



ESTABLISHED 1882 - INCORPORATED 1891

SHOVELING BOARDS,  
WOOD CISTERN TANKS  
ETC.

STEEL  
AND  
WOOD  
LAWN SWINGS.

# Hayes Pump & Planter Co.

MANUFACTURERS OF  
CORN PLANTERS, CHECK ROWERS,  
RIDING AND WALKING CULTIVATORS,  
STEEL LEVER HARROWS,  
DOUBLE CYLINDER FORCE PUMPS,  
THREE CYLINDER POWER PUMPS,  
HOT WATER BOILERS.



**GALVA, ILL.** Nov. 1904.

DEAR SIRS:

We take pleasure in handing you herewith a copy of our Catalogue F, just fresh from the press, and invite your attention to the same that you may notice the advances we have made along the entire line. A glance through its pages will assure you that we have maintained our reputation for catering to the ever increasing demands of the trade, and as we have done in the past, we shall continue to do in the future. That is, supply the trade with the most up-to-date line of Planters, Cultivators, Shoveling Boards and Pumps on the market.

If you are not already numbered among our numerous customers, we shall hope soon to enroll you on our list, and with that end in view, invite your inquiries for anything in our line that you may be in the market for, assuring you that no matter how large or small the order may be it is always appreciated.

Again soliciting your inquiries and a share of your patronage we are,

Very truly yours,

HAYES PUMP AND PLANTER CO.

P. S. -- Kindly acknowledge receipt of this Catalogue and we will mail you our discount sheet.





Founded in 1882

Incorporated in 1891

## CATALOGUE "F"

1904

OF THE

# Hayes Pump & Planter Company

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### Makers of

|                     |                          |
|---------------------|--------------------------|
| Corn Planters       | Steel Pipe, U-Bar        |
| Corn Drills         | & Angle Bar Harrows      |
| Cotton Planters     | Shoveling Boards         |
| Riding Listers      | Hot Water Boilers        |
| Walking Listers     | Pumps (for all purposes) |
| Riding Cultivators  | Wood Tanks               |
| Walking Cultivators | Etc., Etc., Etc.         |

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Factory and General Office

**GALVA, ILLINOIS, U. S. A.**

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### Branch Offices

**HAYES PUMP & PLANTER CO.**

DES MOINES, IOWA

**HAYES PUMP & PLANTER CO.**

OMAHA, NEB.

**MANUFACTURERS SALES CO.**

KANSAS CITY, MO.

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### Distributing Houses

Columbus, Ohio.

Indianapolis, Ind.

Cedar Rapids, Iowa

Bloomington, Ill.

Minneapolis, Minn.

Decatur, Ill.

Rochelle, Ill.

Freeport, Ill.

Springfield, Ill.

Madison, Wis.

Sioux City, Iowa.

Mason City, Iowa.

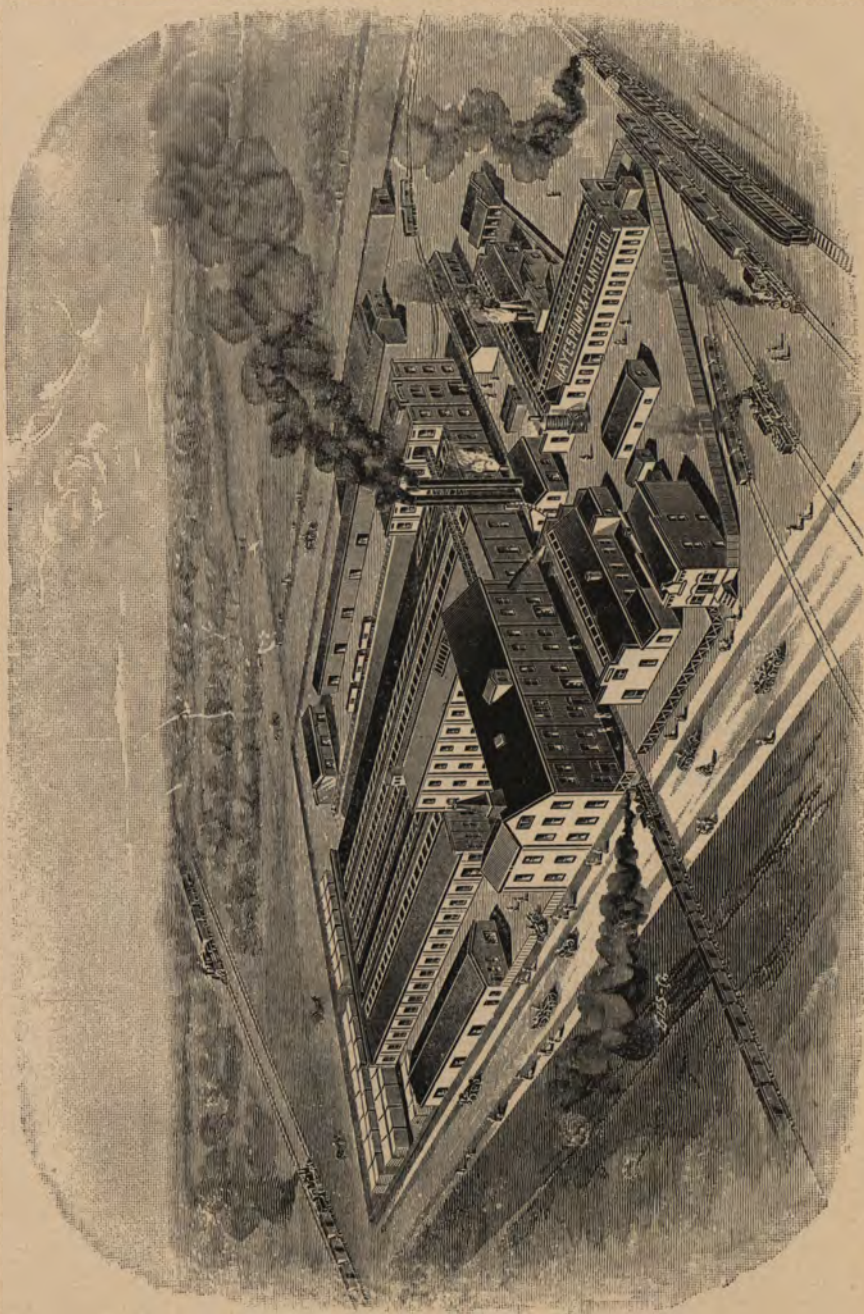
Sioux Falls, S. D.

Springfield, Mo.

St. Louis, Mo.

**HAYES PUMP & PLANTER COMPANY**

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**PLANT AND MAIN OFFICE, GALVA, ILLINOIS, U. S. A.**



## FOREWORD.

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OVER twenty years' experience in the manufacture of a line of corn raising machinery, during which time all the inventive genius and skill in mechanical construction at our command has been concentrated on a limited number of tools, have caused Hayes Implements to stand out a conspicuous success. This success is due to the fact, as shown by patent office records, that our line is creative, not imitative, and essentially different in construction to any other line made. To the dealer the advantages of such a line are unquestioned; it enables him to build up a trade and establish prices on goods his competitor cannot duplicate.

To our customers we wish to assure our appreciation of past relations and hearty co-operation in the maintenance of quality and advancement in our goods.

To the trade, generally, we call attention to the pages following. An investigation will reveal our claims justifiable, a customer made, and an argument ended.

We ask the preservation of this catalogue. We will promptly fill orders and gladly answer all inquiries.

**Hayes Pump & Planter Co.**



# TELEGRAPH CODE.

## CORRESPONDENCE

|                  |                                                                                                                    |
|------------------|--------------------------------------------------------------------------------------------------------------------|
| <b>Table</b>     | Answer by Mail.....                                                                                                |
| <b>Tacit</b>     | Answer by telegraph.....                                                                                           |
| <b>Taffy</b>     | Referring to our letter of.....                                                                                    |
| <b>Talent</b>    | See our letter of today giving full particulars.....                                                               |
| <b>Tallow</b>    | Have received no reply to ours of.....                                                                             |
| <b>Tandem</b>    | Referring to your telegram of.....                                                                                 |
| <b>Tangle</b>    | Referring to our telegram of.....                                                                                  |
| <b>Taper</b>     | Wire reply to ours of.....                                                                                         |
| <b>Target</b>    | Letter referred to not received. Send Copy.....                                                                    |
| <b>Tarnish</b>   | Letter referred to not received. Wire substance.....                                                               |
| <b>Task</b>      | Letter received. Will have our (or my) prompt attention.....                                                       |
| <b>Taste</b>     | Await our letter of.....                                                                                           |
| <b>Trigger</b>   | Will leave here tonight for.....                                                                                   |
| <b>Tubular</b>   | Will leave here today for.....                                                                                     |
| <b>Trill</b>     | Will leave here tomorrow for.....                                                                                  |
| <b>Trimmer</b>   | Will be at..... Sunday.....                                                                                        |
| <b>Triumph</b>   | Will be at..... Monday.....                                                                                        |
| <b>Trombone</b>  | Will be at..... Tuesday.....                                                                                       |
| <b>Tropic</b>    | Will be at..... Wednesday.....                                                                                     |
| <b>Trophy</b>    | Will be at..... Thursday.....                                                                                      |
| <b>Trouble</b>   | Will be at..... Friday.....                                                                                        |
| <b>Trousers</b>  | Will be at..... Saturday.....                                                                                      |
| <b>Tucker</b>    | Telegraph when you can go to.....                                                                                  |
| <b>Tuft</b>      | Go to..... by first train Answer if you can't.....                                                                 |
| <b>Tug</b>       | From there go to.....                                                                                              |
| <b>Tulip</b>     | Call at Postoffice for instructions at.....                                                                        |
| <b>Tumbler</b>   | Wire us when ready to leave.....                                                                                   |
| <b>Tumult</b>    | Go to..... and protect our claim. Instructions at Postoffice. If necessary employ attorney.....                    |
| <b>Trumps</b>    | Message received but not understood. A mistake has been made. Have it repeated writing all words very plainly..... |
| <b>Truncate</b>  | Pay freight and send us expense bill. We will adjust according to contract.....                                    |
| <b>Truncheon</b> | Receive goods and send us expense bill, having agent note breakage thereon.....                                    |
| <b>Trundle</b>   | Shall I (we) honor orders from.....                                                                                |
| <b>Trunk</b>     | Can I (we) have orders filled from.....                                                                            |
| <b>Tube</b>      | Why don't you ship our (my) goods.....                                                                             |

## QUOTATIONS-INQUIRIES

|                 |                                                    |
|-----------------|----------------------------------------------------|
| <b>Tawny</b>    | Quote best price and terms by wire. F. O. B.....   |
| <b>Teamster</b> | Quote best price and terms by mail. F. O. B.....   |
| <b>Teaser</b>   | Can you make quick shipment and at what price..... |

## QUOTATIONS-ANSWERS

|                |                                                         |
|----------------|---------------------------------------------------------|
| <b>Tedious</b> | Specifications insufficient. Give full particulars..... |
| <b>Temper</b>  | Not in position to quote on your inquiry of.....        |
| <b>Templet</b> | We name you on your inquiry of.....                     |
| <b>Terrace</b> | We name you for immediate shipment.....                 |
| <b>Thatch</b>  | We name you for shipment in.....                        |
| <b>Threat</b>  | We quote you for spot cash.....                         |
| <b>Thrift</b>  | We quote you for usual terms.....                       |
| <b>Throng</b>  | Cannot amend our quotation.....                         |
| <b>Ticket</b>  | Cannot accept order at price named.....                 |
| <b>Tickler</b> | We will accept your offer.....                          |

## STOCK INQUIRIES

|                |                                                     |
|----------------|-----------------------------------------------------|
| <b>Tierce</b>  | How soon can you ship us.....                       |
| <b>Tiger</b>   | Have you in stock.....                              |
| <b>Timber</b>  | How soon could you make and ship.....               |
| <b>Timbrel</b> | How soon could you begin and complete shipment..... |

## STOCK ANSWERS

|               |                              |
|---------------|------------------------------|
| <b>Tinkle</b> | Can ship all from stock..... |
|---------------|------------------------------|

|               |                                                       |
|---------------|-------------------------------------------------------|
| <b>Tissue</b> | Can ship an assortment at once, balance in.....       |
| <b>Titter</b> | Can ship complete in.....                             |
| <b>Toast</b>  | Can ship within a week from receipt of order.....     |
| <b>Toady</b>  | Can make shipment within time named.....              |
| <b>Toilet</b> | Cannot make goods within the time named.....          |
| <b>Tokay</b>  | Cannot make shipment within the time named.....       |
| <b>Tomcat</b> | Cannot furnish the goods your inquiry of.....         |
| <b>Tomcod</b> | We do not carry in stock; will take..... days to make |

## ORDERS AND SHIPMENTS- INSTRUCTIONS

|                   |                                                                             |
|-------------------|-----------------------------------------------------------------------------|
| <b>Tomtom</b>     | Ship knocked down and boxed or bundled to obtain lowest classification..... |
| <b>Tone</b>       | Ship knocked down and boxed for ocean shipment.....                         |
| <b>Tongs</b>      | Ship by mail.....                                                           |
| <b>Tonsil</b>     | Ship as soon as possible and follow by tracer.....                          |
| <b>Tontine</b>    | Ship all you can at once, remainder to follow.....                          |
| <b>Toothsome</b>  | Ship if you can ship today.....                                             |
| <b>Topaz</b>      | Ship by express.....                                                        |
| <b>Topic</b>      | Ship by freight.....                                                        |
| <b>Tortoise</b>   | Enter order at your quotation of.....                                       |
| <b>Torture</b>    | Enter order if you can ship within.....                                     |
| <b>Tower</b>      | Enter order if you can ship immediately.....                                |
| <b>Tract</b>      | Hold for instructions our order of.....                                     |
| <b>Trader</b>     | Cancel our order of.....                                                    |
| <b>Traduce</b>    | Add to our order of.....                                                    |
| <b>Tragle</b>     | Duplicate our order of.....                                                 |
| <b>Trammel</b>    | When will you ship our order of.....                                        |
| <b>Transfer</b>   | Trace our shipment of.....                                                  |
| <b>Transfix</b>   | Have you shipped our order of.....                                          |
| <b>Transgress</b> | Don't ship until.....                                                       |
| <b>Transit</b>    | Don't ship unless.....                                                      |
| <b>Trash</b>      | Advise when ready to ship.....                                              |
| <b>Travel</b>     | Ship in first car.....                                                      |
| <b>Trawl</b>      | How soon can you ship?.....                                                 |
| <b>Tray</b>       | Hurry our goods forward.....                                                |
| <b>Tread</b>      | Ship to following address and bill to us.....                               |
| <b>Treadmill</b>  | Ship and draw with bill lading.....                                         |
| <b>Treat</b>      | See your catalogue, page.....                                               |

## ORDERS AND SHIPMENTS-REPLIES

|                  |                                                         |
|------------------|---------------------------------------------------------|
| <b>Tree</b>      | Have entered order as per yours of.....                 |
| <b>Trefoil</b>   | Cannot ship within time named your order of.....        |
| <b>Trellis</b>   | We have shipped today by freight.....                   |
| <b>Tremor</b>    | We have shipped today by express.....                   |
| <b>Trencher</b>  | Now working on your order. Will ship on.....            |
| <b>Trend</b>     | Goods all made. Cannot cancel.....                      |
| <b>Trepan</b>    | Goods referred to were shipped on.....                  |
| <b>Trepid</b>    | Awaiting your specifications.....                       |
| <b>Tressy</b>    | Mail shipping directions. Your order of.....            |
| <b>Triad</b>     | Wire shipping directions. Your order of.....            |
| <b>Trial</b>     | Will hold your order, awaiting letter.....              |
| <b>Triangle</b>  | Ready, awaiting shipping instructions.....              |
| <b>Tribal</b>    | Expect to ship about.....                               |
| <b>Tribes</b>    | Will advise when ready to ship.....                     |
| <b>Tribune</b>   | Shipment has been delayed.....                          |
| <b>Tributary</b> | Will certainly be shipped.....                          |
| <b>Trick</b>     | Have shipped all except.....                            |
| <b>Trickles</b>  | Your order was shipped.....                             |
| <b>Tricolor</b>  | Unless you telegraph to the contrary, we will ship..... |
| <b>Tricot</b>    | Have none in stock. Can make and ship in..... days..... |
| <b>Trident</b>   | Car now loading containing.....                         |



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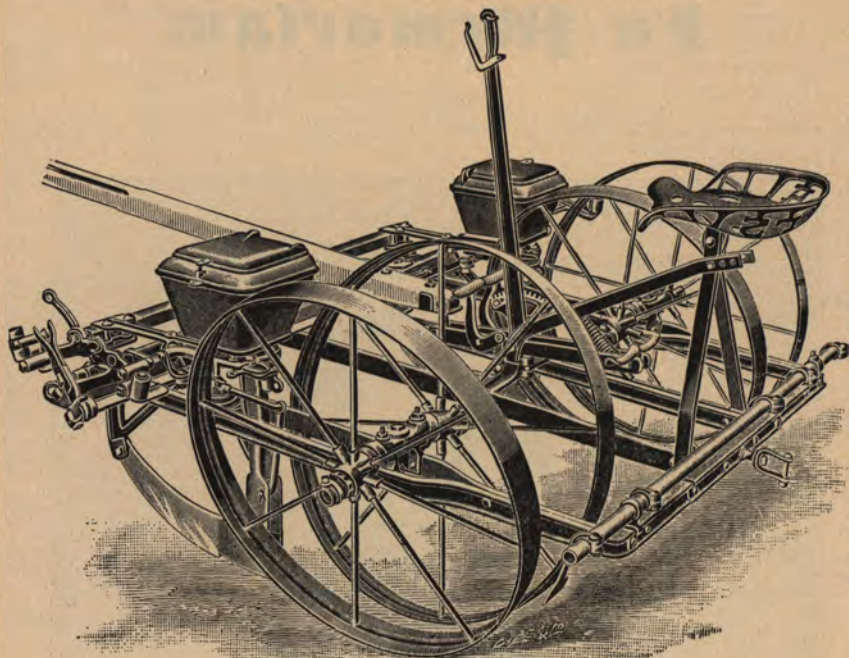
# In Memoriam



Our Founder  
Eugenio R. Hayes.

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## HAYES PLANTER

Is a planter absolutely unique in originality and perfection of design and carefulness of construction. No other is so perfectly adaptable to the various requirements of different localities, no other has so many points of intrinsic superiority.

**Frame.**—Six parallel bars of high carbon steel compose the rear frame, making it many times stronger than any other. The runners are always carried at an even depth, and the frame will absolutely not spring out of shape under any condition.

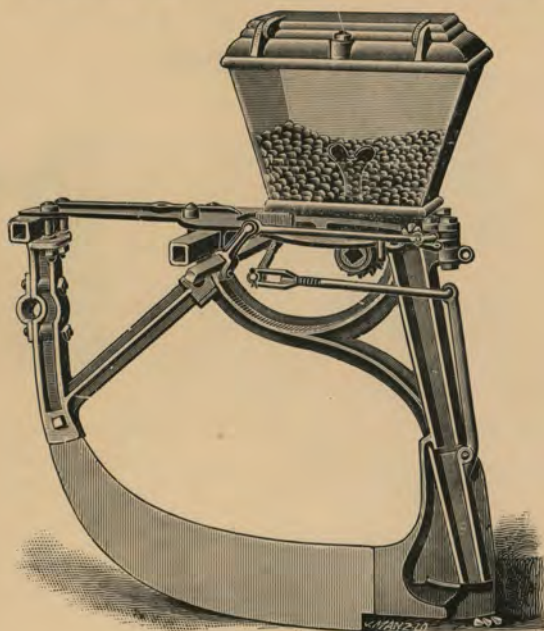
**Tongue.**—The tongue is attached to the front frame in such a manner that six inches raising or lowering the point of the tongue will vary the heel of the runner less than one-half inch, which is very important, especially in checking straight on hilly ground.

**Axles.**—Are cast in chills, making them smooth and hard, insuring long life and easy running. They are provided with solid end boxes, and dust proof sand caps, requiring in most cases, not more than one oiling during the season.

**Covering Wheels.**—Four covering wheels running on a slant and having adjustable axles allow the wheels to give more or less gather so that as much or little dirt can be packed around the corn as the condition of the soil requires. When set about two inches further apart at the front edge we will guarantee them to cover where other wheels fail. A ridge is left over the corn which prevents it from washing out of hill sides; when harrowing this ridge is levelled off, leaving a clean row where the corn comes up, thus gaining one cultivation over a straight covering wheel.

**Even Depth of Planting.**—The runners are set within ten inches of the coupling point of the wheel, which regulates the depth of planting to the fraction of an inch; this is a great advantage in all uneven ground and dead furrows. Being planted the same depth all the corn comes up at the same time, thus allowing it to be cultivated a number of days sooner.





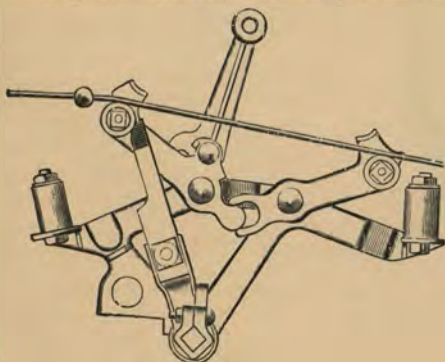
## HAYES PLANTER

**Perfect Checking.**—The valves throw the corn back with the motion of the team, so that the difference in fast and slow driving is entirely overcome, for the faster the horses travel the further the valve throws the corn back, thus putting it in check. This valve is guaranteed not to clog in mud.

**Seed Plates.**—The greatest possible care is used in the construction of the seed plates. They are ground to a perfect thickness by our especial machinery and do not vary 1-1000 of an inch, making the seed cells all of an even size, and will admit any style of a kernel, including "butts and ends." This is the most practical seed plate in regular field work.

**Cut Off.**—It is so designed that it will admit the required number and will positively not cut the corn. A most important feature.

**Lightest Draft.**—The Hayes is the shortest coupled planter on the market.

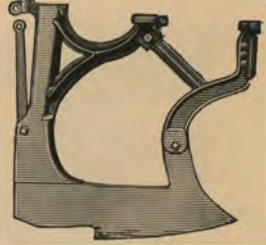


**Perfect Wire Release.**—By means of a simple device the wire can be released from the planter without stopping the team, or the driver leaving his seat.

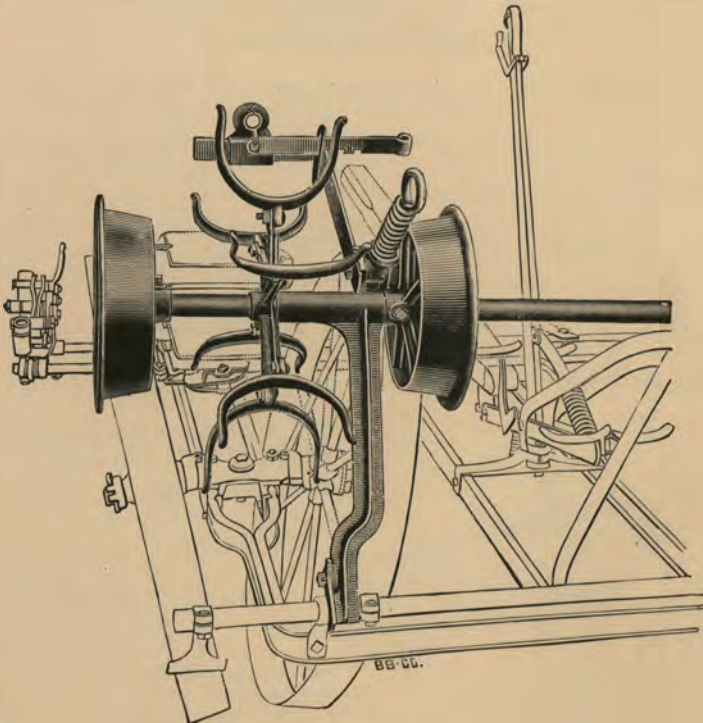
**Ease of Handling.**—The runners are held in the ground by means of a ratchet lever, at the same time being carried on a spring by which the planter can be forced deeper with the foot lever without changing the hand lever.

## HAYES PLANTER

**Stub Runners.**—As shown in the cut are furnished instead of the ordinary sled runners, when specified. They are especially adapted for sandy and loose soil, where trash collects under the ordinary runner, making too large a furrow and leaving the corn uncovered, while the stub runner brings the trash to the surface and pushes it aside. The Hayes Planter equipped with this style of runner cannot be equalled as a stub runner planter, as the runner is always carried on the same level, regardless of the depth of planting.

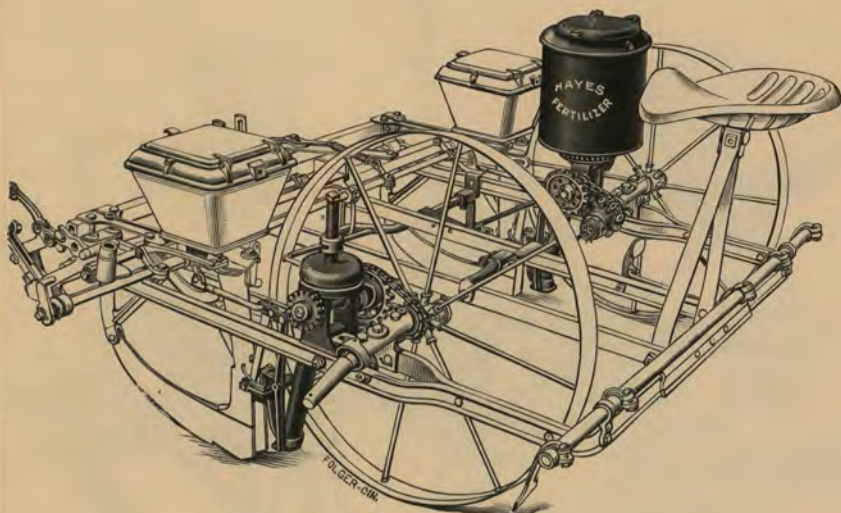


**Automatic Reel.**—The automatic reel as shown herewith is strong and simple, with conveniently arranged devices. It can be placed on either side of the planter with a slight arrangement of parts. The friction of the pulley on the planter wheel is controlled by screw threaded spring rod and may be unscrewed to hold the friction pulley off the planter wheel. Thus it will be observed that the reel does not revolve while the planter is driven on the road. If a little care is used this reel will wind and unwind the wire with the horses on a trot.



Automatic Reel as attached to Hayes Steel Planter.





## HAYES PLANTER

### Showing Fertilizer Attachment

The construction of the Hayes Four-Wheel Planter is such that the fertilizer boxes can be easily held in position by bolting the castings, on which they rest, between the side bars of the rear frame about five inches ahead of the axle. This allows the boxes to be placed low down and between the wheels, so that they are each driven independently by a short chain direct from the planter wheel. It will be observed by setting the fertilizer boxes so close to the axle that the weight is carried almost entirely by the wheels, hence the weight in raising the planter is not increased to any great extent.

**The Tubes.**—Two tubes are used on each side of the planter. The lower end of one of these tubes is pivoted to the runner standard, and the upper end of the other tube is pivoted to the spout on which the fertilizer box rests. The lower tube is arranged to telescope over the upper tube, as the planter is raised or lowered, making a perfect connection for distributing the fertilizer into the ground.

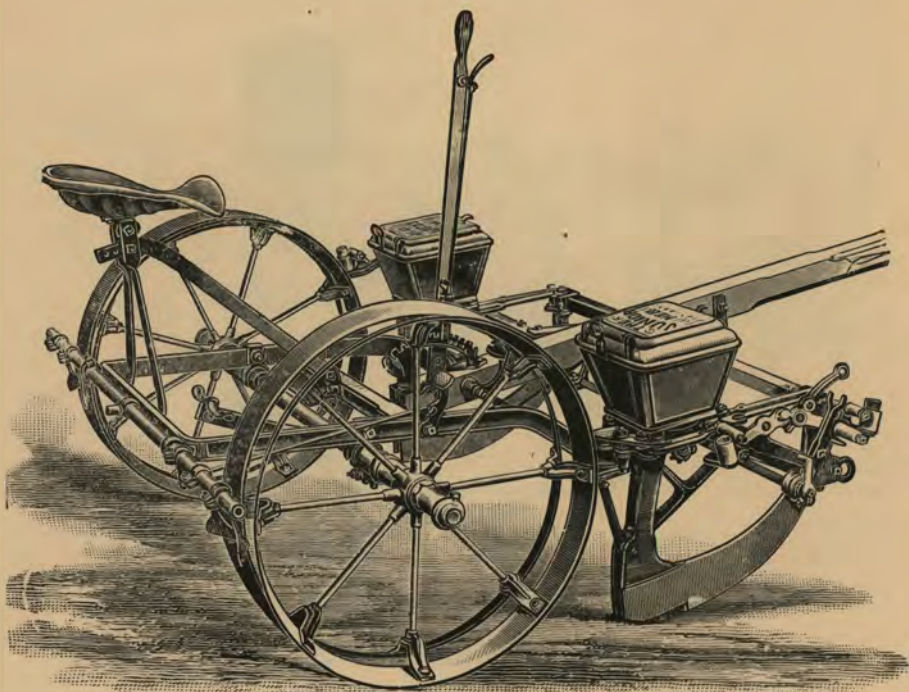
**A Valve** is provided at the lower end of the tube, and so connected to the rock shaft that it is opened simultaneously with the planter valve, and is arranged to deposit the fertilizer about two inches at the rear of the hill of corn, thus preventing it from injuring the seed.

**Drilling the Corn.**—When drilling the corn the valve on the fertilizer tube can be left open and the fertilizer will be sown in a continuous row.

**The Arrangement** is such that when the planter is raised, the attachment is thrown out of gear and the planter can be turned around without distributing the fertilizer.

**A Foot Lever** is furnished so that the attachment can be held out of gear when desired to distribute the fertilizer on the thin soil and not on the richer ground. This lever is also provided with a catch whereby it can be locked out of gear when desired.

**The Amount of Fertilizer** can be varied to suit the requirements.\* We send three sprockets, which with the adjustable slide allows you to sow any reasonable amount. When especially large quantities are desired we have a special feed wheel adapted for this purpose.



## JUNIOR PLANTER

Our success in the manufacture and sale of four-wheeled planters caused us a number of years ago to put on the market a two-wheeled planter embodying as nearly as possible the feature of the Hayes, resulting, our judgment tells us, in the best planter of its class.

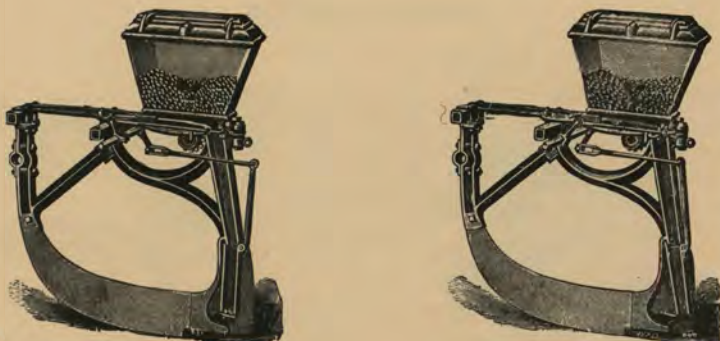
**Frame.**—Is made of a single piece of high carbon steel, combining strength, lightness and a flexibility that conforms itself to the evenness of the ground.

**Wheels.**—Flat, concave and open center wheels in 28 and 36 inch heights will be furnished.

**Checkrower.**—The checkrower, the actual wearing part of a planter, is very simple on the Junior. The fine adjustment required on most planters is overcome, as a half throw of the fork is sufficient to rotate the plate and operate the valve, so it is impossible to miss dropping the corn.

**Seed Plates.**—The greatest possible care is used in the construction of the seed plates. They are ground to a perfectly even thickness by our special machinery and do not vary 1-1000 part of an inch, making the seed cells all of an even size, and will admit any style of kernel including "butts and ends." This is the most practical seed plate in regular field work.



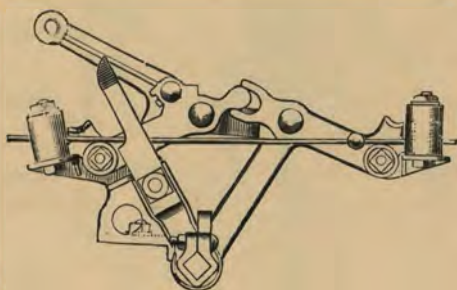


## JUNIOR PLANTER

**Perfect Checking.**—The valve throws the corn back with the motion of the team, so that the difference in fast and slow driving is entirely overcome, for the faster the horses travel the further the valve throws the corn back, thus putting it in check.

**Cannot Clog.**—We guarantee this valve will not clog in mud.

**Cut Off.**—Is so designed that it will admit the required number and will positively not cut the corn, a most important feature.

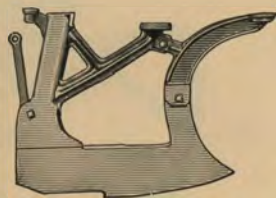


**Wire Release.**—By means of this simple device the wire can be released without stopping the team or the driver leaving his seat. The rollers are of chilled iron and not grooved as common, insuring durability.

**Drill Attachment.**—A perfect geared drill, plants from 3 to 24 inches apart. It is easy to attach or detach and may be left on while the planter is being used as a hill drop. The adjustments are easily made and require no extra parts.

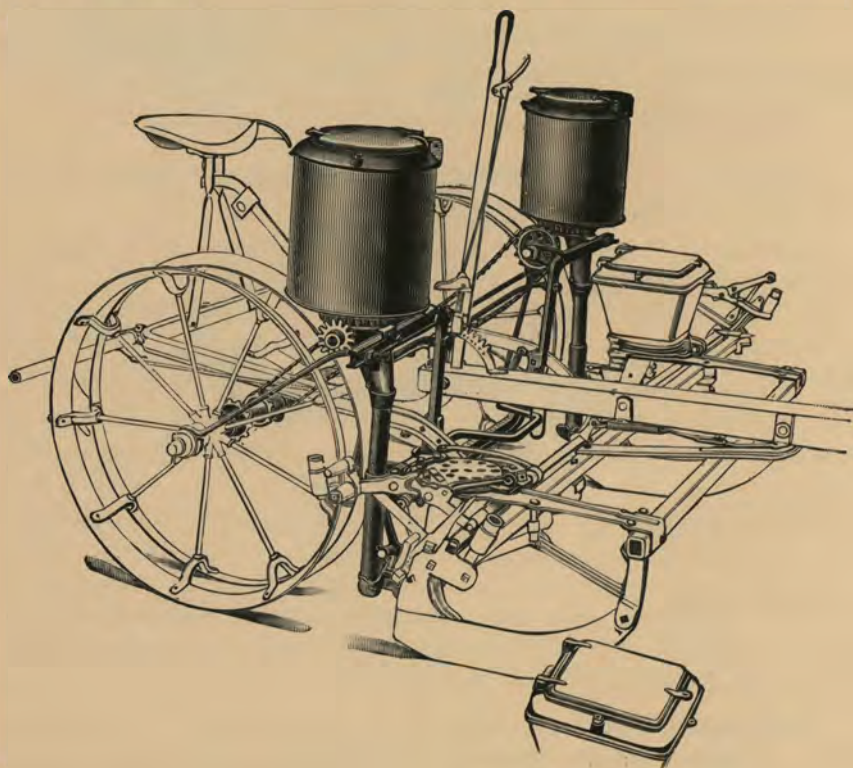
## JUNIOR PLANTER

**Stub Runners.**—As shown in the cut are furnished instead of the ordinary sled runners, when specified. They are especially adapted for sandy and loose soil, where trash collects under the ordinary runners making too large a furrow and leaving the corn uncovered, while the stub runner brings the trash to the surface and pushes it aside.



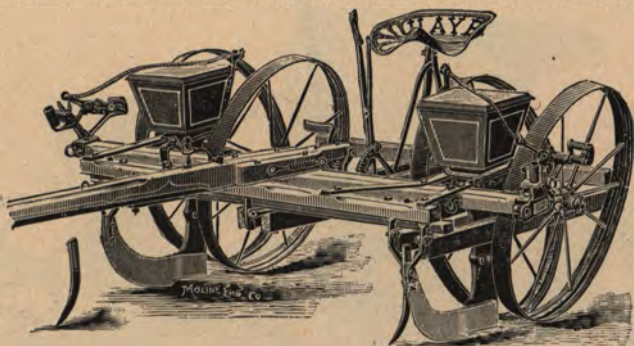
**Automatic Reel.**—The automatic reel is strong and simple with conveniently arranged devices. It can be placed on either side of the planter with a slight arrangement of parts. If a little care is used this reel will wind and unwind the wire with the horses on a trot. Shown in the description of the Eclipse Planter.

**Fertilizer Attachment.**—This fertilizer has the same principle of operation as the Hayes; the only difference being a large steel frame bolted to the rear frame about 15 inches in front of the axle. To this frame the boxes and parts are attached.



Fertilizer Attachment for Junior and Eclipse Planters.





## HAYES WOOD-FRAME PLANTER

The demand for this planter by customers who say they can ask nothing better causes us to continue its manufacture. No change has been made on it for the past ten years; and the fact that none have been asked speaks volumes for the high state of perfection to which it has been brought.

**Construction.**—The frame being constructed of wood is much lighter and has the same strength as a steel frame. The principles of mechanism and construction are identical to the Hayes Steel Frame Planter.

**Seed Plates.**—The greatest possible care is used in the construction of the seed plates. They are ground to a perfectly even thickness by our special machinery and do not vary 1-1000 part of an inch, making the seed cells all of an even size and will admit any style of kernel including "butts and ends." This is the most practical seed plate in the regular field work.

**Cut Off.**—Is so designed that it will admit the required number and will positively not cut the corn. A most important feature.

**Checkrower.**—The checkrower, the actual wearing part of a planter, is very simple. The fine adjustment required on most planters is overcome, as a half throw of the fork is sufficient to rotate the plate and operate the valve, so it is impossible to miss dropping the corn.

**Ease of Handling.**—The runners are held in the ground by means of a ratchet lever, at the same time being carried on a spring by which the planter can be forced deeper with the foot lever without changing the hand lever.



## ECLIPSE PLANTER

The main feature of this planter is the construction of the seed plate. The seed plate revolves in a receptacle, one wall of which is turned off perfectly true and is a round disc with cells extending above its periphery or outer edge. These cells run close to the wall of the receptacle, revolve through the corn, pick up one kernel in each cell and hold it against the side of the receptacle until it comes near the top, where it is deposited through an opening into the seed tube or valve. These cells are of such shape that if the proper size is used it is almost impossible for them to receive over one kernel at a time, be it large or small. The seed plates running in an upright position permit a direct drive from the axle eliminating all cog gearing.

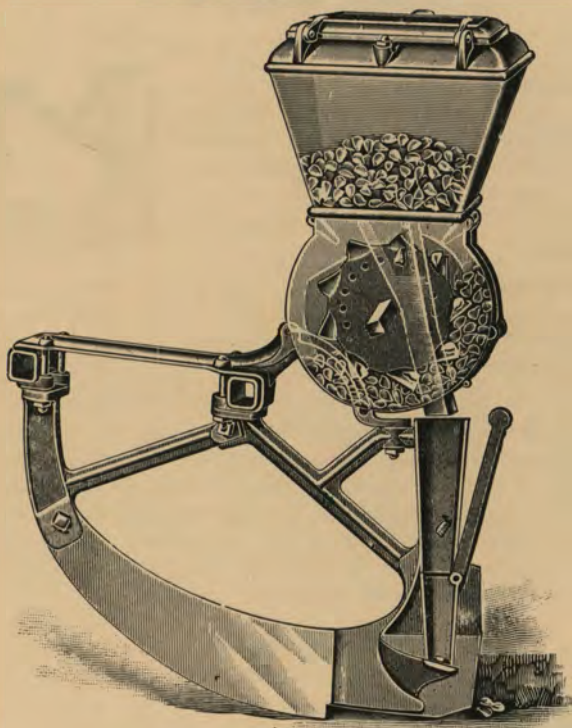
**No Cut Off.**—There is no cut off, hence, no danger of cutting corn, and the long grains can be planted as well as the short ones.

**Frame.**—Is made of a single piece of high carbon steel, combining strength, lightness and a flexibility that conforms itself to the unevenness of the ground.

**Wheels.**—Flat, concave and open center wheels in 28-inch and 36-inch heights will be furnished.



## ECLIPSE PLANTER



SEE THAT CORN



How the plate takes up one kernel at a time and how it is held at the bottom of the valve? The valve throws the corn back with the motion of the team so that the difference in fast and slow driving is entirely overcome, for the faster the horses travel the farther the valve throws the corn back, thus putting it in check.

**Cannot Clog.**—We guarantee this valve will not clog in mud.

**Wire Release.**—By means of a simple device the wire can be released without stopping the team or the driver leaving his seat. The rollers are of chilled iron and not grooved as common.

**Checkrower.**—The checkrower is very simple and overcomes the fine adjustment required by most planters. One-half throw of the fork will operate the valve so it is impossible to miss dropping the corn.

**Drill.**—To change from a checkrower to a drill planter, it is only necessary to hold open the lever valve.

**Wire Release.**—By means of this simple device the wire can be released without stopping the team or the driver leaving his seat. The rollers are of chilled iron and not grooved as common, insuring durability.

**Adjustable.**—Made adjustable in three different widths.

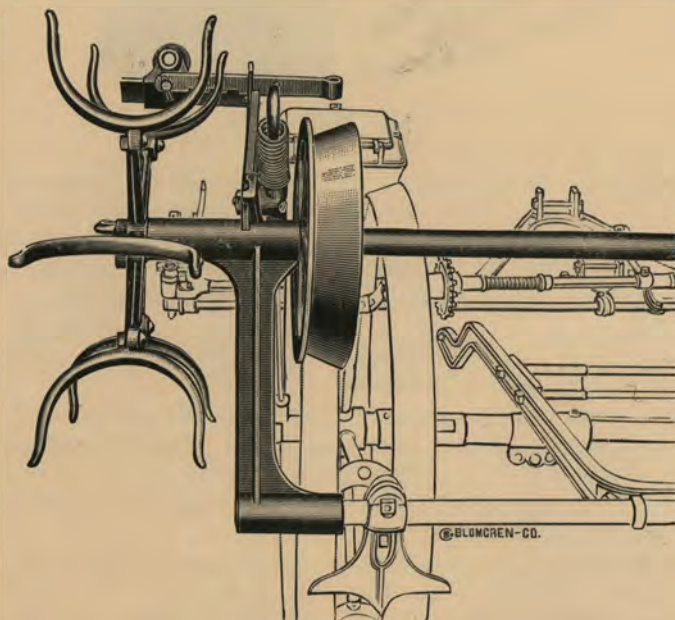
## ECLIPSE PLANTER

**Stub Runners.**—As shown in the cut are furnished instead of the ordinary runners when specified. They are especially adapted for sandy and loose soil where trash collects under the ordinary runner, making too large a furrow and leaving the corn uncovered, while the stub runner brings the trash to the surface and pushes it aside.



**Fertilizer Attachment.**—A highly satisfactory fertilizer attachment, shown in the description of the Junior Planter on page describing the Junior Planter, can be furnished. Our ten years' experience in the manufacture of this rapidly becoming necessary attachment has resulted in a fertilizer par excellence, fully capable of filling the most exacting demands put to it.

**Automatic Reel.**—The automatic reel is strong and simple with conveniently arranged devices. It can be placed on either side of the planter with a slight arrangement of parts. The friction of the pulley on the planter wheel is controlled by a screw-threaded spring rod, and may be unscrewed to hold the friction pulley off the planter wheel. Thus it will be observed that the reel does not revolve while the planter is driven on the road. If a little care is used this reel will wind and unwind the wire with the horses on the trot.



Automatic Reel Attachment to Junior and Eclipse Planters.



## TELEGRAPH CODE AND SHIPPING WEIGHTS OF PLANTERS

### HAYES STEEL FRAME PLANTER

With 80 Rods of Wire and Automatic Reel.

| Name                                 | 3 ft. 2 in. | 3 ft. 4 in. | 3 ft. 6 in. | 3 ft. 8 in. | Weight   |
|--------------------------------------|-------------|-------------|-------------|-------------|----------|
| Hayes with drill.....                | Gaged       | Gagger      | Gaging      | Gagroot     | 541 lbs. |
| Hayes without drill.....             | Gahnite     | Galac       | Galdie      | Galety      | 504 lbs. |
| Fertilizer Attachment for Hayes..... | Galkwar     |             |             |             | 110 lbs. |
| Stub Runners for Hayes.....          | Galler      |             |             |             |          |

### JUNIOR PLANTER

With 80 Rods of Wire and Automatic Reel.

| Name                                               | Kind of Wheels.    | 3 ft. 2 in. | 3 ft. 4 in. | 3 ft. 6 in. | 3 ft. 8 in. | Weight   |
|----------------------------------------------------|--------------------|-------------|-------------|-------------|-------------|----------|
| Junior with drill...                               | 28 in. open center | Gallard     | Gally       | Gain        | Gainage     | 472 lbs. |
| " without drill...                                 | 28 in. "           | Gaincome    | Gainful     | Gainsome    | Gainsay     | 443 lbs. |
| " with drill...                                    | 28 in. concave     | Gairfish    | Gairfowl    | Gait        | Gaiter      | 472 lbs. |
| " without drill...                                 | 28 in. "           | Gala        | Galactic    | Galage      | Galangal    | 443 lbs. |
| " with drill...                                    | 36 in. open center | Galatin     | Galapago    | Galatea     | Galatlan    | 509 lbs. |
| " without drill...                                 | 36 in. "           | Galaxia     | Galba       | Galbanum    | Galbula     | 480 lbs. |
| " with drill...                                    | 36 in. concave     | Gale        | Galente     | Galei       | Gab         | 509 lbs. |
| " without drill...                                 | 36 in. "           | Gabata      | Gabbard     | Gabber      | Gabbing     | 480 lbs. |
| " drill only...                                    | 28 in. open center | Gachna      | Gabble      | Gang        | Gangway     | 367 lbs. |
| " drill only...                                    | 28 in. concave     | Gaduln      | Gabbro      | Ganger      | Gannet      | 367 lbs. |
| " drill only...                                    | 36 in. open center | Gander      | Gabel       | Ganglion    | Gannoid     | 404 lbs. |
| " drill only...                                    | 36 in. concave     | Ganesa      | Gabella     | Gangrel     | Gantlet     | 404 lbs. |
| Fertilizer Attachment for 28 in. Wheel Junior..... |                    | Gafail      |             |             |             | 130 lbs. |
| Fertilizer Attachment for 36 in. Wheel Junior..... |                    | Gag...      |             |             |             | 133 lbs. |
| Stub Runners for Junior.....                       |                    | Gauge       |             |             |             |          |
| Flat Wheels for Junior.....                        |                    | Gachita     |             |             |             |          |

### ECLIPSE PLANTER

With 80 Rods of Wire and Automatic Reel.

| Name                                                | Kind of Wheels.    | 3 ft. 2 in. | 3 ft. 4 in. | 3 ft. 6 in. | 3 ft. 8 in. | Weight   |
|-----------------------------------------------------|--------------------|-------------|-------------|-------------|-------------|----------|
| Eclipse with drill...                               | 28 in. open center | Gablan      | Gable       | Gablock     | Gaffer      | 453 lbs. |
| " with drill...                                     | 28 in. concave     | Gadder      | Gadding     | Gadfly      | Gadhl       | 453 lbs. |
| " with drill...                                     | 36 in. open center | Gadwall     | Gael        | Gaellic     | Gaff        | 506 lbs. |
| " with drill...                                     | 36 in. concave     | Galedod     | Galer       | Galerum     | Galet       | 506 lbs. |
| " drill only...                                     | 28 in. open center | Gantry      | Gallot      | Gaper       | Garcon      | 354 lbs. |
| " drill only...                                     | 28 in. concave     | Ganza       | Gallpot     | Gar         | Garde       | 354 lbs. |
| " drill only...                                     | 36 in. open center | Gaosa       | Galium      | Garb        | Garbler     | 407 lbs. |
| " drill only...                                     | 36 in. concave     | Gap         | Gall        | Garble      | Garfish     | 407 lbs. |
| Fertilizer Attachment for 28 in. Wheel Eclipse..... |                    | Gallant     |             |             |             | 130 lbs. |
| Fertilizer Attachment for 36 in. Wheel Eclipse..... |                    | Gallate     |             |             |             | 133 lbs. |
| Stub Runners for Eclipse.....                       |                    | Gallatin    |             |             |             |          |
| Flat Wheels for Eclipse.....                        |                    | Galleon     |             |             |             |          |

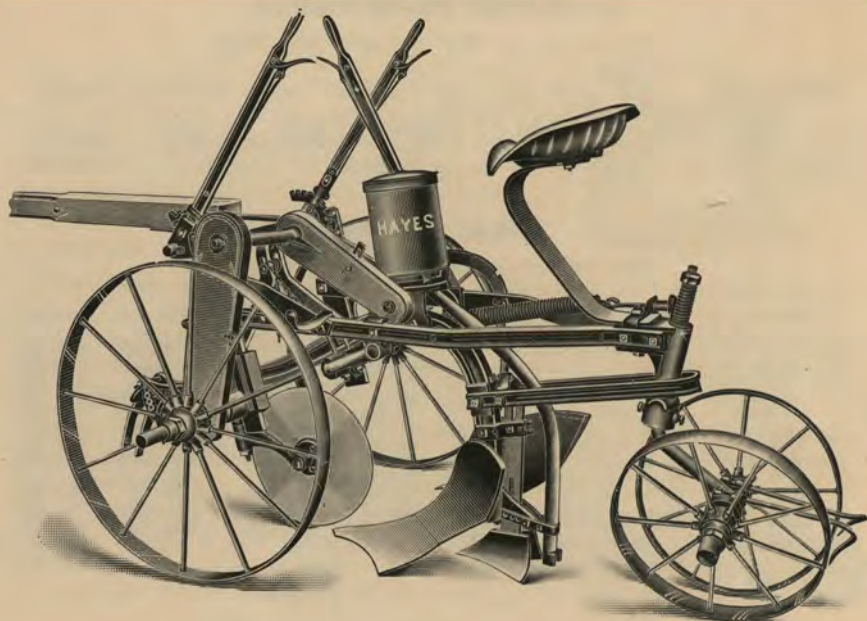
### HAYES WOOD FRAME PLANTER

With 80 Rods of Wire and Automatic Reel.

| Name.                 | 3 ft. 2 in. | 3 ft. 4 in. | 3 ft. 6 in. | 3 ft. 8 in. | Weight   |
|-----------------------|-------------|-------------|-------------|-------------|----------|
| Hayes Wood Frame..... | Gallery     | Galess      | Galliard    | Gallie      | 438 lbs. |

### CHECK-ROWER WIRE

| Size of Bundle.    | Weight. | 3 ft     | 3 ft. 2 in. | 3 ft. 4 in. | 3 ft. 6 in. | 3 ft. 8 in. | 3 ft. 10 in. |
|--------------------|---------|----------|-------------|-------------|-------------|-------------|--------------|
| 80 rod bundle..... | 43 lbs. | Galican  | Galling     | Gallivant   | Gallize     | Gallon      | Gallopade    |
| 20 rod bundle..... | 11 lbs. | Galopin  | Galloway    | Galore      | Galosh      | Galpe       | Galtrop      |
| 10 rod bundle..... | 6 lbs.  | Galushat | Galvanic    | Galvano     | Gam         | Gambo       | Gambado      |



## HAYES FOUR-WHEEL LISTER

Furnished with Shovel or Disk Covers when so ordered.

We were the first to place on the market a Four-Wheel Lister, and have passed successfully through those unsuccessful years of experiments, gradually perfecting this machine in all its details to a culmination that fulfills all of the demands of a Lister of this kind.

**Four Wheel Lister Advantages.**—It is conceded by successful lister corn raisers that the best results can be obtained by following the lister furrows with a corn planter. By this method the dirt is packed around the corn and the moisture retained and inasmuch as the main reason for listing is to obtain moisture it is evident that the best results follow with wheel pressure. Owing to the care required to get the furrows in perfectly parallel and the time to follow them with a corn planter, this method has been practically abandoned. Our four-wheel lister accomplishes the desired results in the same length of time necessary to make the furrows by the old method.



## HAYES LISTER

**Construction.**—The Hayes Four-Wheel Lister, like most tools we build, is original. It is short and compact and the land wheels being directly opposite permits the machine being turned in its own length. The seat is set well back on the frame, throwing the weight of the operator on the covering wheels. It has a high spring lift and handles easily.

**Flexible Connection.**—The beam is attached to the frame with one bail of regular design and are special flexible bail which pivots at the beam connection and rests on the rear wheel support. This permits the lister bottom to level itself when listing over rough ground, and relieves the extra strain on both frame and horses. This bail is provided with an adjustable stop, by means of which the lister bottom can be given more or less suction.

**Covering Wheels.**—Are of the same principle as those used on the Hayes Planter. They pack the dirt around the corn and leave the soil loose on top. Being on slanting axles the wheels open wide at the top and clean almost automatically without the aid of the steel scrapers used. They will not clog or carry the corn over in any condition of the soil.

**Caster Wheels.**—The wheels are provided with an automatic lock. In turning corners the lock is tripped to caster the wheels and after the turn has been made they resume their normal position, thus allowing this machine to be backed successfully.

**Seed Tubes.**—Is cut away near the seed boxes allowing the operator to see the corn as it drops. It is independent of the subsoiler and can be adjusted to drop the corn at any depth, in loose soil or at the bottom of the furrow.

**Drill.**—Is of chain construction, completely enclosed, and so arranged that the tension remains the same regardless of the position of the beam. Being attached to the land wheel insures a positive drive.

**Leveling Levers.**—Enable the operator to do perfect work on hilly ground and double listing.

**Double Listing.**—The rear wheels hold the lister bottom in position and the land wheels can be properly adjusted to the old furrows by means of the forward levers.

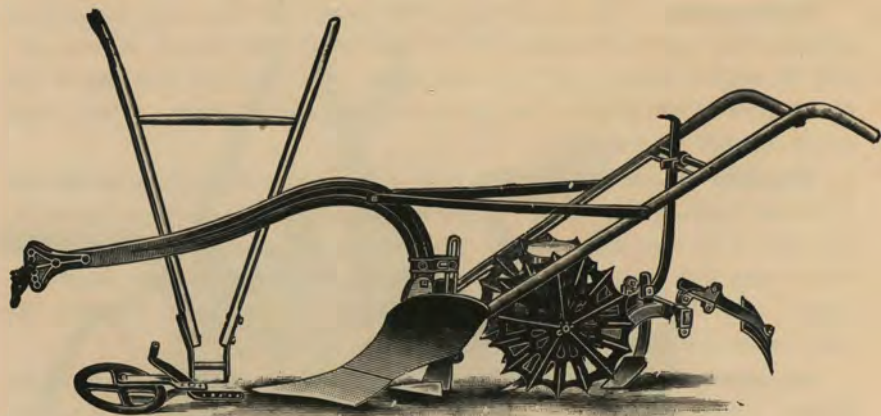
**Penetration.**—The point enters the ground first and comes out first, enabling the operator to obtain the desired depth while going the distance of less than a length of a machine.

**Light Draft.**—The beam being hung on one regular bail is independent of the frame, and the weight of the operator is carried on the wheels.

**Evener.**—Are combination two, three and four horses.

**Seed Plates.**—Six plates and one blank plate are furnished.

**Covering Shovels.**—Are furnished when specified.



## HAYES WALKING LISTER

### Complete with Drill

Is of well known construction and is no experiment.

**The Moulds** are so shaped that they will turn a nice, even furrow and scour in the most difficult soil.

**The Dropping Device** is hinged to the lister and is driven by the two large malleable spur wheels, which run in the bottom of the furrow and insure a positive turn of the seed plates. The device is raised up while turning the lister around, and also for transportation, so that the seed plates do not revolve.

**Seed Plates** six of which will be furnished so that the corn can be dropped from twelve to twenty-eight inches apart.

**The Covering Shovels** can be set up or down or closer together when desired, and the shovels are provided with break pins to avoid extra strain.

**Extra Handles** and gauge wheel is furnished so that the drill can be used independent of the lister when desired.

### TELEGRAPH CODE

| Code Word |                                                   | Shipping Weight |
|-----------|---------------------------------------------------|-----------------|
| Laager    | One Hayes Four-Wheel Riding Lister.....           | 636 lbs.        |
| Laas      | One Hayes Walking Lister complete with Drill..... | 192 lbs.        |
| Lab       | One Hayes Walking Lister only.....                | 122 lbs.        |
| Labadism  | One Hayes Lister Drill.....                       | 70 lbs.         |
| Labadist  | Extra Share.....                                  |                 |





## HAYES ONE-HORSE DRILL

### With Covering Wheels

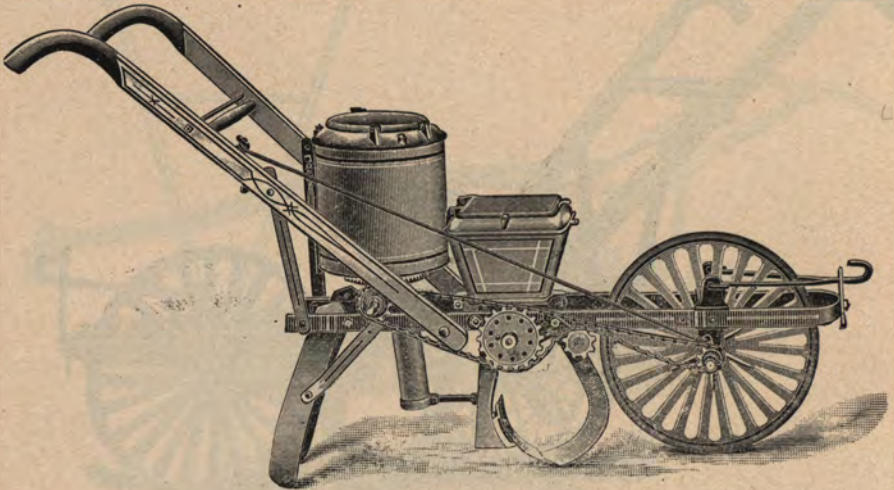
As shown above represents our latest production. The covering wheels work on the same plan as those which have made the Hayes four-wheel planter so famous, and the 75,000 farmers who have used the Hayes four-wheel planter will bear us out in the statement that no planter ever placed on the market will cover corn so well on hard or lumpy soil. The wheels are set on a slant and can also be set farther apart in front, which gives them a slipping motion as the drill is moved forward, forcing the soil into the space left open by the shovel or runner, at the same time leaving a ridge of mellow soil directly over the seed.

This drill embodies, in the dropping mechanism, the same parts used on our Hayes planter, which is unexcelled at the present time. By the change of a single sprocket you are enabled to change the distances planted very quickly. We can furnish different sized plates suitable for planting beans, broom corn, cane, beets, pop corn and all other similar seed. By a very simple device you are enabled to throw it out of gear without stooping over.

Our Fertilizer Attachment can also be used on this drill.

### TELEGRAPH CODE

|        |                                                   | WEIGHT   |
|--------|---------------------------------------------------|----------|
| Hack   | Hayes One-Horse Drill, with Covering Wheels ..... | 98 lbs.  |
| Hackle | " " " " Fertilizer Attachment. ....               | 122 lbs. |



## HAYES ONE-HORSE DRILL

### With Fertilizer Attachment

The above cut represents our One Horse Drill, with Fertilizer Attachment. This drill embodies in the dropping mechanism the same parts used on our Hayes Planter, which is unexcelled at the present time. By the change of a single sprocket you are enabled to change the distances planted very quickly. We can furnish different sized plates, suitable for planting beans, broom corn, cane, beets, pop corn and all other similar seeds. By a very simple device you are enabled to throw it out of gear without stooping over.

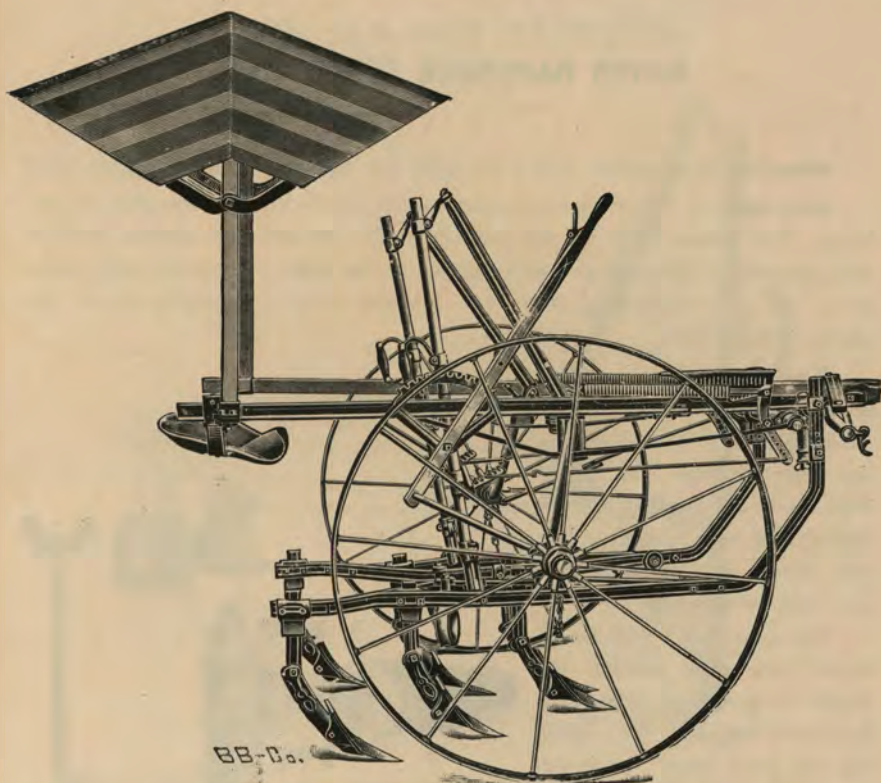
The Fertilizer Attachment furnished has the reliable Marks feed and will handle any of the commercial fertilizers. You can easily change the amounts sown by the use of different sprockets.

Another important feature is that it can be thrown out of gear independent of the Drill, enabling you to use the fertilizer on part of the land and throw it out of gear on the other parts that do not require fertilizer.

### TELEGRAPH CODE

|        |                                                    | WEIGHT   |
|--------|----------------------------------------------------|----------|
| Haaf   | Hayes One Horse Drill.....                         | 108 lbs. |
| Haaber | Hayes One Horse Drill and Fertilizer combined..... | 132 lbs. |
| Habeck | When wanted with pressure wheel, extra.            |          |





## HAYES HAMMOCK CULTIVATOR

Equipped with No. 51 Gangs

This cultivator is a product of the practical experience of its inventor, Mr. Hayes, combined with his as well as others' known ability in mechanical construction. Since the introduction of this cultivator, no change has been made and none suggested; its success was instantaneous. The Hayes Hammock cultivator has many new and thoroughly practical points, most of which are covered by patents and there are a few manufacturers who have not felt its influence and copied one or more of its features.

**Construction.**—The frame is constructed of angle bar spring steel. It is braced laterally four times and each hound has a longitudinal brace. The tongue is attached to a brace well forward allowing the operator to see five or six hills ahead, thus enabling him to dodge crooked corn accurately.

**Perfect Balance.**—A lever is provided within easy reach of the operator, whereby the wheels can be adjusted back and forth to balance the weight of the operator. The lever and rod connection to the opposite wheel hold the cultivator rigid. The seat castings are also adjustable, and are so constructed that they prevent the seat from swinging backward or forward.

## HAYES HAMMOCK CULTIVATOR

**Wheels.**—Steel wheels with a malleable hub and removable boxing are used.

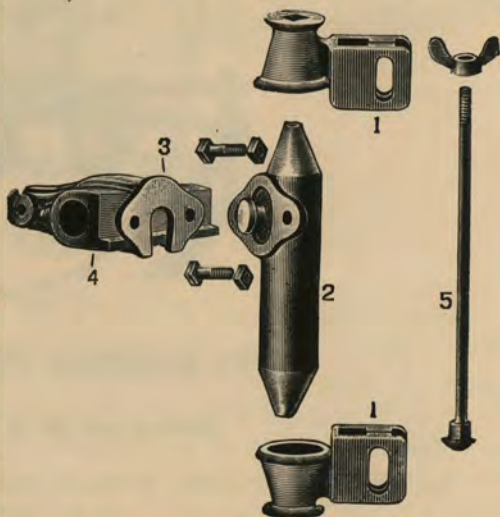
**Stirrups.** — The stirrups are clamped and may be attached any place on the beam. This means much for the comfort of the operator and without comfort, why not walk? The stirrups may be placed on the upper side of the beam either for a boy, or in cultivating large corn. In any position it may be placed, the stirrup is held rigid.

**Coupling.**—This is an original and patented feature. The malleable clips 1-1 are bolted to the beam through the slotted holes and are clamped to the chilled iron cone 2, with a bolt and thumb nut by which all wear can be adjusted.

The cone 2 is bolted to the swivel casting 3, causing the beams to swing with a level or horizontal motion. By changing the bolts which hold the castings 2 and 3 rigid to a casting on the lift pipe the beam has a pendulum swing.

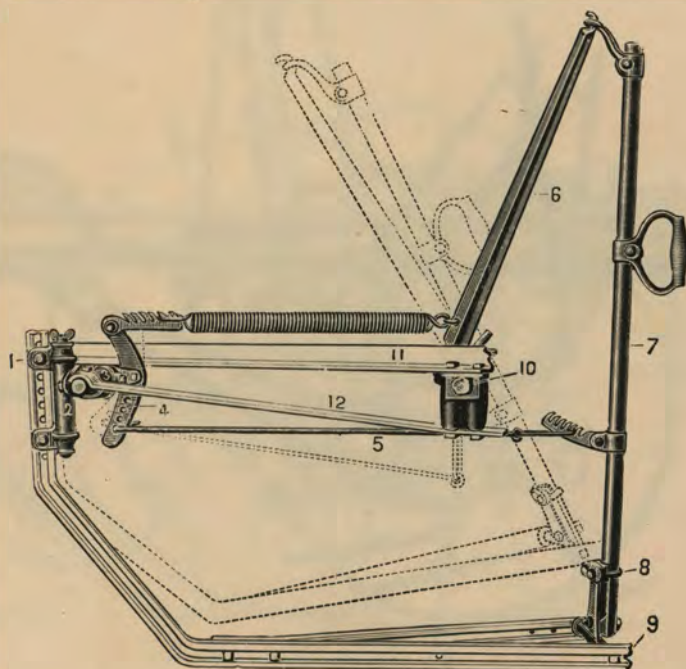
**Shovel Beams.**—Are furnished of either wood or steel, and are arranged so that either 4 or 6 shovels can be used. The standards are clamped to the beam and are adjustable up or down. The steel beams can also be used for four shovel eagle claws, and we can furnish either four or five spring tooth attachments which can be used on the same beam. Steel spring trip beams of four or six shovel can be furnished. Surface blades furnished for all beams with pin break.

**Pivot Tongue.**—We furnish this cultivator with a pivot tongue if desired. A pole lever is used for swinging the cultivator so that the beams will move in the direction the cultivator is guided, making it easy to dodge corn in crooked rows. The lever may be locked and the corn dodged by the feet in the stirrups.



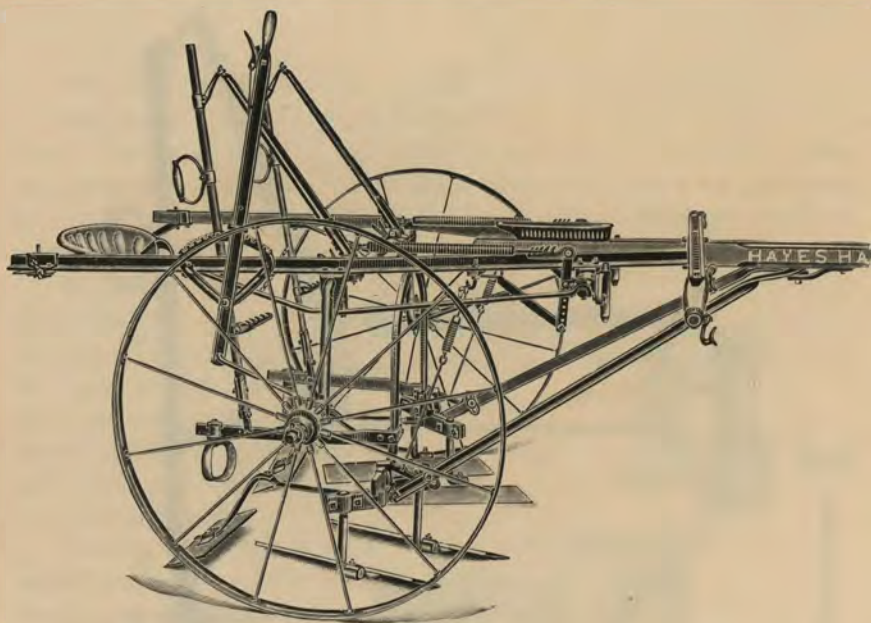


## HAYES HAMMOCK CULTIVATOR



**Operation.**—When the handle bars are thrown forward as in dotted line the shovels are lifted for transportation. When the operation is reversed the shovels are thrown to the ground and when the team starts, they are thrown into the ground by their own suction, bring the spring into action and holding the support from the top of the tension lever. The depth of the shovels is regulated by hooking the front end of the tension rod in the lower hole in the tension lever and the link in the proper notch on the handle bar. Thus by a slight pressure of the foot on the stirrup, the tension lever will yield and allow the shovel to be forced deeper into the ground. Should the tension of the spring not be sufficient to hold the shovels out of the ground, it can be given a stronger tension by placing it in a higher hole in the tension lever (4). This lever having five holes in its lower end the same results will be obtained as though five springs, each having a different tension were furnished.

It should be understood that the tension lever has only one action, as shown in the dotted line, so that while the spring on the support is always intact, it has a limited movement at the lower end, so that the tension rod acts upon the spring and allows the shovels to be forced deeper into the ground, and the top of the tension lever is thrown forward as the shovels are raised, thus keeping an even tension on the spring.



## HAYES HAMMOCK CULTIVATOR

Equipped with Gopher Attachment

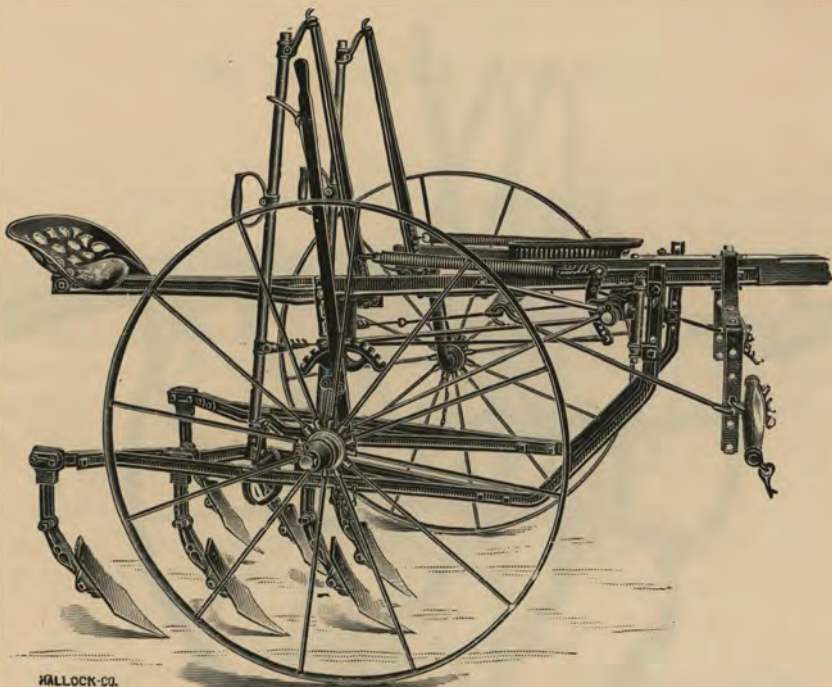
To provide a specially constructed gopher attachment we have designed the above. By removing the gangs and substituting a small brace for the spring tension rod, the gopher beams may be attached, making a first class surface cultivator in every particular. It enables the purchaser to have two distinct cultivators in one at a very small cost.

**Construction.**—The gopher attachment is of simple construction and is made almost entirely of steel. The head blocks are of steel and clamp the standards firmly in any position allowing any adjustment to the knives.

The levelers are of simple construction and may be given any desired adjustment.

**Balance Lever.**—Is provided within easy reach of the operator whereby the wheels can be adjusted back or forward to balance the weight of the operator. There is no other way that a plow can be so perfectly balanced.





## HAYES HAMMOCK No. 2

Equipped with No. 51 Gangs

This cultivator is the same as the Hayes Hammock, except that it has a combination seat. This seat is preferred by many for the reason that it can be adjusted to any height and still have a level seat. It is easier to mount, and is held in a more rigid position.

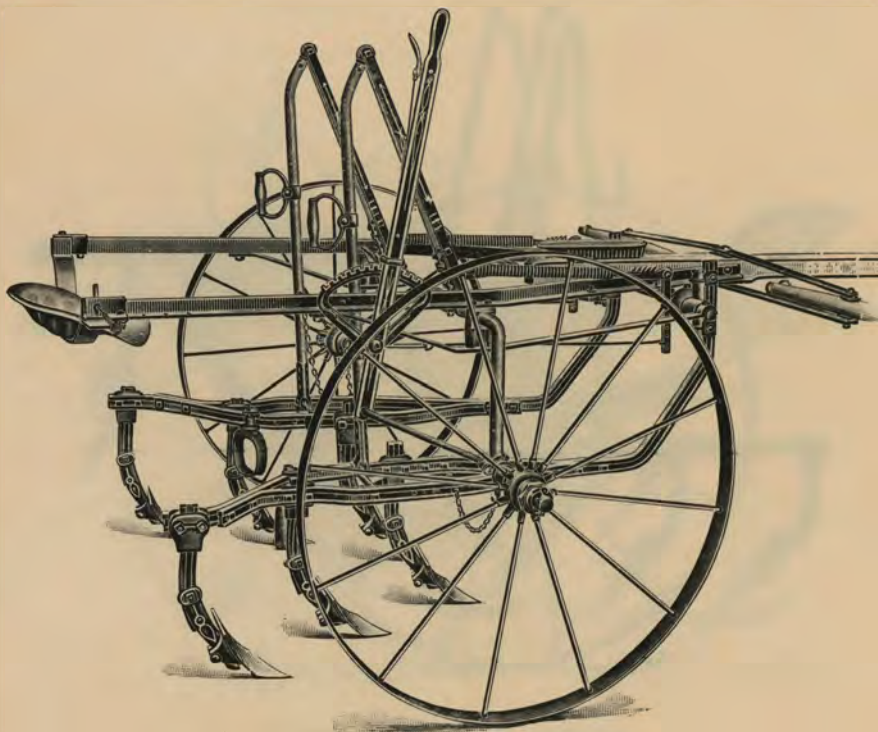
**Gangs.**—This cultivator is furnished with all styles of gangs.

### SHOVEL BLOCK

Used on all Hayes Cultivators unless ordered with Open Sleeve



This is the most satisfactory sleeve and block made. With this block the most minute adjustment can be given the shovels, and the clamp is so strong that they never fail to hold.



## REX HAMMOCK CULTIVATOR

Equipped with No. 51 Gangs

In the construction of this cultivator we have followed the general outline of the most approved cultivator of its class, adding such new features as actual experience has shown to be advisable.

**Construction.**—The frame is constructed of angle bar spring steel. It is braced laterally four times and each hound has a longitudinal brace. The tongue is attached to a brace well forward, allowing the operator to see five or six hills ahead, thus enabling him to dodge crooked corn accurately.

**Perfect Balance.**—A lever is provided within easy reach of the operator, whereby the wheels can be adjusted back and forth to balance the weight of the operator. The seat castings are also adjustable and are so constructed that they prevent the seat from swinging backward and forward.

**Wheels.**—Steel wheels with a malleable hub and removable boxing are used.



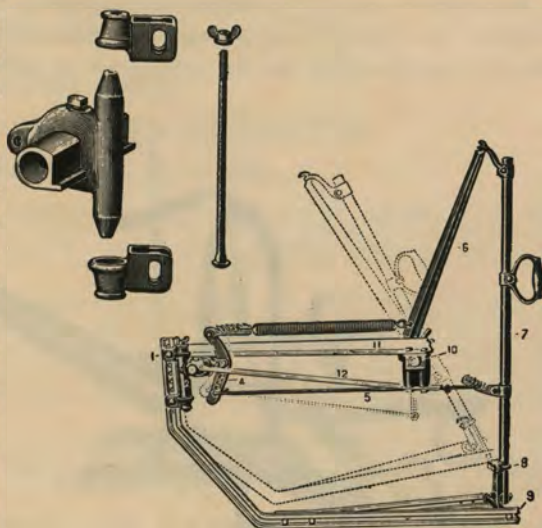
## REX HAMMOCK CULTIVATOR

**Stirrups.**—The stirrups are clamped and may be attached any place on the beam. This means much for the comfort of the operator, and without comfort, why not walk? The stirrups may be placed on the upper side of the beam, either for a boy, or in cultivating large corn. In any position it may be placed the stirrup is held rigid.

**Coupling.**—Malleable clips are attached to the beam, which work on a chilled cone sleeve, giving sufficient variation in width. The wear may be taken up with a thumb nut. The points of bearing being far apart, insure an easy working, rigid and perfectly level swing to the beams.

**Operation.**—When the handle bars are thrown forward as in the dotted line, the shovels are lifted for transportation. When the operation is reversed, the shovels are thrown to the ground and when the team starts, they are drawn into the ground by their own suction, bring the spring into action and holding the support from the top of the tension lever. The depth of the shovels is regulated by hooking the front end of the tension rod in the lower hole in the tension lever and the link in the proper notch on the handle bar. Thus by a slight pressure of the foot on the stirrup, the tension lever will yield and allow the shovel to be forced deeply into the ground. Should the tension of the spring not be sufficient to hold the shovels out of the ground, it can be given a stronger tension by placing it in a higher hole in the tension lever (4). This lever having five holes in its lower end the same results will be obtained as though five springs, each having a different tension, were furnished.

It should be understood that the tension lever has only one action, as shown in the dotted line, so that while the spring on the support is always intact, it has

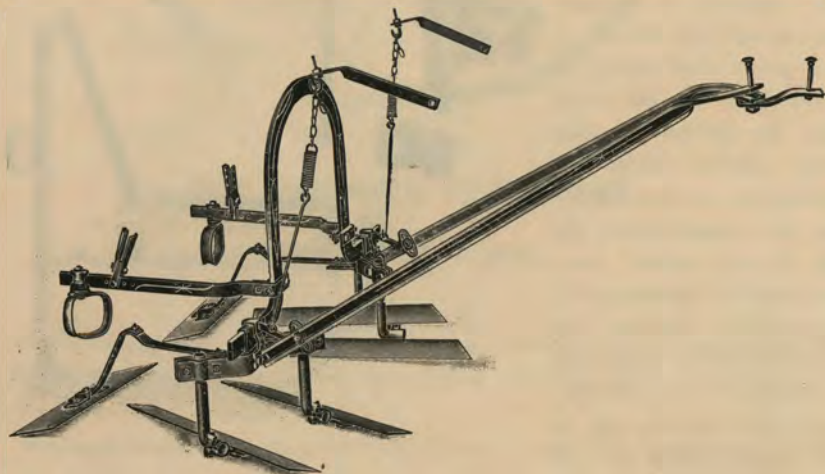


## REX HAMMOCK CULTIVATOR

a limited movement at the lower end, so that the tension rod acts upon the spring and allows the shovels to be forced deeper into the ground, and the top of the tension lever is thrown forward and the shovels are raised, thus keeping an even tension on the spring.

**Shovel Beams.**—Are furnished on which either 4 or 6 shovels can be used. The standards are clamped to the beams and are adjustable up and down. The beams can also be used for four shovel eagle claws, and we can furnish four or five spring tooth attachments which can be used on the same beam. Spring trip beams of four or six shovel can be furnished. Surface blades furnished for all beams with pin break.

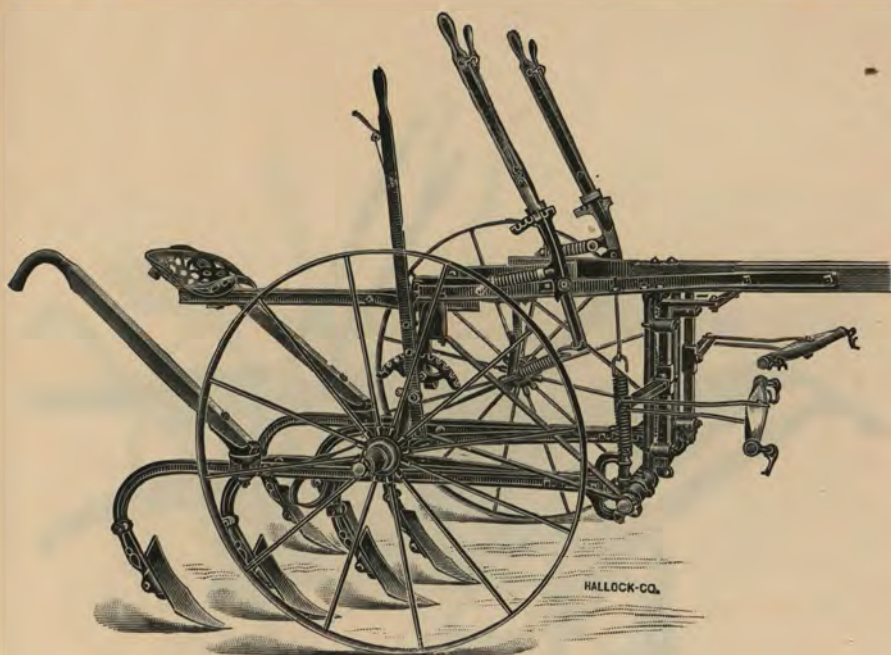
**Pivot Tongue.**—We furnish this cultivator with a pivot tongue if specified. A pole lever is used for swinging the cultivator so that the beams move in the direction the cultivator is guided, making it easy to dodge corn in crooked rows. The lever may be locked and the corn dodged by the feet in the stirrups.



Gopher Attachment

To provide a specially constructed gopher attachment we have designed the above. By removing the gangs and substituting a small brace for the spring tension rod, the gopher beams may be attached making a first class surface cultivator in every particular. It enables the purchaser to have two distinct cultivators in one at a very small cost.





## HAYES COMBINED CULTIVATOR

Equipped with No. 32 Gangs

**Construction.** — In designing this cultivator we have not lost sight of the fact that a combined cultivator must be made as light as possible and still be of sufficient strength to stand the required strain. Malleable castings are used in all places where there is any special strain, and the frame is made of high carbon steel, which is a much stiffer and stronger frame.

**The Hitch.** — One of the most important things on a combined cultivator is the hitch. Our hitch is constructed of two square bars of high carbon steel rounded on both ends and pivoted to the front arch. These bars are connected by malleable castings extending forward and pivoted to a connecting bar directly under the tongue. Extending outward from each bar is a malleable arm to which the single-trees are attached, so made that they can be adjusted up and down upon the bar, always up when used as a rider and down when used as a walker. In any adjustment these arms have about twelve inches swing, thus assuring a perfect evenness.

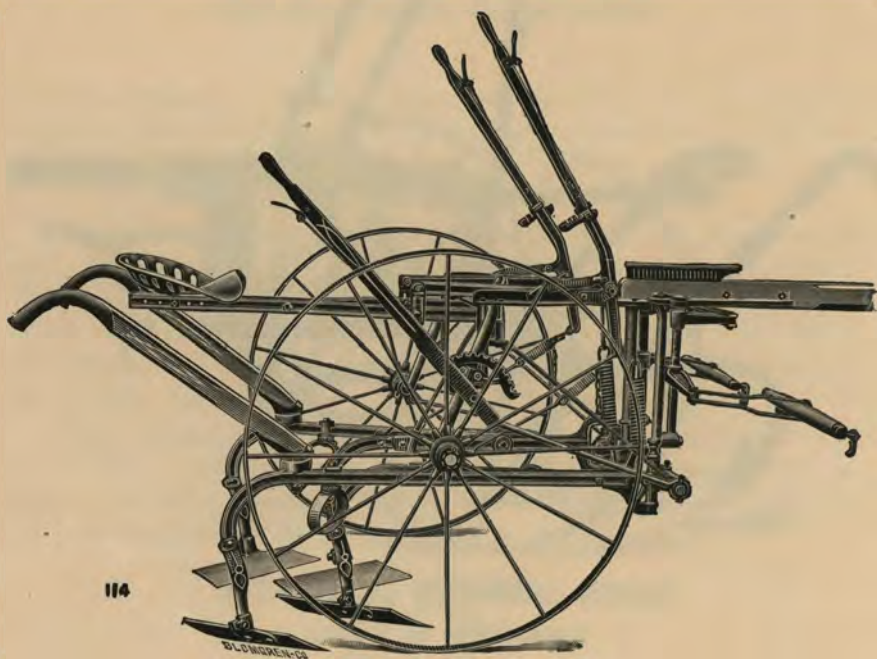
**The Coupling.** — Is made of malleable iron which works on a chilled cone sleeve. The wear may be taken up by simply turning a thumb nut, and the sleeve can be adjusted up and down by loosening only one bolt. The points of bearings are far apart so that the gangs are held rigidly in a vertical position to the shovels at all times, still allowing the gangs to handle easily.

**Springs.** — Springs of sufficient strength to balance the beam and so arranged that when the gangs are in the ground they have very little tendency to pull them out. We also use a pair of small springs to regulate the depth while used as a rider, allowing the gangs to be forced into the ground without changing the lever.

**Balance Lever.** — Is provided within easy reach of the operator, whereby the wheels can be adjusted back or forward to balance the weight of the operator. There is no other way that a plow can be so perfectly balanced.

**Gauge Levers.** — Are provided that will not only gauge the depth of the gangs, but at the same time will raise the gangs very high for turning around. The rack has a fine adjustment so that by moving one notch only varies the shovel about three-fourths of an inch. The racks are pivoted with the levers and are held in position with a spring so attached that when the lever is thrown back they pass the center and thus lock the lever and hold the gangs in position for turning around. The spring can be regulated so that after the plow is turned around the gangs can be lowered with a slight pressure of the foot on the stirrup, giving full use of both hands to drive the team and making it unnecessary to stop.

**Gangs.** — The gangs shown in the cut will be furnished regularly either in four or six shovel rigs. With either of these gangs we can furnish surface blades which can be put on in place of the shovels. When desired we can furnish the following style shovel rigs: 4 or 6-shovel spring trip; 8-shovel eagle claws; 8 or 10-shovel spring tooth.



## HAYES COMBINED CULTIVATOR

With Surface Blades

The above cut shows the Hayes Combined Cultivator equipped with surface blades, making a highly satisfactory surface cultivator. These blades may be used on any pin break steel beam riding or walking cultivator we make.

**Pivot Tongue.**—We furnish the Hayes Combined Cultivator with a pivot tongue if desired. A pole lever is used for swinging the frame so that the beams move in the direction the cultivator is guided. This is a desirable feature for listed corn or side hill plowing.

**The Coupling.**—Is made of malleable iron which works on a chilled cone sleeve. The wear may be taken up by simply turning a thumb nut, and the sleeve can be adjusted up and down by loosening only one bolt. The points of bearing are far apart so that the gangs are held rigidly in a vertical position to the shovels at all times still allowing the gangs to handle easily.





## DUKE COMBINED CULTIVATOR

Equipped with No. 32 Gangs

The gangs of this cultivator travel perfectly level. The chain attached to the lifting lever runs over a pulley placed well forward and connects with the gang far back. This causes a more level swing to the gangs than the usually almost vertical connected chain and gives a more equal penetration to the shovels.

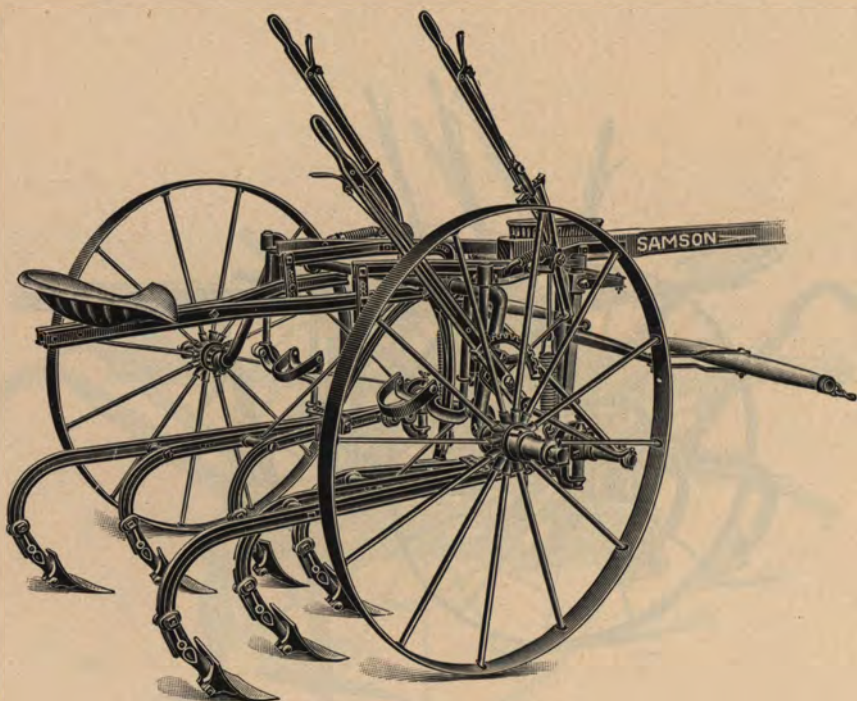
**Balance Lever.**—Is made of malleable iron which works on a chilled cone sleeve. The wear may be taken up by simply turning a thumb nut and the sleeve adjusted up and down by loosening only one bolt. The points of bearing are far apart so that the gangs are held rigidly in a vertical position to the shovels at all times, still allowing the gangs to handle easily.

**Handles.**—The handles are adjustable and may be placed at any angle desired.

**Wheels.**—Steel wheels with removable boxing are used.

**Pivot Pole.**—Will be furnished when specified.

**Gangs.**—This cultivator is furnished with any style of gangs.



## SAMPSON COMBINED CULTIVATOR

Equipped with No. 32 Gangs

The principal feature of this cultivator is the method of shifting the gangs. This is done by a forward pressure of the foot, instead of sideways, as is usually the case. This device is particularly advantageous in crooked corn, as the slightest pressure of the foot causes the gang to move instantly. The treadles may be adjusted to swing the heaviest gangs with ease.

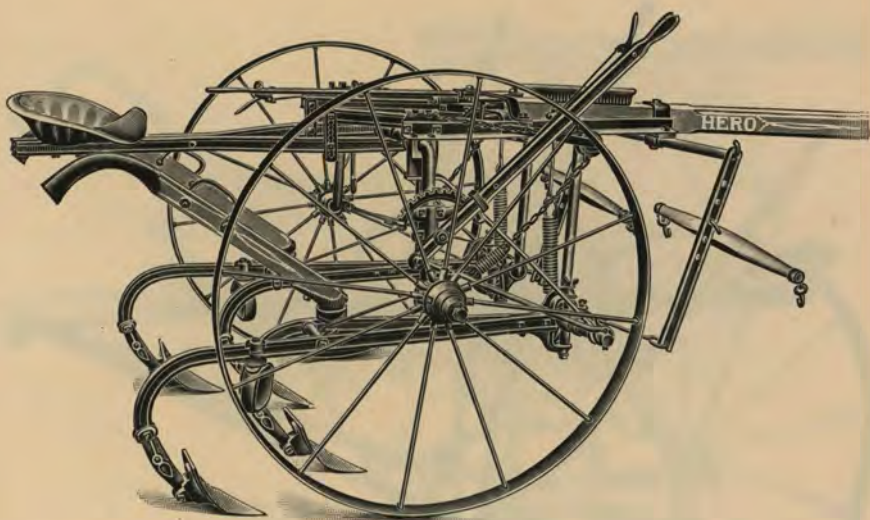
**The Hitch.**—One of the most important parts of a combined cultivator is the hitch. Our hitch is constructed of two square bars of high carbon steel rounded at both ends and pivoted to the front arch. These bars are connected by malleable castings extending forward and pivoted to a connecting bar directly under the tongue. Extending outward from each bar is a malleable arm to which the single-trees are attached, so made that they can be adjusted up and down upon the bar, always up when used as a rider and down when used as a walker. In any adjustment these arms have about twelve inches, thus assuring a perfect evenness.

**Balance Lever.**—Is provided within easy reach of the operator whereby the wheels can be adjusted back or forward to balance the weight of the operator. There is no other way a plow can be so perfectly balanced.

**Coupling.**—Is made of malleable iron which works as a chilled sleeve. The wear can be taken up by simply turning a thumb nut, and the sleeve adjusted up and down by loosening only one bolt. The points of bearing are far apart so that the gangs are held rigidly in a vertical position to the shovels at all times, still allowing the gangs to handle easily.

**Gangs.**—This cultivator is furnished with any style of gangs.





## HERO COMBINED CULTIVATOR

### DIVOT POLE

Equipped with No. 30 Gangs.

On this cultivator the depth of cultivation is regulated without levers. It is done by means of a chain attached to a notched strap within easy reach of the operator. The chain passes over a pulley well forward and attaches far back on the gang, causing the gangs to swing in a line and not raise out of the ground when spread.

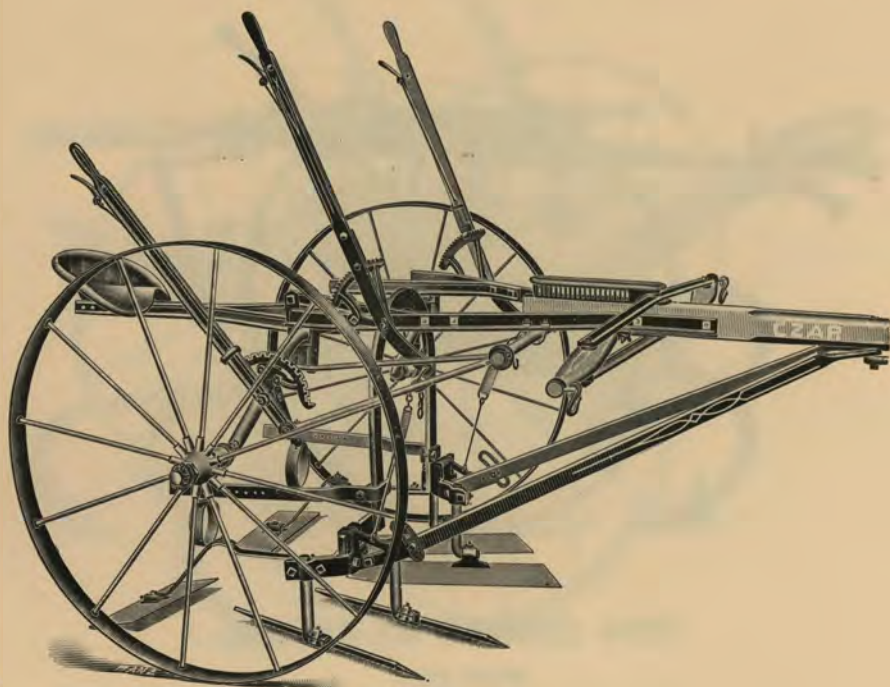
**Pivot Pole.**—A pole lever is used for swinging the cultivator frame so that the beams move in the direction the cultivator is guided. It is a desirable feature for listed corn and side hill plowing. Furnished also without pivot pole.

**Balance Lever.**—By use of this lever the axle is thrown backward or forward bringing the cultivator to a perfect balance. It may be operated from the seat.

**Handles.**—The handles are adjustable and may be placed at any angle desired. They are provided with convenient hand holds.

**Wheels.**—Steel wheels with a malleable hub and removable boxing are used

**Gangs.**—Can be furnished with any style of gangs.



## CZAR SURFACE CULTIVATOR

This style of cultivator has been in use for a number of years and in many localities is considered productive of the best results. The Czar Surface Cultivator combines all the essential features of cultivators of this class with a simplicity and thoroughness of mechanical construction not found in others

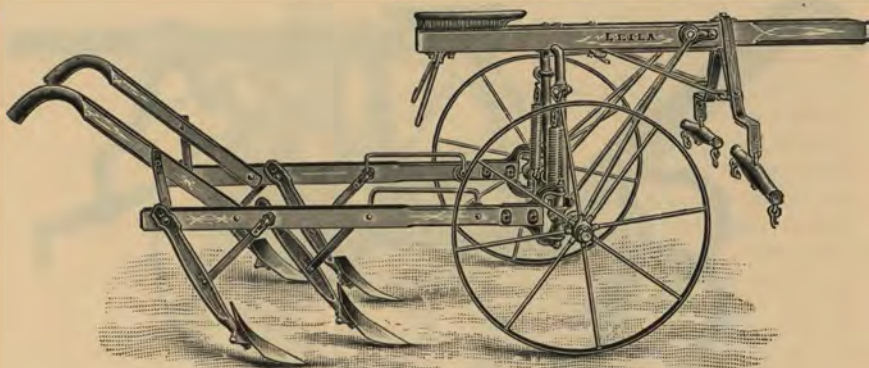
**Construction.**—Is almost entirely of steel. The blocks are of steel and clamp the standards firmly in position, allowing any desired adjustment to the knives. This is the most satisfactory kind of head block as there are no joints to wear and become loose.

**Knives.**—Are of the best hardened steel.

**Levelers.**—Are very simple and can be set at any desired angle. Balance Lever is easily reached from the seat and enables the cultivator to be kept in perfect balance.

**Wheels.**—Steel wheels with a malleable hub and removable boxing are used. These boxes can be replaced at a small cost.





## LEILA WALKING CULTIVATOR

Equipped with No. 9 Gangs

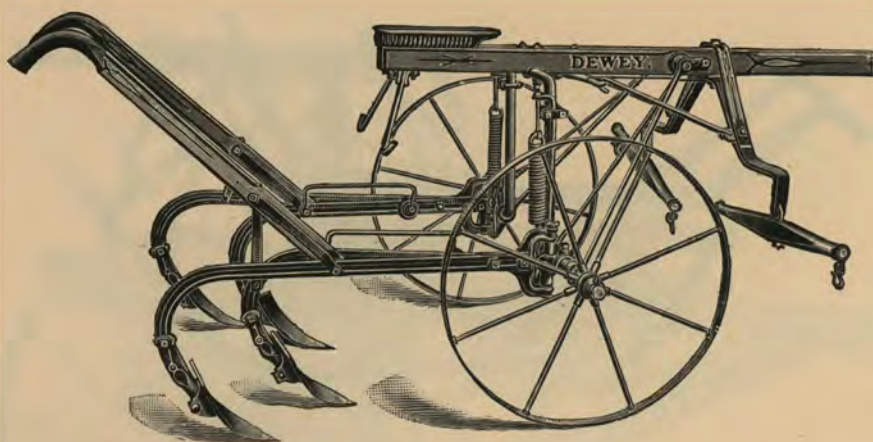
**Steel and Malleable Iron** are the principal materials used in the construction of this cultivator. None but the best of material and workmanship are used in its construction and special attention is paid to the finish, so that it not only works well and is durable, but it presents a handsome appearance as well.

**The Frame** is strong, simple and has few parts to break or get out of order. The principal part is a heavy piece of round steel that is bent so as to form both axles and arch. When made with an adjustable arch this is made in three pieces. All other parts of the frame are securely braced and fastened to the arch, providing greatest possible strength with the least possible weight.

**The Evener** is steel, of the drop pattern, and is connected on each end at the point of strain with a short evener at the rear. This permits of low hitch without any twisting strain on the evener, and causes each horse to do a full share of the work. The low hitch *relieves the team of all neck weight.*

**Steel Wheels** with straight oval spokes are used. They have a removable boxing which can be easily replaced at slight cost, thus repairing any wear that may occur in the hub box.

**Adjustable Arch.**—This cultivator will be furnished, when specified, with an adjustable arch, by means of which the frame can be changed for wide or narrow cultivator.



## DEWEY WALKING CULTIVATOR

Equipped with No. 1 Gangs

**Steel and Malleable Iron** are the principal materials used in the construction of this cultivator. None but the best of material and workmanship are used in its construction and special attention is paid to the finish, so that it not only works well and is durable, but it presents a handsome appearance as well.

**The Frame** is strong, simple and has few parts to break or get out of order. The principal part is a heavy piece of round steel that is bent so as to form both axles and arch. When made with an adjustable arch this is made in three pieces. All other parts of the frame are securely braced and fastened to the arch, providing greatest possible strength with the least possible weight.

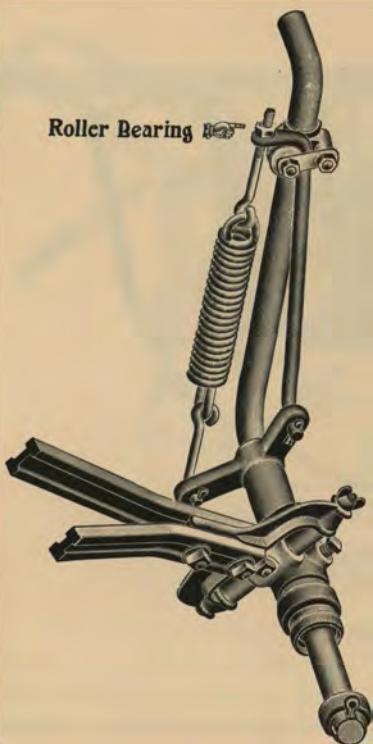
**The Evener** is steel, of the drop pattern, and is connected on each end at the point of strain with a short evener at the rear. This permits of low hitch without any twisting strain on the evener, and causes each horse to do a full share of the work. The low hitch *relieves the team of all neck weight*.

**Steel Wheels** with straight oval spokes are used. They have a removable boxing which can be easily replaced at slight cost, thus repairing any wear that may occur in the hub box.

**Adjustable Arch.**—This cultivator will be furnished, when specified, with an adjustable arch, by means of which the frame can be changed for wide or narrow cultivator.



Roller Bearing



**Lifting Springs** are simple and effective. They are so made that they not only aid in lifting the gangs but help hold them in the ground as well. They are double acting because the force is doubly applied in raising up one arm while pushing down on another. Each of which has the same power in raising the gang. They are non-frictional, because the steel rod that carries the upper end of the spring moves in a roller which relieves it of all sliding friction, and because the spring pulls up and pushes down with equal force on the two levers that are a part of the sleeve coupling which is thus caused to rock upon the axle without friction. They are perfect balance because they may be set to hold any weight or kind of gang at any point between the object on which the shovels may rest and the hang-up hooks above. They are dead center because they exert no lifting force upon the shovels when running at a proper depth, yet are so sensitive as to come into immediate action upon dodging or raising the shovels to free them from trash.

**The Distance Between the Gangs is Adjustable** by means of a movable coupling on the frame, to admit of cultivating

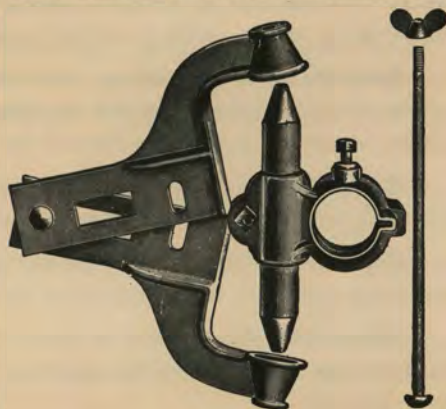
crops of different size and to allow for different distances between rows.

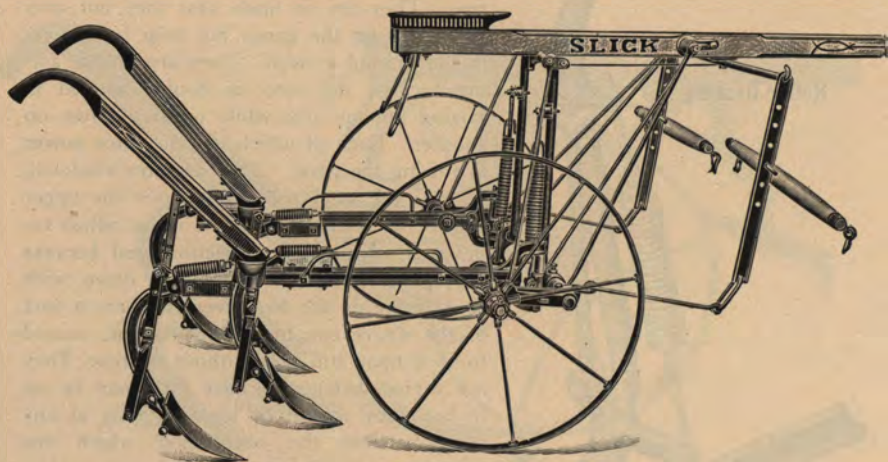
**Equipment.**—We furnish with this cultivator any of our different styles of rigs.

**Shovels** of various shapes and sizes, and all the usual attachments made for cultivators can be used.

**The Couplings** are made of malleable iron which works on a chilled cone sleeve. The wear may be taken up by simply turning a thumb nut and the sleeve adjusted up and down by simply loosening one bolt. The points of bearing are far apart so that the gangs handle easily. The couplings hold the gangs rigidly in a vertical position to the shovels at all times.

**Depth of Cultivation** can be nicely regulated by the adjustment of the springs, by raising or lowering the front end of the beams on the coupling sleeve and by setting the shovels.





## SLICK WALKING CULTIVATOR

Equipped with No. 17 Gangs

**Balance Frame.**—Notice how the axle bearing of the wheels extends back from the arch. No matter how heavy the gangs are, the tongue will not raise under the horses necks when turning at the end of the row.

**Evener.**—The hitch is low and the line of draft is direct from the shovels to the horses' shoulders. The evener is entirely steel.

**Couplings.**—Are our well known design—the best made. They have chilled cone bearings and the wear can be taken up with a thumb nut. The distance between the gangs may be varied by moving the couplings in or out and the front of the beams may be raised or lowered to give the shovels more or less suction.

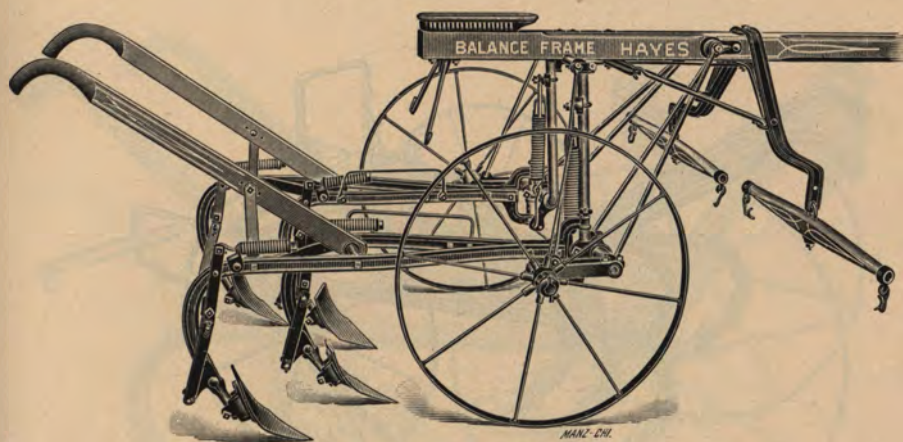
**Springs.**—Powerful springs make the handling of the gangs easy. They can be so nicely adjusted that with any style beam they will perfectly balance and remain suspended at any point between the two extremes of vertical movement.

**Wheels.**—Steel wheels with malleable hubs and dust proof removable boxes are used. The boxes can be replaced at a small expense.

**Gangs.**—We furnish this cultivator with all styles of gangs and especially recommend it where the heavier gangs are used.

**Adjustable Arch.**—This cultivator will be furnished, when specified, with an adjustable arch, by means of which the frame can be changed for wide or narrow cultivator.





## HAYES BALANCE-FRAME

Equipped with No. 10 Gangs

This cultivator is built with an extra strong frame. The axle bearing of the wheels extend back from the arch, causing the frame to remain in perfect balance when the gangs are hung up, thus overcoming the raising of the tongue under the horses' necks when turning at the end of the row. This feature is especially advantageous where the heavier styles of gangs are used.

**Eveners.**—The Hayes Balance Frame has a double steel evener. The hitch is low and all neck draft is absolutely removed.

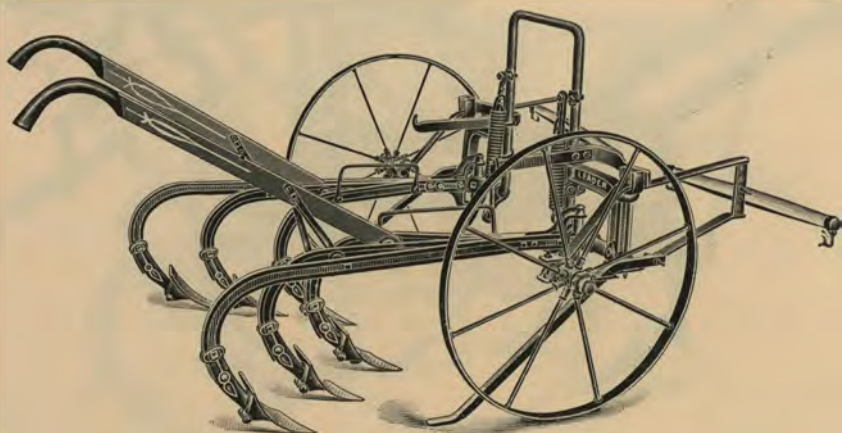
**Springs.**—The springs are powerful and easily adjusted. They make the handling of the heaviest gangs easy, exert no influence upon the gangs when at work except to carry their weight, and will cause the gangs when lifted to remain suspended at any point between the extremes of vertical movement.

**Coupling.**—The couplings have chilled coned bearings, reducing the wear to a minimum. They may be moved in or out to vary the distance between the gangs and the front of the coupling may be raised or lowered to give the shovels more or less suction.

**Wheels.**—Steel wheels with a malleable hub and dust proof removable boxing are used. The boxes can be replaced at a small expense.

**Gangs.**—Furnished with all styles of gangs and especially recommended where the heavier styles are used.

**Adjustable Arch.**—This cultivator will be furnished, when specified, with an adjustable arch, by means of which the frame can be changed for wide or narrow cultivator.



## LEADER TONGUELESS CULTIVATOR

Equipped with No. 5 Gangs

This is a very popular cultivator in sections where the tongueless cultivators are used, and wherever introduced has superseded all other tongueless cultivators.

**Balance Frame.**—The axle bearings of the wheels are set back from the arch, causing the cultivator to balance when the gangs are hung up. This is an especially meritorious feature when the heavier styles of gangs are used.

**Lifting Springs.**—Coil lifting springs of sufficient strength to accommodate any style gang are used. They are readily adjusted and make the handling of the gangs easy.

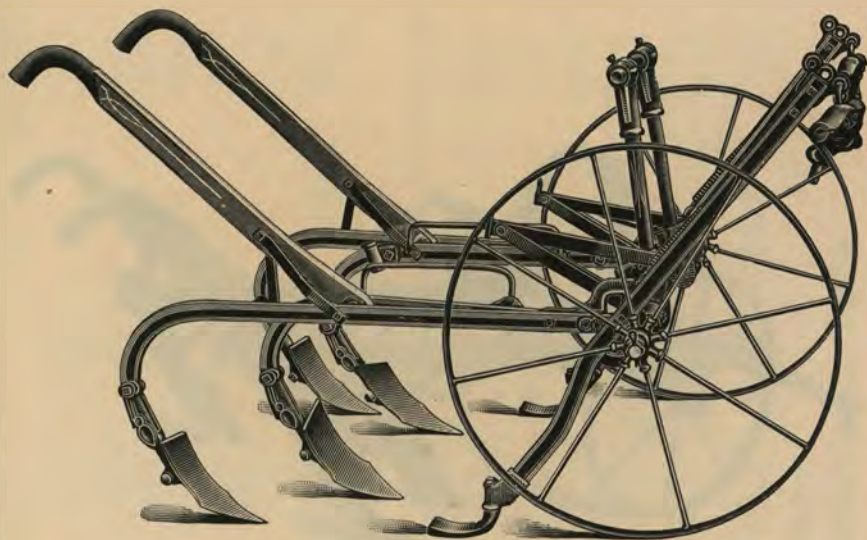
**Coupling.**—Is made of malleable iron and works on a chilled cone. The distance between the gangs may be varied by moving the coupling in or out and the front of the beams may be raised or lowered to give the shovels more or less suction.

**Hitch.**—The hitch permits five adjustments and the flexible movement of the cultivator causes each horse to pull its own load.

**Wheels.**—Steel wheels with a malleable hub and removable boxing are used. These boxes can be replaced at a small expense.

**Gangs.**—We furnish the cultivator with any style of gangs and especially recommend it where the heavier gangs are used.





## HAYES SPRING CULTIVATOR

Equipped with No. 1 Gangs

This cultivator is made with an adjustable arch, using bar steel of high carbon, giving it great strength. A flexible movement causes each horse to pull its own load. The hitch has three adjustments and is so arranged that the draft of the team raises the drag shoes from the ground when at work.

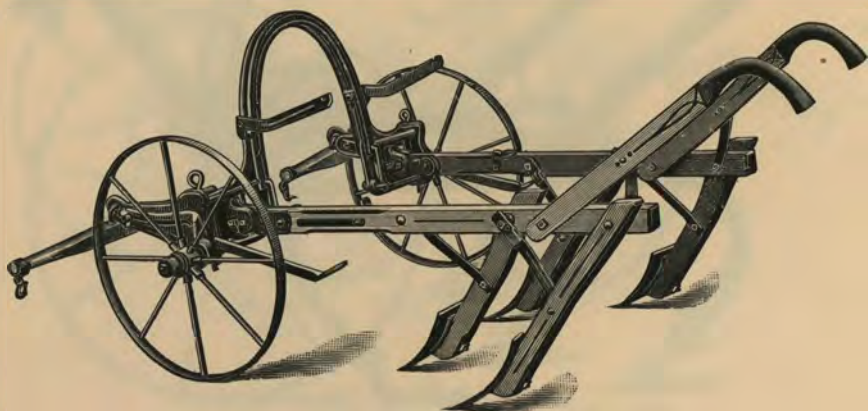
**Lifting Springs.**—Lifting springs are attached to the drag bars and will accommodate any style of gang we manufacture. When gangs are at work in the ground they exert no influence upon them except to carry the weight of the gangs.

**Drag Shoes.**—Swiveled drag shoes are used, making it easier to turn the cultivator. When worn out they can be removed and replaced at a small expense.

**Couplings.**—We use the same couplings on this cultivator as is furnished with all other styles. It is unquestionably without a peer. A good coupling is one of the most essential parts of a cultivator.

**Wheels.**—Steel wheels with removable boxing are used. These boxes can be replaced at a small expense.

This cultivator presents a very neat appearance, is well constructed and will always elicit praise wherever shown. Furnished with any style gang.



## VICTOR TONGUELESS CULTIVATOR

Equipped with No. 8 Gangs

The Victor Tongueless presents to you the best of the tongueless class of cultivators. It at once commends itself to the user of this kind of cultivator as a thoroughly practical, first class, and satisfactory implement.

It is well and strongly made, of the best material, with high double steel arch, steel wheels, swiveled, with removable boxes, direct hitch.

The swivel wheels and direct hitch give absolutely free motion to each rig independently of the other, compelling each horse to do an equal share of the work.

The single-trees are hitched to the brackets and steel hooks provided for hanging up the rigs.

The shovels can be adjusted to any desired pitch by the adjustable shank braces.



## RIDING CULTIVATORS, CODE WORD AND SHIPPING WEIGHT

### HAMMOCK SEAT RIDING CULTIVATORS

| Kind of Gangs | Kind of Shovels | Hayes Hammock                 | Hayes Hammock Pivot Pole       | Hayes Hammock No. 2             | Hayes Hammock No. 2 Pivot Pole  | Rex Hammock                    | Rex Hammock Pivot Pole          | Rex Hammock No. 2              | Rex Hammock No. 2 Pivot Pole   |
|---------------|-----------------|-------------------------------|--------------------------------|---------------------------------|---------------------------------|--------------------------------|---------------------------------|--------------------------------|--------------------------------|
| No. 50        | A               | <b>Fiacre</b><br>Wt. 397 lbs. | <b>Fial</b><br>Wt. 413 lbs.    | <b>Fickle</b><br>Wt. 370 lbs.   | <b>Fides</b><br>Wt. 386 lbs.    | <b>Fiend</b><br>Wt. 387 lbs.   | <b>Fig</b><br>Wt. 403 lbs.      | <b>Figural</b><br>Wt. 376 lbs. | <b>Filar</b><br>Wt. 376 lbs.   |
| No. 51        | I               | <b>Fiants</b><br>Wt. 409 lbs. | <b>Fibrine</b><br>Wt. 425 lbs. | <b>Fictile</b><br>Wt. 382 lbs.  | <b>Fidfad</b><br>Wt. 398 lbs.   | <b>Fierce</b><br>Wt. 399 lbs.  | <b>Figaro</b><br>Wt. 415 lbs.   | <b>Figure</b><br>Wt. 372 lbs.  | <b>Filaria</b><br>Wt. 388 lbs. |
| No. 52        | A               | <b>Fiar</b><br>Wt. 399 lbs.   | <b>Fibro</b><br>Wt. 415 lbs.   | <b>Fiction</b><br>Wt. 372 lbs.  | <b>Fidget</b><br>Wt. 388 lbs.   | <b>Fiery</b><br>Wt. 389 lbs.   | <b>Figary</b><br>Wt. 405 lbs.   | <b>Figured</b><br>Wt. 362 lbs. | <b>Filbert</b><br>Wt. 378 lbs. |
| No. 53        | I               | <b>Fiasco</b><br>Wt. 417 lbs. | <b>Fibroid</b><br>Wt. 433 lbs. | <b>Fictive</b><br>Wt. 390 lbs.  | <b>Fidia</b><br>Wt. 406 lbs.    | <b>Fiesta</b><br>Wt. 407 lbs.  | <b>Figing</b><br>Wt. 423 lbs.   | <b>Figwort</b><br>Wt. 380 lbs. | <b>Filch</b><br>Wt. 396 lbs.   |
| No. 54        | L               | <b>Fiat</b><br>Wt. 427 lbs.   | <b>Fibrous</b><br>Wt. 443 lbs. | <b>Fictor</b><br>Wt. 400 lbs.   | <b>Fidicen</b><br>Wt. 416 lbs.  | <b>Fife</b><br>Wt. 417 lbs.    | <b>Figgum</b><br>Wt. 433 lbs.   | <b>Figlan</b><br>Wt. 390 lbs.  | <b>Fildor</b><br>Wt. 406 lbs.  |
| No. 55        | A               | <b>Fib</b><br>Wt. 411 lbs.    | <b>Fibster</b><br>Wt. 427 lbs. | <b>Ficus</b><br>Wt. 384 lbs.    | <b>Fiducial</b><br>Wt. 400 lbs. | <b>Fifish</b><br>Wt. 401 lbs.  | <b>Fight</b><br>Wt. 417 lbs.    | <b>Fike</b><br>Wt. 374 lbs.    | <b>Filer</b><br>Wt. 390 lbs.   |
| No. 56        | I               | <b>Fiber</b><br>Wt. 433 lbs.  | <b>Fibula</b><br>Wt. 450 lbs.  | <b>Fidd</b><br>Wt. 407 lbs.     | <b>Fief</b><br>Wt. 423 lbs.     | <b>Fifteen</b><br>Wt. 423 lbs. | <b>Fighter</b><br>Wt. 440 lbs.  | <b>Fikery</b><br>Wt. 397 lbs.  | <b>Fillal</b><br>Wt. 413 lbs.  |
| No. 57        | M               | <b>Fiberd</b><br>Wt. 414 lbs. | <b>Ficche</b><br>Wt. 430 lbs.  | <b>Fiddle</b><br>Wt. 383 lbs.   | <b>Field</b><br>Wt. 399 lbs.    | <b>Fifth</b><br>Wt. 404 lbs.   | <b>Fighting</b><br>Wt. 420 lbs. | <b>Filacer</b><br>Wt. 373 lbs. | <b>Fillate</b><br>Wt. 389 lbs. |
| No. 58        | W               | <b>Fibril</b><br>Wt. 432 lbs. | <b>Fiechu</b><br>Wt. 448 lbs.  | <b>Fidelity</b><br>Wt. 405 lbs. | <b>Fielder</b><br>Wt. 421 lbs.  | <b>Fifty</b><br>Wt. 422 lbs.   | <b>Figment</b><br>Wt. 438 lbs.  | <b>Filago</b><br>Wt. 395 lbs.  | <b>Fillbeg</b><br>Wt. 411 lbs. |

Gopher Attachment for Hammock Seat Cultivators..... Wt. 128 lbs..... **Flake**

### COMBINED RIDING AND WALKING CULTIVATORS

| Kind of Gangs | Kind of Shovels | Hayes Combined                 | Hayes Combined Pivot Pole      | Duke.                          | Duke Pivot Pole.                | Samson.                        | Samson Pivot Pole              | Hero.                          | Hero Pivot Pole.               |
|---------------|-----------------|--------------------------------|--------------------------------|--------------------------------|---------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| No. 30        | A               | <b>Filices</b><br>Wt. 407 lbs. | <b>Film</b><br>Wt. 422 lbs.    | <b>Finable</b><br>Wt. 399 lbs. | <b>Findling</b><br>Wt. 414 lbs. | <b>Finical</b><br>Wt. 432 lbs. | <b>Finned</b><br>Wt. 447 lbs.  | <b>Firefly</b><br>Wt. 387 lbs. | <b>Firmly</b><br>Wt. 402 lbs.  |
| No. 31        | A               | <b>Fillice</b><br>Wt. 425 lbs. | <b>Filosa</b><br>Wt. 440 lbs.  | <b>Final</b><br>Wt. 417 lbs.   | <b>Fineer</b><br>Wt. 432 lbs.   | <b>Finikin</b><br>Wt. 450 lbs. | <b>Finnish</b><br>Wt. 465 lbs. | <b>Fireman</b><br>Wt. 405 lbs. | <b>First</b><br>Wt. 420 lbs.   |
| No. 32        | I               | <b>Fillety</b><br>Wt. 429 lbs. | <b>Filour</b><br>Wt. 444 lbs.  | <b>Finally</b><br>Wt. 421 lbs. | <b>Finely</b><br>Wt. 436 lbs.   | <b>Fining</b><br>Wt. 454 lbs.  | <b>Fiord</b><br>Wt. 469 lbs.   | <b>Firesmo</b><br>Wt. 409 lbs. | <b>Firstly</b><br>Wt. 424 lbs. |
| No. 33        | L               | <b>Filing</b><br>Wt. 439 lbs.  | <b>Filter</b><br>Wt. 454 lbs.  | <b>Finance</b><br>Wt. 431 lbs. | <b>Finesse</b><br>Wt. 446 lbs.  | <b>Finish</b><br>Wt. 464 lbs.  | <b>Floret</b><br>Wt. 479 lbs.  | <b>Firkin</b><br>Wt. 419 lbs.  | <b>Fiscal</b><br>Wt. 434 lbs.  |
| No. 34        | A               | <b>Fillole</b><br>Wt. 417 lbs. | <b>Filth</b><br>Wt. 432 lbs.   | <b>Finback</b><br>Wt. 410 lbs. | <b>Finetop</b><br>Wt. 425 lbs.  | <b>Finite</b><br>Wt. 442 lbs.  | <b>Florite</b><br>Wt. 457 lbs. | <b>Firlot</b><br>Wt. 397 lbs.  | <b>Fisetic</b><br>Wt. 412 lbs. |
| No. 35        | I               | <b>Fillet</b><br>Wt. 447 lbs.  | <b>Filum</b><br>Wt. 462 lbs.   | <b>Finch</b><br>Wt. 439 lbs.   | <b>Finger</b><br>Wt. 454 lbs.   | <b>Finitor</b><br>Wt. 472 lbs. | <b>Fipple</b><br>Wt. 487 lbs.  | <b>Firm</b><br>Wt. 427 lbs.    | <b>Fish</b><br>Wt. 442 lbs.    |
| No. 36        | M               | <b>Fillip</b><br>Wt. 432 lbs.  | <b>Fimble</b><br>Wt. 447 lbs.  | <b>Find</b><br>Wt. 424 lbs.    | <b>Fingram</b><br>Wt. 439 lbs.  | <b>Finlet</b><br>Wt. 457 lbs.  | <b>Fire</b><br>Wt. 472 lbs.    | <b>Firman</b><br>Wt. 412 lbs.  | <b>Fisher</b><br>Wt. 427 lbs.  |
| No. 37        | W               | <b>Filly</b><br>Wt. 450 lbs.   | <b>Fimbria</b><br>Wt. 465 lbs. | <b>Finder</b><br>Wt. 442 lbs.  | <b>Finial</b><br>Wt. 457 lbs.   | <b>Finn</b><br>Wt. 475 lbs.    | <b>Firebug</b><br>Wt. 490 lbs. | <b>Firmary</b><br>Wt. 430 lbs. | <b>Fishing</b><br>Wt. 445 lbs. |

Czar Riding Surface Cultivator..... Wt. 318 lbs..... **Flame**

## WALKING CULTIVATORS, CODE WORD AND SHIPPING WEIGHT

| Kind of Gangs | Kind of Shovels | Dewey                   | Dewey High Arch          | Dewey Adjustable Arch   | Leila                   | Leila High Arch         | Leila Adjustable Arch    | Hayes Balance           |
|---------------|-----------------|-------------------------|--------------------------|-------------------------|-------------------------|-------------------------|--------------------------|-------------------------|
| No. 1         | A               | Wt. 237 lbs.<br>Faba    | Wt. 240 lbs.<br>Faber    | Wt. 240 lbs.<br>Fabian  | Wt. 234 lbs.<br>Fable   | Wt. 237 lbs.<br>Fabric  | Wt. 237 lbs.<br>Fabrille | Wt. 249 lbs.<br>Facade  |
| No. 2         | A               | Wt. 247 lbs.<br>Face    | Wt. 250 lbs.<br>Facet    | Wt. 250 lbs.<br>Facial  | Wt. 244 lbs.<br>Facient | Wt. 247 lbs.<br>Facile  | Wt. 247 lbs.<br>Facing   | Wt. 259 lbs.<br>Fact    |
| No. 3         | A               | Wt. 267 lbs.<br>Faction | Wt. 270 lbs.<br>Faster   | Wt. 270 lbs.<br>Facture | Wt. 264 lbs.<br>Facula  | Wt. 267 lbs.<br>Fad     | Wt. 267 lbs.<br>Fade     | Wt. 279 lbs.<br>Fader   |
| No. 5         | I               | Wt. 259 lbs.<br>Fadge   | Wt. 262 lbs.<br>Fading   | Wt. 262 lbs.<br>Fadme   | Wt. 256 lbs.<br>Faff    | Wt. 259 lbs.<br>Faem    | Wt. 259 lbs.<br>Fag      | Wt. 271 lbs.<br>Faggy   |
| No. 6         | L               | Wt. 257 lbs.<br>Faggott | Wt. 260 lbs.<br>Faggotto | Wt. 260 lbs.<br>Fagus   | Wt. 254 lbs.<br>Fahaka  | Wt. 257 lbs.<br>Faham   | Wt. 257 lbs.<br>Fahlerz  | Wt. 269 lbs.<br>Falk    |
| No. 7         | M               | Wt. 250 lbs.<br>Falled  | Wt. 253 lbs.<br>Faille   | Wt. 253 lbs.<br>Failure | Wt. 247 lbs.<br>Fain    | Wt. 250 lbs.<br>Faint   | Wt. 250 lbs.<br>Fair     | Wt. 262 lbs.<br>Fairy   |
| No. 8         | D Wood          | Wt. 232 lbs.<br>Fait    | Wt. 235 lbs.<br>Faith    | Wt. 235 lbs.<br>Faix    | Wt. 229 lbs.<br>Fake    | Wt. 232 lbs.<br>Faker   | Wt. 232 lbs.<br>Fakofa   | Wt. 244 lbs.<br>Fala    |
| No. 9         | A               | Wt. 236 lbs.<br>Falcate | Wt. 239 lbs.<br>Falces   | Wt. 239 lbs.<br>Falcon  | Wt. 233 lbs.<br>Facula  | Wt. 236 lbs.<br>Fald    | Wt. 236 lbs.<br>Faldage  | Wt. 248 lbs.<br>Falk    |
| No. 10        | A               | Wt. 267 lbs.<br>Fall    | Wt. 270 lbs.<br>Falla    | Wt. 270 lbs.<br>Fallacy | Wt. 264 lbs.<br>Fallen  | Wt. 267 lbs.<br>Falling | Wt. 267 lbs.<br>Falk     | Wt. 279 lbs.<br>Fallow  |
| No. 11        | I               | Wt. 279 lbs.<br>False   | Wt. 282 lbs.<br>Falsify  | Wt. 282 lbs.<br>Falsity | Wt. 276 lbs.<br>Falter  | Wt. 279 lbs.<br>Faluns  | Wt. 279 lbs.<br>Fan      | Wt. 291 lbs.<br>Fame    |
| No. 12        | A               | Wt. 265 lbs.<br>Family  | Wt. 268 lbs.<br>Famine   | Wt. 268 lbs.<br>Famish  | Wt. 262 lbs.<br>Famous  | Wt. 265 lbs.<br>Famp    | Wt. 265 lbs.<br>Fan      | Wt. 277 lbs.<br>Fanne   |
| No. 13        | I               | Wt. 263 lbs.<br>Fanal   | Wt. 266 lbs.<br>Fantic   | Wt. 266 lbs.<br>Fancier | Wt. 260 lbs.<br>Fancy   | Wt. 263 lbs.<br>Fane    | Wt. 263 lbs.<br>Fanfore  | Wt. 275 lbs.<br>Fang    |
| No. 14        | M               | Wt. 307 lbs.<br>Fanger  | Wt. 310 lbs.<br>Fangle   | Wt. 310 lbs.<br>Fanion  | Wt. 304 lbs.<br>Fannel  | Wt. 307 lbs.<br>Fanon   | Wt. 307 lbs.<br>Fantail  | Wt. 319 lbs.<br>Fantan  |
| No. 15        | W               | Wt. 319 lbs.<br>Fantasy | Wt. 322 lbs.<br>Fantod   | Wt. 322 lbs.<br>Fap     | Wt. 316 lbs.<br>Faquir  | Wt. 319 lbs.<br>Fapesmo | Wt. 319 lbs.<br>Far      | Wt. 331 lbs.<br>Farad   |
| No. 16        | A               | Wt. 262 lbs.<br>Faradic | Wt. 265 lbs.<br>Farand   | Wt. 265 lbs.<br>Farce   | Wt. 259 lbs.<br>Farceur | Wt. 262 lbs.<br>Farcial | Wt. 262 lbs.<br>Farcast  | Wt. 274 lbs.<br>Farcey  |
| No. 17        | A               | Wt. 285 lbs.<br>Fard    | Wt. 288 lbs.<br>Fardage  | Wt. 288 lbs.<br>Fardel  | Wt. 282 lbs.<br>Farding | Wt. 285 lbs.<br>Fare    | Wt. 285 lbs.<br>Farewel  | Wt. 297 lbs.<br>Fargard |

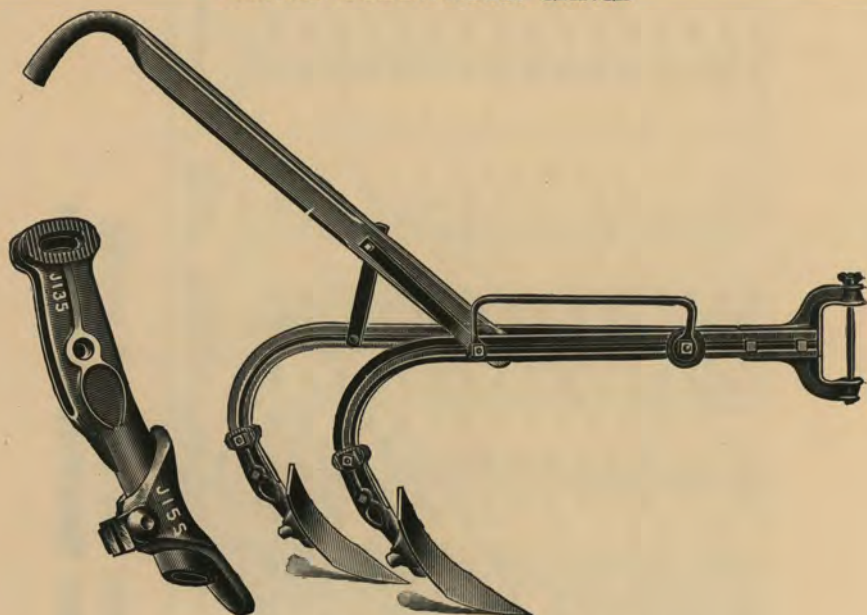


# WALKING CULTIVATORS, CODE WORD AND SHIPPING WEIGHT

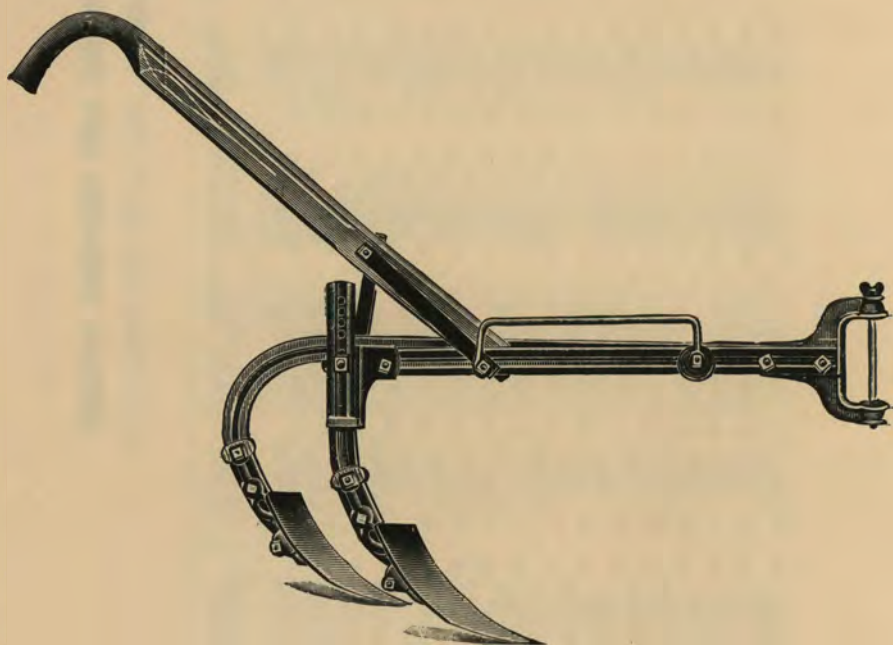
(Continued)

| Kinds of Gangs | Kind of Shovels | Hayes Balance High Arch | Hayes Balance Adjustable Arch | Slick                   | Slick High Arch         | Slick Adjustable Arch   | Hayes Spring Tongueless | Leader Tongueless        | Victor Tongueless       |
|----------------|-----------------|-------------------------|-------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|--------------------------|-------------------------|
| No. 1          | A               | Farl<br>Wt. 252 lbs.    | Farlen<br>Wt. 252 lbs.        | Farlie<br>Wt. 248 lbs.  | Farm<br>Wt. 251 lbs.    | Farmary<br>Wt. 251 lbs. | Farmer<br>Wt. 218 lbs.  | Farming<br>Wt. 233 lbs.  | Farmost<br>Wt. 203 lbs. |
| No. 2          | A               | Faro<br>Wt. 262 lbs.    | Farrago<br>Wt. 262 lbs.       | Farrow<br>Wt. 258 lbs.  | Farse<br>Wt. 261 lbs.   | Farsure<br>Wt. 261 lbs. | Farther<br>Wt. 228 lbs. | Fascas<br>Wt. 243 lbs.   | Fascet<br>Wt. 213 lbs.  |
| No. 3          | A               | Fascia<br>Wt. 282 lbs.  | Fascial<br>Wt. 282 lbs.       | Facicle<br>Wt. 278 lbs. | Fascine<br>Wt. 281 lbs. | Fash<br>Wt. 281 lbs.    | Fashion<br>Wt. 248 lbs. | Fast<br>Wt. 263 lbs.     | Fastly<br>Wt. 233 lbs.  |
| No. 5          | I               | Fat<br>Wt. 274 lbs.     | Fatal<br>Wt. 274 lbs.         | Fatally<br>Wt. 270 lbs. | Fate<br>Wt. 273 lbs.    | Fateful<br>Wt. 273 lbs. | Father<br>Wt. 240 lbs.  | Fatherly<br>Wt. 255 lbs. | Fathom<br>Wt. 225 lbs.  |
| No. 6          | L               | Fatidic<br>Wt. 272 lbs. | Fatigue<br>Wt. 272 lbs.       | Fatling<br>Wt. 268 lbs. | Fatness<br>Wt. 271 lbs. | Fatsia<br>Wt. 271 lbs.  | Fatten<br>Wt. 238 lbs.  | Fatty<br>Wt. 253 lbs.    | Fatulty<br>Wt. 223 lbs. |
| No. 7          | M               | Fatuous<br>Wt. 265 lbs. | Faucal<br>Wt. 265 lbs.        | Fauces<br>Wt. 261 lbs.  | Faught<br>Wt. 264 lbs.  | Faucon<br>Wt. 264 lbs.  | Faugh<br>Wt. 231 lbs.   | Faule<br>Wt. 246 lbs.    | Fault<br>Wt. 216 lbs.   |
| No. 8          | D Wood          | Faulter<br>Wt. 247 lbs. | Faulty<br>Wt. 247 lbs.        | Faun<br>Wt. 243 lbs.    | Faunna<br>Wt. 246 lbs.  | Faunt<br>Wt. 246 lbs.   | Faured<br>Wt. 213 lbs.  | Fause<br>Wt. 228 lbs.    | Fausen<br>Wt. 198 lbs.  |
| No. 9          | A               | Favor<br>Wt. 251 lbs.   | Favus<br>Wt. 251 lbs.         | Favella<br>Wt. 246 lbs. | Favissa<br>Wt. 249 lbs. | Favor<br>Wt. 249 lbs.   | Favored<br>Wt. 216 lbs. | Favorit<br>Wt. 231 lbs.  | Favose<br>Wt. 201 lbs.  |
| No. 10         | A               | Fayles<br>Wt. 282 lbs.  | Faze<br>Wt. 282 lbs.          | Fat 278 lbs.            | Fawned<br>Wt. 281 lbs.  | Fawsant<br>Wt. 281 lbs. | Fay<br>Wt. 248 lbs.     | Fayence<br>Wt. 263 lbs.  | Fayfena<br>Wt. 233 lbs. |
| No. 11         | I               | Fearful<br>Wt. 294 lbs. | Fear<br>Wt. 294 lbs.          | Fearful<br>Wt. 290 lbs. | Feak<br>Wt. 293 lbs.    | Feal<br>Wt. 293 lbs.    | Feality<br>Wt. 260 lbs. | Fear<br>Wt. 275 lbs.     | Fearful<br>Wt. 245 lbs. |
| No. 12         | A               | Fearns<br>Wt. 280 lbs.  | Feart<br>Wt. 280 lbs.         | Feast<br>Wt. 276 lbs.   | Feat<br>Wt. 279 lbs.    | Feather<br>Wt. 279 lbs. | Feature<br>Wt. 246 lbs. | Feaze<br>Wt. 261 lbs.    | Feble<br>Wt. 231 lbs.   |
| No. 13         | I               | Fecula<br>Wt. 278 lbs.  | Fecal<br>Wt. 278 lbs.         | Feces<br>Wt. 274 lbs.   | Fecial<br>Wt. 277 lbs.  | Feck<br>Wt. 277 lbs.    | Feket<br>Wt. 244 lbs.   | Fecula<br>Wt. 259 lbs.   | Fecund<br>Wt. 229 lbs.  |
| No. 14         | M               | Federal<br>Wt. 322 lbs. | Fed<br>Wt. 322 lbs.           | Fecul<br>Wt. 318 lbs.   | Fecle<br>Wt. 321 lbs.   | Fee<br>Wt. 321 lbs.     | Feed<br>Wt. 278 lbs.    | Feeder<br>Wt. 303 lbs.   | Feeding<br>Wt. 273 lbs. |
| No. 15         | W               | Fel<br>Wt. 334 lbs.     | Felcer<br>Wt. 334 lbs.        | Fell<br>Wt. 330 lbs.    | Feeze<br>Wt. 333 lbs.   | Fel<br>Wt. 333 lbs.     | Feign<br>Wt. 290 lbs.   | Feint<br>Wt. 315 lbs.    | Feld<br>Wt. 285 lbs.    |
| No. 16         | A               | Felline<br>Wt. 277 lbs. | Fell<br>Wt. 277 lbs.          | Fellah<br>Wt. 273 lbs.  | Fellie<br>Wt. 276 lbs.  | Fellor<br>Wt. 276 lbs.  | Felow<br>Wt. 243 lbs.   | Felly<br>Wt. 268 lbs.    | Felld<br>Wt. 228 lbs.   |
| No. 17         | A               | Felon<br>Wt. 300 lbs.   | Felony<br>Wt. 300 lbs.        | Felsite<br>Wt. 296 lbs. | Felt<br>Wt. 299 lbs.    | Felted<br>Wt. 299 lbs.  | Felting<br>Wt. 266 lbs. | Feltre<br>Wt. 281 lbs.   | Felspar<br>Wt. 251 lbs. |

## HAYES CULTIVATOR GANGS



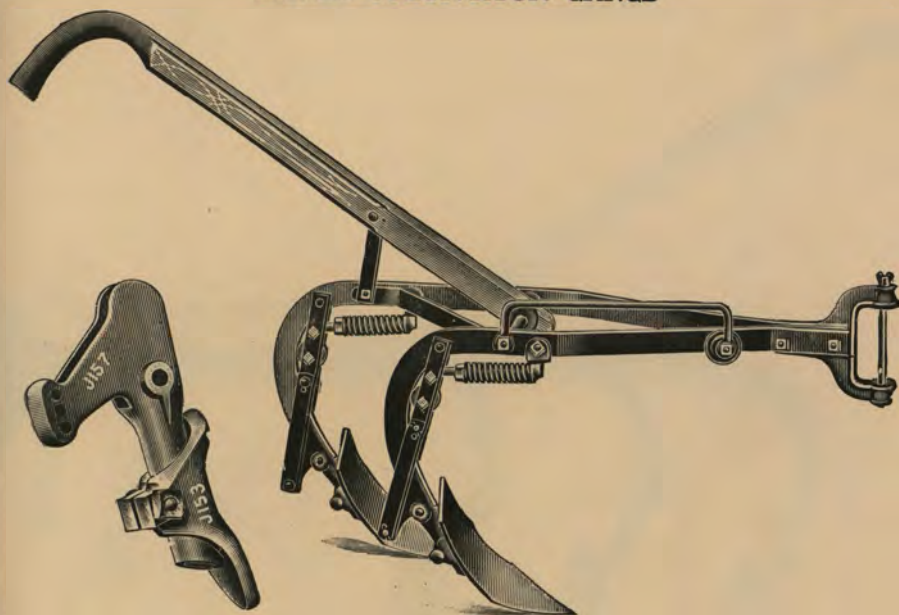
No. 1, Steel Beam, 4 Shovel Rig.



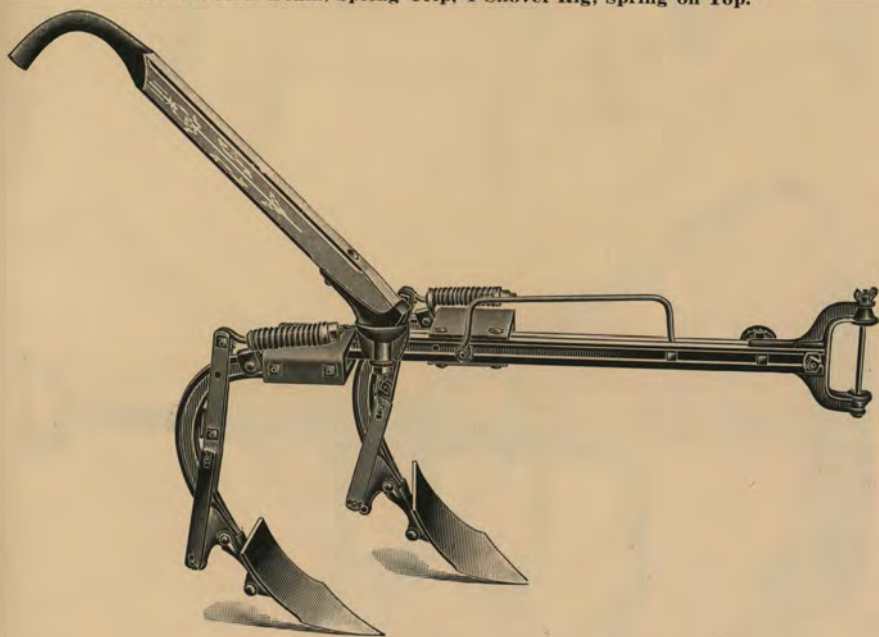
No. 2, Steel Beam, Adjustable Front Standard, 4-Shovel Rig.



## HAYES CULTIVATOR GANGS

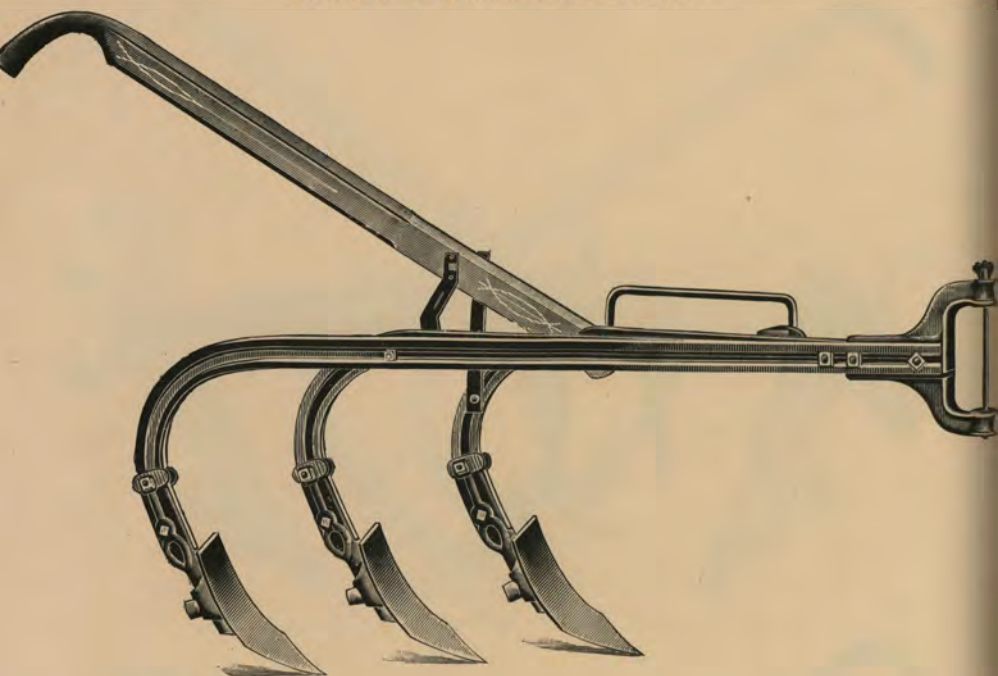


No. 10 Steel Beam, Spring Trip, 4-Shovel Rig, Spring on Top.

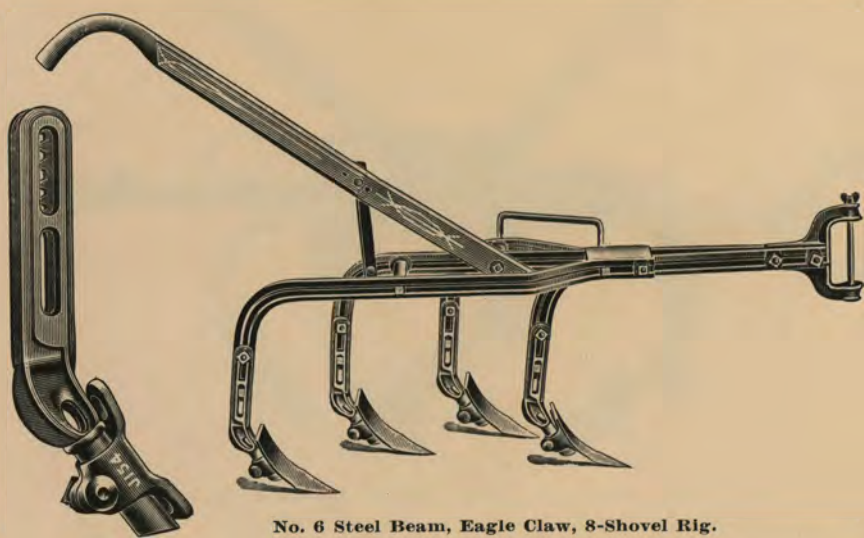


No. 17 Steel Beam, Spring Trip, 4-Shovel Rig, Universal Handle.  
No. 16 Steel Beam, 4-Shovel Rig, Universal Handle.

## HAYES CULTIVATOR GANGS



No. 5 Steel Beam 6-Shovel Rig.



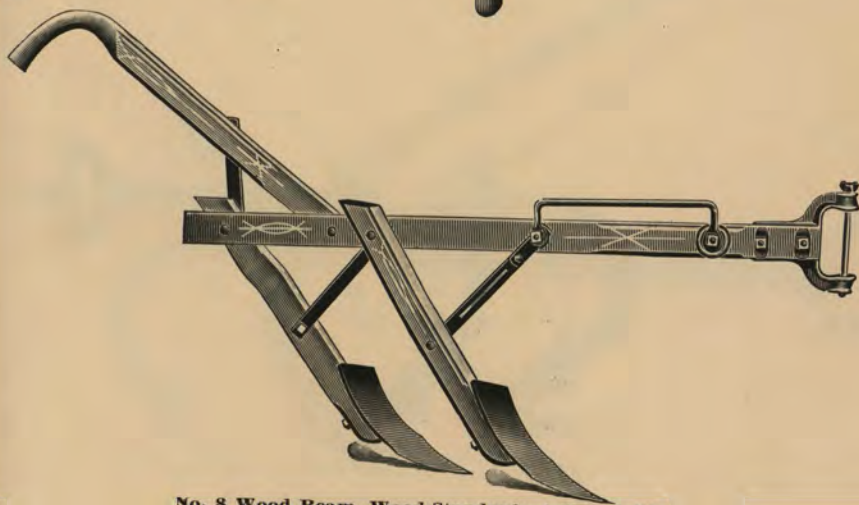
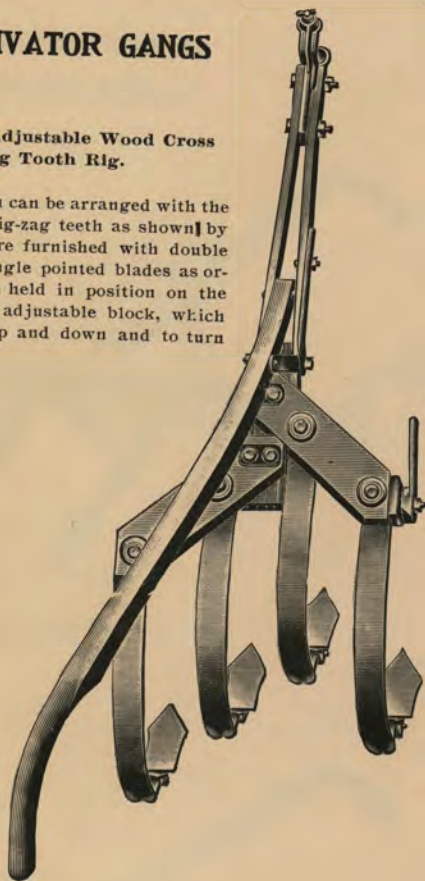
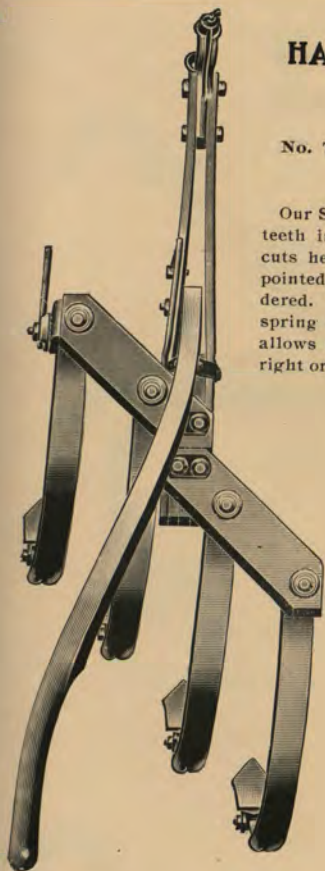
No. 6 Steel Beam, Eagle Claw, 8-Shovel Rig.



## HAYES CULTIVATOR GANGS

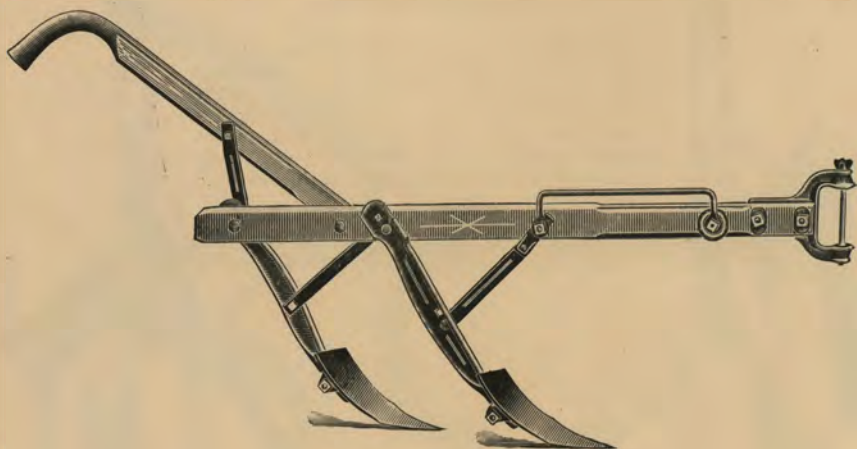
### No. 7 Steel Beam, Adjustable Wood Cross Bars, Spring Tooth Rig.

Our Spring-tooth Beam can be arranged with the teeth in line or with zig-zag teeth as shown by cuts herewith. They are furnished with double pointed reversible or single pointed blades as ordered. These blades are held in position on the spring by means of an adjustable block, which allows of adjustment up and down and to turn right or left.

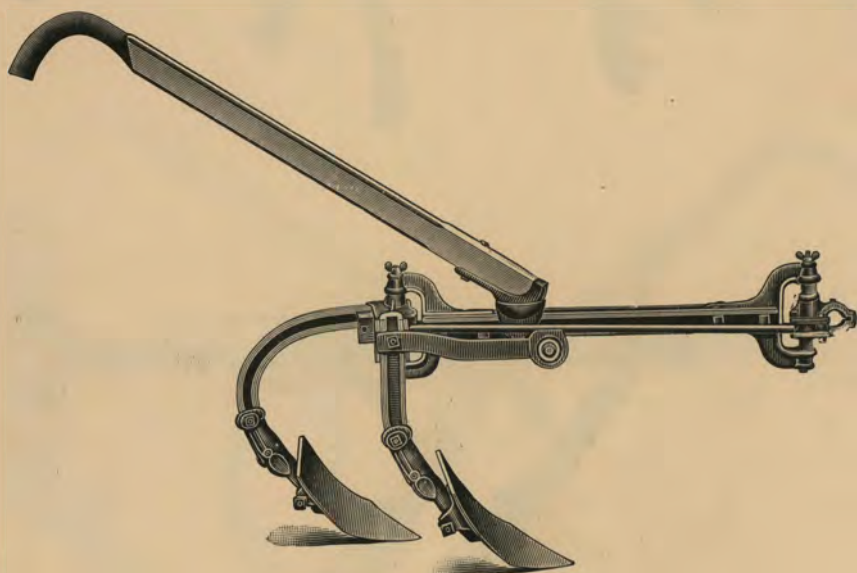


No. 8 Wood Beam, Wood Standards, 4-Shovel Rig.

## HAYES CULTIVATOR GANGS



No. 9 Wood Beam, Iron Standards, 4-Shovel Rig.

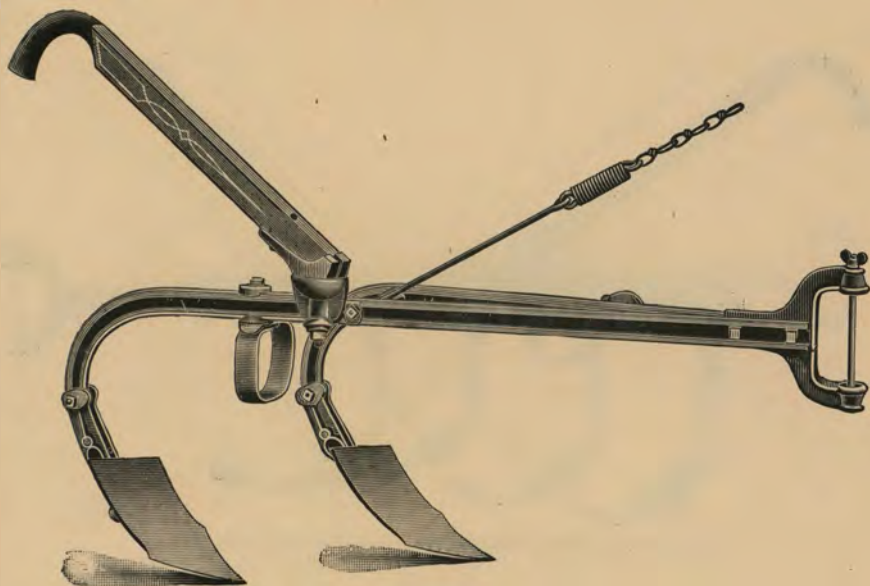


No. 12 Steel Beam, Parallel, 4-Shovel Rig.

No. 13 Steel Beam, Parallel, 6-Shovel Rig.

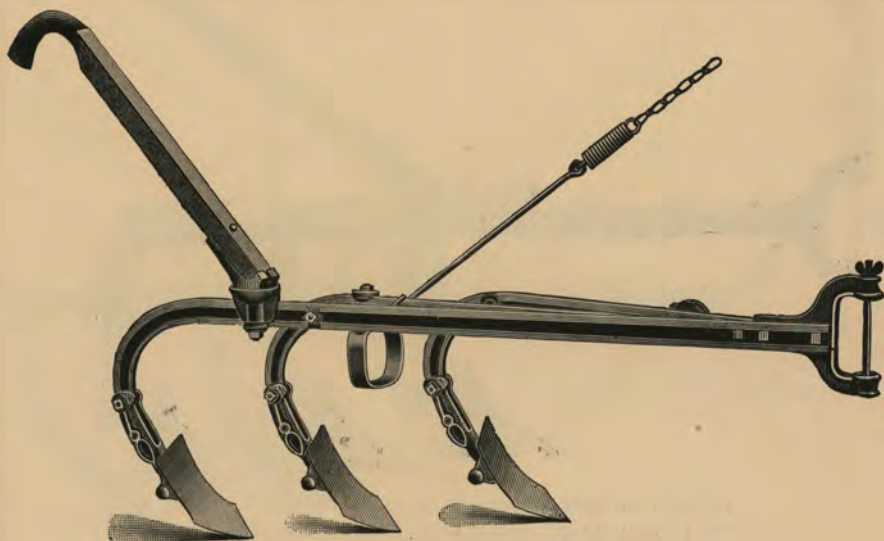


## HAYES CULTIVATOR GANGS



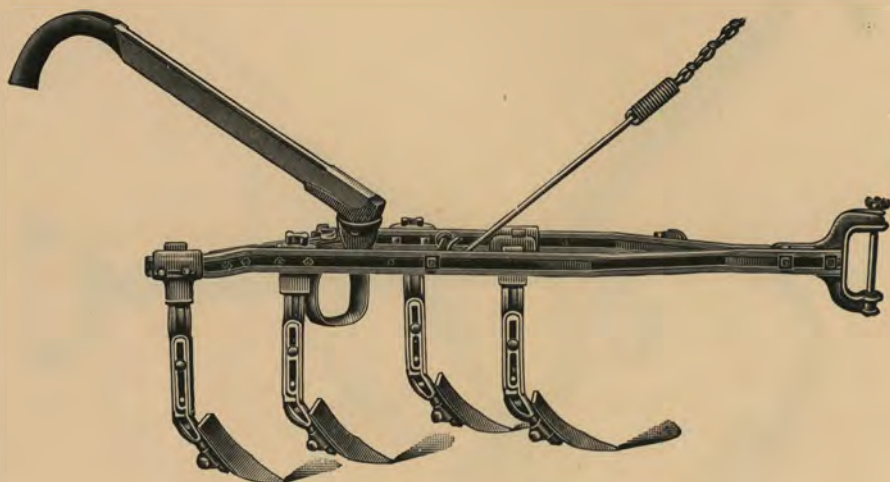
No. 30 Steel Beam, 4-Shovel Rig, Combined.

No. 31 Steel Beam, Inside Standard, Adjustable, 4-Shovel Rig, Combined.

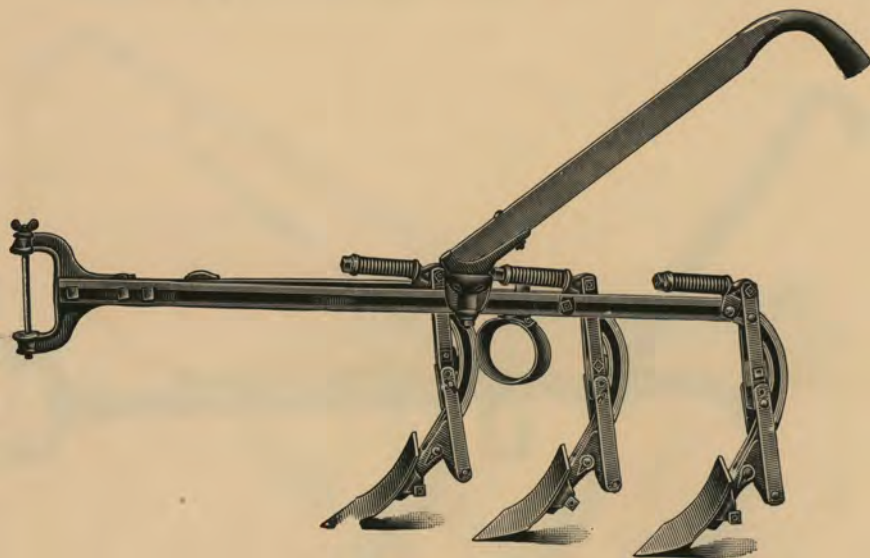


No. 32 Steel Beam, 6-Shovel Rig, Combined.

## HAYES CULTIVATOR GANGS



No. 33 Steel Beam, Eagle Claw, 8-Shovel Rig, Combined.



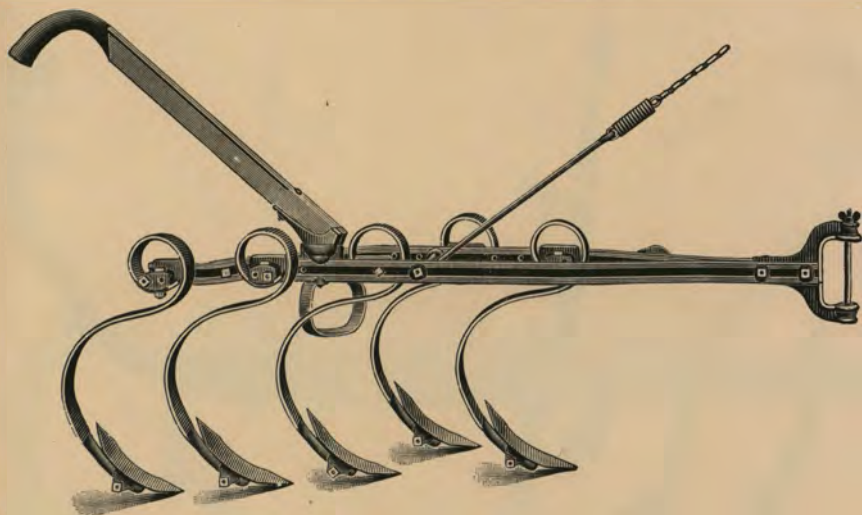
No. 34 Steel Beam, Spring Trip, 4-Shovel Rig, Combined.

No. 35 Steel Beam, Spring Trip, 6-Shovel Rig, Combined.

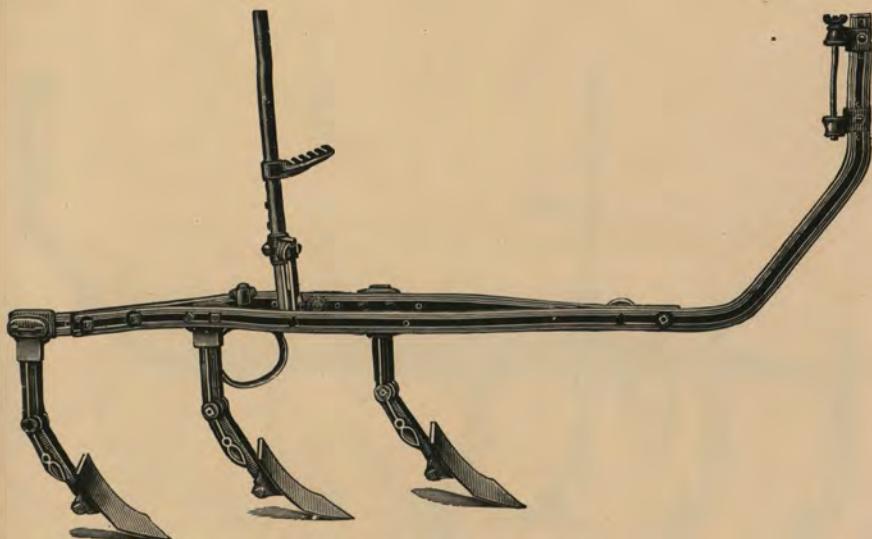
No. 11 Steel Beam, Spring Trip, 6-Shovel Rig, Walker.



## HAYES CULTIVATOR GANGS

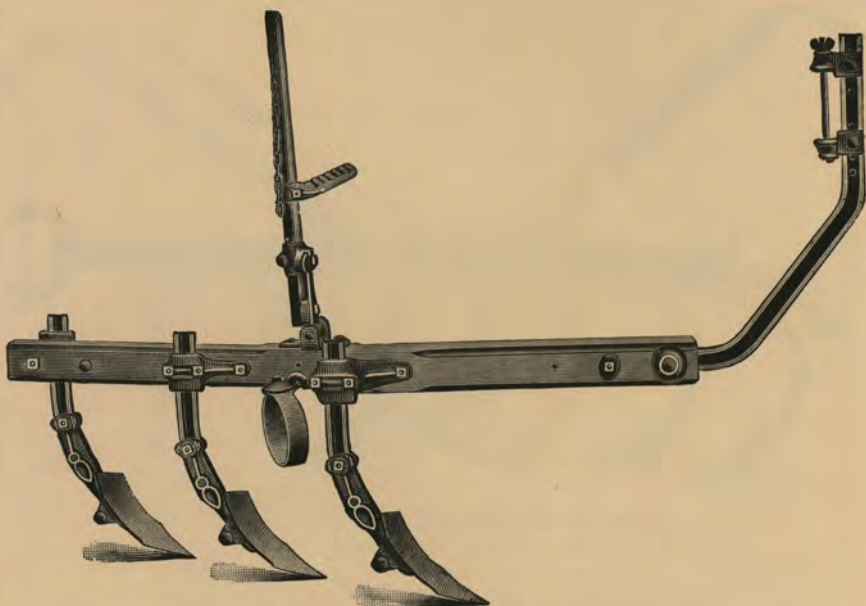


- No. 36, Steel Beam, Spring Tooth, 8-Shovel Rig, Combined  
 No. 37, Steel Beam, Spring Tooth, 10-Shovel Rig, Combined  
 No. 14, Steel Beam, Spring Tooth, 8-Shovel Rig, Walker  
 No. 15, Steel Beam, Spring Tooth, 10-Shovel Rig, Walker



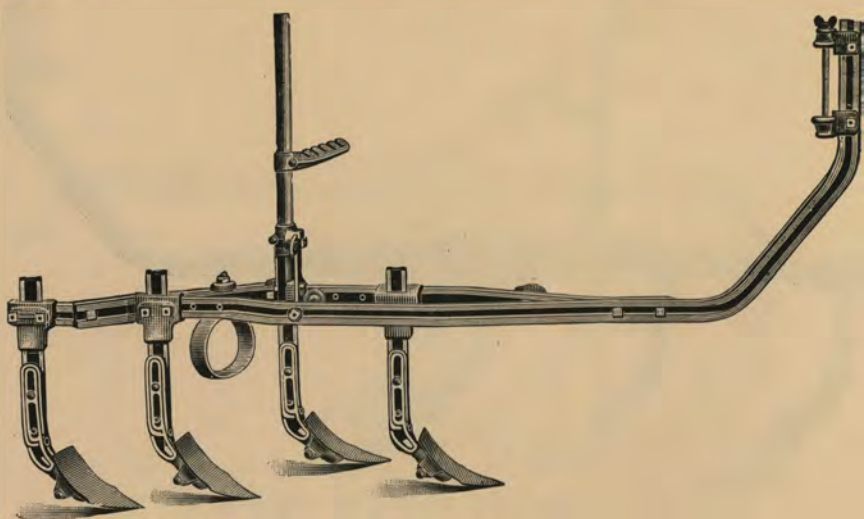
- No. 50, Steel Beam, 4-Shovel Rig, Hammock  
 No. 51, Steel Beam, 6-Shovel Rig, Hammock

## HAYES CULTIVATOR GANGS



No. 52, Wood Beam, 4-Shovel Rig, Hammock

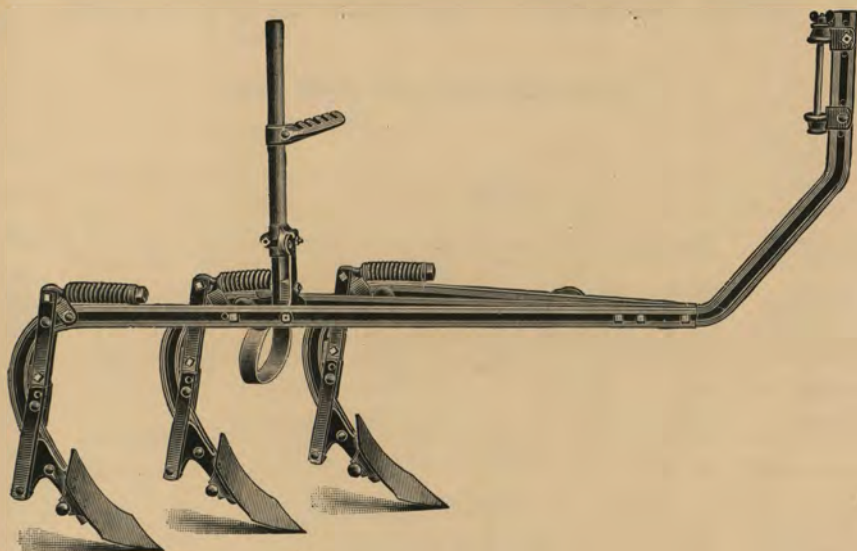
No. 53, Wood Beam, 6-Shovel Rig, Hammock



No. 54, Steel Beam, Eagle Claw, 8-Shovel Rig, Hammock

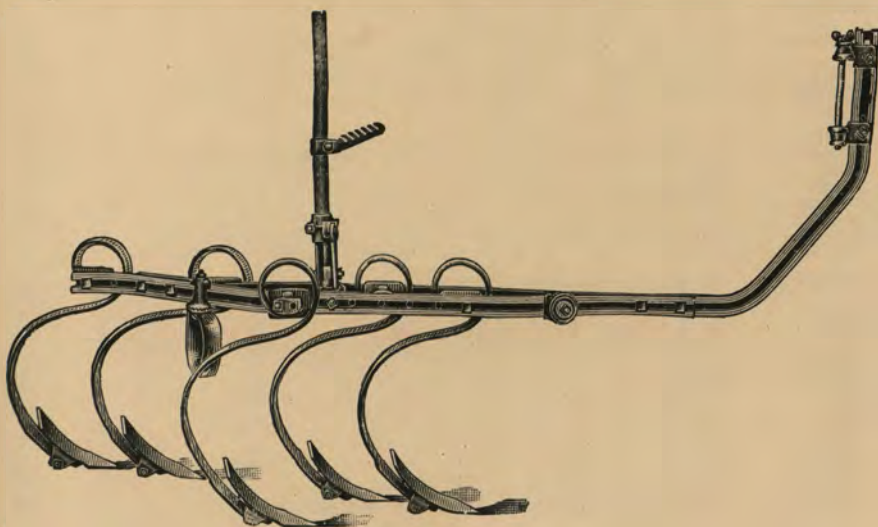


## HAYES CULTIVATOR GANGS



No. 55, Steel Beam, Spring Trip, 4-Shovel Rig, Hammock

No. 56, Steel Beam, Spring Trip, 6-Shovel Rig, Hammock



No. 57, Steel Beam, Spring Tooth, 8-Shovel Rig, Hammock

No. 58, Steel Beam, Spring Tooth, 10-Shovel Rig, Hammock

## SHOVEL EQUIPMENT FURNISHED ON CULTIVATORS

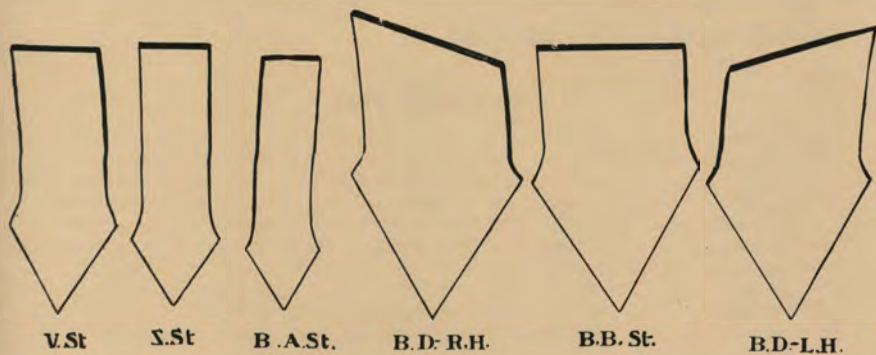
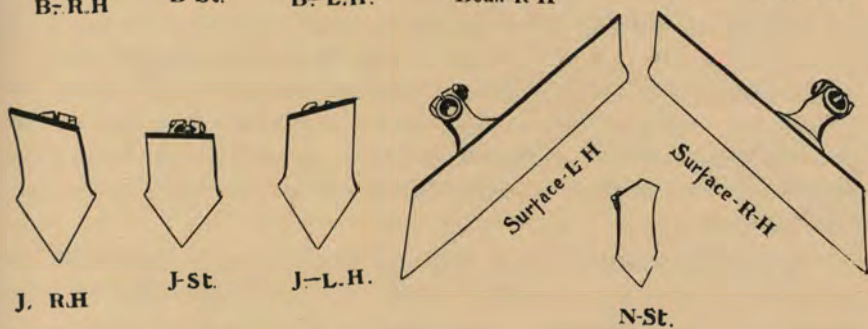
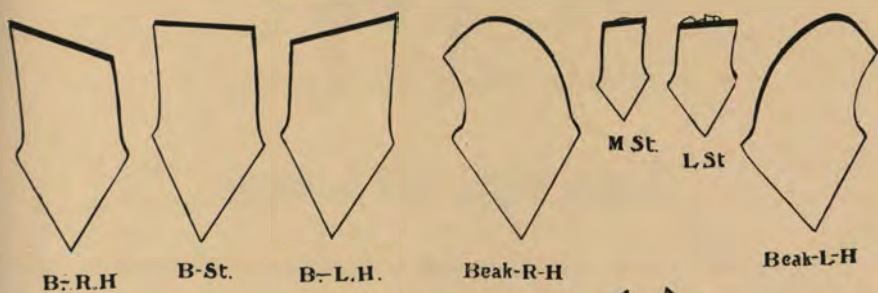
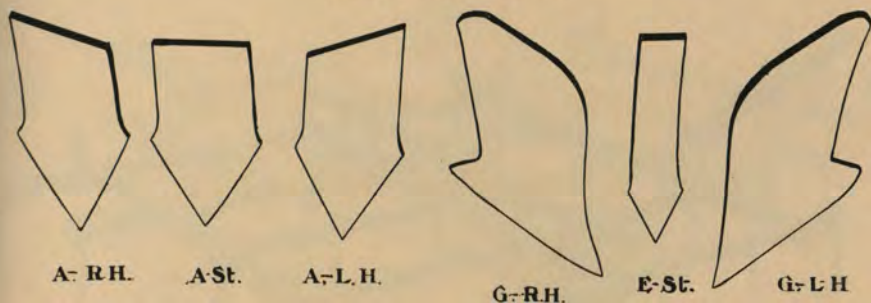
### TELEGRAPH CODE AND PRICE LIST

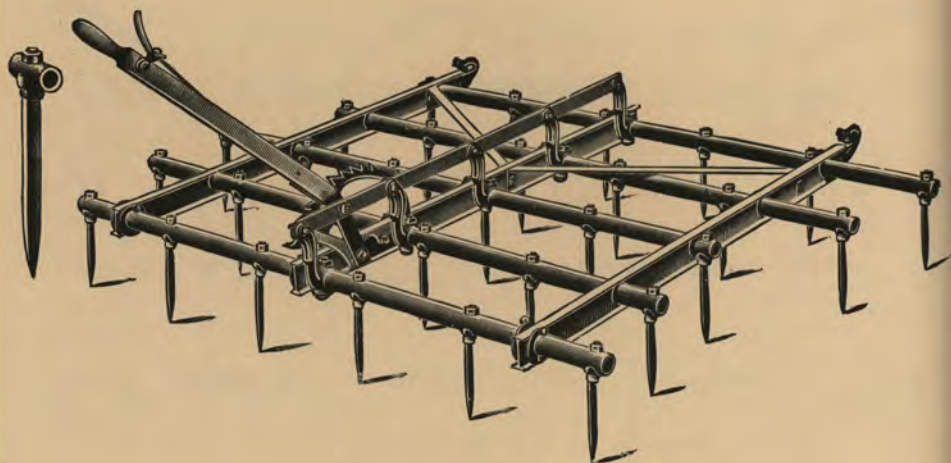
| TELEGRAPH<br>CODE |                                                                                                                 | PRICE<br>LIST |
|-------------------|-----------------------------------------------------------------------------------------------------------------|---------------|
| Jackal            | Set A.—One pair straight and one pair twisted shovels, 5 in. wide, 11 in. long. Furnished regular.....          | \$5.00        |
| Jackanapes        | Set B.—One pair straight and one pair twisted shovels, 5½ in. wide, 12½ in. long.....                           | 5.00          |
| Jackare           | Set C.—Two pair twisted shovels, 5 in. wide, 11 in. long.....                                                   | 5.00          |
| Jackboots         | Set D.—Two pair twisted shovels, 5½ in. wide, 12½ in. long. Furnished regular on beams with wood standards..... | 5.00          |
| Jackeen           | Set E.—One pair bull tongues, 2½ in. wide, 11 in. long.....                                                     | 1.00          |
| Jackknife         | Set F.—Two pair bull tongues, 2½ in. wide, 11 in. long.....                                                     | 2.00          |
| Jacksnipe         | Set G.—One pair diamond turn shovels.....                                                                       | 3.00          |
| Jackson           | Set H.—One pair mould board turn shovels.....                                                                   | 3.00          |
| Jacksonla         | Set I.—Three pair twisted shovels, 3½ in. wide, 9½ in. long. Furnished regular on 6-shovel gangs.....           | 6.00          |
| Jackstone         | Set J.—One pair straight and two pair twisted shovels, 3½ in. wide, 9½ in. long.....                            | 6.00          |
| Jackstraw         | Set K.—Three pair straight shovels, 3½ in. wide, 9½ in. long.....                                               | 6.00          |
| Jacktimber        | Set L.—Four pair straight shovels, 3 in. wide, 7½ in. long. Furnished regular on eagle claw beams.....          | 5.00          |
| Jackwood          | Set M.—Four pair single pointed spring tooth shovels. Furnished regular.....                                    | 5.00          |
| Jacob             | Set N.—Four pair double pointed spring tooth shovels.....                                                       | 5.50          |
| Jacobaca          | Set O.—Set A shovels with Set E shovels extra.....                                                              | 6.00          |
| Jacolatt          | Set P.—Set A shovels with Set F shovels extra.....                                                              | 7.00          |
| Jacquard          | Set Q.—Set A shovels with Set G shovels extra.....                                                              | 8.00          |
| Jacqueminot       | Set R.—Set A shovels with Set H shovels extra.....                                                              | 8.00          |
| Jacquerie         | Set S.—Set C shovels with Set E shovels extra.....                                                              | 6.00          |
| Jactancy          | Set T.—Set C shovels with Set F shovels extra.....                                                              | 7.00          |
| Jactation         | Set U.—One pair straight and Set G in place of Set A. Regular.....                                              | 5.50          |
| Jaculate          | Set V.—One pair straight and Set H in place of Set A. Regular.....                                              | 5.50          |
| Jaculation        | Set W.—Five pair single pointed shovels, 1½ in. wide, 6 in. long, steel beam, spring tooth.....                 | 6.00          |
| Jaculator         | Set X.—Five pair double pointed shovels, 1½ in. wide, 9 in. long, steel beam, spring tooth.....                 | 6.50          |
| Jaculatory        | Set Y.—Three pair straight shovels, 3 in. wide, 9 in. long.....                                                 | 5.00          |
| Jad               | Set Z.—One pair straight shovels, 2½ in. wide, 9 in. long.....                                                  | 1.50          |
| Jaddis            | Set BA.—One pair straight shovels, 2 in. wide, 9 in. long.....                                                  | 1.00          |
| Jadedly           | Set BB.—Two pair straight shovels, 5 in. wide, 9½ in. long.....                                                 | 5.00          |
| Jadeite           | Set BC.—One pair straight shovels and one pair twisted shovels, 5 in. wide, 9½ in. long.....                    | 5.00          |
| Jadery            | Set BD.—Two pair twisted shovels, 5 in. wide, 9½ in. long.....                                                  | 5.00          |
| Jadish            | Set BE.—Two pair Set I shovels and one pair Set Z shovels.....                                                  | 5.50          |
| Jadoo             | Set BF.—Two pair Set I shovels and one pair Set BA shovels.....                                                 | 5.00          |
| Jaeger            | Set BG.—Two pair Set K shovels and one pair Set Z shovels.....                                                  | 5.50          |
| Jaelgoat          | Set BH.—Two pair Set K shovels and one pair Set B shovels.....                                                  | 5.00          |
| Jag               | Set BI.—Two pair Set Y shovels and one pair Set Z shovels.....                                                  | 5.50          |
| Jagbolt           | Set BJ.—Two pair Set Y shovels and one pair Set BA shovels.....                                                 | 5.00          |
| Jagataic          | Set BK.—Three pair Set L shovels and one pair 2½ in. shovels with block J 154.....                              | 5.25          |
| Jager             | Set BL.—Three pair Set L shovels and one pair 2 in. shovels with block J 154.....                               | 4.75          |
| Jaghir            | Set BM.—Four pair 2x9 shovels with block J 154.....                                                             | 5.25          |
| Jaguar            | Set BN.—Four pair 2½x9 shovels with block J 154.....                                                            | 5.25          |
| Jail              | Set BO.—Four pair 2½x9 and two pair 2x9 shovels with block J 154.....                                           | 5.25          |
| Jailer            | Set BP.—One pair 2½x9 shovels with block J 154.....                                                             | 1.50          |
| Jainism           | Set BQ.—One pair 2x9 shovels with block J 154.....                                                              | 1.00          |
| Jakie             | Set BR.—One pair Set L (3x7½) shovels with block J 154.....                                                     | 1.25          |
| Jalap             | Set BS.—One pair 3x9 shovels with block J 154.....                                                              | 1.75          |
| Jalapic           | Set BT.—Three pair Set Z shovels 2½x9.....                                                                      | 4.50          |
| Jalie             | Set BU.—Three pair Set BA shovels 2x9.....                                                                      | 3.00          |
| Jalous            | Set BV.—One pair Set Y shovels 3x9.....                                                                         | 1.75          |
| Jamba             | Set BW.—Two pair 4½x8½ straight.....                                                                            | 4.00          |
| Jambok            | Set BX.—Two pair 4½x8½ twisted.....                                                                             | 4.00          |
| Jambone           | Set BY.—One pair 4½x8½ twisted and one pair straight.....                                                       | 4.00          |

When any of the above sets of shovels are wanted in place of the regular, follow the cipher word for the cultivator with the cipher word for the set wanted.



# **HAYES SHOVELS**





## HAYES STEEL PIPE HARROW

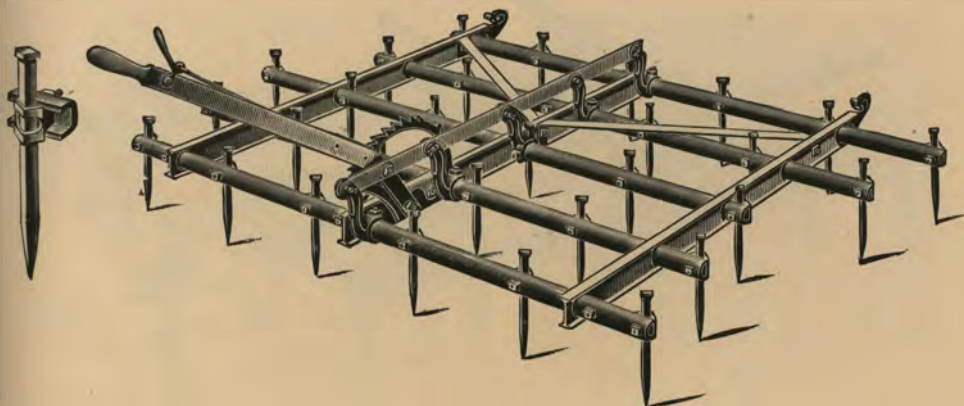
This harrow is made from tubular iron, steel and malleable iron, and the manner of construction is such that it will last the farmer for years. The beams are made of tubular iron, and the teeth pass through same, and are threaded and held firmly in place by a nut, and can be easily replaced when broken. The harrow can be used as a straight-tooth pulverizing harrow or a slanting tooth smoothing harrow. If trash should accumulate, the position of the teeth can be changed in a moment, while in operation, by means of the lever, to a slanting position so as to clear the trash.

As a smoothing harrow it never clogs; the rubbish is cut or passes down and off at ends of teeth and is completely buried. For cultivating young corn in its early stage, it is unsurpassed. It pulverizes the soil thoroughly, destroying all the weeds, while the corn remains uninjured. The frame is flexible, thus adapting itself to the unevenness of the ground.

### TELEGRAPH CODE

|          |                                                                        |
|----------|------------------------------------------------------------------------|
| Naam     | One 50-tooth Pipe Harrow, $\frac{1}{2}$ -inch square teeth, complete.  |
| Naambar  | One 60-tooth Pipe Harrow, $\frac{1}{2}$ -inch square teeth, complete.  |
| Nab      | One 70-tooth Pipe Harrow, $\frac{1}{2}$ -inch square teeth, complete.  |
| Nabat    | One 75-tooth Pipe Harrow, $\frac{1}{2}$ -inch square teeth, complete.  |
| Nabbuck  | One 90-tooth Pipe Harrow, $\frac{1}{2}$ -inch square teeth, complete.  |
| Nabcheat | One 100-tooth Pipe Harrow, $\frac{1}{2}$ -inch square teeth, complete. |
| Nabidae  | One 105-tooth Pipe Harrow, $\frac{1}{2}$ -inch square teeth, complete. |
| Nabla    | One 120-tooth Pipe Harrow, $\frac{1}{2}$ -inch square teeth, complete. |
| Nablock  | One 125-tooth Pipe Harrow, $\frac{1}{2}$ -inch square teeth, complete. |
| Nabob    | One 140-tooth Pipe Harrow, $\frac{1}{2}$ -inch square teeth, complete. |





## HAYES STEEL U-BAR HARROW

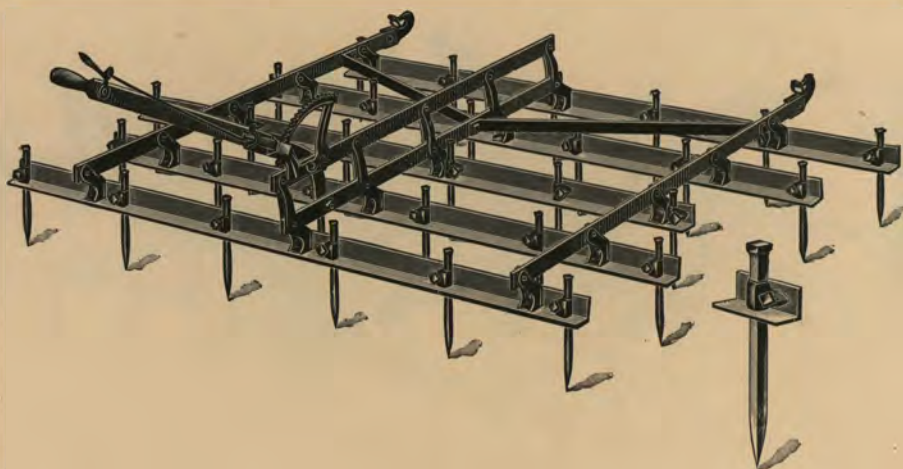
The Hayes Steel Lever U Bar Harrow, owing to its lightness, flexibility and strength, commends itself to the trade and to the farmer. The tooth bars pass through and revolve in I bars which form cross braces for the ends of each section. A longitudinal brace runs through the center of the section and diagonal bars pass to the front corners. This gives great strength and permits the flexibility necessary for a perfect working harrow.

The levers are long enough and so constructed as to be conveniently reached and easily handled while the harrow is at work.

In the construction of this harrow, the threaded tooth with a top nut has been dispensed with, and in its place a simple, strong clamp device is used, holding the tooth firmly in its place, easily released and admitting of adjustment for depth or for turning the tooth so that different edges may be presented to the front, thus insuring a keen cutting edge and uniform wear.

### TELEGRAPH CODE

| $\frac{1}{2}$ -INCH<br>SQUARE TEETH | $\frac{1}{2}$ -INCH<br>DIAMOND TEETH | $\frac{5}{8}$ -INCH<br>SQUARE TEETH | $\frac{5}{8}$ -INCH<br>DIAMOND TEETH | U BAR HARROW,<br>COMPLETE |
|-------------------------------------|--------------------------------------|-------------------------------------|--------------------------------------|---------------------------|
| Nacarot                             | Nach                                 | Nacker                              | Nacodar                              | One 50-tooth.             |
| Nacre                               | Nadab                                | Naddle                              | Nadir                                | One 60 tooth.             |
| Nanga                               | Nanmu                                | Nantle                              | Nap                                  | One 64-tooth.             |
| Nadorite                            | Naenia                               | Naething                            | Naerose                              | One 70-tooth.             |
| Nag                                 | Nagari                               | Nagdana                             | Nagelfluh                            | One 75-tooth.             |
| Nagger                              | Naggle                               | Naggon                              | Nagkassar                            | One 90-tooth.             |
| Nall                                | Namer                                | Nanboy                              | Nandina                              | One 96-tooth.             |
| Nagow                               | Nagnal                               | Nagyagite                           | Nahleh                               | One 100-tooth.            |
| Nahoor                              | Nahuatl                              | Nahum                               | Naiad                                | One 105-tooth.            |
| Naidina                             | Naif                                 | Nail                                | Nailbonne                            | One 120-tooth.            |
| Nailwort                            | Nain                                 | Nalque                              | Naisant                              | One 125-tooth.            |
| Nanism                              | Nanna                                | Napaea                              | Napal                                | One 128-tooth.            |
| Naithless                           | Naive                                | Navete                              | Naja                                 | One 140-tooth.            |



## HAYES STEEL ANGLE-BAR HARROW

The Hayes Steel Lever Angle Bar Harrow, owing to its lightness, flexibility and strength, is a favorite in many localities. All cross bars are above the tooth bars, so they are not liable to gather trash and clog the harrow. It is also amply braced by two diagonal braces. The levers are long enough and so constructed as to be conveniently reached and easily handled while the harrow is at work. They also allow the teeth to pitch forward as well as backward.

In the construction of this harrow the threaded tooth with a top nut has been dispensed with. The tooth passes through a hole punched in the angle bar and is fastened at the top by a malleable clip. This allows the tooth to be raised or lowered and admits of turning the tooth so the different edges may be presented to the front, thus insuring a keen cutting edge and uniform wear.

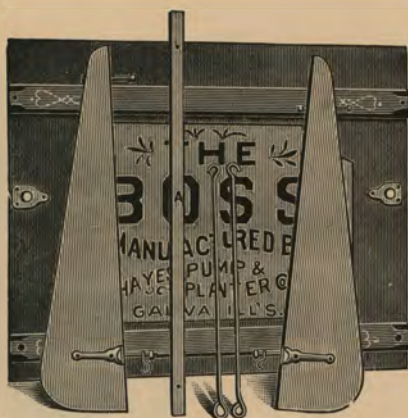
It is arranged so that the tooth bar can be turned in a position to make a good clod smasher and smoothing tool.

Combination double-trees, or eveners will be furnished with all our harrows unless otherwise ordered.

### TELEGRAPH CODE

|          |                                                                             |
|----------|-----------------------------------------------------------------------------|
| Najidae  | One 50-tooth Angle Bar Harrow, $\frac{1}{2}$ -inch square teeth, complete.  |
| Nakong   | One 60-tooth Angle Bar Harrow, $\frac{1}{2}$ -inch square teeth, complete.  |
| Namad    | One 70-tooth Angle Bar Harrow, $\frac{1}{2}$ -inch square teeth, complete.  |
| Name     | One 75-tooth Angle Bar Harrow, $\frac{1}{2}$ -inch square teeth, complete.  |
| Namore   | One 90-tooth Angle Bar Harrow, $\frac{1}{2}$ -inch square teeth, complete.  |
| Nandidae | One 100-tooth Angle Bar Harrow, $\frac{1}{2}$ -inch square teeth, complete. |
| Nane     | One 105-tooth Angle Bar Harrow, $\frac{1}{2}$ -inch square teeth, complete. |
| Nankeen  | One 120-tooth Angle Bar Harrow, $\frac{1}{2}$ -inch square teeth, complete. |
| Nanple   | One 125-tooth Angle Bar Harrow, $\frac{1}{2}$ -inch square teeth, complete. |
| Naos     | One 140-tooth Angle Bar Harrow, $\frac{1}{2}$ -inch square teeth, complete. |





ALL COMPLETE, READY TO PUT TOGETHER  
AND ATTACH TO THE WAGON

## BOSS SHOVELING BOARD



This was the first shoveling board made. It has always been the leading board and there are more in actual use than all other makes of shoveling boards combined. Over half a million sold. It is a style of board perfectly adaptable to all localities, is the simplest and has more good points than any other board made. As a general purpose board it has no equal for hauling corn, shelled grain, potatoes and coal and is especially efficient in hauling hogs.

### GOOD POINTS OF THE BOSS

It is an outside board, gives plenty of standing room and prevents the corn from falling over the sideboard when lowered.

Forms a perfect brace for the wagon box, preventing it from spreading.

Can be detached from the wagon or replaced quicker than any other.

By means of an adjustable wagon bed attachment the board is always held tight to the wagon box with the steel spring rods used.

The board is grain tight and makes a perfect dump board.

No expense for repairs. The user can duplicate any part if needed.

Wood or steel sides, 36 in. or wood sides 40 in. high. Made in three widths for 38 in., 40 in. and 42 in. beds. Orders will be filled for 38 in. wagon and 36 in. high unless otherwise specified.

### TELEGRAPH CODE

| 36-IN. HIGH. | 40-IN. HIGH. |
|--------------|--------------|
| Dabbling     | Deacon       |
| Dab          |              |
| Daclan       | Deaconess    |
| Dabber       |              |
| Dactyl       | Deaden       |
| Dacapo       |              |

One crate of 2 Boss Shoveling Boards, 38-inch bed, wood sides.  
One crate of 2 Boss Shoveling Boards, 38-inch bed, steel sides.  
One crate of 2 Boss Shoveling Boards, 40-inch bed, wood sides.  
One crate of 2 Boss Shoveling Boards, 40-inch bed, steel sides.  
One crate of 2 Boss Shoveling Boards, 42-inch bed, wood sides.  
One crate of 2 Boss Shoveling Boards, 42-inch bed, steel sides.

Shipping weight, 80 lbs. per crate (2 boards).

Wood or Steel  
Sides

Made in Three  
Widths for  
38, 40 and 42 in.  
Wagon Beds

Made in Two  
Heights  
36 and 40 in.  
40 inch Wood  
Sides Only



Easy to Attach  
and Detach

Grain Tight



Adjustable  
Attachment

## PERKINS SHOVELING BOARD

This board was designed by Mr. Perkins, the inventor of the "Boss" board. He embodied in it all of the good features of the Boss together with new and practical ideas in construction. Having purchased Mr. Perkins' patents we have applied these new features to the Boss making the two boards identical in every point.

Among these new and patented features are the adjustable top box attachment which always keeps the board tight to the box, and a patented rod hole casting which irons the hole and clinches on the opposite side, similar in construction to an eyelet of a shoe. This protects the hole against the wear of the rod and wagon box attachment.

The Perkins is made of a good quality of matched lumber, is given two coats of durable linseed oil paint and is a well finished and thoroughly constructed shoveling board.

### Dealers in Western Iowa and Nebraska

will note that the Perkins is the only board sold in their section, which is built the same as we build our Boss. Compare the improved features, material used and finish with others and you will buy the Perkins.

### TELEGRAPH CODE

| 36-IN. HIGH. | 40-IN. HIGH. |
|--------------|--------------|
| Dague        | Deadfall     |
| Dahlia       |              |
| Dahlite      | Deadish      |
| Dahoon       |              |
| Daily        | Deadly       |
| Daintiness   |              |

One crate of 2 Perkins Shoveling Boards, 38-inch bed, wood sides.  
One crate of 2 Perkins Shoveling Boards, 38-inch bed, steel sides.  
One crate of 2 Perkins Shoveling Boards, 40-inch bed, wood sides.  
One crate of 2 Perkins Shoveling Boards, 40-inch bed, steel sides.  
One crate of 2 Perkins Shoveling Boards, 42-inch bed, wood sides.  
One crate of 2 Perkins Shoveling Boards, 42-inch bed, steel sides.

Shipping weight, 80 lbs. per crate (2 boards).





## RUBY SHOVELING BOARD

### A Self-Attaching Endgate

Made in three widths for 38, 40 and 42-inch beds (measuring outside of bed). Special sizes made to order at special prices.

**Construction.** — We use two pieces of angle steel long enough to project up above the top box. To these angles we rivet a piece of wood so it will just fill the groove from which the end gate is taken. To hold them firmly in place we bolt a spring clamp which can be adjusted at the top end of angles to fit any height box. To these angles we bolt a hinge at the bottom and an eye about midway, to which the rod is attached. Both the hinge and the eye are adjustable, so the board can always be locked tight to the bed.

**Easy to Attach.** — Take out the end gate and slip the angles in its place. If the board does not lock solid to the bed, adjust castings so it will.

**Plenty of Room.** — The side boards close on the outside of bed, so there is plenty of room for the corn to spread without falling over side boards.

Made in 36-inch high wood and steel sides, and 40-inch high wood sides

### TELEGRAPH CODE

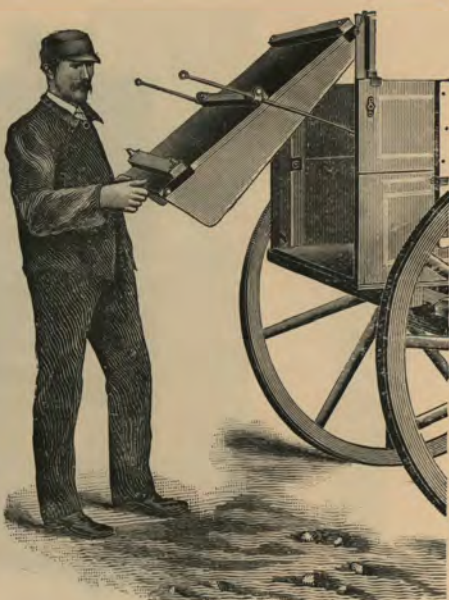
| 36-IN. HIGH. | 40-IN. HIGH. |
|--------------|--------------|
| Dairying     | Dealer       |
| Dakota       |              |
| Daksha       | Dealth       |
| Dalallama    |              |
| Dalaway      | Deanness     |
| Dalbergia    |              |

One crate of 2 Ruby Shoveling Boards, 38-inch bed, wood sides.  
 One crate of 2 Ruby Shoveling Boards, 38-inch bed, steel sides.  
 One crate of 2 Ruby Shoveling Boards, 40-inch bed, wood sides.  
 One crate of 2 Ruby Shoveling Boards, 40-inch bed, steel sides.  
 One crate of 2 Ruby Shoveling Boards, 42-inch bed, wood sides.  
 One crate of 2 Ruby Shoveling Boards, 42-inch bed, steel sides.

Shipping weight, 80 lbs. per crate (2 boards).



Showing how it is slipped in where the end gate is taken out.



Showing how it is used as a dump end gate.

## SELF DUMP SHOVELING BOARD

### A Self Attaching Endgate

Made in three widths for 38, 40 and 42-inch beds. Special sizes will be made to order at special prices. In measuring for this board, give us the exact length of end gate in the lower bed.

It is with a degree of satisfaction that we present to you this circular of the Self Dump Board believing that we are fulfilling our promise to furnish the best line of shoveling boards that the market affords.

**Construction.**—The attachment irons consist of two pieces of angle steel to which there is a piece of wood riveted the right size to fill the space from which the end gate is taken. To this angle all the attachments are riveted in such a manner as to hold the angle firmly in place.

**The Rods** are attached with closed eyes and pass through the casting which is pivoted on the board, and the board is hinged at its lower end in the notch cut in lower end of angle.

**Operation.**—When used as a shoveling board it is turned down and held in position by the rods. When used as an end gate it is thrown up and locked in position by springing the rods under the hooks. When used as a self dump, the small hooks at top of board are placed in the holes at top of angle irons, then the rods are unlocked, and by raising up the rods the board is lifted out of bottom hinge and it is dumped by the weight of the grain.

**Points of Merit.**—*First*, It is simple and strong. *Second*, It can be put on without the use of tools and without defacing the bed. *Third*, It closes on the inside of bed and fits closely against the angle so it can be used for hauling small grain. *Fourth*, When locked in position it cannot unlock and jump out at bottom of its own accord.

### TELEGRAPH CODE

**Daugerrean**  
**Daikaulia**  
**Daintify**

One crate of 2 Self Dump Shoveling Boards, 38-inch bed, wood sides.  
One crate of 2 Self Dump Shoveling Boards, 40-inch bed, wood sides.  
One crate of 2 Self Dump Shoveling Boards, 42-inch bed, wood sides.  
Shipping weight, 80 lbs. per crate (2 boards).





## **B. B. SHOVELING BOARD**

### **Wood or Steel Sides**

Made in three widths for 38, 40 and 42-inch beds (measuring outside of bed). Special sizes made to order at special prices.

This Board is designed to use where a shoveling board is wanted for use without using the top box, for hauling coal, potatoes and such like. The entire attachment is made on the lower bed. The lower attachment is identical to that of the original Boss board and the upper attachment is made by simply boring two holes in the lower bed and bolting on the castings for holding the rod. When steel sides are used we have an adjustable malleable casting that is reversible so that it can be used on beds having the cleat projecting out without cutting of the cleat, as the casting projects over the cleat on the rear end of the wagon bed. Where there is a demand for a lower bed attachment shoveling board, we have no doubt but that the B. B. will fill the demand better than any board made. Like the original Boss board it can be used for hauling small grain better than any board on the market on account of its lower attachment, making a tighter adjustment than can be made in any other way.

### **TELEGRAPH CODE**

**Daugerrear  
Dahl  
Dalkaulia  
Dalmon  
Daintify  
Dairy**

One crate of 2 Self Dump Shoveling Boards, 38-inch bed, wood sides.  
One crate of 2 Self Dump Shoveling Boards, 38-inch bed, steel sides.  
One crate of 2 Self Dump Shoveling Boards, 40-inch bed, wood sides.  
One crate of 2 Self Dump Shoveling Boards, 40-inch bed, steel sides.  
One crate of 2 Self Dump Shoveling Boards, 42-inch bed, wood sides.  
One crate of 2 Self Dump Shoveling Boards, 42-inch bed, steel sides.  
Shipping weight, 80 lbs. per crate (2 boards).



## THE HAYES HAND CART

**This Patent End Gate is a dandy! It can be taken out and replaced in less than a minute.**

Believing that there is a demand for a Hand Cart that is built on scientific principles and finished in a manner so that it will be recognized by the town and city trade as the best finished, most symmetrical and strongest cart on the market that can be sold at a reasonable price, we have constructed **THE HAYES**.

**Advantages.**—The bed is provided with patent end-gates which can be taken out and replaced in less than one minute, or it can be swung open at the bottom for dumping purposes if desired.

**The End Gates** are provided with a cam lock so that the bed is held firmly together without the use of rods.

**The Wheels** are made of steel and provided with an interchangeable box so that if they become worn they can be renewed at a small expense.

**The Axle** is made of high carbon steel and is stiff enough to hold up a load of 600 or 800 pounds, and is provided with two uprights, over which the coil springs are placed.

**Our Patent Springs** are so constructed that they are very sensitive to a light load, and at the same time they cannot be damaged by a heavy load, as it simply closes them together and no harm is done. Try the Hayes and you will be convinced.

**Advantages of Springs.**—It is a well known fact that any vehicle using springs will not only carry its load in a better condition, but is of much lighter draft, especially over uneven surfaces, and in no vehicle is it more fully demonstrated than in a hand cart while passing over uneven sidewalks. It is safe to say that a man can handle one-third more weight than he can without the springs.

## TELEGRAPH CODE AND PRICE LIST

| TELEGRAPH CODE | SIZE                | SIZE OF BOX                     | DIAM. OF WHEEL | PRICE LIST    |
|----------------|---------------------|---------------------------------|----------------|---------------|
| <b>Eager</b>   | No. 1.....18x32 in. | 7 in. deep, inside measure..... | 30 in.....     | <b>\$7.00</b> |
| <b>Eagle</b>   | No. 2.....20x38 in. | 7 in. deep, inside measure..... | 30 in.....     | <b>7.50</b>   |
| <b>Earn</b>    | No. 3.....22x42 in. | 7 in. deep, inside measure..... | 30 in.....     | <b>8.00</b>   |

The No. 2 is medium size and is recommended for general use. It is narrow enough for a person to pass on a four foot sidewalk, which makes it very convenient for use in towns and small cities where walks are narrow.



## HAYES HITCHING POST

You  
Cannot  
Tie  
to a  
Better  
Hitching  
Post  
Than  
This,

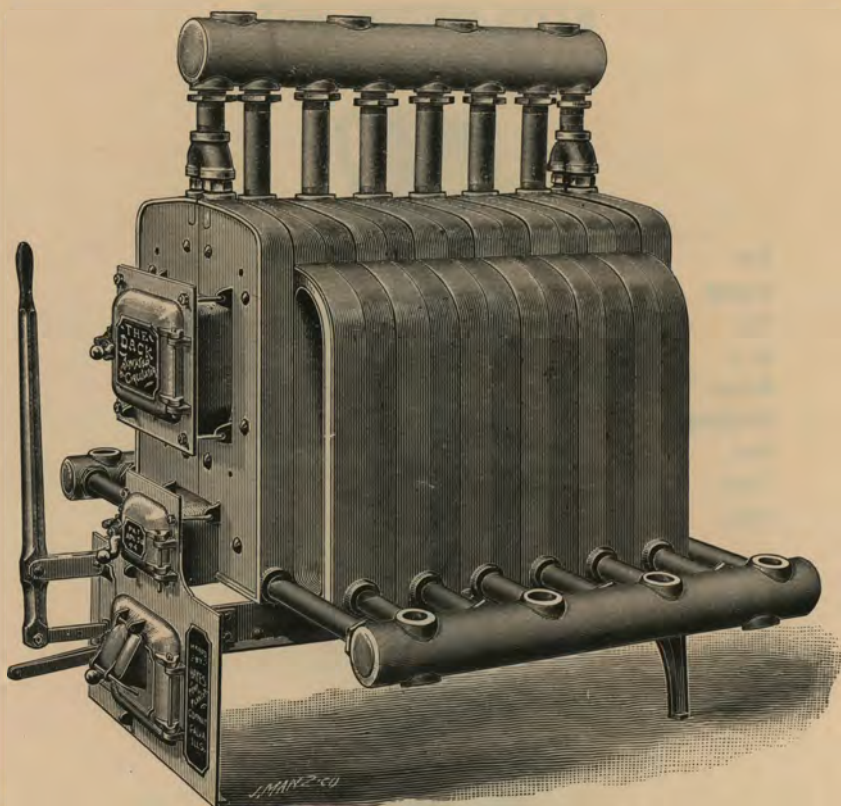


CODE WORD  
**Labarum**

**Hayes Hitching Post**

SHIPPING WEIGHT  
**75 lbs.**

RETAIL PRICE  
**\$6.00**



### DACK HOT-WATER BOILER

It has NO PACKED JOINTS exposed to the action of the fire.

It HAS VERTICAL CIRCULATION causing the water to pass most easily and rapidly over the heating surface.

It has NO LARGE FLAT SURFACES to gather dirt and soot.

It HAS large return smoke flues combined with the largest possible direct heating surface.

It is set in an eight-inch brick wall, so there is no unnecessary radiation of heat in the cellar.

It is so constructed that the water absorbs all the heat of the burning gasses, resulting in the greatest economy of fuel.

It has large grate surface, insuring perfect ventilation.

Doors are conveniently placed for cleaning all flues.

**It is Absolutely Safe.**—There is no case on record of an explosion or fire caused by the use of a hot-water plant. There cannot be.

**It is Healthy.**—The air retains its natural purity by the use of the Dack.

**It is Noiseless.**—Yes, perfectly noiseless in operation. No cracking or pounding, as with steam heating apparatus.

**There is no Danger of Freezing.**—The circulation of the water in every radiator prevents it.

The best system for any building is hot water. No matter how *large* or how *small* the building, the DACK will heat it best.

OUR SPECIAL HEATER CATALOGUE FURNISHED ON APPLICATION.



## How to Order Hayes Pumps

Always give the number of the pump, and it is well, also, as a precaution, to give the figure number of the pump. When ordering a pump to be fitted, give the depth of the well from the bottom to the top of platform.

## Notice

There are certain conditions requisite to the operation of any pump; these factors are briefly:

**Suction Pipe.**—The suction pipe is the pipe below the lower valve, irrespective of whether the valves are in the pump itself or in the cylinder below the pump, and in practical working should not exceed twenty-five feet in vertical height at sea level, and proportionately less at higher levels. This pipe may, however, extend almost any distance horizontally, if care is taken that it fall evenly along its entire length, from pump or cylinder to water supply. In this connection, as well as in long, vertical suction pipe, we urge the use of a foot or check valve, provided the pipe is protected from frost, as it retains water when pump is not in use. Properly, the suction pipe of single acting cylinders and pumps should be half the diameter of the working barrel, and in suction pipes one hundred feet or more in length, or with pumps working fast, it may be increased.

**Connecting or Delivery Pipe.**—The first term is applied only to pipe between pump standard and cylinder, and the last term to the same pipe as well, but more especially to describe pipe carrying water beyond pump to any point.

**Hot Water.**—No pump will draw hot water any distance for the reason that the vapor or steam rising from the liquid passes through the suction pipe into the pump and fills it with vapor instead of water. Therefore, for pumping hot liquids, the pump should be placed as near supply as practical, or better, under flooded suction, forcing the liquid upward instead of lifting it by suction. A hot water pump always requires metal valves throughout, and should be so ordered.

## Special Directions to be Observed

Before placing pump in well, put the cylinder in a pail of water. This will expand the buckets. If the buckets should be thick it may work hard and stiff at first. The difference in thickness and expansion of leathers when pumps are fitted snug makes it almost impossible to adjust them right at the factory and have them all work easy when

first put in. The pump always works easier after a few days' use.

In placing the pump in the well be very careful to see that the pipe joints are well threaded and screwed together snugly. Great care should be taken that the connecting rod in deep well pumps be well threaded and screwed together tightly, making good strong joints.

To prime the pump hold a pail of water to the spout and work the handle rapidly and it will prime itself.

## Hints to be Observed in Setting Pumps

Always give the manufacturer credit for knowing what wells his pumps are adapted for.

Never try to raise the water over twenty-five feet with a four-foot set length pump unless you lower the cylinder. Always use the pipes specified in the description of the pump. See that the frost vent that the lower cylinder be placed as close to the bottom of the well

is open. We recommend as possible.

## What is the Matter With Your Pump ??

The first and most important is, is there water in the well? The simple fact that there was water in the well is no indication that there is water at the present time, therefore, before making complaint about your pump, assure yourself that there is water there to be pumped. If a pump does not work properly there must be some cause.

## You will find it here

If it loses its priming (the water runs down) the check valve is defective or some obstruction has gotten under it; it may be sand or gravel or a little cutting broken from the pipe thread. Remedy: Remove the valve and scrape the lower side thoroughly with a knife, being careful to remove all grit.

If it throws water on the down stroke of handle only (we refer to a double acting pump), there must be something under the lower check valve or the plunger leather is worn out.

If it throws water on the upward stroke of handle only, there must be something lodged under valve in lower bucket, or it may have become hardened and curled up.

If the pump discharges air bubbles with the water, either the suction pipe is not screwed together tight or it is split open.

If the handle jerks back when you pull it down, you either have the cylinder too far from the water or the supply is cut off in some manner; the suction pipe may be too small, or if a drive well, the screen may be closed up.

## PITCHER-SPOUT CISTERN PUMPS

Fig. 901

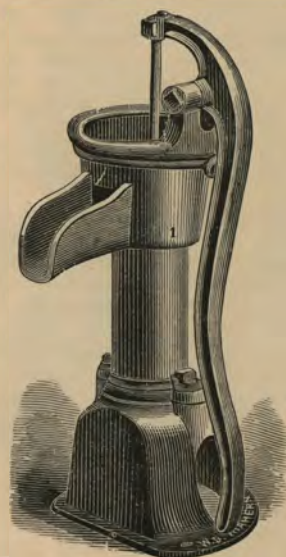
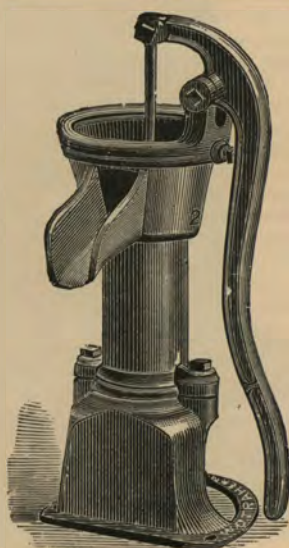


Fig. 902



This class of pumps being so well and favorably known, their utility and reputation so well and permanently established everywhere, it is quite unnecessary for us to enter into any extended or detailed description of them. We simply say to the trade that they are made in the VERY BEST MANNER, with all the modern improvements attached.

These Pumps are fitted to attach either lead or gas pipe. When gas pipe is to be used, take off the brass tube, and the iron nut will be found ready fitted to receive the gas pipe.

The handles are all made to revolve by loosening the set screw under the same. The valve may be tripped to let back the water by raising the handle to full height.

| No. of Pump | Code Word | Size of Cylinder | Fitted For   | Weight | Price List |
|-------------|-----------|------------------|--------------|--------|------------|
| 520         | Vue       | 2½               | 1 in. Pipe.  | 20     | \$ 4.25    |
| 521         | Vulcan    | 3                | 1¼ in. Pipe. | 22     | 4.75       |
| 522         | Vulcanite | 3½               | 1½ in. Pipe. | 25     | 5.25       |



## HAYES BRASS CYLINDER, PITCHER SPOUT CISTERN PUMP

Revolving Top. Brass Cylinder, All Brass Plunger and  
Brass Valve Seat. Base Bolted on with Three Bolts.

Fig. 735



In designing this pump we have endeavored to make a pump that is not only strong and durable, but cheap enough to be within the reach of everyone.

**Construction.** — The cylinder is made of 3-inch seamless drawn brass and will be furnished regularly with an all brass plunger and brass lower valve seat.

**Revolving Top**—By loosening the set screw under the handle you can revolve the top and handle around to any position with respect to the spout.

### Price List as Represented by Fig. 735

| No. of Pump | Code Word                                                | Weight  | Price List |
|-------------|----------------------------------------------------------|---------|------------|
| 80          | Vodka..... Fitted with Brass Plunger and Valve Seat..... | 19 lbs. | \$ 4.50    |
| 81          | Vodu..... Fitted with Iron Plunger and Iron Valve Seat.  | 19 lbs. | 4.00       |

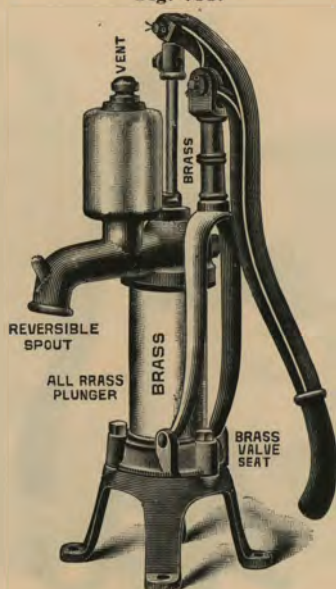
The above pumps are fitted for 1-inch iron pipe. When fitted for iron and lead pipe, add 25 cents to the list.

THEY'RE PAINTED YELLOW

## HAYES BRASS CYLINDER HOUSE FORCE PUMP

Reversible Spout. Brass Cylinder, All Brass Plunger and  
Brass Valve Seat. Large Air Chamber and Long Handle  
Fulcrum. Base Bolted on with Three Bolts ❧ ❧ ❧  
Brass Screw Vent

Fig. 733.



This is a strong, neat, compact and powerful force pump.

**Construction.**—The cylinder is made of 3-inch seamless drawn brass tubing. The plunger, stuffing box and valve seat are also of brass. A long, easy working fulcrum to which the handle is attached, prevents friction in the stuffing box. A large air chamber assures a steady flow of water, and when used for forcing water to an elevated tank, it proves a very valuable feature as the pump works much smoother and easier.

**Anti-Freezing.**—Freezing is prevented by raising the handle and thus tripping the lower valve.

**The Spout.**—By loosening the three bolts in the base, the spout can be turned to any position with respect to the handle, and by taking these three bolts out, it allows you to repair the lower valve and the plunger valve without unscrewing the cylinder.

These pumps have a back outlet tapped for  $\frac{3}{4}$ -inch pipe and we furnish them with a  $\frac{3}{4}$ -inch hose connection, which enables you to use it for washing windows, putting out fires, spraying flowers, etc.

**Price List as Represented by Fig. 733.**

| No. of Pump | Code Word                                       | Weight  | Price List |
|-------------|-------------------------------------------------|---------|------------|
| 82          | Voe..... Fitted for 1-inch Iron Pipe.....       | 23 lbs. | \$ 6.50    |
| 83          | Voetian..... Fitted for Iron and Lead Pipe..... | 24 lbs  | 6.75       |

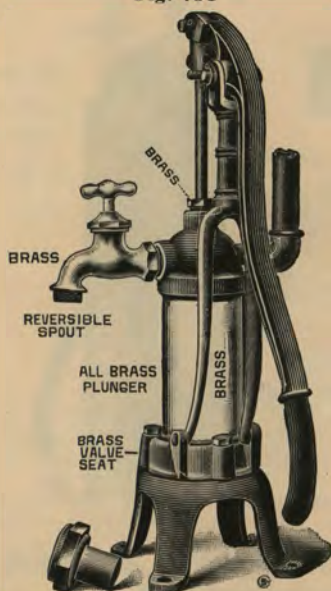
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## HAYES BRASS CYLINDER HOUSE FORCE PUMP WITH COCK SPOUT

Reversible Spout. Brass Cylinder, All Brass Plunger, Brass Valve Seat and Brass Cock Spout. Long Handle Fulcrum. Base Bolted on with Three Bolts. Back Outlet

Fig. 734



This is a strong, neat, compact and powerful force pump.

**Construction.** -- The cylinder is made of 3-inch seamless drawn brass tubing. The plunger, stuffing box, valve seat and cock spout are also of brass. A long, easy working fulcrum to which the handle is attached, prevents friction in the stuffing box. This pump is tapped for  $\frac{3}{4}$ -inch iron pipe, allowing the water to be forced into a bath tub or tank above.

**Anti-Freezing.** -- Freezing is prevented by raising the handle and thus tripping the lower valve.

**The Spout.** -- By loosening the three bolts in the base, the spout can be turned to any position with respect to the handle, and by taking these three bolts out, it allows you to repair the lower valve and the plunger valve without unscrewing the cylinders.

### Price List as Represented by Fig. 734

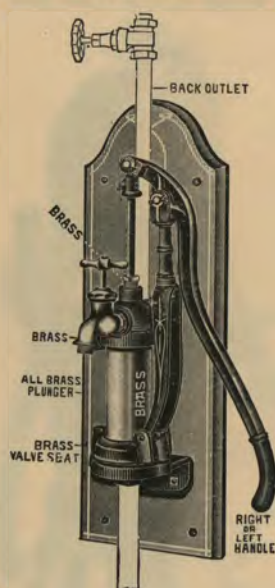
| No. of Pump | Code Word                                    | Weight  | Price List |
|-------------|----------------------------------------------|---------|------------|
| 84          | Vog .....                                    | 21 lbs. | \$ 8.00    |
| 85          | Vogle.....Fitted for Iron and Lead Pipe..... | 21 lbs. | 8.25       |

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## HAYES BRASS CYLINDER HOUSE FORCE PUMP ON PLANK

Reversible Handle, Brass Cylinder, All Brass Plunger  
Brass Valve Seat, and Brass Cock Spout, Long  
Handle Fulcrum. Base Bolted to Plank. ❁ ❁ ❁

Fig. 736



This pump is provided with brackets for attaching it to the wall for convenience. Furnished with or without plank.

**Construction.** — The cylinder is made of 3-inch seamless drawn brass tubing. The plunger, stuffing box, valve seat and cock spout are also of brass. A long, easy working fulcrum to which the handle is attached, prevents friction in the stuffing box. This pump is tapped for  $\frac{3}{4}$ -inch iron pipe, allowing the water to be forced into a bath tub or tank above.

**Anti - Freezing.**—Freezing is prevented by raising the handle and thus tripping the lower valve.

**Back Outlet.**—These pumps have a back outlet tapped for  $\frac{3}{4}$ -inch pipe.

| No. of Pump | Code Word                                                 | Weight | Price List |
|-------------|-----------------------------------------------------------|--------|------------|
| 91          | Vulcano.... Pump complete with Brass Cock Spout and Plank | 26     | \$ 9.00    |
| 92          | Vulgar.... Pump complete less Plank.....                  | 19     | 8 00       |
| 93          | Vulgarian... Pump complete less Cock Spout.....           | 25     | 7.50       |
| 94          | Vulgarism... Pump complete less Plank and Cock Spout..... | 18     | 6.50       |

Above pumps fitted for 1-inch iron. When fitted for iron and lead pipe add 25 cents to the list.

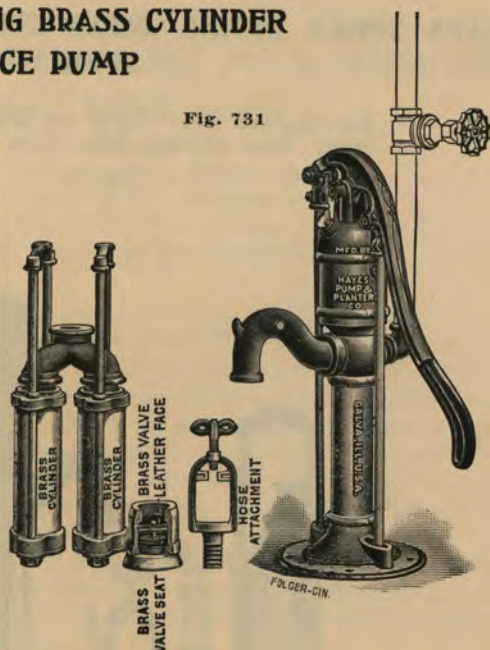
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## HAYES DOUBLE ACTING BRASS CYLINDER HOUSE FORCE PUMP

Fig. 731

Brass Screwed Vent. Large Air Chamber. Siphon Spout, Brass Cylinders, Brass Valve and Valve Seats. ❁ ❁ ❁ ❁ ❁ ❁ ❁ ❁



This is a strong, neat, compact and powerful force pump.

Where you can place the pump directly over the cistern, this pump is unexcelled, for it never needs to be primed, as the cylinders are placed near the bottom of the cistern or well.

This pump is built on the same principle as the Hayes Double Cylinder Force Pump, using the same cylinder with a shorter stroke.

**The Cylinders.** instead of the plungers, are operated by the handle. This arrangement allows the rod to be placed on the outside of the pipe, thus doing entirely away with the stuffing box, yet making the most powerful force pump made. The water is agitated by the working of the cylinder, thus insuring pure and fresh water at all times.

**From the Fact** that the cylinders are always submerged, it can never lose its priming.

**Anti-Freezing.**—A vent hole should be placed in the pipe 4 feet below the platform, which will positively prevent it freezing.

**Spray Pump.**—This pump when furnished with 2-inch cylinders and long handle, makes the most powerful spray pump on the market. It can be used on a barrel or tank for that purpose.

Price List as Represented by Fig. 731

| No. of Pump | Code Word                                                                                                                                                                    | Weight  | Price List |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------|
| 86          | <b>Voglite</b> .....Has two 2½-inch Brass Cylinders, Tapped 1-inch, Brass Valves and Brass Valve Seats.....                                                                  | 22 lbs. | \$ 10.00   |
| 87          | <b>Vogue</b> .....Has two 2-inch Brass Cylinders, Tapped 1-inch, Brass Valves and Brass Valve Seats, long handle suitable for spraying purposes.....                         | 22 lbs. | 10.00      |
| 88          | <b>Voice</b> .....Has two 2-inch Brass Cylinders, Tapped 1-inch, Brass Valves, Brass Valve Seats, Brass Lower Caps and Brass Plunger, long Handle for spraying purposes..... | 22 lbs. | 13.00      |

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## HAYES SINGLE ACTING BRASS CYLINDER HOUSE FORCE PUMP

Brass Screwed Vent. Large Air Chamber and Siphon Spout. Brass Cylinder, Brass Valve and Valve Seat

Fig. 732



This is a strong, neat, compact and powerful force pump.

Where you can place the pump directly over the cistern, this pump is unexcelled, for it never loses its priming, as the cylinder is always submerged. This pump is built on the same principle as the Hayes Double Cylinder Force Pump, with the exception that only one cylinder is used and it has a shorter stroke.

**The Cylinder** instead of the plunger, is operated by the handle. This arrangement allows the rod to be placed on the outside of the pipe, thus doing away with the stuffing box, yet making the most powerful force pump made. The water is agitated by the working of the cylinder, thus insuring pure and fresh water.

**From The Fact** that the cylinder is always submerged, it can never lose its priming.

**Anti-Freezing.** — A vent hole should be placed in the pipe four feet below the platform, which will positively prevent its freezing.

### Price List as Represented by Fig. 732

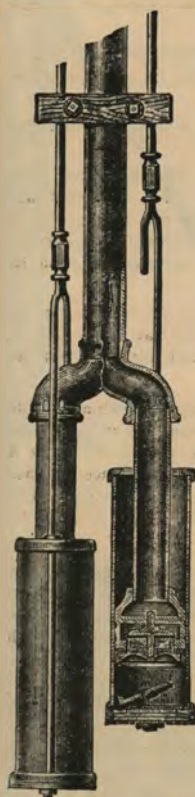
| No. of Pump | Code Word                                                                                                        | Weight  | Price List |
|-------------|------------------------------------------------------------------------------------------------------------------|---------|------------|
| 89          | <b>Voiceful</b> .... Has one 3-in. Brass Cylinder, Brass Valve and Brass Valve Seat, Tapped for 1-in. Pipe.....  | 21 lbs. | \$ 8.00    |
| 90          | <b>Voicer</b> ..... Has one 3½-in. Brass Cylinder, Brass Valve and Brass Valve Seat, Tapped for 1¼-in. Pipe..... | 21 lbs. | 8.50       |

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## HAYES DOUBLE CYLINDER DOUBLE ACTING HAND AND WINDMILL FORCE PUMP

With or Without Three-way. For Shallow or Deep Open or Six Inch Cased Wells. Malleable Iron and Steel Handle, Seamless Drawn Brass Cylinders, Brass Valve Seats, Leather Faced Brass Valves, Anti-Freezing



For open or cased wells not smaller than 5½-inch, the Hayes Double Cylinder Force Pump is the most satisfactory pump made, throwing double the amount of water with the same ease as any of the so-called double acting force pumps. Thousands of users of this style of pump are eager to testify to its superiority. By placing the cylinders and rods on the opposite sides of the pipe, they are perfectly balanced, thereby saving half the power, as the weight of the rod nearly equals the weight of the water.

**Malleable Iron and Steel Handles.**—The handle is made of malleable iron and steel, making it the lightest, most durable, and at the same time, the least liable to breakage.

**Adjustable Rods.**—The rods are made adjustable, enabling you to correct any error in their length, even after the pump is put in the well.

**Brass Valve Seats.**—Many substances, including rubber, glass, aluminum, etc., have been tested and discarded on account of chipping or cracking, or not having sufficient strength to withstand the hard service of deep well work, until to-day it is conceded by practical pump men that a good brass valve seat properly finished and fitted in is the most durable and reliable valve seat that can be made.

**Windmill Top.**—We furnish a wind mill attachment for these pumps and it can be attached to the pump at any time without any change.

**Three Ways.**—These pumps can be furnished with good reliable three-way valves.

**Regulator Pumps.**—This pump is made with our wind mill regulator, which controls the mill at all times, allowing it to operate the pump when the water is used from the tank and shutting the mill off as soon as the tank is filled.

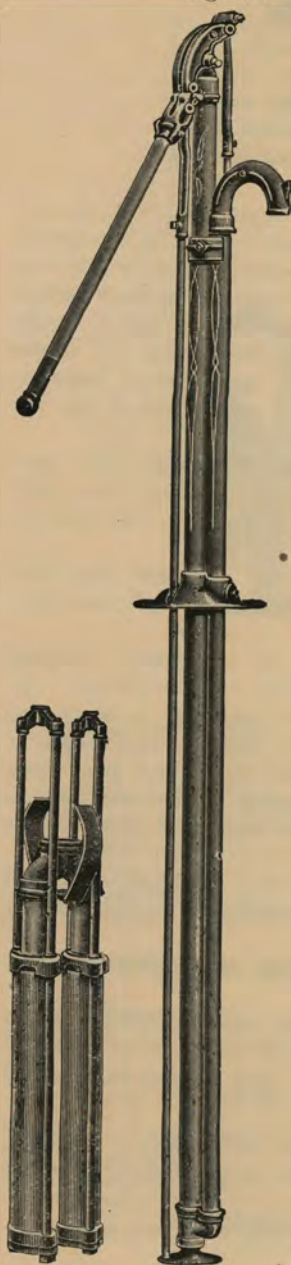
**Anti-Freezing.**—This means that the pump is drilled with a small discharge hole below the frost line, which allows the water in the stand to drop back to this point, thus preventing freezing.

**Cylinders.**—These pumps are furnished with seamless drawn brass cylinders only.

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## WHAT WE CLAIM FOR THE HAYES DOUBLE ACTING FORCE PUMP

Fig. 719



By working the cylinder instead of the plunger, we have the most powerful force pump ever placed on the market, for the following reasons:

**First.**—There is no packing box to cause friction and leakage, thereby stopping the force of the water.

**Second.**—There are two cylinders instead of one, which causes a steady pressure and thereby a much larger stream of water.

**Third.**—Having a vent four feet below platform, so as to let the water out of the stand, thereby making it a positive anti-freezing pump.

**Fourth.**—By using a brass valve with leather face, it will not wear the valve seat and will hold its priming better than any valve known.

**Fifth.**—By using a brass valve seat it will not rust, and it will last a life-time.

**Sixth.**—By placing the rods on the outside of the pipe, the full capacity of the pipe is secured, and they will not wear the galvanizing off the pipe. They are also arranged so that they cannot be unscrewed until they are disconnected at the top, thereby overcoming a great annoyance found in all other pumps.

**Seventh.**—By placing the cylinders at the bottom on opposite sides of the pipe they are perfectly balanced, thereby saving half the power, as the weight of rod nearly equals the weight of the water.

**Eighth.**—By placing the cylinders at the bottom of the well they are always submerged and can never lose their priming. The bottoms of the cylinders are protected by a screen, and for sand wells, when ordered, we place a brass wire screen between the cast screen and the cylinder caps, at a small additional cost, which will be found a very desirable feature in some localities.

**Ninth.**—By attaching a windmill to one cylinder, the other one is free to be worked by hand without detaching the mill, thereby giving the advantage of two single, or one double acting pump, as the cylinders act independent of each other.

The single acting pump is the same as the double acting pump except there is only one cylinder instead of two.

We guarantee our single pumps to throw as large a stream of water as any of the so-called double acting pumps, having the same size receiving cylinder, and they will last longer from the fact that they are all submerged.

*Remember that we guarantee this pump to be the best pump on earth, and we will send any responsible dealer a sample, to be returned in thirty days from receipt of invoice, if he is not satisfied that it is all we claim for it.*

Fig. 719 shows the Hayes Two-inch Double Cylinder Double Acting Force Pump. The stand and cylinders are made so they will stand in the center of a five and one-half inch cased well.

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**Fig. 701**

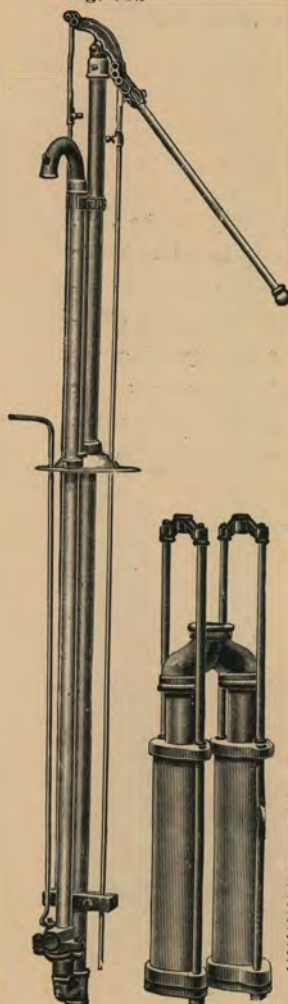
Where it is possible to place these pumps in the well, they are the most satisfactory pump made, throwing double the amount of water with the same ease as any of the so-called double acting force pumps. By placing the cylinders and rods on the opposite sides of the pipe, they are perfectly balanced, thereby saving half the power, as the weight of the rod nearly equals the weight of the water. Thousands of users of this style of pump are eager to testify to its superiority as a force pump.

### Price List as Represented by Fig. 701

| No. of Pump | Code Word | Adapted for Wells up to | Diam. Pump will work in | Gallons per Hour—Forty strokes per minute | Size of Cylinders | Kind of Cylinders | Weight. | Size of Pipe Tapped for | Price List |
|-------------|-----------|-------------------------|-------------------------|-------------------------------------------|-------------------|-------------------|---------|-------------------------|------------|
| 1           | Vacant    | 25 ft.                  | 9 in.                   | 1200                                      | 3½x10             | Br'ss             | 92 lbs  | 1½                      | \$ 18.00   |
| 2           | Vacatur   | 50 ft.                  | 9 in.                   | 880                                       | 3 x10             | Br'ss             | 89 lbs  | 1½                      | 17.00      |
| 3           | Vacary    | 75 ft.                  | 7 in.                   | 612                                       | 2½x10             | Br'ss             | 84 lbs  | 1                       | 16.00      |
| 3½          | Vaccine   | 75 ft.                  | 7 in.                   | 612                                       | 2½x10             | Br'ss             | 84 lbs  | 1                       | 16.00      |
| 4           | Vach      | 300 ft.                 | 5½ in                   | 392                                       | 2 x12             | Br'ss             | 75 lbs  | 1½                      | 15.00      |
|             | Vacuity   | Galvanizing             | Pump complete           |                                           |                   |                   |         |                         | 3.00       |
|             | Vacuna    | Galvanizing             | Cylinders only          |                                           |                   |                   |         |                         | 1.50       |

## HAYES DOUBLE CYLINDER DOUBLE ACTING AND FORCE PUMP WITH THREE-WAY

Fig. 702



For Shallow or Deep Wells. Malleable Iron and Steel Handle. Adjustable Rods, Seamless Drawn Brass Cylinders, Brass Valve Seats and Leather Faced Brass Valves. Anti-Freezing ❖ ❖ ❖ ❖

In the Hayes Double Cylinder Pumps we work the cylinder in place of the plunger, giving the most powerful force pump ever placed on the market. There is no packing box to cause friction or leakage, thereby stopping the force of the water

Price List as Represented by Fig. 702

| No. of Pump | Code Word | Adapted for Wells up to | Diam. Pump will work in | Gallons per hour Forty strokes per minutes | Size of Cylinders | Kind of Cylinders | Weight | Size of Pipe tapped for | Price List |
|-------------|-----------|-------------------------|-------------------------|--------------------------------------------|-------------------|-------------------|--------|-------------------------|------------|
| 30          | Vacuole   | 25 ft.                  | 9 in.                   | 1200                                       | 3½ x 10           | Br'ss             | 97 lbs | 1¼                      | \$21.00    |
| 31          | Vacuum    | 50 ft.                  | 9 in.                   | 880                                        | 3 x 10            | Br'ss             | 94 lbs | 1¼                      | 20.00      |
| 32          | Vade      | 75 ft.                  | 7 in.                   | 612                                        | 2½ x 10           | Br'ss             | 89 lbs | 1                       | 19.00      |
| 33          | Vadium    | 75 ft.                  | 7 in.                   | 612                                        | 2½ x 10           | Br'ss             | 89 lbs | 1¼                      | 19.00      |
| 34          | Vadmel    | 300 ft.                 | 5½ in.                  | 392                                        | 2 x 12            | Br'ss             | 80 lbs | 1                       | 18.00      |
|             | Vacuity   | Galvanizing             | Pump complete           | .....                                      | add to list       |                   |        |                         | 3.00       |
|             | Vacuna    | Galvanizing             | Cylinders only          | .....                                      | add to list       |                   |        |                         | 1.50       |



Fig. 703



## HAYES DOUBLE CYLINDER DOUBLE ACTING WINDMILL FORCE PUMP

For Shallow or Deep Wells. Malleable Iron and Steel Handle. Adjustable Rods, Seamless Drawn Brass Cylinders, Brass Valve Seats with Leather Faced Brass Valves. Anti-Freezing ❀ ❀ ❀ ❀

This shows our Double Cylinder Double Acting Windmill Pump. By attaching the inside rod to the windmill and leaving the other attached to the handle, allows you to use the pump by hand without detaching the windmill, thereby giving the advantage of two single cylinder pumps or one double cylinder pump, as the cylinders act independently of each other.

Price List as Represented by Fig. 703

| No. of Pump | Code Word | Adapted for Wells up to | Diam. Pump will work in | Gallons per Hour—Forty strokes per minute | Size of Cylinders | Kind of Cylinders | Weight | Size of Pipe Tapped for | Price List       |
|-------------|-----------|-------------------------|-------------------------|-------------------------------------------|-------------------|-------------------|--------|-------------------------|------------------|
| 35          | Vadose    | 25 ft.                  | 9 in.                   | 1200                                      | 3½ x 10           | Br'ss             | 93 lbs | 1¼                      | \$ 19.00         |
| 36          | Vag       | 50 ft.                  | 9 in.                   | 880                                       | 3 x 10            | Br'ss             | 90 lbs | 1¼                      | 18.00            |
| 37          | Vagabond  | 75 ft.                  | 7 in.                   | 612                                       | 2½ x 10           | Br'ss             | 86 lbs | 1                       | 17.00            |
| 38          | Vagal     | 75 ft.                  | 7 in.                   | 612                                       | 2½ x 10           | Br'ss             | 86 lbs | 1¼                      | 17.00            |
| 39          | Vagaus    | 300 ft.                 | 5½ in.                  | 392                                       | 2 x 12            | Br'ss             | 78 lbs | 1                       | 16.00            |
|             | Vacuity   | Galvanizing             | Pump complete           |                                           |                   |                   |        |                         | add to list 3.00 |
|             | Vacuna    | Galvanizing             | Cylinders only          |                                           |                   |                   |        |                         | add to list 1.50 |







## HAYES DOUBLE CYLINDER DOUBLE ACTING FIRE HAND FORCE PUMP

Fig. 706

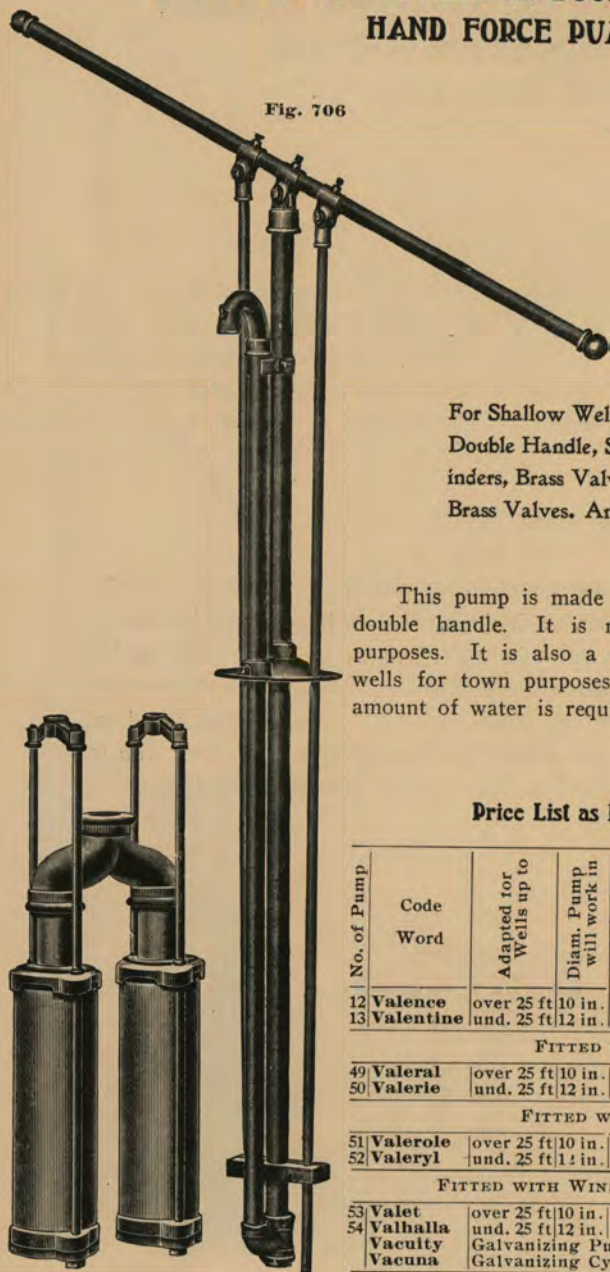
### EXTRA HEAVY

For Shallow Wells Malleable Iron and Steel  
Double Handle, Seamless Drawn Brass Cyl-  
inders, Brass Valve Seats and Leather Faced  
Brass Valves. Anti-Freezing ❀ ❀ ❀ ❀ ❀

This pump is made very heavy and provided with a double handle. It is more especially adapted for fire purposes. It is also a very desirable pump for shallow wells for town purposes, and stock wells where a large amount of water is required.

### Price List as Represented by Fig. 706

| No. of Pump                            | Code<br>Word | Adapted for<br>Wells up to                 | Diam. Pump<br>will work in | Gals. per hr.—<br>Forty strokes<br>per minute | Size of<br>Cylinders | Kind of<br>Cylinders | Weight  | Size of Pipe<br>Tapped for | Price List |
|----------------------------------------|--------------|--------------------------------------------|----------------------------|-----------------------------------------------|----------------------|----------------------|---------|----------------------------|------------|
| 12                                     | Valence      | over 25 ft                                 | 10 in.                     | 1200                                          | 3½ x 12              | Br'ss                | 122 lbs | 1½                         | \$ 23.00   |
| 13                                     | Valentine    | und. 25 ft                                 | 12 in.                     | 1560                                          | 4 x 12               | Br'ss                | 131 lbs | 1½                         | 25.00      |
| FITTED WITH THREE-WAY                  |              |                                            |                            |                                               |                      |                      |         |                            |            |
| 49                                     | Valeral      | over 25 ft                                 | 10 in.                     | 1200                                          | 3½ x 12              | Br'ss                | 130 lbs | 1½                         | 27.00      |
| 50                                     | Valerie      | und. 25 ft                                 | 12 in.                     | 1560                                          | 4 x 12               | Br'ss                | 139 lbs | 1½                         | 29.00      |
| FITTED WITH WINDMILL TOP               |              |                                            |                            |                                               |                      |                      |         |                            |            |
| 51                                     | Valerole     | over 25 ft                                 | 10 in.                     | 1200                                          | 3½ x 12              | Br'ss                | 124 lbs | 1½                         | 24.00      |
| 52                                     | Valeryl      | und. 25 ft                                 | 12 in.                     | 1560                                          | 4 x 12               | Br'ss                | 133 lbs | 1½                         | 26.00      |
| FITTED WITH WINDMILL TOP AND THREE-WAY |              |                                            |                            |                                               |                      |                      |         |                            |            |
| 53                                     | Valet        | over 25 ft                                 | 10 in.                     | 1200                                          | 3½ x 12              | Br'ss                | 132 lbs | 1½                         | 28.00      |
| 54                                     | Valhalla     | und. 25 ft                                 | 12 in.                     | 1560                                          | 4 x 12               | Br'ss                | 141 lbs | 1½                         | 30.00      |
|                                        | Vaculty      | Galvanizing Pump complete.....add to list  |                            |                                               |                      |                      |         |                            | 3.00       |
|                                        | Vacuna       | Galvanizing Cylinders only.....add to list |                            |                                               |                      |                      |         |                            | 1.50       |





## HAYES MOVABLE CYLINDER SINGLE ACTING HAND FORCE PUMP

Fig. 707

For Shallow or Deep Wells. Malleable Iron and Steel Handle. Adjustable Rod, Seamless Drawn Brass Cylinder. Brass Valve Seat and Leather Faced Brass Valve. No Stuffing Box. Anti-Freezing ❀ ❀ ❀

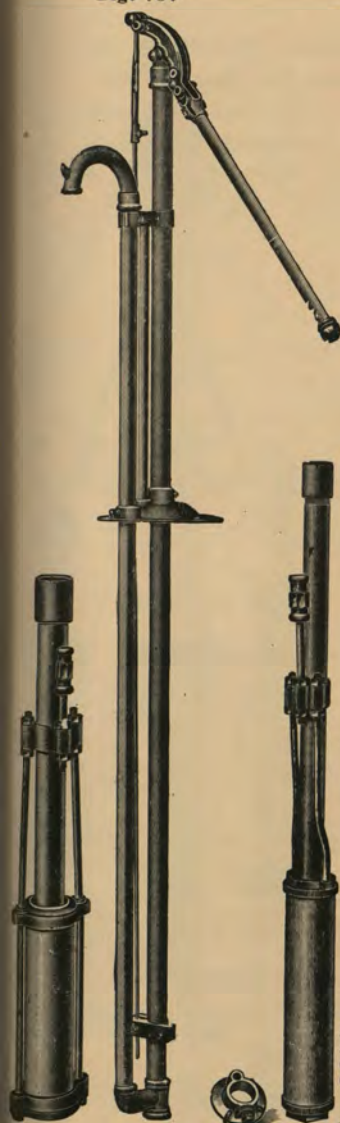
This illustrates the Hayes Movable Cylinder Single Acting Hand Force Pump. By moving the cylinder instead of the plunger, the stuffing box is not required, thus avoiding all the annoyance from that source. As a single acting pump and for windmill purposes, this makes a very desirable pump. Fig. 708 is the same as Fig. 707, except it has a windmill top.

Price List as Represented by Fig. 707

| No. of Pump | Code Word | Adapted for Wells up to                          | Diam. Pump will work in | Gals. per hr. Forty strokes per minute | Size of Cylinder | Kind of Cylinder | Weight | Size of Pipe Tapped for | Price List |       |
|-------------|-----------|--------------------------------------------------|-------------------------|----------------------------------------|------------------|------------------|--------|-------------------------|------------|-------|
| 5           | Vallant   | 25 ft                                            | 6 in.                   | 600                                    | 3½x10            | Br'ss            | 74 lbs | 1¾                      | \$14.00    |       |
| 6           | Valid     | 50 ft                                            | 5 in.                   | 440                                    | 3 x10            | Br'ss            | 73 lbs | 1¾                      | 13.00      |       |
| 7           | Validate  | 75 ft                                            | 4 in.                   | 306                                    | 2½x10            | Br'ss            | 71 lbs | 1                       | 12.00      |       |
| 7½          | Wool      | Fitted with 2½x10 Flush Cap Cylinder, wt. 70 lbs |                         |                                        |                  |                  |        |                         |            | 13.00 |
|             | Vacuity   | Galvanizing Pump complete.....add to list        |                         |                                        |                  |                  |        |                         |            | 2.25  |
|             | Vacuna    | Galvanizing Cylinder only.....add to list        |                         |                                        |                  |                  |        |                         |            | .75   |

FIG. 708 FITTED WITH WINDMILL TOP

|     |         |                                                  |       |     |       |       |        |    |       |
|-----|---------|--------------------------------------------------|-------|-----|-------|-------|--------|----|-------|
| 58  | Vallate | 25 ft                                            | 6 in. | 600 | 3½x10 | Br'ss | 79 lbs | 1¾ | 15.00 |
| 59  | Valley  | 50 ft                                            | 5 in. | 440 | 3 x10 | Br'ss | 78 lbs | 1¾ | 14.00 |
| 60  | Vallum  | 75 ft                                            | 4 in. | 306 | 2½x10 | Br'ss | 76 lbs | 1  | 13.00 |
| 60½ | Wooly   | Fitted with 2½x10 Flush Cap Cylinder, wt. 75 lbs |       |     |       |       |        |    | 14.00 |
|     | Vacuity | Galvanizing Pump Complete.....add to list        |       |     |       |       |        |    | 2.25  |
|     | Vacuna  | Galvanizing Cylinder only.....add to list        |       |     |       |       |        |    | .75   |



## HAYES MOVABLE CYLINDER SINGLE ACTING HAND FORCE PUMP WITH THREE-WAY

For Shallow or Deep Wells. Malleable Iron and Steel Handle. Adjustable Rod, Seamless Drawn Brass Cylinder. Brass Valve Seat and Leather Faced Brass Valve. No Stuffing Box. Anti-Freezing ❀ ❀ ❀ ❀ ❀ ❀ ❀ ❀ ❀

Fig. 709



The Hayes Movable Cylinder Single Acting Pump is constructed the same as our double cylinder pump, except it has only one cylinder, and thus throws only one-half the amount of water as the double cylinder pump. Fig. 710 is the same as Fig. 709, except it has a windmill top.

### Price List as Represented by Fig. 709

| No. of Pump | Code Word | Adapted for Wells up to                              | Diam. Pump will work in | Gallons per hour—Forty strokes per minute | Size of Cylinder | Weight | Size of Pipe tapped for | Price List   |
|-------------|-----------|------------------------------------------------------|-------------------------|-------------------------------------------|------------------|--------|-------------------------|--------------|
| 55          | Valsee    | 25 ft.                                               | 6 in.                   | 600                                       | 3½x10            | 81 lbs | 1¼                      | \$17.00      |
| 56          | Valkyr    | 50 ft.                                               | 5 in.                   | 440                                       | 3 x10            | 80 lbs | 1¾                      | 16.00        |
| 57          | Vallar    | 75 ft.                                               | 4 in.                   | 306                                       | 2½x10            | 78 lbs | 1                       | 15.00        |
| 57½         | World     | Fitted with 2½x10 Flush Cap Cylinder.....            |                         |                                           |                  |        |                         |              |
|             | Vacuity   | Galvanizing Pump Complete .. add to list Wt. 77 lbs. |                         |                                           |                  |        |                         | 16.00        |
|             | Vacula    | Galvanizing Cylinder only .....add to list           |                         |                                           |                  |        |                         | 2.25<br>..75 |

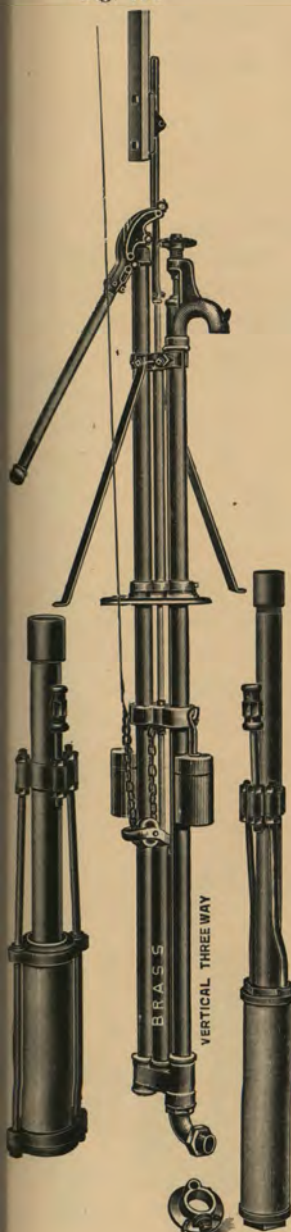
**Fig. 710 Fitted With Windmill Top**

|     |         |                                           |       |     |       |         |    |         |
|-----|---------|-------------------------------------------|-------|-----|-------|---------|----|---------|
| 61  | Valmaid | 25 ft.                                    | 6 in. | 600 | 3½x10 | 84 lbs. | 1½ | \$18.00 |
| 62  | Valois  | 50 ft.                                    | 5 in. | 440 | 3 x10 | 83 lbs. | 1½ | 17.00   |
| 63  | Valonia | 75 ft.                                    | 4 in. | 306 | 2½x10 | 81 lbs. | 1  | 16.00   |
| 63½ | Worst   | Fitted with 2½x10 Flush Cap Cylinder....  |       |     |       |         |    |         |
|     |         | ..... Wt. 80 lbs.                         |       |     |       |         |    | 17.00   |
|     | Vacuity | Galvanizing Pump Complete....add to list  |       |     |       |         |    | 2.25    |
|     | Vacuna  | Galvanizing Cylinder only.....add to list |       |     |       |         |    | .75     |



## HAYES MOVABLE CYLINDER SINGLE ACTING WINDMILL FORCE PUMP

Fig. 711



With Three-Way and Hydraulic Regulator Cylinder. For Shallow or Deep Wells. Malleable Iron and Steel Handle, Adjustable Rod, Seamless Drawn Brass Cylinders, Brass Valve Seat and Leather Faced Brass Valve. No Stuffing Box. Anti-Freezing. Vertical Three-Way

This cut represents our Movable Cylinder Single Acting Regulator Force Pump, for automatically stopping and starting the windmill when the tank is full or any water is removed from it. It embraces many new and valuable features; is simple, strong and durable. The three-way valve is operated by a hand wheel at the spout. The hydraulic cylinder is of seamless drawn brass.

Price List as Represented by Fig. 711

| No. of Pump | Code Word | Adapted for Wells up to | Diam. Pump will work in | Gallons per hour—Forty strokes per minute | Size of Cylinder | Kind of Cylinder | Weight  | Size of Pipe tapped for | Price List |
|-------------|-----------|-------------------------|-------------------------|-------------------------------------------|------------------|------------------|---------|-------------------------|------------|
| 64          | Valor     | 50 ft.                  | 13 in.                  | 440                                       | 3 x10            | Br'ss            | 138 lbs | 1 1/4                   | \$27.00    |
| 65          | Valsa     | 75 ft.                  | 13 in.                  | 306                                       | 2 1/2 x10        | Br'ss            | 136 lbs | 1                       | 26.00      |
| 65 1/2      | Work      |                         |                         |                                           |                  |                  |         |                         | 27.00      |
|             | Vaculty   |                         |                         |                                           |                  |                  |         |                         | 2.25       |
|             | Vacuna    |                         |                         |                                           |                  |                  |         |                         | .75        |

## HAYES DOUBLE CYLINDER DOUBLE ACTING DRIVE WELL HAND FORCE PUMP

Fig. 712



For Shallow or Medium Depth Wells. Malleable Iron and Steel Handle. Adjustable Rods. Seamless Drawn Brass Cylinders. Large Polished Brass Rods and Stuffing Box. Anti-Freezing. ❀ ❀ ❀ ❀ ❀ ❀ ❀

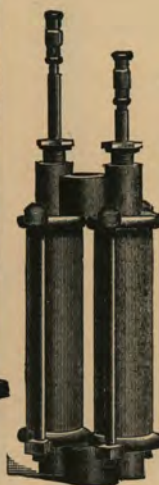
The Hayes Double Acting Double Cylinder Drive Well Force Pump fills the demand for a double cylinder pump for shallow or medium depth wells where the cylinders cannot be placed at or near the bottom of the well. Fig. 713 is the same as Fig. 712, except it has a windmill top.

Price List as Represented by Fig. 712

| No. of Pump | Code Word | Adapted for Wells up to   | Diam. Pump will work in | Gals. per hr. Forty strokes per minute | Size of Cylinder | Kind of Cylinder | Weight | Size of Pipe Tapped for | Price List       |
|-------------|-----------|---------------------------|-------------------------|----------------------------------------|------------------|------------------|--------|-------------------------|------------------|
| 10          | Valuate   | und. 30 ft                | .....                   | 880                                    | 3 x10            | Br'ss            | 87 lbs | 1½                      | \$ 16 00         |
| 11          | Value     | 50 ft                     | .....                   | 612                                    | 2½x10            | Br'ss            | 83 lbs | 1¼                      | 15 00            |
|             | Vacuity   | Galvanizing Pump complete | .....                   |                                        |                  |                  |        |                         | add to list 3 00 |
|             | Vacuna    | Galvanizing Cylinder only | .....                   |                                        |                  |                  |        |                         | add to list 1 50 |

FIG. 713 FITTED WITH WINDMILL TOP

|    |         |                           |       |     |       |       |        |    |                  |
|----|---------|---------------------------|-------|-----|-------|-------|--------|----|------------------|
| 69 | Valvata | 30 ft                     | ..... | 880 | 3 x10 | Br'ss | 89 lbs | 1½ | 17 00            |
| 70 | Valvula | 50 ft                     | ..... | 612 | 2½x10 | Br'ss | 84 lbs | 1¼ | 16 00            |
|    | Vacuity | Galvanizing Pump complete | ..... |     |       |       |        |    | add to list 3 00 |
|    | Vacuna  | Galvanizing Cylinder only | ..... |     |       |       |        |    | add to list 1 50 |





## HAYES DOUBLE CYLINDER DOUBLE ACTING DRIVE WELL HAND FORCE PUMP WITH THREE-WAY

Fig. 714



For Shallow or Medium Depth Wells. Malleable Iron and Steel Handle, Adjustable Rods, Seamless Drawn Brass Cylinders. Large Polished Brass Rods and Stuffing Box. Anti-Freezing. ✽

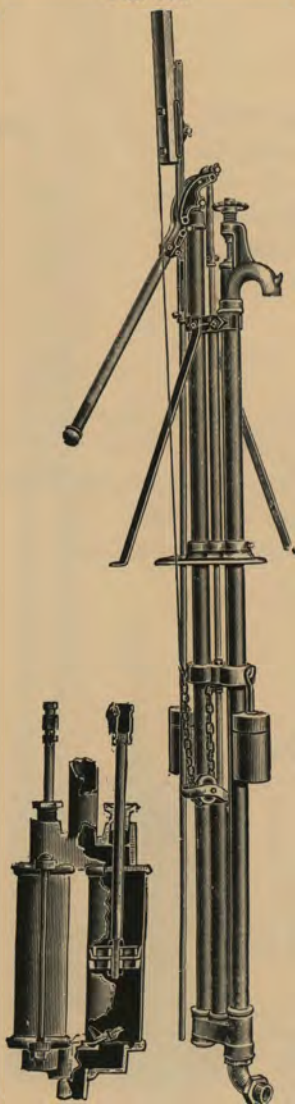
This illustrates the Hayes Double Cylinder Double Acting Drive Well Force Pump with three-way. When it is desired to force the water through an underground pipe, the three-way valve is used, and a pipe is attached to the side outlet. Fig 715 is the same as Fig. 714 except it has a windmill top.

Price List as Represented by Fig. 714

| No. of Pump                       | Code Word | Adapted for Wells up to | Diam. Pump will work in | Gals. per hr. Forty strokes per minute | Size of Cylinders | Kind of Cylinders | Weight | Size of Pipe Tapped for | Price List       |
|-----------------------------------|-----------|-------------------------|-------------------------|----------------------------------------|-------------------|-------------------|--------|-------------------------|------------------|
| 67                                | Valueless | 30 ft                   | 10 in.                  | 880                                    | 3 x10             | Br'ss             | 93 lbs | 1½                      | \$19.00          |
| 68                                | Valva     | 50 ft                   | 7 in.                   | 612                                    | 2½x10             | Br'ss             | 88 lbs | 1¼                      | 18.00            |
|                                   | Vaculty   | Galvanizing             | Pump complete.....      |                                        |                   |                   |        |                         | add to list 3.00 |
|                                   | Vacuna    | Galvanizing             | Cylinders only.....     |                                        |                   |                   |        |                         | add to list 1.50 |
| FIG. 715 FITTED WITH WINDMILL TOP |           |                         |                         |                                        |                   |                   |        |                         |                  |
| 71                                | Valylene  | 30 ft                   | 10 in.                  | 880                                    | 3 x10             | Br'ss             | 94 lbs | 1½                      | 20.00            |
| 72                                | Vamose    | 50 ft                   | 7 in.                   | 612                                    | 2½x10             | Br'ss             | 90 lbs | 1¼                      | 19.00            |
|                                   | Vaculty   | Galvanizing             | Pump complete.....      |                                        |                   |                   |        |                         | add to list 3.00 |
|                                   | Vacuna    | Galvanizing             | Cylinders only.....     |                                        |                   |                   |        |                         | add to list 1.50 |

## HAYES DOUBLE CYLINDER DOUBLE ACTING DRIVE WELL WINDMILL FORCE PUMP WITH THREE-WAY AND HYDRAULIC REGULATOR CYLINDER

Fig. 716



For Shallow or Medium Depth Wells.  
Malleable Iron and Steel Handle, Adjustable Rods, Seamless Drawn Brass Cylinders, Large Polished Brass Rods and Stuffing Box, Vertical Three-Way. Anti-Freezing ❀ ❀ ❀ ❀ ❀ ❀

This pump has our reliable windmill regulator with vertical three-way and windmill top. This pump fully controls the windmill at all times, allowing it to operate the pump when the water is used from the tank, and shutting the mill off as soon as the tank is filled. One or more tanks can be operated from the same pump by having a float valve at each tank. This pump can be used either with a mill that pulls into gear or one that pulls out of gear.

Price List as Represented by Fig. 716

| No. of Pump | Code Word | Adapted for Wells up to | Diam. Pump will work in | Gallons per hour—Forty strokes per minute | Size of Cylinders | Kind of Cylinders | Weight | Size of Pipe tapped for | Price List |
|-------------|-----------|-------------------------|-------------------------|-------------------------------------------|-------------------|-------------------|--------|-------------------------|------------|
| 73          | Vamp      | 30 ft.                  | 13 in.                  | 880                                       | 3 x 10            | Br'ss             | 150    | 1 1/4                   | \$30.00    |
| 74          | Vamper    | 50 ft.                  | 13 in.                  | 612                                       | 2 1/2 x 10        | Br'ss             | 145    | 1 1/4                   | 29.00      |
|             | Vacuity   |                         |                         |                                           |                   |                   |        |                         | 3.00       |
|             | Vacuna    |                         |                         |                                           |                   |                   |        |                         | 1.50       |



## HAYES DOUBLE ACTING FORCE PUMP WITH DOUBLE HANDLE

Fig. 717

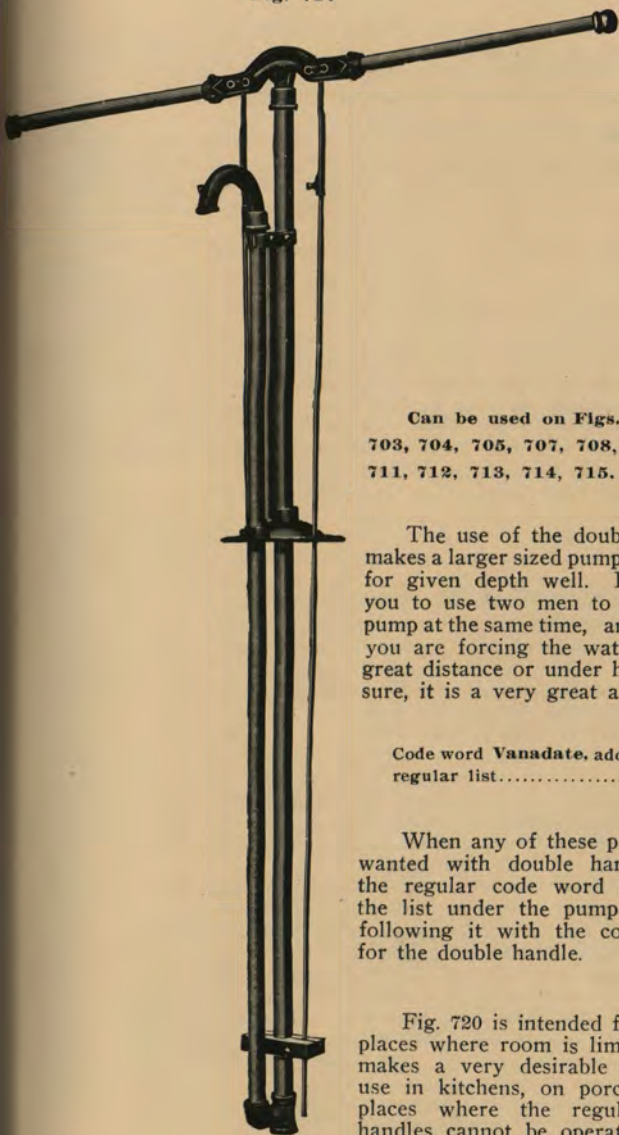


Fig. 720



Can be used on Figs. 701, 702, 703, 704, 705, 707, 708, 709, 710, 711, 712, 713, 714, 715, and 716.

The use of the double handle makes a larger sized pump adapted for given depth well. It enables you to use two men to work the pump at the same time, and where you are forcing the water to any great distance or under high pressure, it is a very great advantage.

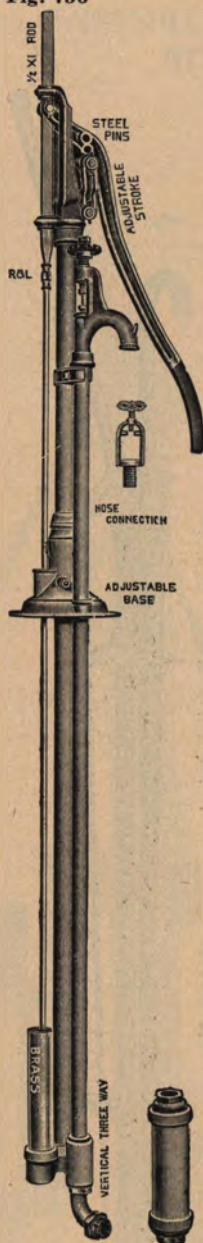
Code word **Vanadate**, add to our regular list.....\$0.75

When any of these pumps are wanted with double handle, use the regular code word given in the list under the pump desired, following it with the code word for the double handle.

Fig. 720 is intended for use in places where room is limited, and makes a very desirable stand to use in kitchens, on porches, and places where the regular style handles cannot be operated.

## HAYES DIVIDED CYLINDER DOUBLE ACTING HAND OR WINDMILL FORCE PUMP

Fig. 756



**With or Without Three-Ways. For Shallow or Deep Well. Adjustable Base and Large Steel Pins, Seamless Drawn Brass Upper Cylinder, Self-Expanding Force Bucket, Brass Valve Seat. Anti-Freezing**

The construction of our Divided Cylinder Pump causes it to throw half on each stroke of the handle, thus utilizing both upward and downward strokes and causing pump to work easier and more satisfactory. It is adapted for open, drilled, driven or tubular wells, either as a shallow or deep well pump.

**Base.**—Our adjustable base is made in halves and held together by means of two heavy steel bolts. The base is high enough to prevent any water running back into the well, and is so constructed that there can be no ice formed thereon during the winter weather to obstruct the rods, which is a very important feature.

**Force Bucket.**—Our self-expanding force bucket is a marvel of simplicity and makes our pump very easy working. The lower force nut is made with corrugations in its outer circumference, which holds the bucket in place and allows the force of the water to expand the bucket. The harder you force the water the tighter you expand the bucket. All mechanically expanded buckets must be tight enough for the greatest pressure, and when working under low pressure causes the pump to work harder than necessary.

**Steel Pins.**—These pumps are fitted with large hard steel handle pins with long bearings held so they cannot turn, insuring long life and a smooth and noiseless pump.

**Brass Valve Seat.**—Many substances, including rubber, glass, aluminum, etc., have been tested and discarded on account of chipping or cracking, or not having sufficient strength to withstand the hard service of deep well work, until to-day it is conceded by practical pump men that a good brass valve seat, properly finished and fitted in, is the most durable and reliable valve seat that can be made.

**Vertical Three-Way.**—Our vertical three-ways have a brass screw and packing box. The union ell can be turned in any direction, and by removing the union nut, the pump can be removed without disturbing the underground piping. The three-way valve can also be repaired without removing the pump from the well.

**Windmill Tops.**—These pumps are provided either with an eight inch or an adjustable stroke windmill top. They have a right and left thread in the coupling where the slide attaches to the rod. This enables you to disconnect the rod above the platform without otherwise disturbing the pump. Then unscrew the upper cylinder, which allows you to disconnect the upper plunger for repairing without taking the pump from the well.

**Anti-Freezing.**—This means that the pump is drilled with a small vent hole below the frost line, which allows the water in the stand to drop back to this point, thus preventing freezing.

**Tubular Wells.**—Our tubular well pumps are arranged so that the plunger can be withdrawn without removing the pump from the well. The upper cylinder is screwed into a bushing, and, on the removal of this, allows the plunger to be withdrawn. On windmill heads you can disconnect the rod by the right and left coupling at the side without disturbing the rest of the pump. You will find these pumps listed under the different styles of pumps.

**Cylinders.**—These pumps are furnished with brass lined or seamless drawn brass cylinders, either outside or inside cased.



## HAYES DIVIDED CYLINDER DOUBLE ACTING HAND FORCE PUMP

For Shallow or Deep Wells. Adjustable Base and Large Steel Pins. Seamless Drawn Brass Upper Cylinder, Self-Expanding Force Bucket. Brass Valve Seat. Anti-Freezing ❀ ❀ ❀ ❀

This pump can be used for open, drilled or driven wells, either as a shallow or deep well pump. It has an adjustable base and large, hard steel handle pins with long bearings, held so they cannot turn, insuring long life and a smooth and noiseless pump. It contains many new improvements and is very neat in design.



Price List as Represented by Fig. 750

| No. of Pump | Code Word  | Adapted for Wells up to                     | Diam. Pump will work in | Gals. per hour 40 strokes per minute | Size of Cylinder | Kind of Cylinders | Kind of Caps | Weight | Size of Pipe tapped for | Price List       |
|-------------|------------|---------------------------------------------|-------------------------|--------------------------------------|------------------|-------------------|--------------|--------|-------------------------|------------------|
| 99          | Veadar     | 150 ft.                                     | 5½ in                   | 306                                  | 2½ x 10          | Iron              | Outside      | 68 lbs | 1¼                      | \$12.50          |
| 100         | Veal       | 150 ft.                                     | 5½ in                   | 306                                  | 2½ x 10          | Br'ss L'd         | Outside      | 67 lbs | 1¼                      | 14.50            |
| 101         | Veck       | 150 ft.                                     | 5½ in                   | 306                                  | 2½ x 10          | Se'ml's B         | Outside      | 64 lbs | 1¼                      | 15.00            |
| 102         | Vectis     | 150 ft.                                     | 5½ in                   | 306                                  | 2½ x 12          | Se'ml's B         | Inside       | 65 lbs | 1¼                      | 15.25            |
| 102½        | Vectility  | 75 ft.                                      | 5½ in                   | 440                                  | 4 x 10           | Iron              | Outside      | 69 lbs | 1¼                      | 12.75            |
| 103         | Vector     | 75 ft.                                      | 5½ in                   | 440                                  | 3 x 10           | Br'ss L'd         | Outside      | 71 lbs | 1¼                      | 14.75            |
| 104         | Veda       | 75 ft.                                      | 5½ in                   | 440                                  | 3 x 10           | Se'ml's B         | Outside      | 66 lbs | 1¼                      | 15.25            |
| 105         | Vedalia    | 75 ft.                                      | 5½ in                   | 440                                  | 3 x 12           | Se'ml's B         | Inside       | 67 lbs | 1¼                      | 15.50            |
| 105½        | Vedaland   | 50 ft.                                      | 6½ in                   | 600                                  | 3½ x 10          | Iron              | Outside      | 71 lbs | 1½                      | 13.25            |
| 106         | Vedanga    | 50 ft.                                      | 6½ in                   | 600                                  | 3½ x 10          | Br'ss L'd         | Outside      | 72 lbs | 1½                      | 15.25            |
| 107         | Veddah     | 50 ft.                                      | 6½ in                   | 600                                  | 3½ x 10          | Se'ml's B         | Outside      | 67 lbs | 1½                      | 15.75            |
| 108         | Vedette    | 50 ft.                                      | 6½ in                   | 600                                  | 3½ x 12          | Se'ml's B         | Inside       | 67 lbs | 1½                      | 16.25            |
| 108½        | Vedialacal | 30 ft.                                      | 6½ in                   | 780                                  | 4 x 10           | Iron              | Outside      | 72 lbs | 2                       | 15.00            |
| 109         | Vedic      | 30 ft.                                      | 6½ in                   | 780                                  | 4 x 10           | Br'ss L'd         | Outside      | 77 lbs | 2                       | 17.50            |
| 110         | Veer       | 30 ft.                                      | 6½ in                   | 780                                  | 4 x 10           | Se'ml's B         | Outside      | 76 lbs | 2                       | 18.00            |
| 111         | Vega       | 30 ft.                                      | 6½ in                   | 780                                  | 4 x 12           | Se'ml's B         | Inside       | 60 lbs | 2                       | 19.00            |
| 112         | Vegetable  | Tubular Head only, Wood Rod Connection..... |                         |                                      |                  |                   |              |        | 2                       | 11.00            |
| 113         | Vegetad    | Tubular Head only, Wood Rod Connection..... |                         |                                      |                  |                   |              |        | 2½                      | 11.50            |
| 114         | Vegetad    | Tubular Head only, Wood Rod Connection..... |                         |                                      |                  |                   |              |        | 3                       | 12.00            |
|             | Vegetal    | For Iron Valve Seat.....                    |                         |                                      |                  |                   |              |        |                         | deduct from list |
|             | Vacuity    | Galvanizing Pump complete.....              |                         |                                      |                  |                   |              |        |                         | add to list      |
|             | Vacuna     | Galvanizing Cylinders only.....             |                         |                                      |                  |                   |              |        |                         | add to list      |

## HAYES DIVIDED CYLINDER DOUBLE ACTING HAND FORCE PUMP WITH THREE-WAY

Fig. 751



For Shallow or Deep Wells. Adjustable Base and Large Steel Pins. Seamless Drawn Brass Upper Cylinder. Self-Expanding Force Bucket, Brass Valve Seat. Anti-Freezing. Vertical Three-Way \* \* \* \* \*

Our Self-Expanding Force Bracket is a marvel of simplicity and makes our pump very easy working. The lower force nut is made with corrugations in its outer circumference, which holds the bucket in place and allows the force of the water to expand the bucket. The harder you force the water, the tighter you expand the bucket. All mechanically expanded buckets must be tight enough for the greatest pressure, and when working under low pressure causes the pump to work harder than necessary.

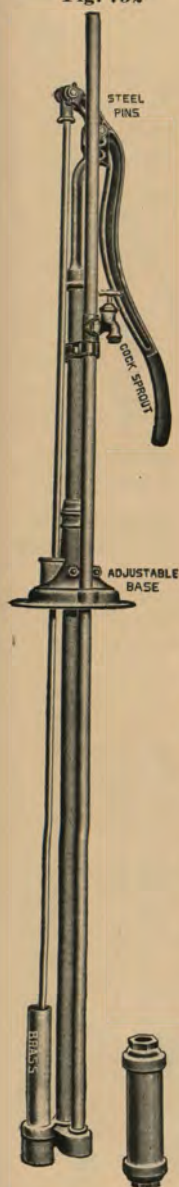
Price List as Represented by Fig. 751

| No. of Pump | Code Word | Adapted for Wells up to                    | Diam. Pump will work in | Gals. per hr. - Forty strokes per minute | Size of Cylinder | Kind of Cylinder | Kind of Caps | Weight | Size of Pipe Tapped for | Price List |
|-------------|-----------|--------------------------------------------|-------------------------|------------------------------------------|------------------|------------------|--------------|--------|-------------------------|------------|
| 115         | Vegetoal  | 150 ft                                     | 6 1/4 in                | 306                                      | 2 1/4 x 10       | Iron             | Outside      | 82 lbs | 1 1/2                   | \$ 15.50   |
| 116         | Vehicle   | 150 ft                                     | 6 1/4 in                | 306                                      | 2 1/4 x 10       | Br'ss L'd        | Outside      | 83 lbs | 1 1/2                   | 17.50      |
| 117         | Vell      | 150 ft                                     | 6 1/4 in                | 306                                      | 2 1/4 x 10       | Se'm'l's B       | Outside      | 79 lbs | 1 1/2                   | 18.00      |
| 118         | Vein      | 150 ft                                     | 6 1/4 in                | 306                                      | 2 1/4 x 12       | Se'm'l's B       | Inside       | 79 lbs | 1 1/4                   | 18.25      |
| 118 1/2     | Veined    | 75 ft                                      | 6 1/4 in                | 440                                      | 3 x 10           | Iron             | Outside      | 83 lbs | 1 1/4                   | 15.75      |
| 119         | Vela      | 75 ft                                      | 6 1/4 in                | 440                                      | 3 x 10           | Br'ss L'd        | Outside      | 85 lbs | 1 1/4                   | 17.75      |
| 120         | Velamen   | 75 ft                                      | 6 1/4 in                | 440                                      | 3 x 10           | Se'm'l's B       | Outside      | 80 lbs | 1 1/4                   | 18.25      |
| 121         | Velarium  | 75 ft                                      | 6 1/4 in                | 440                                      | 3 x 12           | Se'm'l's B       | Inside       | 80 lbs | 1 1/4                   | 18.50      |
| 121 1/2     | Velary    | 50 ft                                      | 6 1/4 in                | 600                                      | 3 1/4 x 10       | Iron             | Outside      | 86 lbs | 1 1/2                   | 16.25      |
| 122         | Velate    | 50 ft                                      | 6 1/4 in                | 600                                      | 3 1/4 x 10       | Br'ss L'd        | Outside      | 87 lbs | 1 1/2                   | 18.25      |
| 123         | Velation  | 50 ft                                      | 6 1/4 in                | 600                                      | 3 1/2 x 10       | Se'm'l's B       | Outside      | 82 lbs | 1 1/2                   | 18.75      |
| 124         | Veld      | 50 ft                                      | 6 1/4 in                | 600                                      | 3 1/2 x 12       | Se'm'l's B       | Inside       | 81 lbs | 1 1/2                   | 19.25      |
| 124 1/2     | Veldex    | 30 ft                                      | 6 1/4 in                | 780                                      | 4 x 10           | Iron             | Outside      | 87 lbs | 2                       | 18.00      |
| 125         | Velella   | 30 ft                                      | 6 1/4 in                | 780                                      | 4 x 10           | Br'ss L'd        | Outside      | 96 lbs | 2                       | 20.50      |
| 126         | Vellc     | 30 ft                                      | 6 1/4 in                | 780                                      | 4 x 10           | Se'm'l's B       | Outside      | 72 lbs | 2                       | 21.00      |
| 127         | Veliger   | 30 ft                                      | 6 1/4 in                | 780                                      | 4 x 12           | Se'm'l's B       | Inside       | 72 lbs | 2                       | 22.00      |
| 128         | Vellite   | Tubular Head only... Wood Rod Connection   |                         |                                          |                  |                  |              | 73 lbs | 2                       | 14.00      |
| 129         | Vell      | Tubular Head only... Wood Rod Connection   |                         |                                          |                  |                  |              | 73 lbs | 2 1/2                   | 14.50      |
| 130         | Vellon    | Tubular Head only... Wood Rod Connection   |                         |                                          |                  |                  |              | 73 lbs | 3                       | 15.00      |
|             | Vegetal   | For Iron Valve Seat.....deduct from list   |                         |                                          |                  |                  |              |        |                         | .25        |
|             | Vacuity   | Galvanizing Pump complete.....add to list  |                         |                                          |                  |                  |              |        |                         | 2.25       |
|             | Vacuna    | Galvanizing Cylinders only.....add to list |                         |                                          |                  |                  |              |        |                         | .75        |



## HAYES DIVIDED CYLINDER DOUBLE ACTING HAND FORCE PUMP

Fig. 752



Adjustable Base and Large Steel Handle Pins, Seamless Drawn Brass Upper Cylinder, Self-Expanding Force Bucket, Brass Valve Seat, Anti-Freezing, with Cock Spout and Back Outlet ❁ ❁ ❁ ❁ ❁

This illustrates our cock spout with back outlet, which can be attached to any of our force pumps which have the goose-neck spouts, with the exception of vertical three-way pumps. By this arrangement water can be forced to any part of a building or grounds by closing off the cock in the spout. It is designed most especially for house use where it is desirable to force the water into a bath room or tank, and when an anti-freezing pump is required.

When ordering this style of pump, order it by the regular list number, adding, "with cock spout." When ordering with the telegraph code, follow the regular list code word with the code word for the cock spout.

THEY'RE PAINTED YELLOW

Code word, **Velleity**, add to our regular price list, **\$3.00**

## HAYES DIVIDED CYLINDER DOUBLE ACTING WINDMILL FORCE PUMP

Fig. 753



For Shallow or Deep Wells. Eight Inch Stroke. Adjustable Base and Large Steel Pins. Seamless Drawn Brass Upper Cylinder. Self-Expanding Force Bucket. Brass Valve Seat. Anti-Freezing

The construction of our Divided Cylinder Pump causes it to throw half on each stroke of the handle, thus utilizing both upward and downward strokes, and causing the pump to work easier and more satisfactory. Our self expanding force bucket takes the place of the stuffing box, and instead of packing against a hard substance, the water forms a packing, expanding the bucket and preventing leakage, at the same time, keeping the bucket always lubricated and causing it to wear longer.

Price List as Represented by Fig. 753

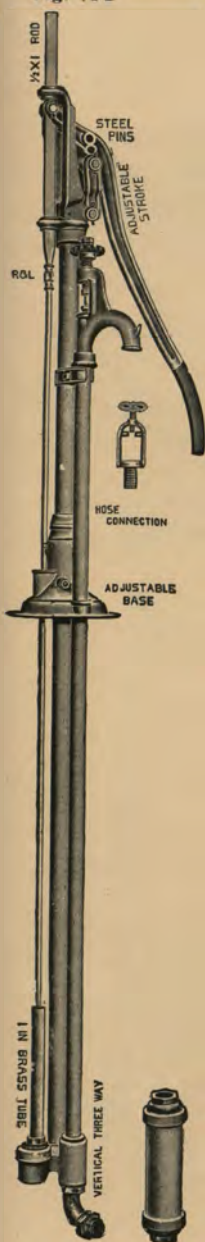
| No. of Pump | Code Word        | Adapted for Wells up to                              | Diam. Pump will work in | Gals. per hour 40 strokes per minute | Size of Cylinder | Kind of Cylinder | Kind of Caps | Weight | Size of Pipe tapped for | Price List |
|-------------|------------------|------------------------------------------------------|-------------------------|--------------------------------------|------------------|------------------|--------------|--------|-------------------------|------------|
| 131         | <b>Velloped</b>  | 150 ft.                                              | 5 5/8 in                | 405                                  | 2 1/2 x 12       | Iron             | Outside      | 82 lbs | 1 1/4                   | \$14.25    |
| 132         | <b>Vellum</b>    | 150 ft.                                              | 5 5/8 in                | 405                                  | 2 1/2 x 12       | Br'ss L'd        | Outside      | 83 lbs | 1 1/4                   | 15.75      |
| 133         | <b>Veloce</b>    | 150 ft.                                              | 5 5/8 in                | 405                                  | 2 1/2 x 12       | Se'ml's B        | Outside      | 79 lbs | 1 1/4                   | 16.25      |
| 134         | <b>Velocity</b>  | 150 ft.                                              | 5 5/8 in                | 405                                  | 2 1/2 x 14       | Se'ml's B        | Inside       | 77 lbs | 1 1/4                   | 16.50      |
| 134 1/2     | <b>Velonia</b>   | 75 ft.                                               | 5 5/8 in                | 585                                  | 3 x 12           | Iron             | Outside      | 84 lbs | 1 1/4                   | 14.50      |
| 135         | <b>Velouis</b>   | 75 ft.                                               | 5 5/8 in                | 585                                  | 3 x 12           | Br'ss L'd        | Outside      | 85 lbs | 1 1/4                   | 16.00      |
| 136         | <b>Velumen</b>   | 75 ft.                                               | 5 5/8 in                | 585                                  | 3 x 12           | Se'ml's B        | Outside      | 79 lbs | 1 1/4                   | 16.50      |
| 137         | <b>Velvet</b>    | 75 ft.                                               | 5 5/8 in                | 585                                  | 3 x 14           | Se'ml's B        | Inside       | 80 lbs | 1 1/4                   | 16.75      |
| 137 1/2     | <b>Velveteen</b> | 50 ft.                                               | 6 1/4 in                | 800                                  | 3 1/2 x 12       | Iron             | Outside      | 87 lbs | 1 1/2                   | 15.00      |
| 138         | <b>Vena</b>      | 50 ft.                                               | 6 1/4 in                | 800                                  | 3 1/2 x 12       | Br'ss L'd        | Outside      | 88 lbs | 1 1/2                   | 16.50      |
| 139         | <b>Venada</b>    | 50 ft.                                               | 6 1/4 in                | 800                                  | 3 1/2 x 12       | Se'ml's B        | Outside      | 83 lbs | 1 1/2                   | 17.25      |
| 140         | <b>Venality</b>  | 50 ft.                                               | 6 1/4 in                | 800                                  | 3 1/2 x 14       | Se'ml's B        | Inside       | 80 lbs | 1 1/2                   | 17.75      |
| 141         | <b>Vend</b>      | Tubular Head only, Wood Rod Connection. 74 lbs 2     |                         |                                      |                  |                  |              |        |                         |            |
| 142         | <b>Vendace</b>   | Tubular Head only, Wood Rod Connection. 74 lbs 2 1/2 |                         |                                      |                  |                  |              |        |                         |            |
| 143         | <b>Vendean</b>   | Tubular Head only, Wood Rod Connection. 74 lbs 3     |                         |                                      |                  |                  |              |        |                         |            |
|             | <b>Vegetal</b>   | For Iron Valve Seat.....deduct from list             |                         |                                      |                  |                  |              |        |                         |            |
|             | <b>Vacuity</b>   | Galvanizing Pump complete.....add to list            |                         |                                      |                  |                  |              |        |                         |            |
|             | <b>Vacuna</b>    | Galvanizing Cylinders only.....add to list           |                         |                                      |                  |                  |              |        |                         |            |

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# HAYES DIVIDED CYLINDER DOUBLE ACTING WINDMILL FORCE PUMP WITH THREE-WAY

Fig. 754



Eight Inch Stroke. For Shallow or Deep Wells. Adjustable Base and Large Steel Pins. Seamless Drawn Brass Upper Cylinder. Self-Expanding Force Bucket. Brass Valve Seat. Anti-Freezing. Vertical Three-Way

This pump is similar to Fig. 553, except that it has our vertical three-way valve with brass screw and packing nut. The union elbow can be turned in any direction, and by removing the union nut the pump can be removed without disturbing the under-ground piping. The three-way valve can also be repaired without removing the pump from the well.

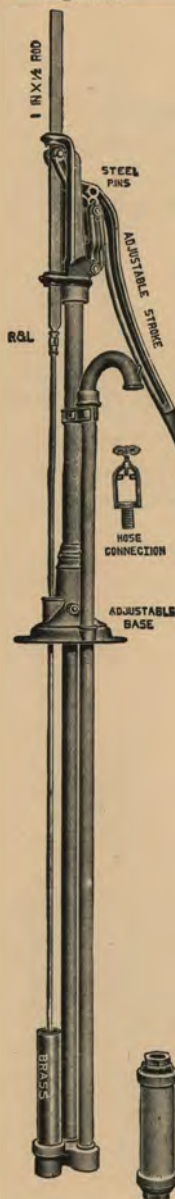
Price List as Represented by Fig. 754

| No. of Pump | Code Word  | Adapted for Wells up to                     | Diam. Pump will work in | Gals. per hr. - Forty strokes per minute | Size of Cylinder | Kind of Cylinder | Kind of Caps | Weight  | Size of Pipe Tapped for | Price List |
|-------------|------------|---------------------------------------------|-------------------------|------------------------------------------|------------------|------------------|--------------|---------|-------------------------|------------|
| 144         | Vendee     | 150 ft                                      | 6 1/4 in                | 405                                      | 2 1/2 x 12       | Iron             | Outside      | 94 lbs  | 1 1/4                   | \$17.25    |
| 145         | Vender     | 150 ft                                      | 6 1/4 in                | 405                                      | 2 1/2 x 12       | Br'ss L'd        | Outside      | 95 lbs  | 1 1/4                   | 18.75      |
| 146         | Vendible   | 150 ft                                      | 6 1/4 in                | 405                                      | 2 1/2 x 12       | Se'ml's B        | Outside      | 90 lbs  | 1 1/4                   | 19.25      |
| 147         | Vending    | 150 ft                                      | 6 1/4 in                | 405                                      | 2 1/2 x 14       | Se'ml's B        | Inside       | 89 lbs  | 1 1/4                   | 19.50      |
| 147 1/2     | Venditor   | 75 ft                                       | 6 1/4 in                | 585                                      | 3 x 12           | Iron             | Outside      | 96 lbs  | 1 1/4                   | 17.50      |
| 148         | Vendue     | 75 ft                                       | 6 1/4 in                | 585                                      | 3 x 12           | Br'ss L'd        | Outside      | 97 lbs  | 1 1/4                   | 19.00      |
| 149         | Veneer     | 75 ft                                       | 6 1/4 in                | 585                                      | 3 x 12           | Se'ml's B        | Outside      | 91 lbs  | 1 1/4                   | 19.50      |
| 150         | Venenate   | 75 ft                                       | 6 1/4 in                | 585                                      | 3 x 14           | Se'ml's B        | Inside       | 92 lbs  | 1 1/4                   | 19.75      |
| 150 1/2     | Venenencia | 50 ft                                       | 6 1/4 in                | 800                                      | 3 1/2 x 12       | Iron             | Outside      | 99 lbs  | 1 1/2                   | 18.00      |
| 151         | Venenons   | 50 ft                                       | 6 1/4 in                | 800                                      | 3 1/2 x 12       | Br'ss L'd        | Outside      | 100 lbs | 1 1/2                   | 19.50      |
| 152         | Venerable  | 50 ft                                       | 6 1/4 in                | 800                                      | 3 1/2 x 12       | Se'ml's B        | Outside      | 95 lbs  | 1 1/2                   | 20.25      |
| 153         | Venerate   | 50 ft                                       | 6 1/4 in                | 800                                      | 3 1/2 x 14       | Se'ml's B        | Inside       | 92 lbs  | 1 1/2                   | 20.75      |
| 154         | Venery     | Tubular Head only... Wood Rod Connection    |                         |                                          |                  |                  |              |         |                         |            |
| 155         | Venesect   | Tubular Head only... Wood Rod Connection    |                         |                                          |                  |                  |              |         |                         |            |
| 156         | Venesity   | Tubular Head only... Wood Rod Connection    |                         |                                          |                  |                  |              |         |                         |            |
|             | Vegetal    | For Iron Valve Seat... deduct from list     |                         |                                          |                  |                  |              |         |                         |            |
|             | Vacuity    | Galvanizing Pump complete..... add to list  |                         |                                          |                  |                  |              |         |                         |            |
|             | Vacuna     | Galvanizing Cylinders only..... add to list |                         |                                          |                  |                  |              |         |                         |            |

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## HAYES DIVIDED CYLINDER DOUBLE ACTING ADJUSTABLE STROKE WINDMILL FORCE PUMP

Fig. 755



For Shallow or Deep Wells. Adjustable Stroke, Six, Eight, and Ten-Inch. Adjustable Base and Large Steel Pins, Seamless Drawn Brass Upper Cylinder, Self-Expanding Force Bucket, Brass Valve Seat. Anti-Freezing ❄ ❄ ❄

This pump has our adjustable stroke, and can be used in shallow or deep wells, as the stroke can be set long for shallow or medium wells where a large amount of water is desired, and short so as to work easily in deep wells. A pump with a ten-inch stroke has two-thirds more capacity than the same sized cylinder pump with a six-inch stroke.

**Price List as Represented by Fig. 755**

| No. of Pump | Code Word        | Adapted for Wells up to                      | Diam. Pump will work in | Gals. per hour 40 strokes per minute | Size of Cylinder | Kind of Cylinder | Kind of Caps | Weight | Size of Pipe tapped for | Price List |
|-------------|------------------|----------------------------------------------|-------------------------|--------------------------------------|------------------|------------------|--------------|--------|-------------------------|------------|
| 157         | <b>Venetala</b>  | 150 ft.                                      | 5 5/8 in                | 510                                  | 2 1/2 x 14       | Iron             | Outside      | 89 lbs | 1 1/4                   | \$15.50    |
| 158         | <b>Venetian</b>  | 150 ft.                                      | 5 5/8 in                | 510                                  | 2 1/2 x 14       | Br'ss L'd        | Outside      | 90 lbs | 1 1/4                   | 17.00      |
| 159         | <b>Venew</b>     | 150 ft.                                      | 5 5/8 in                | 510                                  | 2 1/2 x 14       | Se'm'l's B       | Outside      | 85 lbs | 1 1/4                   | 17.50      |
| 160         | <b>Vengeance</b> | 150 ft.                                      | 5 5/8 in                | 510                                  | 2 1/2 x 16       | Se'm'l's B       | Inside       | 85 lbs | 1 1/4                   | 17.75      |
| 160 1/2     | <b>Vengeable</b> | 75 ft.                                       | 5 5/8 in                | 730                                  | 3 x 14           | Iron             | Outside      | 91 lbs | 1 1/4                   | 15.75      |
| 161         | <b>Vengeful</b>  | 75 ft.                                       | 5 5/8 in                | 730                                  | 3 x 14           | Br'ss L'd        | Outside      | 92 lbs | 1 1/4                   | 17.25      |
| 162         | <b>Venial</b>    | 75 ft.                                       | 5 5/8 in                | 730                                  | 3 x 14           | Se'm'l's B       | Outside      | 86 lbs | 1 1/4                   | 17.75      |
| 163         | <b>Veniplex</b>  | 75 ft.                                       | 5 5/8 in                | 730                                  | 3 x 16           | Se'm'l's B       | Inside       | 85 lbs | 1 1/4                   | 18.00      |
| 163 1/2     | <b>Veniprex</b>  | 50 ft.                                       | 6 1/4 in                | 1000                                 | 3 1/2 x 14       | Iron             | Outside      | 96 lbs | 1 1/2                   | 16.25      |
| 164         | <b>Venire</b>    | 50 ft.                                       | 6 1/4 in                | 1000                                 | 3 1/2 x 14       | Br'ss L'd        | Outside      | 97 lbs | 1 1/2                   | 17.75      |
| 165         | <b>Venlson</b>   | 50 ft.                                       | 6 1/4 in                | 1000                                 | 3 1/2 x 14       | Se'm'l's B       | Outside      | 87 lbs | 1 1/2                   | 18.75      |
| 166         | <b>Vennel</b>    | 50 ft.                                       | 6 1/4 in                | 1000                                 | 3 1/2 x 16       | Se'm'l's B       | Inside       | 87 lbs | 1 1/2                   | 19.25      |
| 167         | <b>Venom</b>     | Tubular Head only, Wood Rod Connection.      |                         |                                      |                  |                  |              |        |                         |            |
| 168         | <b>Venomom</b>   | Tubular Head only, Wood Rod Connection.      |                         |                                      |                  |                  |              |        |                         |            |
| 168         | <b>Venomous</b>  | Tubular Head only, Wood Rod Connection.      |                         |                                      |                  |                  |              |        |                         |            |
| 169         | <b>Vegetal</b>   | For Iron Valve Seat deduct from list.....    |                         |                                      |                  |                  |              |        |                         |            |
|             | <b>Vaculty</b>   | Galvanizing Pump complete, add to list....   |                         |                                      |                  |                  |              |        |                         |            |
|             | <b>Vacuna</b>    | Galvanizing Cylinders only, add to list..... |                         |                                      |                  |                  |              |        |                         |            |

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# HAYES DIVIDED CYLINDER DOUBLE ACTING ADJUSTABLE STROKE WINDMILL FORCE PUMP WITH THREE-WAY

Fig. 756



For Shallow or Deep Wells. Adjustable Stroke, Six, Eight, and Ten Inch. Adjustable Base and Large Steel Pins, Seamless Drawn Brass Upper Cylinder, Self-Expanding Force Bucket, Brass Valve Seat, Vertical Three-Way. Anti-Freezing

All windmills heads of this style of pump have a right and left thread in the coupling where the slide attaches to the rod. This enables you to disconnect the rod above the platform without otherwise disturbing the pump. Then unscrew the upper cylinder or tube, which allows you to disconnect the upper plunger for repairing without taking the pump from the well.

Price List as Represented by Fig. 756

| No. of Pump | Code Word | Adapted for Wells up to                     | Diam Pump will work in | Gals. per hr. Forty strokes per minute | Size of Cylinder | Kind of Cylinder | Kind of Caps | Weight  | Size of Pipe Tapped for | Price List |
|-------------|-----------|---------------------------------------------|------------------------|----------------------------------------|------------------|------------------|--------------|---------|-------------------------|------------|
| 170         | Venosaly  | 150 ft                                      | 6 1/4 in               | 510                                    | 2 1/4 x 14       | Iron             | Outside      | 96 lbs  | 1 1/2                   | \$18.50    |
| 171         | Venose    | 150 ft                                      | 6 1/4 in               | 510                                    | 2 1/4 x 14       | Br'ss L'd        | Outside      | 97 lbs  | 1 1/4                   | 20.00      |
| 172         | Venons    | 150 ft                                      | 6 1/4 in               | 510                                    | 2 1/4 x 14       | Se'm'l's B       | Outside      | 92 lbs  | 1 1/4                   | 20.50      |
| 173         | Vent      | 150 ft                                      | 6 1/4 in               | 510                                    | 2 1/4 x 16       | Se'm'l's B       | Inside       | 92 lbs  | 1 1/4                   | 20.75      |
| 173 1/2     | Ventada   | 75 ft                                       | 6 1/4 in               | 730                                    | 3 x 14           | Iron             | Outside      | 98 lbs  | 1 1/4                   | 18.75      |
| 174         | Ventage   | 75 ft                                       | 6 1/4 in               | 730                                    | 3 x 14           | Br'ss L'd        | Outside      | 98 lbs  | 1 1/4                   | 18.75      |
| 175         | Ventail   | 75 ft                                       | 6 1/4 in               | 730                                    | 3 x 14           | Se'm'l's B       | Outside      | 93 lbs  | 1 1/4                   | 20.25      |
| 176         | Venter    | 75 ft                                       | 6 1/4 in               | 730                                    | 3 x 16           | Se'm'l's B       | Inside       | 92 lbs  | 1 1/4                   | 20.75      |
| 176 1/2     | Ventiduct | 50 ft                                       | 6 1/4 in               | 1000                                   | 3 1/4 x 14       | Iron             | Outside      | 103 lbs | 1 1/2                   | 21.00      |
| 177         | Ventilate | 50 ft                                       | 6 1/4 in               | 1000                                   | 3 1/4 x 14       | Br'ss L'd        | Outside      | 104 lbs | 1 1/2                   | 19.25      |
| 178         | Ventral   | 50 ft                                       | 6 1/4 in               | 1000                                   | 3 1/4 x 14       | Se'm'l's B       | Outside      | 94 lbs  | 1 1/2                   | 20.75      |
| 179         | Ventrice  | 50 ft                                       | 6 1/4 in               | 1000                                   | 3 1/4 x 16       | Se'm'l's B       | Inside       | 94 lbs  | 1 1/2                   | 21.75      |
| 180         | Venture   | Tubular Head only... Wood Rod Connection    |                        |                                        |                  |                  |              |         |                         |            |
| 181         | Venturin  | Tubular Head only... Wood Rod Connection    |                        |                                        |                  |                  |              |         |                         |            |
| 182         | Venturous | Tubular Head only... Wood Rod Connection    |                        |                                        |                  |                  |              |         |                         |            |
|             | Vegetal   | For Iron Valve Seat..... deduct from list   |                        |                                        |                  |                  |              |         |                         |            |
|             | Vaculty   | Galvanizing Pump complete..... add to list  |                        |                                        |                  |                  |              |         |                         |            |
|             | Vacuna    | Galvanizing Cylinders only..... add to list |                        |                                        |                  |                  |              |         |                         |            |

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## HAYES BRASS PLUNGER TUBE SINGLE ACTING WINDMILL FORCE PUMP

Fig. 760



**With or Without Three-Way. For Shallow or Deep Wells. Adjustable Base and Large Steel Pins, Seamless Drawn Brass One Inch Plunger Tube, Self-Expanding Force Bucket, Brass Valve Seat. Anti-Freezing ❄️**

Our Brass Plunger Tube Pump has an advantage over the ordinary stuffing-box in that the plunger buckets are self-expanding, hence require less attention. The power required to discharge water from the plunger tube on the down stroke is no greater than that required to force the piston through the ordinary stuffing-box.

**Base.**—Our adjustable base is made in halves and held together by means of two heavy steel bolts. The base is high enough to prevent any water running back into the well, and is so constructed that there can be no ice formed thereon during the winter weather to obstruct the rods, which is a very important feature.

**Force Bucket.**—Our self-expanding force bucket is a marvel of simplicity and makes our pumps very easy working. The lower force nut is made with corrugations in its outer circumference, which holds the bucket in place and allows the force of the water to expand the bucket. The harder you force the water the tighter you expand the bucket. All mechanically expanded buckets must be tight enough for the greatest pressure, and when working under low pressure causes the pump to work harder than necessary.

**Steel Pins.**—These pumps are fitted with large hard steel handle pins with long bearings held so they cannot turn, insuring long life and a smooth and noiseless pump.

**Brass Valve Seats.**—Many substances, including rubber, glass, aluminum, etc., have been tested and discarded on account of chipping or cracking, or not having sufficient strength to withstand the hard service of deep well work, until to-day it is conceded by practical pump men that a good brass valve seat, properly finished and fitted in, is the most durable and reliable valve seat that can be made.

**Vertical Three-Way.**—Our vertical three-ways have a brass screw and packing box. The union ell can be turned in any direction, and by removing the union nut, the pump can be removed without disturbing the underground piping. The three-way valve can also be repaired without removing the pump from the well.

**Windmill Top.**—These pumps are provided either with an eight inch or an adjustable stroke windmill top. They have a right and left hand thread in the coupling where the slide attaches to the rod. This enables you to disconnect the rod above the platform without otherwise disturbing the pump. Then unscrew the upper tube which allows you to disconnect the upper plunger for repairing without taking the pump from the well.

**Tubular Wells.**—Our tubular well pumps are arranged so that the plunger can be withdrawn without removing the pump from the well. The brass plunger tube is screwed into a bushing, and on the removal of this allows the plunger to be withdrawn. On windmill heads you can disconnect the rod by the right and left coupling at the slide, without disturbing the rest of the pump. You will find these pumps listed under each different style.

**Regulator Pumps.**—This pump is made with our windmill regulator which controls the mill at all times, allowing it to operate the pump when the water is used from the tank and shutting the mill off as soon as the tank is filled.

**Anti-Freezing.**—This means that the pump is drilled with a small vent hole below the frost line, which allows the water in the stand to drop back to this point, thus preventing freezing.

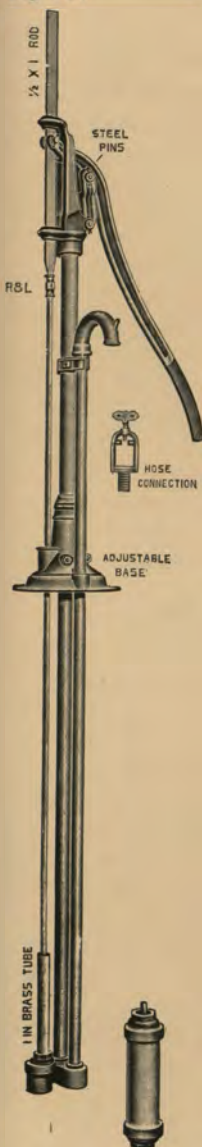
**Cylinders.**—These pumps are furnished with iron brass lined or either outside or inside cap seamless drawn brass cylinders, either outside or inside capped.

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## HAYES BRASS PLUNGER TUBE SINGLE ACTING WINDMILL FORCE PUMP

Fig. 757



For Shallow or Deep Wells. Eight Inch Stroke. Adjustable Base and Large Steel Pins. Seamless Drawn Brass One Inch Plunger Tube. Self Expanding Force Bucket. Brass Valve Seat. Anti-Freezing ❀ ❀ ❀ ❀ ❀ ❀ ❀ ❀

This pump shows our Single Acting One Inch Brass Plunger Tube, which has the advantage over the ordinary stuffing box, in that the plunger buckets are self expanding, hence require less attention. The power required to discharge the water from the plunger tube on the down stroke is no greater than that required to force the piston through the ordinary stuffing box.

Price List as Represented by Fig. 757

| No. of Pump | Code Word | Adapted for Wells up to       | Diam. Pump will work in | Gals. per hour 40 strokes per minute | Size of Cylinder | Kind of Cylinder | Kind of Caps | Weight | Size of Pipe tapped for | Price List |
|-------------|-----------|-------------------------------|-------------------------|--------------------------------------|------------------|------------------|--------------|--------|-------------------------|------------|
| 183         | Venue     | 150 ft                        | 5 5/8 in                | 405                                  | 2 1/4 x 12       | Iron             | Outside      | 80 lbs | 1 1/4                   | \$13.25    |
| 184         | Venule    | 150 ft                        | 5 5/8 in                | 405                                  | 2 1/4 x 12       | Br'ss L'd        | Outside      | 81 lbs | 1 1/4                   | 14.75      |
| 185         | Venus     | 150 ft                        | 5 5/8 in                | 405                                  | 2 1/4 x 12       | Se'ml's B        | Outside      | 75 lbs | 1 1/4                   | 15.25      |
| 186         | Veracity  | 150 ft                        | 5 5/8 in                | 405                                  | 2 1/4 x 14       | Se'ml's B        | Inside       | 75 lbs | 1 1/4                   | 15.50      |
| 186 1/2     | Veracose  | 75 ft                         | 5 5/8 in                | 585                                  | 3 x 12           | Iron             | Outside      | 82 lbs | 1 1/4                   | 13.50      |
| 187         | Veranda   | 75 ft                         | 5 5/8 in                | 585                                  | 3 x 12           | Br'ss L'd        | Outside      | 83 lbs | 1 1/4                   | 15.00      |
| 188         | Veratric  | 75 ft                         | 5 5/8 in                | 585                                  | 3 x 12           | Se'ml's B        | Outside      | 77 lbs | 1 1/4                   | 15.50      |
| 189         | Veratrol  | 75 ft                         | 5 5/8 in                | 585                                  | 3 x 14           | Se'ml's B        | Inside       | 77 lbs | 1 1/4                   | 15.75      |
| 189 1/2     | Veratrum  | 50 ft                         | 6 1/4 in                | 800                                  | 3 1/2 x 12       | Iron             | Outside      | 85 lbs | 1 1/2                   | 14.00      |
| 190         | Verb      | 50 ft                         | 6 1/4 in                | 800                                  | 3 1/2 x 12       | Br'ss L'd        | Outside      | 86 lbs | 1 1/2                   | 15.50      |
| 191         | Verbal    | 50 ft                         | 6 1/4 in                | 800                                  | 3 1/2 x 12       | Se'ml's B        | Outside      | 80 lbs | 1 1/2                   | 16.25      |
| 192         | Verbatim  | 50 ft                         | 6 1/4 in                | 800                                  | 3 1/2 x 14       | Se'ml's B        | Inside       | 78 lbs | 1 1/2                   | 16.75      |
| 193         | Verbena   | Tubular, Head only            | Wood Rod Connection     |                                      |                  |                  |              | 68 lbs | 2                       | 11.50      |
| 194         | Verbiage  | Stand only                    |                         |                                      |                  |                  |              | 68 lbs | 1 1/2                   | 11.00      |
| 195         | Verbielde | Stand only                    |                         |                                      |                  |                  |              | 68 lbs | 1 1/2                   | 12.00      |
| 196         | Verbide   | Tubular, Head only            | Wood Rod Connection     |                                      |                  |                  |              | 68 lbs | 2 1/2                   | 12.00      |
| 197         | Verbide   | Tubular, Head only            | Wood Rod Connection     |                                      |                  |                  |              | 68 lbs | 3                       | 12.50      |
|             | Vegetal   | For Iron Valve Seat           |                         |                                      |                  |                  |              |        |                         | .25        |
|             | Vacuity   | For Galvanizing Pump complete |                         |                                      |                  |                  |              |        |                         | 2.25       |
|             | Vacuna    | For Galvanizing Pump complete |                         |                                      |                  |                  |              |        |                         | .75        |

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## HAYES BRASS PLUNGER TUBE SINGLE ACTING WINDMILL FORCE PUMP WITH THREE-WAY

Fig. 758



For Shallow or Deep Wells. Eight Inch Stroke. Adjustable Base and Large Steel Pins. Seamless Drawn Brass One Inch Plunger Tube. Self-Expanding Force Bucket. Brass Valve Seat. Anti-Freezing. Vertical Three-Way

This is our regular single acting windmill force pump with three-way. It is a perfect and easy working pump equipped with all the latest improvements, vertical three-way, brass screw and packing nut, adjustable base and large steel pins. It throws a free, steady stream and is a durable, first class pump.

Price List as Represented by Fig. 758

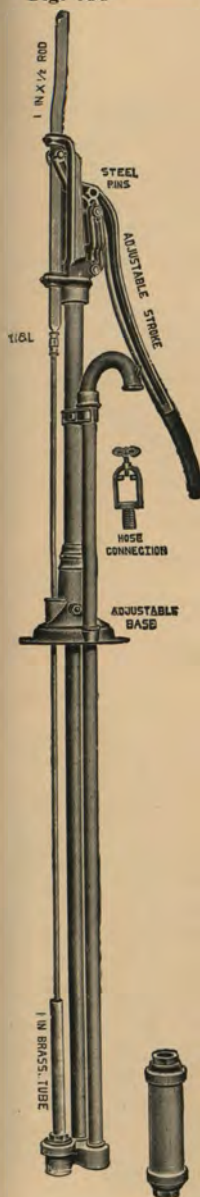
| No. of Pump | Code Word  | Adapted for Wells up to                     | Diam. Pump will work in | Gals. per hr. Forty strokes per minute | Size of Cylinder | Kind of Cylinder | Kind of Caps | Weight | Size of Pipe Tapped for | Price List |
|-------------|------------|---------------------------------------------|-------------------------|----------------------------------------|------------------|------------------|--------------|--------|-------------------------|------------|
| 198         | Verbidus   | 150 ft                                      | 6 1/4 in                | 405                                    | 2 1/2 x 12       | Iron             | Outside      | 93 lbs | 1 1/4                   | \$16.25    |
| 199         | Verbify    | 150 ft                                      | 6 1/4 in                | 405                                    | 2 1/2 x 12       | Br'ss L'd        | Outside      | 94 lbs | 1 1/4                   | 17.75      |
| 200         | Verbose    | 150 ft                                      | 6 1/4 in                | 405                                    | 2 1/2 x 12       | Se'm'l's B       | Outside      | 89 lbs | 1 1/4                   | 18.25      |
| 201         | Verd       | 150 ft                                      | 6 1/4 in                | 405                                    | 2 1/2 x 14       | Se'm'l's B       | Inside       | 89 lbs | 1 1/4                   | 18.50      |
| 201 1/2     | Verdandi   | 75 ft                                       | 6 1/4 in                | 585                                    | 3 x 12           | Iron             | Outside      | 95 lbs | 1 1/4                   | 16.50      |
| 202         | Verdant    | 75 ft                                       | 6 1/4 in                | 585                                    | 3 x 12           | Br'ss L'd        | Outside      | 96 lbs | 1 1/4                   | 18.00      |
| 203         | Verdea     | 75 ft                                       | 6 1/4 in                | 585                                    | 3 x 12           | Se'm'l's B       | Outside      | 90 lbs | 1 1/4                   | 18.50      |
| 204         | Verdict    | 75 ft                                       | 6 1/4 in                | 585                                    | 3 x 14           | Se'm'l's B       | Inside       | 91 lbs | 1 1/4                   | 18.75      |
| 204 1/2     | Verdigris  | 50 ft                                       | 6 1/4 in                | 800                                    | 3 1/2 x 12       | Iron             | Outside      | 98 lbs | 1 1/2                   | 17.00      |
| 205         | Verdine    | 50 ft                                       | 6 1/4 in                | 800                                    | 3 1/2 x 12       | Br'ss L'd        | Outside      | 99 lbs | 1 1/2                   | 18.50      |
| 206         | Verdun     | 50 ft                                       | 6 1/4 in                | 800                                    | 3 1/2 x 12       | Se'm'l's B       | Outside      | 94 lbs | 1 1/2                   | 19.25      |
| 207         | Verdure    | 50 ft                                       | 6 1/4 in                | 800                                    | 3 1/2 x 14       | Se'm'l's B       | Inside       | 91 lbs | 1 1/2                   | 19.75      |
| 208         | Verge      | Tubular Head only... Wood Rod Connection    |                         |                                        |                  |                  |              | 81 lbs | 2                       | 14.50      |
| 209         | Vergency   | Stand only.....                             |                         |                                        |                  |                  |              | 81 lbs | 1 1/4                   | 14.00      |
| 210         | Vergent    | Stand only.....                             |                         |                                        |                  |                  |              | 81 lbs | 1 1/2                   | 15.00      |
| 211         | Verger     | Tubular Head only... Wood Rod Connection    |                         |                                        |                  |                  |              | 81 lbs | 2 1/2                   | 15.00      |
| 212         | Vergillian | Tubular Head only... Wood Rod Connection    |                         |                                        |                  |                  |              | 81 lbs | 3                       | 15.50      |
|             | Vegetal    | For Iron Valve Seat..... deduct from list   |                         |                                        |                  |                  |              |        |                         | .25        |
|             | Vaculty    | Galvanizing Pump complete..... add to list  |                         |                                        |                  |                  |              |        |                         | 2.25       |
|             | Vacuna     | Galvanizing Cylinders only..... add to list |                         |                                        |                  |                  |              |        |                         | .75        |

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## HAYES BRASS PLUNGER TUBE SINGLE ACTING ADJUSTABLE STROKE WINDMILL FORCE PUMP

Fig. 759



For Shallow or Deep Wells. Adjustable Stroke, Six, Eight, and Ten Inch. Adjustable Base and Large Steel Pins, Seamless Drawn Brass One Inch Plunger Tube, Self-Expanding Force Bucket. Brass Valve Seat. Anti-Freezing ❄️❄️❄️

All our tubular well pumps are arranged so that the plunger can be withdrawn without removing the pump from the well. The upper cylinder, plunger tube or stuffing box is screwed into a bushing, and on the removal of this bushing, allows the plunger to be withdrawn. On windmill heads you can disconnect the rod by the right and left coupling at the slide without disturbing the rest of the pump.

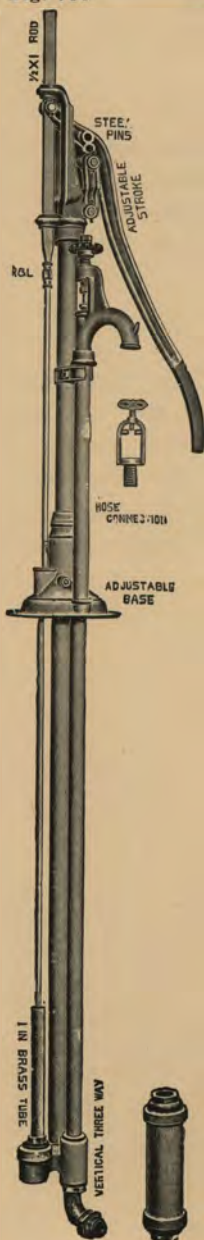
Price List as Represented by Fig. 759

| No. of Pump | Code Word | Adapted for Wells up to   | Diam. Pump will work in | Gals. per hour 40 strokes per minute | Size of Cylinder | Kind of Cylinder | Kind of Caps | Weight | Size of Pipe tapped for | Price List |
|-------------|-----------|---------------------------|-------------------------|--------------------------------------|------------------|------------------|--------------|--------|-------------------------|------------|
| 213         | Veridical | 150 ft.                   | 5 5/8 in                | 510                                  | 2 1/2 x 14       | Iron             | Outside      | 85 lbs | 1 1/4                   | \$14.50    |
| 214         | Verify    | 150 ft.                   | 5 5/8 in                | 510                                  | 2 1/2 x 14       | Br'ss L'd        | Outside      | 85 lbs | 1 1/4                   | 16.00      |
| 215         | Verine    | 150 ft.                   | 5 5/8 in                | 510                                  | 2 1/2 x 14       | Se'm'l's B       | Outside      | 80 lbs | 1 1/4                   | 16.50      |
| 216         | Veritable | 150 ft.                   | 5 5/8 in                | 510                                  | 2 1/2 x 16       | Se'm'l's B       | Inside       | 80 lbs | 1 1/4                   | 16.75      |
| 216 1/2     | Veritas   | 75 ft.                    | 5 5/8 in                | 730                                  | 3 x 14           | Iron             | Outside      | 86 lbs | 1 1/4                   | 14.75      |
| 217         | Verjuice  | 75 ft.                    | 5 5/8 in                | 730                                  | 3 x 14           | Br'ss L'd        | Outside      | 87 lbs | 1 1/4                   | 16.25      |
| 218         | Vermeil   | 75 ft.                    | 5 5/8 in                | 730                                  | 3 x 14           | Se'm'l's B       | Outside      | 81 lbs | 1 1/4                   | 16.75      |
| 219         | Vermes    | 75 ft.                    | 5 5/8 in                | 730                                  | 3 x 16           | Se'm'l's B       | Inside       | 80 lbs | 1 1/4                   | 17.00      |
| 219 1/2     | Vermian   | 50 ft.                    | 6 1/2 in                | 1000                                 | 3 1/2 x 14       | Iron             | Outside      | 96 lbs | 1 1/2                   | 15.25      |
| 220         | Vermil    | 50 ft.                    | 6 1/2 in                | 1000                                 | 3 1/2 x 14       | Br'ss L'd        | Outside      | 97 lbs | 1 1/2                   | 16.75      |
| 221         | Vernal    | 50 ft.                    | 6 1/2 in                | 1000                                 | 3 1/2 x 14       | Se'm'l's B       | Outside      | 87 lbs | 1 1/2                   | 17.75      |
| 222         | Vernate   | 50 ft.                    | 6 1/2 in                | 1000                                 | 3 1/2 x 16       | Se'm'l's B       | Inside       | 87 lbs | 1 1/2                   | 18.25      |
| 223         | Vernier   | Tubular, Head only        | Wood Rod Connection     |                                      |                  |                  |              | 72 lbs | 2                       | 12.50      |
| 224         | Vernonia  | Stand only                |                         |                                      |                  |                  |              | 71 lbs | 1 1/4                   | 12.00      |
| 225         | Vernunft  | Stand only                |                         |                                      |                  |                  |              | 76 lbs | 1 1/2                   | 13.00      |
| 226         | Veronese  | Tubular, Head only        | Wood Rod Connection     |                                      |                  |                  |              | 76 lbs | 2 1/2                   | 13.00      |
| 227         | Veronica  | Tubular, Head only        | Wood Rod Connection     |                                      |                  |                  |              | 76 lbs | 3                       | 13.50      |
|             | Vegetal   | For Iron Valve Seat       |                         |                                      |                  |                  |              |        |                         | 2.25       |
|             | Vacuity   | Galvanizing Pump complete |                         |                                      |                  |                  |              |        |                         | 2.25       |
|             | Vacuna    | Galvanizing Cylinder only |                         |                                      |                  |                  |              |        |                         | .75        |

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## HAYES BRASS PLUNGER TUBE SINGLE ACTING ADJUSTABLE STROKE WINDMILL FORCE PUMP WITH THREE-WAY

Fig. 760



For Shallow or Deep Wells. Adjustable Stroke, Six, Eight, and Ten Inch. Adjustable Base and Large Steel Pins. Seamless Drawn Brass One Inch Plunger Tube. Self-Expanding Force Bucket. Brass Valve Seat. Anti-Freezing. Vertical Three-Way

This pump combines all the features required in a reliable windmill adjustable stroke force pump with three-way, being neat in design, strong and compact. It is the easiest pump on the market to handle, and at the same time one of the strongest. A ten-inch stroke pump has two-thirds more capacity than the same sized cylinder pump with a six-inch stroke.

Price List as Represented by Fig. 760

| No. of Pump | Code Word | Adapted for Wells up to                     | Diam. Pump will work in | Gals. per hr. Forty strokes per minute | Size of Cylinder | Kind of Cylinder | Kind of Caps | Weight  | Size of Pipe Tapped for | Price List |
|-------------|-----------|---------------------------------------------|-------------------------|----------------------------------------|------------------|------------------|--------------|---------|-------------------------|------------|
| 228         | Verray    | 150 ft                                      | 6 1/4 in                | 510                                    | 2 1/2 x 14       | Iron             | Outside      | 99 lbs  | 1 1/4                   | \$17.50    |
| 229         | Verrugas  | 150 ft                                      | 6 1/4 in                | 510                                    | 2 1/2 x 14       | Br'ss L'd        | Outside      | 100 lbs | 1 1/4                   | 19.00      |
| 230         | Versant   | 150 ft                                      | 6 1/4 in                | 510                                    | 2 1/2 x 14       | Se'm'l's B       | Outside      | 95 lbs  | 1 1/4                   | 19.50      |
| 231         | Versatile | 150 ft                                      | 6 1/4 in                | 510                                    | 2 1/2 x 16       | Se'm'l's B       | Inside       | 95 lbs  | 1 1/4                   | 19.75      |
| 231 1/2     | Versation | 75 ft                                       | 6 1/4 in                | 730                                    | 3 x 14           | Iron             | Outside      | 101 lbs | 1 1/4                   | 17.75      |
| 232         | Verse     | 75 ft                                       | 6 1/4 in                | 730                                    | 3 x 14           | Br'ss L'd        | Outside      | 102 lbs | 1 1/4                   | 19.25      |
| 233         | Versicle  | 75 ft                                       | 6 1/4 in                | 730                                    | 3 x 14           | Se'm'l's B       | Outside      | 96 lbs  | 1 1/4                   | 19.75      |
| 234         | Versify   | 75 ft                                       | 6 1/4 in                | 730                                    | 3 x 16           | Se'm'l's B       | Inside       | 95 lbs  | 1 1/4                   | 20.00      |
| 234 1/2     | Versine   | 50 ft                                       | 6 1/4 in                | 1000                                   | 3 1/2 x 14       | Iron             | Outside      | 106 lbs | 1 1/2                   | 18.25      |
| 235         | Version   | 50 ft                                       | 6 1/4 in                | 1000                                   | 3 1/2 x 14       | Br'ss L'd        | Outside      | 107 lbs | 1 1/2                   | 19.75      |
| 236         | Versor    | 50 ft                                       | 6 1/4 in                | 1000                                   | 3 1/2 x 14       | Se'm'l's B       | Outside      | 97 lbs  | 1 1/2                   | 20.75      |
| 237         | Verstand  | 50 ft                                       | 6 1/4 in                | 1000                                   | 3 1/2 x 16       | Se'm'l's B       | Inside       | 97 lbs  | 1 1/2                   | 21.25      |
| 238         | Versus    | Tubular, Head only.. Wood Rod Connection    |                         |                                        |                  |                  |              | 86 lbs  | 2                       | 15.50      |
| 239         | Vert      | Stand only.....                             |                         |                                        |                  |                  |              | 86 lbs  | 1 1/4                   | 15.00      |
| 240         | Vertant   | Stand only.....                             |                         |                                        |                  |                  |              | 86 lbs  | 1 1/2                   | 16.00      |
| 241         | Vertast   | Tubular, Head only.. Wood Rod Connection    |                         |                                        |                  |                  |              | 86 lbs  | 2 1/2                   | 16.00      |
| 242         | Vertatal  | Tubular, Head only.. Wood Rod Connection    |                         |                                        |                  |                  |              | 86 lbs  | 3                       | 16.50      |
|             | Vegetal   | For Iron Valve Seat..... deduct from list   |                         |                                        |                  |                  |              |         |                         | .25        |
|             | Vacuity   | Galvanizing Pump complete..... add to list  |                         |                                        |                  |                  |              |         |                         | 2.25       |
|             | Vacuna    | Galvanizing Cylinders only..... add to list |                         |                                        |                  |                  |              |         |                         | .75        |

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## HAYES BRASS PLUNGER TUBE SINGLE ACTING ADJUSTABLE STROKE WINDMILL FORCE PUMP

Fig. 761

### WITH THREE-WAY AND HYDRAULIC REGULATOR

For Shallow or Deep Wells, Adjustable Stroke, Six, Eight and Ten Inch. Adjustable Base and Large Steel Pins. Seamless Drawn Brass One Inch Plunger Tube and Regulator Cylinder. Self-Expanding Force Bucket. Brass Valve Seat. Vertical Three-Way, Anti-Freezing. ❀ ❀ ❀ ❀ ❀ ❀ ❀

Our regulator pump can be used for windmills that pull out of gear, or for those that pull into gear. For mills that pull into gear, remove the chain from the pulley, attach the furl wire to the chain, and put enough weight on to hold the mill in gear. All levers, cranks, springs, safety valves and all unnecessary parts above the platform, so general in this class of pumps, have been done away with. There is no extra pit required for our hydraulic cylinder for tubular or drive wells. By removing two cap screws the pulley yoke can be removed, allowing the plunger to be repaired. Our automatic relief is so arranged that when the windmill brake does not operate, the plunger is forced past the relief vents, which allows the surplus water to escape, the mill being held out of gear all the while, thus preventing any possible chance of breakage.

Price List as Represented by Fig. 761

| No. of Pump | Code Word   | Adapted for Wells up to        | Diam. Pump will work in | Gals. per hr. — Forty strokes per minute | Size of Cylinder    | Kind of Cylinder | Kind of Caps | Weight  | Size of Pipe Tapped for | Price List |
|-------------|-------------|--------------------------------|-------------------------|------------------------------------------|---------------------|------------------|--------------|---------|-------------------------|------------|
| 243         | Vertawal    | 150 ft                         | 14 in.                  | 510                                      | 2½ x 14             | Iron             | Outside      | 141 lbs | 1½                      | \$26.50    |
| 244         | Vertebra    | 150 ft                         | 14 in.                  | 510                                      | 2½ x 14             | Br'ss L'd        | Outside      | 142 lbs | 1½                      | 28.00      |
| 245         | Vertex      | 150 ft                         | 14 in.                  | 510                                      | 2½ x 14             | Se'ml's B        | Outside      | 137 lbs | 1½                      | 28.50      |
| 246         | Vertical    | 150 ft                         | 14 in.                  | 510                                      | 2½ x 16             | Se'ml's B        | Inside       | 137 lbs | 1½                      | 28.75      |
| 246½        | Verticality | 75 ft                          | 14 in.                  | 730                                      | 3 x 14              | Iron             | Outside      | 143 lbs | 1½                      | 26.75      |
| 247         | Vertigo     | 75 ft                          | 14 in.                  | 730                                      | 3 x 14              | Br'ss L'd        | Outside      | 144 lbs | 1½                      | 28.25      |
| 248         | Verules     | 75 ft                          | 14 in.                  | 730                                      | 3 x 14              | Se'ml's B        | Outside      | 138 lbs | 1½                      | 28.75      |
| 249         | Vervain     | 75 ft                          | 14 in.                  | 730                                      | 3 x 16              | Se'ml's B        | Inside       | 137 lbs | 1½                      | 29.00      |
| 250         | Verve       | Tubular Head only...           |                         |                                          | Wood Rod Connection |                  |              | 128 lbs | 2                       | 24.50      |
| 251         | Vervet      | Stand only.....                |                         | 1½                                       | Hydraulic Cylinder  |                  |              | 128 lbs | 1½                      | 24.00      |
| 252         | Vesania     | Stand only.....                |                         | 2½                                       | Hydraulic Cylinder  |                  |              | 128 lbs | 1½                      | 25.00      |
| 253         | Vesarex     | Tubular, Head only...          |                         |                                          | Wood Rod Connection |                  |              | 128 lbs | 2½                      | 25.00      |
| 254         | Vesatal     | Tubular, Head only...          |                         |                                          | Wood Rod Connection |                  |              | 128 lbs | 3                       | 25.50      |
|             | Vegetal     | For Iron Valve Seat.....       |                         |                                          | deduct from list    |                  |              |         |                         | .25        |
|             | Vacuity     | Galvanizing Pump complete..... |                         |                                          | add to list         |                  |              |         |                         | 2.25       |
|             | Vacuna      | Galvanizing Cylinder only..... |                         |                                          | add to list         |                  |              |         |                         | .75        |

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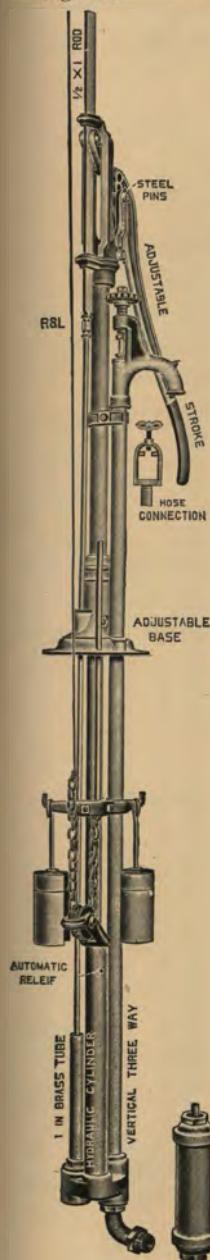
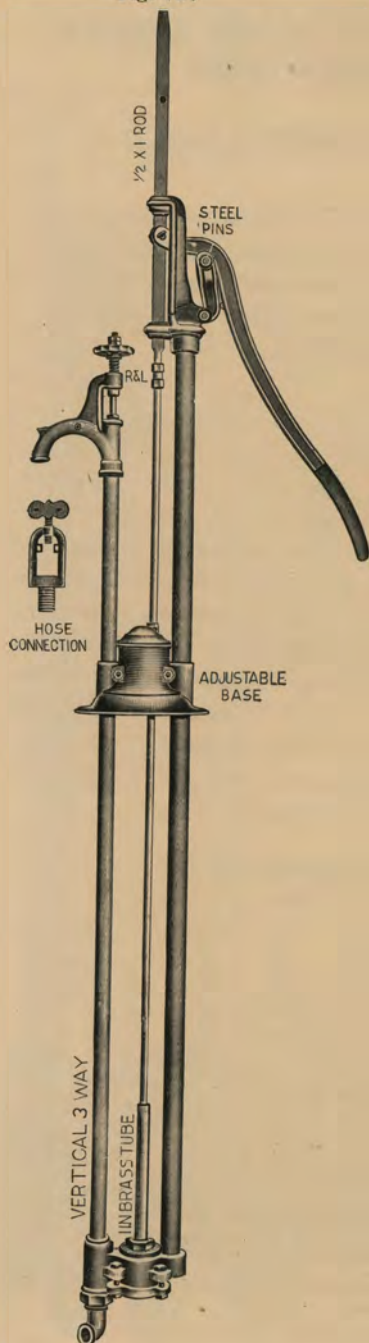


Fig. 767



## HAYES BRASS PLUNGER TUBE SINGLE ACTING WINDMILL FORCE PUMP WITH THREE-WAY

For Shallow or Deep Wells. Eight Inch or Adjustable Six, Eight or Ten Inch Stroke. Adjustable Base, Large Steel Pins, Seamless Drawn Brass One Inch Plunger Tube, Self-Expanding Force Bucket. Anti-Freezing. Vertical Three-Way

This pump is especially adapted for tubular well work. The plunger can be withdrawn through the base without removing the pump. It is furnished with flange union at bottom, tapped 1¼, 1½, 2, 2½ and 3 inches.

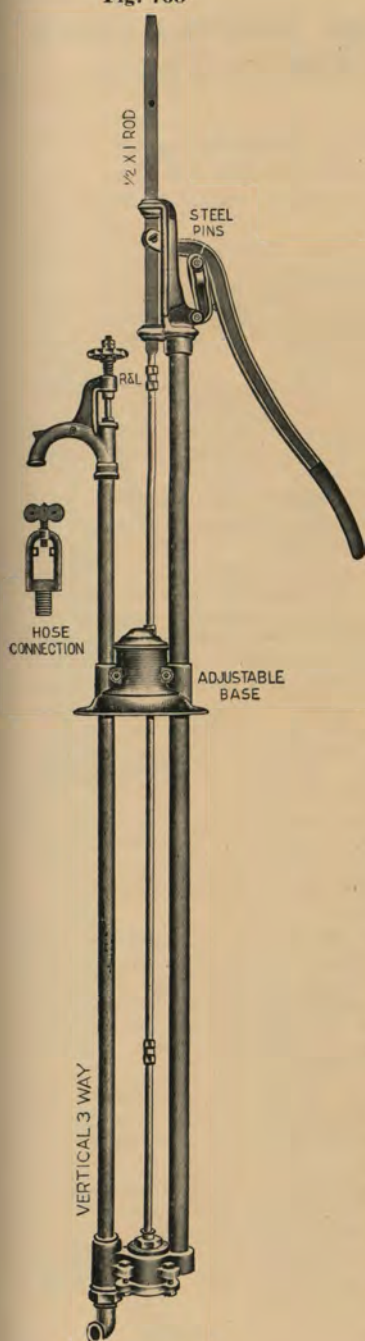
### Price List as Represented by Fig. 767 4-ft. Set Length

| No. of Pump | Code    | Description                                       | Stroke | Tapped | Price List |
|-------------|---------|---------------------------------------------------|--------|--------|------------|
| 330         | Vodka   | Head only.....                                    | 8 in.  | 1¼     | \$14.00    |
| 331         | Vodu    | Head only.....                                    | 8 in.  | 1½     | 14.00      |
| 332         | Voltian | Head only, Tubular..                              | 8 in.  | 2      | 14.50      |
| 333         | Vogle   | Head only, Tubular..                              | 8 in.  | 2½     | 14.50      |
| 334         | Vogue   | Head only, Tubular..                              | 8 in.  | 3      | 14.50      |
| 335         | Voice   | Head only.....                                    | Adj.   | 1¼     | 15.00      |
| 336         | Void    | Head only.....                                    | Adj.   | 1½     | 15.00      |
| 337         | Voix    | Head only, Tubular..                              | Adj.   | 2      | 15.50      |
| 338         | Vol     | Head only, Tubular..                              | Adj.   | 2½     | 15.50      |
| 339         | Volage  | Head only, Tubular..                              | Adj.   | 3      | 15.50      |
| 340         | Volans  | For 2½ or 3x12 Brass Lower Cyl-<br>inder add..... |        |        | 5.00       |
| 341         | Volar   | For 2½ or 3x14 Brass Lower Cyl-<br>inder add..... |        |        | 6.00       |

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Fig. 768



## HAYES STUFFING BOX SINGLE ACTING WINDMILL FORCE PUMP WITH THREE-WAY

For Shallow or Deep Wells. Eight Inch or Adjustable Six, Eight or Ten Inch Stroke. Adjustable Base, Large Steel Pins, Large Polished Rod with Brass Packing Box. Anti-Freezing. Vertical Three-Way

This pump is especially adapted for tubular well work. The plunger can be withdrawn through the base without removing the pump. It is furnished with flange union at bottom, tapped 1¼, 1½, 2, 2½ and 3 inches.

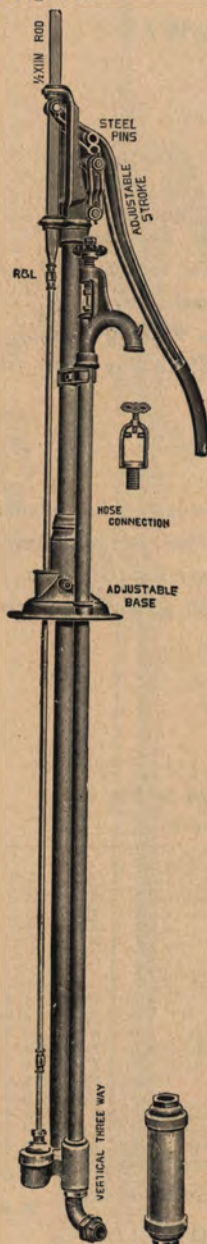
Price List as Represented by Fig. 768  
4-ft. Set Length

| No. of Pump | Code     | Description                                  | Stroke | Tapped | Price List |
|-------------|----------|----------------------------------------------|--------|--------|------------|
| 350         | Volatile | Head only .....                              | 8 in   | 1¼     | \$14.00    |
| 351         | Volcanic | Head only.....                               | 8 in   | 1½     | 14.00      |
| 352         | Violet   | Head only, Tubular..                         | 8 in   | 2      | 14.50      |
| 353         | Volley   | Head only, Tubular..                         | 8 in   | 2½     | 14.50      |
| 354         | Volt     | Head only, Tubular..                         | 8 in   | 3      | 14.50      |
| 355         | Voltage  | Head only.....                               | Adj.   | 1¼     | 15.00      |
| 356         | Volume   | Head only.....                               | Adj.   | 1½     | 15.00      |
| 357         | Volute   | Head only, Tubular..                         | Adj.   | 2      | 15.50      |
| 358         | Volva    | Head only, Tubular..                         | Adj.   | 2½     | 15.50      |
| 359         | Volvox   | Head only, Tubular..                         | Adj.   | 3      | 15.50      |
| 360         | Volyer   | For 2½ or 3x12 Brass Lower Cylinder add..... |        |        | 5.00       |
| 361         | Vomer    | For 2½ or 3x14 Brass Lower Cylinder add..... |        |        | 6.00       |

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## HAYES STUFFING BOX SINGLE ACTING WINDMILL FORCE PUMP WITH OR WITHOUT THREE-WAY

Fig. 765



**For Shallow or Deep Wells. Adjustable Base and Large Steel Pins. Large Polished Rod and Brass Packing Box. Brass Valve Seats. Anti-Freezing**

In our Stuffing Box Pumps we offer a line superior to any on the market at the present time. Where water is to be forced a long distance, they are preferred by many because they exert no pressure on the down stroke of the windmill rod. They contain many new and valuable improvements. They have a large polished piston rod and heavy brass packing box.

**Base.**—Our adjustable base is made in halves and held together by means of two heavy steel bolts. The base is high enough to prevent any water running back into the well, and is so constructed that there can be no ice formed thereon during the winter weather to obstruct the rod, which is a very important feature.

**Steel Pins.**—These pumps are fitted with large hard steel handle pins with long bearings and held so they cannot turn, insuring long life and a smooth and noiseless pump.

**Brass Valve Seat.**—Many substances, including rubber, glass, aluminum, etc., have been tested and discarded on account of chipping or cracking, or not having sufficient strength to withstand the hard service of deep well work, until to-day it is conceded by practical pump men that a good brass valve seat, properly finished and fitted in, is the most durable and reliable valve seat that can be made.

**Vertical Three-Way.**—Our vertical three-ways have a brass screw and packing box. The union ell can be turned in any direction, and by removing the union nut, the pump can be removed without disturbing the underground piping. The three-way valve can also be repaired without removing the pump from the well.

**Windmill Top.**—These pumps are provided either with an eight inch or an adjustable stroke windmill top. They have a right and left hand thread in the coupling where the slide attaches to the rod. This enables you to disconnect the rod above the platform without otherwise disturbing the pump.

**Tubular Wells.**—Our tubular well pumps are arranged so that the plunger can be withdrawn without removing the pump from the well. The brass packing box is screwed into a bushing, and on the removal of this bushing allows the plunger to be withdrawn. On windmill heads you can disconnect the rod by the right and left coupling at the slide without disturbing the rest of the pump. You will find these pumps listed under each different style.

**Regulator Pumps.**—This pump is made with our windmill regulator which controls the mill at all times, allowing it to operate the pump when the water is used from the tank and shutting the mill off as soon as the tank is filled.

**Anti-Freezing.**—This means that the pump is drilled with a small vent hole below the frost line, which allows the water in the stand to drop back to this point, thus preventing freezing.

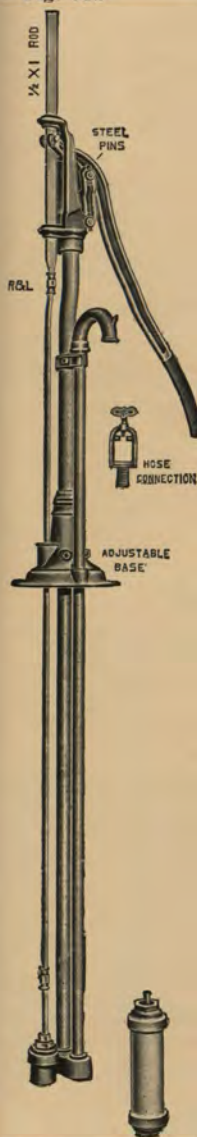
**Cylinders.**—These pumps are furnished with iron brass lined or either outside or inside cap seamless drawn brass cylinders, either outside or inside capped.

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## HAYES STUFFING BOX SINGLE ACTING WINDMILL FORCE PUMP

Fig. 762



For Shallow or Deep Wells. Eight Inch Stroke. Adjustable Base and Large Steel Pins. Large Polished Rod and Brass Packing Box. Brass Valve Seat. Anti-Freezing ❄ ❄ ❄

In our stuffing box pumps we offer a line superior to any on the market at the present time. Where water is to be forced a long distance they are preferred by many because they exert no pressure on the down stroke of the windmill rod. They contain many new and valuable improvements. They have a large polished piston rod and heavy brass packing box.

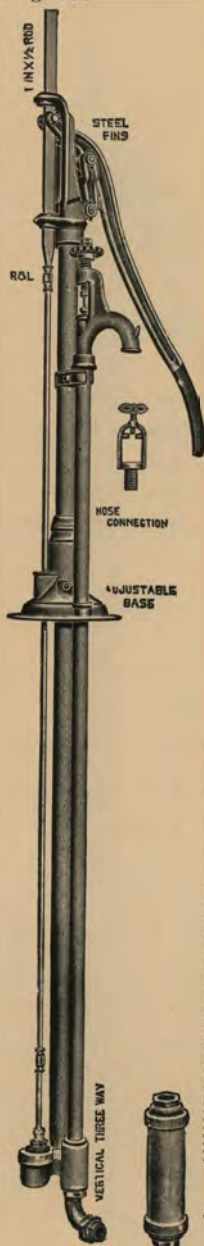
Price List as Represented by Fig. 762

| No. of Pump | Code Word  | Adapted for Wells up to                    | Diam. Pump will work in | Gals. per hr. — Forty strokes per minute | Size of Cylinder | Kind of Cylinder | Kind of Caps | Weight | Size of Pipe Tapped for | Price List |
|-------------|------------|--------------------------------------------|-------------------------|------------------------------------------|------------------|------------------|--------------|--------|-------------------------|------------|
| 255         | Vesatum    | 150 ft                                     | 5 1/4 in                | 405                                      | 2 1/2 x 12       | Iron             | Outside      | 80 lbs | 1 1/4                   | \$13.25    |
| 256         | Vesbium    | 150 ft                                     | 5 1/4 in                | 405                                      | 2 1/2 x 12       | Br'ss L'd        | Outside      | 81 lbs | 1 1/4                   | 14.75      |
| 257         | Vesica     | 150 ft                                     | 5 1/4 in                | 405                                      | 2 1/2 x 12       | Se'm'l's B       | Outside      | 76 lbs | 1 1/4                   | 15.25      |
| 258         | Vesicant   | 150 ft                                     | 5 1/4 in                | 405                                      | 2 1/2 x 14       | Se'm'l's B       | Inside       | 75 lbs | 1 1/4                   | 15.50      |
| 258 1/2     | Vesication | 75 ft                                      | 5 1/4 in                | 585                                      | 3 x 12           | Iron             | Outside      | 82 lbs | 1 1/4                   | 13.50      |
| 259         | Vesicle    | 75 ft                                      | 5 1/4 in                | 585                                      | 3 x 12           | Br'ss L'd        | Outside      | 83 lbs | 1 1/4                   | 15.00      |
| 260         | Vespa      | 75 ft                                      | 5 1/4 in                | 585                                      | 3 x 12           | Se'm'l's B       | Outside      | 77 lbs | 1 1/4                   | 15.50      |
| 261         | Vesper     | 75 ft                                      | 5 1/4 in                | 585                                      | 3 x 14           | Se'm'l's B       | Inside       | 78 lbs | 1 1/4                   | 15.75      |
| 261 1/2     | Vesplary   | 50 ft                                      | 6 1/4 in                | 800                                      | 3 1/2 x 12       | Iron             | Outside      | 85 lbs | 1 1/2                   | 14.00      |
| 262         | Vessel     | 50 ft                                      | 6 1/4 in                | 800                                      | 3 1/2 x 12       | Br'ss L'd        | Outside      | 86 lbs | 1 1/2                   | 15.50      |
| 263         | Vest       | 50 ft                                      | 6 1/4 in                | 800                                      | 3 1/2 x 12       | Se'm'l's B       | Outside      | 81 lbs | 1 1/2                   | 16.25      |
| 264         | Vestal     | 50 ft                                      | 6 1/4 in                | 800                                      | 3 1/2 x 14       | Se'm'l's B       | Inside       | 78 lbs | 1 1/2                   | 16.75      |
| 265         | Vestibule  | Tubular, Head only.. Wood Rod Connection   |                         |                                          |                  |                  |              | 68 lbs | 2                       | 11.50      |
| 266         | Vestige    | Stand only.....                            |                         |                                          |                  |                  |              | 68 lbs | 1 1/4                   | 11.00      |
| 267         | Vestlet    | Stand only.....                            |                         |                                          |                  |                  |              | 68 lbs | 1 1/2                   | 12.00      |
| 268         | Vestment   | Tubular, Head only.. Wood Rod Connection   |                         |                                          |                  |                  |              | 68 lbs | 2 1/2                   | 12.00      |
| 269         | Vestral    | Tubular, Head only.. Wood Rod Connection   |                         |                                          |                  |                  |              | 68 lbs | 3                       | 12.50      |
|             | Vegetal    | For Iron Valve Seat..... deduct from list  |                         |                                          |                  |                  |              |        |                         | .25        |
|             | Vacuity    | Galvanizing Pump complete..... add to list |                         |                                          |                  |                  |              |        |                         | 2.25       |
|             | Vacuna     | Galvanizing Cylinder only..... add to list |                         |                                          |                  |                  |              |        |                         | .75        |

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## HAYES STUFFING BOX SINGLE ACTING WINDMILL FORCE PUMP WITH THREE-WAY

Fig. 763



For Shallow or Deep Wells, Eight Inch Stroke, Adjustable Base and Large Steel Pins, Large Polished Rod and Brass Packing Box, Brass Valve Seat, Anti-Freezing, Vertical Three-Way

Our adjustable base is made in halves and held together by means of two heavy steel bolts. The base is high enough to prevent any water running back into the well, and is so constructed that there can be no ice formed thereon during the winter weather to obstruct the rods, which is a very important feature.

Price List as Represented by Fig. 763

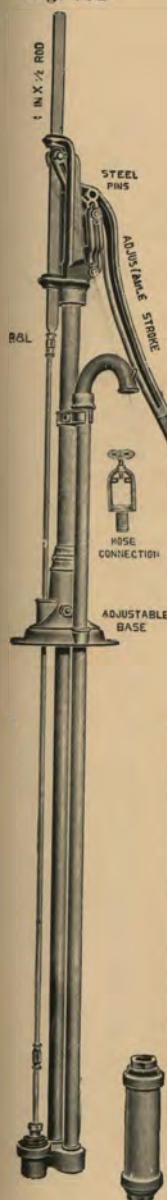
| No. of Pump | Code Word | Adapted for Wells up to                  | Diam. Pump will work in | Gals. per hour 40 strokes per minute | Size of Cylinder | Kind of Cylinder | Kind of Caps | Weight | Size of Pipe tapped for | Price List |
|-------------|-----------|------------------------------------------|-------------------------|--------------------------------------|------------------|------------------|--------------|--------|-------------------------|------------|
| 270         | Vestrox   | 150 ft                                   | 6 1/4 in                | 405                                  | 2 1/2 x 12       | Iron             | Outside      | 93 lbs | 1 1/4                   | \$16.25    |
| 271         | Vestry    | 150 ft                                   | 6 1/4 in                | 405                                  | 2 1/2 x 12       | Br'ss L'd        | Outside      | 94 lbs | 1 1/4                   | 17.75      |
| 272         | Vesture   | 150 ft                                   | 6 1/4 in                | 405                                  | 2 1/2 x 12       | Se'm'l's B       | Outside      | 89 lbs | 1 1/4                   | 18.25      |
| 273         | Veta      | 150 ft                                   | 6 1/4 in                | 405                                  | 2 1/2 x 14       | Se'm'l's B       | Inside       | 89 lbs | 1 1/4                   | 18.50      |
| 273 1/2     | Vetanda   | 75 ft                                    | 6 1/4 in                | 585                                  | 3 x 12           | Iron             | Outside      | 95 lbs | 1 1/4                   | 16.50      |
| 274         | Vetch     | 75 ft                                    | 6 1/4 in                | 585                                  | 3 x 12           | Br'ss L'd        | Outside      | 96 lbs | 1 1/4                   | 18.00      |
| 275         | Veteran   | 75 ft                                    | 6 1/4 in                | 585                                  | 3 x 12           | Se'm'l's B       | Outside      | 90 lbs | 1 1/4                   | 18.50      |
| 276         | Vetust    | 75 ft                                    | 6 1/4 in                | 585                                  | 3 x 14           | Se'm'l's B       | Inside       | 91 lbs | 1 1/4                   | 18.75      |
| 276 1/2     | Veuve     | 50 ft                                    | 6 1/4 in                | 800                                  | 3 1/2 x 12       | Iron             | Outside      | 98 lbs | 1 1/2                   | 17.00      |
| 277         | Vex       | 50 ft                                    | 6 1/4 in                | 800                                  | 3 1/2 x 12       | Br'ss L'd        | Outside      | 99 lbs | 1 1/2                   | 18.50      |
| 278         | Vexation  | 50 ft                                    | 6 1/4 in                | 800                                  | 3 1/2 x 12       | Se'm'l's B       | Outside      | 94 lbs | 1 1/2                   | 19.25      |
| 279         | Vexillar  | 50 ft                                    | 6 1/4 in                | 800                                  | 3 1/2 x 14       | Se'm'l's B       | Inside       | 91 lbs | 1 1/2                   | 19.75      |
| 280         | Viable    | Tubular, Head only, Wood Rod Connection  |                         |                                      |                  |                  |              | 81 lbs | 2                       | 14.50      |
| 281         | Viaduct   | Stand only                               |                         |                                      |                  |                  |              | 81 lbs | 1 1/4                   | 14.00      |
| 282         | Vial      | Stand only                               |                         |                                      |                  |                  |              | 81 lbs | 1 1/2                   | 15.00      |
| 283         | Vialfui   | Tubular, Head only, Wood Rod Connection  |                         |                                      |                  |                  |              | 81 lbs | 2 1/2                   | 15.00      |
| 284         | Viameter  | Tubular, Head only, Wood Rod Connection  |                         |                                      |                  |                  |              | 81 lbs | 3                       | 15.50      |
|             | Vegetal   | For Iron Valve Seat, deduct from list.   |                         |                                      |                  |                  |              |        |                         |            |
|             | Vacuity   | Galvanizing Pump complete, add to list.  |                         |                                      |                  |                  |              |        |                         |            |
|             | Vacuna    | Galvanizing Cylinders only, add to list. |                         |                                      |                  |                  |              |        |                         |            |

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## HAYES STUFFING BOX SINGLE ACTING ADJUSTABLE STROKE WINDMILL FORCE PUMP

Fig. 764



For Shallow or Deep Wells. Adjustable Stroke, Six, Eight and Ten Inch. Adjustable Base and Large Steel Pins. Large Polished Rod and Brass Packing Box. Brass Valve Seat. Anti-Freezing

This pump combines all the features required in a reliable single-acting force pump, being neat in design, strong and compact. It is the easiest pump on the market to handle, and at the same time one of the strongest. It is furnished with a 14-inch cylinder, and when used with a 10-inch stroke, will pump two-thirds more water than a 6-inch stroke pump with the same size cylinder.

Price List as Represented by Fig. 764

| No. of Pump | Code Word | Adapted for Wells up to   | Diam. Pump will work in | Gals. per hr. Forty strokes per minute | Size of Cylinder | Kind of Cylinder | Kind of Caps | Weight | Size of Pipe Tapped for | Price List |
|-------------|-----------|---------------------------|-------------------------|----------------------------------------|------------------|------------------|--------------|--------|-------------------------|------------|
| 285         | Vimopol   | 150 ft                    | 5 1/2 in                | 510                                    | 2 1/2 x 14       | Iron             | Outside      | 82 lbs | 1 1/4                   | \$14.50    |
| 286         | Vland     | 150 ft                    | 5 1/2 in                | 510                                    | 2 1/2 x 14       | Br'ss L'd        | Outside      | 83 lbs | 1 1/4                   | 16.00      |
| 287         | Vlatic    | 150 ft                    | 5 1/2 in                | 510                                    | 2 1/2 x 14       | Se'm'l's B       | Outside      | 78 lbs | 1 1/4                   | 16.50      |
| 288         | Viatcan   | 150 ft                    | 5 1/2 in                | 510                                    | 2 1/2 x 16       | Se'm'l's B       | Inside       | 78 lbs | 1 1/4                   | 16.75      |
| 288 1/2     | Viatoble  | 75 ft                     | 5 1/2 in                | 730                                    | 3 x 14           | Iron             | Outside      | 84 lbs | 1 1/4                   | 14.75      |
| 289         | Viator    | 75 ft                     | 5 1/2 in                | 730                                    | 3 x 14           | Br'ss L'd        | Outside      | 85 lbs | 1 1/4                   | 16.25      |
| 290         | Vibex     | 75 ft                     | 5 1/2 in                | 730                                    | 3 x 14           | Se'm'l's B       | Outside      | 79 lbs | 1 1/4                   | 16.75      |
| 291         | Vibrant   | 75 ft                     | 5 1/2 in                | 730                                    | 3 x 16           | Se'm'l's B       | Inside       | 78 lbs | 1 1/2                   | 17.00      |
| 291 1/2     | Vibrator  | 50 ft                     | 6 1/4 in                | 1000                                   | 3 1/2 x 14       | Iron             | Outside      | 89 lbs | 1 1/2                   | 15.25      |
| 292         | Vicar     | 50 ft                     | 6 1/4 in                | 1000                                   | 3 1/2 x 14       | Br'ss L'd        | Outside      | 90 lbs | 1 1/2                   | 16.75      |
| 293         | Vicirage  | 50 ft                     | 6 1/4 in                | 1000                                   | 3 1/2 x 14       | Se'm'l's B       | Outside      | 80 lbs | 1 1/2                   | 17.75      |
| 294         | Vice      | 50 ft                     | 6 1/4 in                | 1000                                   | 3 1/2 x 16       | Se'm'l's B       | Inside       | 80 lbs | 1 1/2                   | 18.25      |
| 295         | Viceroy   | Tubular, Head only        | Wood Rod Connection     | 69 lbs                                 | 2                |                  |              | 12.50  |                         |            |
| 296         | Vichy     | Stand only                | 69 lbs                  | 1 1/4                                  |                  |                  |              | 12.00  |                         |            |
| 297         | Vicinity  | Stand only                | 69 lbs                  | 1 1/2                                  |                  |                  |              | 13.00  |                         |            |
| 298         | Viculous  | Tubular, Head only        | Wood Rod Connection     | 69 lbs                                 | 2 1/2            |                  |              | 13.00  |                         |            |
| 299         | Vicissy   | Tubular, Head only        | Wood Rod Connection     | 69 lbs                                 | 3                |                  |              | 13.50  |                         |            |
|             | Vegetal   | For Iron Valve Seat       | deduct from list        |                                        |                  |                  |              | .25    |                         |            |
|             | Vaculty   | Galvanizing Pump complete | add to list             |                                        |                  |                  |              | 2.25   |                         |            |
|             | Vacuna    | Galvanizing Cylinder only | add to list             |                                        |                  |                  |              | .75    |                         |            |

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## HAYES STUFFING BOX SINGLE ACTING ADJUSTABLE STROKE WINDMILL FORCE PUMP WITH THREE-WAY

Fig. 765



For Shallow or Deep Wells. Adjustable Stroke, Six, Eight and Ten Inch. Adjustable Base and Large Steel Pins. Large Polished Rod with Brass Packing Box. Brass Valve Seat. Anti-Freezing. Vertical Three-Way

This pump has an adjustable stroke, adjustable base and large hard steel handle pins, with long bearings held so they cannot turn. It has a vertical three-way with brass screw and packing nut. The union elbow can be turned in any direction, and by removing the union nut, the pump may be removed from the well, or by unscrewing the union elbow the three-way valve may be repaired without taking the pump from the well.

Price List as Represented by Fig. 765

| No. of Pump | Code Word  | Adapted for Wells up to                     | Diam. Pump will work in | Gals. per hr. Forty strokes per minute | Size of Cylinder | Kind of Cylinder | Kind of Caps | Weight  | Size of Pipe Tapped for | Price List |
|-------------|------------|---------------------------------------------|-------------------------|----------------------------------------|------------------|------------------|--------------|---------|-------------------------|------------|
| 300         | Vicount    | 150 ft                                      | 6 1/4 in                | 510                                    | 2 1/2 x 14       | Iron             | Outside      | 95 lbs  | 1 1/4                   | \$17.50    |
| 301         | Victim     | 150 ft                                      | 6 1/4 in                | 510                                    | 2 1/2 x 14       | Br'ss L'd        | Outside      | 96 lbs  | 1 1/4                   | 19.00      |
| 302         | Victor     | 150 ft                                      | 6 1/4 in                | 510                                    | 2 1/2 x 14       | Se'ml's B        | Outside      | 91 lbs  | 1 1/4                   | 19.50      |
| 303         | Victual    | 150 ft                                      | 6 1/4 in                | 510                                    | 2 1/2 x 16       | Se'ml's B        | Inside       | 91 lbs  | 1 1/4                   | 19.75      |
| 303 1/2     | Vicuna     | 75 ft                                       | 6 1/4 in                | 730                                    | 3 x 14           | Iron             | Outside      | 97 lbs  | 1 1/4                   | 17.75      |
| 304         | Vidame     | 75 ft                                       | 6 1/4 in                | 730                                    | 3 x 14           | Br'ss L'd        | Outside      | 98 lbs  | 1 1/4                   | 19.25      |
| 305         | Vide       | 75 ft                                       | 6 1/4 in                | 730                                    | 3 x 14           | Se'ml's B        | Outside      | 92 lbs  | 1 1/4                   | 19.75      |
| 306         | Vidian     | 75 ft                                       | 6 1/4 in                | 730                                    | 3 x 16           | Se'ml's B        | Inside       | 91 lbs  | 1 1/4                   | 20.00      |
| 306 1/2     | Vidify     | 50 ft                                       | 6 1/4 in                | 1000                                   | 3 1/2 x 14       | Iron             | Outside      | 102 lbs | 1 1/2                   | 18.25      |
| 307         | Vidimus    | 50 ft                                       | 6 1/4 in                | 1000                                   | 3 1/2 x 14       | Br'ss L'd        | Outside      | 103 lbs | 1 1/2                   | 19.75      |
| 308         | Viduante   | 50 ft                                       | 6 1/4 in                | 1000                                   | 3 1/2 x 14       | Se'ml's B        | Outside      | 93 lbs  | 1 1/2                   | 20.75      |
| 309         | Vielle     | 50 ft                                       | 6 1/4 in                | 1000                                   | 3 1/2 x 16       | Se'ml's B        | Inside       | 93 lbs  | 1 1/2                   | 21.25      |
| 310         | View       | Tubular, Head only.. Wood Rod Connection    |                         |                                        |                  |                  |              | 82 lbs  | 2                       | 15.50      |
| 311         | Viewless   | Stand only.....                             |                         |                                        |                  |                  |              | 82 lbs  | 1 1/4                   | 15.00      |
| 312         | Vigil      | Stand only.....                             |                         |                                        |                  |                  |              | 82 lbs  | 1 1/2                   | 16.00      |
| 313         | Vigillable | Tubular, Head only.. Wood Rod Connection    |                         |                                        |                  |                  |              | 82 lbs  | 2 1/2                   | 16.00      |
| 314         | Vigillage  | Tubular, Head only.. Wood Rod Connection    |                         |                                        |                  |                  |              | 82 lbs  | 3                       | 16.50      |
|             | Vegetal    | For Iron Valve Seat..... deduct from list   |                         |                                        |                  |                  |              |         |                         | .25        |
|             | Vacuity    | Galvanizing Pump complete..... add to list  |                         |                                        |                  |                  |              |         |                         | 2.25       |
|             | Vacuna     | Galvanizing Cylinders only..... add to list |                         |                                        |                  |                  |              |         |                         | .75        |

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## HAYES STUFFING BOX SINGLE ACTING ADJUSTABLE STROKE WINDMILL FORCE PUMP

WITH THREE-WAY AND HYDRAULIC REGULATOR

Fig. 766



For Shallow or Deep Wells. Adjustable Stroke, Six, Eight, and Ten Inch. Adjustable Base and Large Steel Pins. Large Polished Rod and Brass Packing Box. Seamless Drawn Brass Regulator Cylinder. Automatic Relief. Brass Valve Seat. Anti-Freezing. Vertical Three-Way

The following points are essential for the successful working of our regulator pump:

**First.**—The platform or curbing must be substantial and strong.

**Second.**—A check valve should be placed on the discharge pipe between the pump and tank.

**Third.**—A reliable float valve, one that will close promptly and be absolutely tight, must be used. A large float is also required.

**Fourth.**—You must have enough weight on to overcome the weight of the water in the discharge pipe.

**Fifth.**—The furl wire must be attached to the chain just so the hydraulic plunger comes up to the relief vents when the mill is fully out of gear.

### Price List as Represented by Fig. 766

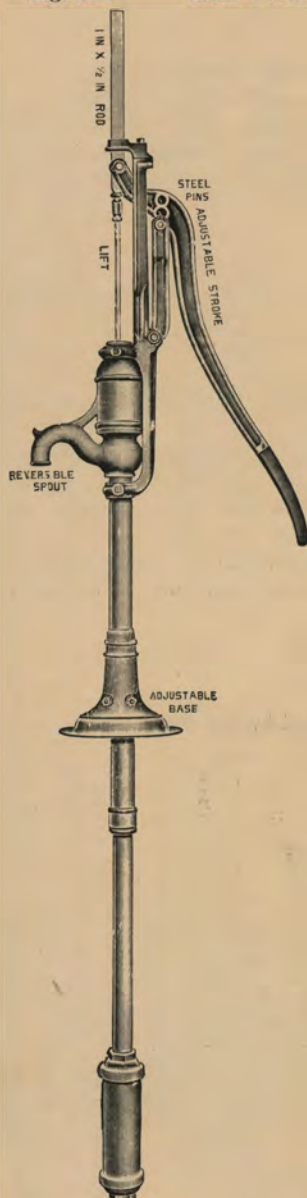
| No. of Pump | Code<br>Word | Adapted for<br>Wells up to                  | Diam. Pump<br>will work in | Gals. per hr.—<br>Forty strokes<br>per minute | Size of<br>Cylinder | Kind of<br>Cylinder | Kind of Caps | Weight  | Size of Pipe<br>Tapped for | Price List |
|-------------|--------------|---------------------------------------------|----------------------------|-----------------------------------------------|---------------------|---------------------|--------------|---------|----------------------------|------------|
| 315         | Vigilant     | 150 ft                                      | 14 in.                     | 510                                           | 2 3/4 x 14          | Iron                | Outside      | 140 lbs | 1 1/2                      | \$26.50    |
| 316         | Vigilant     | 150 ft                                      | 14 in.                     | 510                                           | 2 3/4 x 14          | Br'ss L'd           | Outside      | 141 lbs | 1 1/2                      | 28.00      |
| 317         | Vignette     | 150 ft                                      | 14 in.                     | 510                                           | 2 3/4 x 14          | Se'm'l's B          | Outside      | 136 lbs | 1 1/2                      | 28.50      |
| 318         | Vigor        | 150 ft                                      | 14 in.                     | 510                                           | 2 3/4 x 16          | Se'm'l's B          | Inside       | 136 lbs | 1 1/2                      | 28.75      |
| 318 1/2     | Vigorous     | 75 ft                                       | 14 in.                     | 730                                           | 3 x 14              | Iron                | Outside      | 142 lbs | 1 1/2                      | 26.75      |
| 319         | Vigorous     | 75 ft                                       | 14 in.                     | 730                                           | 3 x 14              | Br'ss L'd           | Outside      | 143 lbs | 1 1/2                      | 28.25      |
| 320         | Vihara       | 75 ft                                       | 14 in.                     | 730                                           | 3 x 14              | Se'm'l's B          | Outside      | 137 lbs | 1 1/2                      | 28.75      |
| 321         | Viking       | 75 ft                                       | 14 in.                     | 730                                           | 3 x 16              | Se'm'l's B          | Inside       | 136 lbs | 1 1/2                      | 29.00      |
| 322         | Vile         | Tubular, Head only.. Wood Rod Connection    |                            |                                               |                     |                     |              | 127 lbs | 2                          | 24.50      |
| 323         | Villify      | Stand only..... 1 1/4 Hydraulic Cylinder    |                            |                                               |                     |                     |              | 127 lbs | 1 1/2                      | 24.00      |
| 324         | Villa        | Stand only..... 2 1/4 Hydraulic Cylinder    |                            |                                               |                     |                     |              | 127 lbs | 1 1/2                      | 25.00      |
| 325         | Villabom     | Tubular, Head only.. Wood Rod Connection    |                            |                                               |                     |                     |              | 127 lbs | 2 1/2                      | 25.00      |
| 326         | Villadul     | Tubular, Head only.. Wood Rod Connection    |                            |                                               |                     |                     |              | 127 lbs | 3                          | 25.50      |
|             | Vegetal      | For Iron Valve Seat.....deduct from list    |                            |                                               |                     |                     |              |         |                            |            |
|             | Vacuity      | Galvanizing Pump complete..... add to list  |                            |                                               |                     |                     |              |         |                            |            |
|             | Vacuna       | Galvanizing Cylinders only..... add to list |                            |                                               |                     |                     |              |         |                            |            |

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## HAYES HAND AND WINDMILL LIFT SINGLE ACTING PUMP

Adjustable Base and Large Steel Pins. Reservoir Head and Siphon Spout. Long Fulcrum Support. Brass Valve Seat. Anti-Freezing ❖ ❖ ❖ ❖ ❖

Fig. 802



In order to give our customers a first-class pump at a moderate price, we are offering this line of hand and windmill pumps. They are adapted for open, drilled, driven or tubular wells.

**Base.**—Our adjustable base is made in halves and is held together by means of two heavy steel bolts. The base is high enough to prevent any water running back into the well.

**Steel Pins.**—These pumps are fitted with large hard steel handle pins with long bearings and held so they cannot turn, insuring long life and a smooth and noiseless pump.

**Brass Valve Seats.**—Many substances, including rubber, glass, aluminum, etc., have been tested and discarded on account of chipping or cracking, or not having sufficient strength to withstand the hard service of deep well work, until to-day it is conceded by practical pump men that a good brass valve seat, properly finished and fitted in, is the most durable and reliable valve seat that can be made.

**Windmill Top.**—All windmill heads have a steel slide bar  $1\frac{1}{2}$ -inch, and all other parts in proportion. They also have a renewable rod guide; all friction is received on this guide, thus protecting the fulcrum support, while it is but a small expense to replace the guide when worn out.

**Reservoir Head and Siphon Spout.**—They have a siphon spout and reservoir head which throw a continuous stream and always give satisfaction.

**Long Fulcrum Support.**—These pumps are fitted with our reversible handle fulcrum, which has a long arm extending below the spout and forming a strong support, which is very desirable as the breakage from frail tops to pumps is very great.

**Vent.**—The reservoir head forms a large air chamber when used for forcing the water, and when not forcing the water the brass screw vent gives the pump a free, steady stream.

**Tubular Wells.**—Our Tubular Well Pumps are arranged so that the plunger can be withdrawn without removing the pump from the well. By means of our renewable rod guide we can withdraw the plunger from the pump without removing the entire fulcrum support. You will find these pumps listed under the different styles of heads.

**Anti-Freezing.**—This means that the pump is drilled with a small vent hole below the frost line, which allows the water in the stand to drop back to this point, thus preventing freezing.

**Cylinders.**—These pumps are furnished with iron, brass lined, or either outside or inside capped seamless drawn brass cylinders.

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## HAYES HAND LIFT PUMP

Fig. 800



Adjustable Base and Large Steel Pins.  
Reservoir Head with Siphon Spout.  
Long Fulcrum Support. Brass Valve  
Seat. Anti-Freezing ❀ ❀ ❀ ❀ ❀

This pump has our large steel handle pins with long bearings, held so they cannot turn, insuring long life and a smooth and noiseless pump. It contains many new improvements and is very neat in design.

### Price List as Represented by Fig. 800

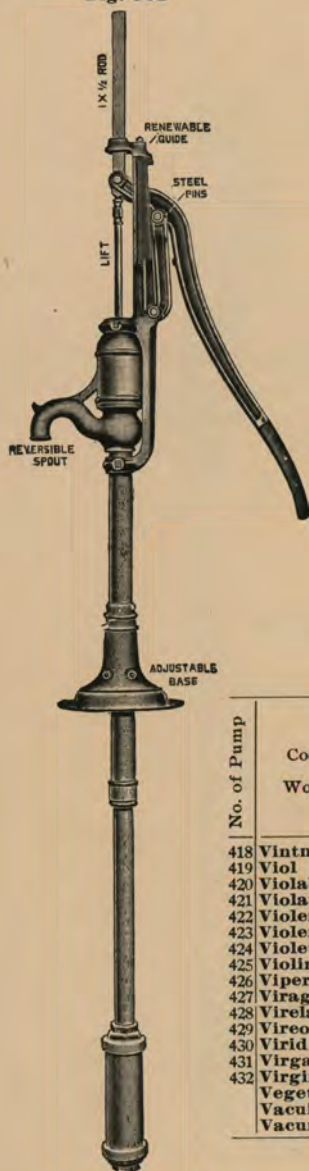
#### Four-foot Set Length

| No. of Pump | Code Word  | Adapted for Wells up to                          | Diam. Pump will work in | Gals. per hour 40 strokes per minute | Size of Cylinder | Kind of Cylinder | Kind of Caps | Weight | Size of Pipe tapped for | Price List |
|-------------|------------|--------------------------------------------------|-------------------------|--------------------------------------|------------------|------------------|--------------|--------|-------------------------|------------|
| 400         | Village    | 150 ft                                           | 3 3/4                   | 306                                  | 2 1/2 x 10       | Iron             | Outside      | 59 lbs | 1 1/4                   | \$6.25     |
| 401         | Villian    | 150 ft                                           | 3 3/4                   | 306                                  | 2 1/2 x 10       | Br'ss L'd        | Outside      | 60 lbs | 1 1/4                   | 7.25       |
| 402         | Vim        | 150 ft                                           | 3 3/4                   | 306                                  | 2 1/2 x 10       | Se'ml's B        | Outside      | 56 lbs | 1 1/4                   | 7.75       |
| 403         | Vimana     | 150 ft                                           | 2 3/4                   | 306                                  | 2 3/8 x 12       | Se'ml's B        | Inside       | 56 lbs | 1 1/4                   | 8.00       |
| 404         | Vina       | 75 ft                                            | 4 1/2                   | 440                                  | 3 x 10           | Iron             | Outside      | 60 lbs | 1 1/4                   | 6.50       |
| 405         | Vinago     | 75 ft                                            | 4 1/2                   | 440                                  | 3 x 10           | Br'ss L'd        | Outside      | 62 lbs | 1 1/4                   | 7.50       |
| 406         | Vinalia    | 75 ft                                            | 3 3/4                   | 440                                  | 3 x 10           | Se'ml's B        | Outside      | 56 lbs | 1 1/4                   | 8.25       |
| 407         | Vinable    | 75 ft                                            | 3 3/4                   | 440                                  | 3 x 12           | Se'ml's B        | Inside       | 58 lbs | 1 1/4                   | 8.50       |
| 408         | Vinenlum   | 50 ft                                            | 4 3/4                   | 780                                  | 3 1/2 x 10       | Iron             | Outside      | 63 lbs | 1 1/2                   | 7.25       |
| 409         | Vinclicate | 50 ft                                            | 4 3/4                   | 780                                  | 3 1/2 x 10       | Br'ss L'd        | Outside      | 64 lbs | 1 1/2                   | 8.25       |
| 410         | Vineal     | 50 ft                                            | 4 3/4                   | 780                                  | 3 1/2 x 10       | Se'ml's B        | Outside      | 58 lbs | 1 1/2                   | 8.75       |
| 411         | Vinegar    | 50 ft                                            | 3 3/4                   | 780                                  | 3 3/4 x 12       | Se'ml's B        | Inside       | 58 lbs | 1 1/2                   | 9.00       |
| 412         | Vinery     | Stand only, 1 1/4 pipe reduced to 1 1/4          |                         |                                      |                  |                  |              | 46 lbs | 1 1/4                   | 4.50       |
| 413         | Vineyard   | Tubular, stand only, 2-in. pipe reduced to 1 1/4 |                         |                                      |                  |                  |              | 45 lbs | 1 1/4                   | 5.00       |
| 414         | Vintage    | Tubular, stand only, without pipe and reducer    |                         |                                      |                  |                  |              | 35 lbs | 2                       | 4.00       |
|             | Vegetal    | For Iron Valve Seat, deduct from list            |                         |                                      |                  |                  |              |        |                         | .25        |
|             | Vacuity    | For Galvanizing Pump complete add to list        |                         |                                      |                  |                  |              |        |                         | 2.25       |
|             | Vacuna     | For Galvanizing Cylinder only, add to list       |                         |                                      |                  |                  |              |        |                         | .75        |

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## HAYES WINDMILL LIFT PUMP

Fig. 801



Six Inch Stroke, Adjustable Base and Large Steel Pins, Reservoir Head with Siphon Spout, Long Fulcrum Support, Renewable Rod Guide, Brass Valve Seat. Anti-Freezing ❄ ❄ ❄

This pump is fitted with our reversible handle fulcrum, which has a long arm extending below the spout and forming a strong support, which is very desirable, as the breakage from frail tops to lift pumps is very great.

### Price List as Represented by Fig. 801

#### Four-Foot Set Lengths

| No. of Pump | Code Word | Adapted for Wells up to                          | Diam. Pump will work in | Gals. per hr. — Forty strokes per minute | Size of Cylinder | Kind of Cylinder | Kind of Caps | Weight | Size of Pipe Tapped for | Price List |
|-------------|-----------|--------------------------------------------------|-------------------------|------------------------------------------|------------------|------------------|--------------|--------|-------------------------|------------|
| 418         | Vintner   | 150 ft                                           | 3 3/4                   | 306                                      | 2 1/2 x 10       | Iron             | Outside      | 71 lbs | 1 3/4                   | \$ 7.25    |
| 419         | Viol      | 150 ft                                           | 3 3/4                   | 306                                      | 2 1/2 x 10       | Br'ss L'd        | Outside      | 72 lbs | 1 3/4                   | 8.25       |
| 420         | Violabl   | 150 ft                                           | 3 3/4                   | 306                                      | 2 1/2 x 10       | Se'm'l's B       | Outside      | 67 lbs | 1 3/4                   | 8.75       |
| 421         | Violate   | 150 ft                                           | 2 3/4                   | 306                                      | 2 1/2 x 12       | Se'm'l's B       | Inside       | 67 lbs | 1 3/4                   | 9.00       |
| 422         | Violence  | 75 ft                                            | 4 1/2                   | 440                                      | 3 x 10           | Iron             | Outside      | 72 lbs | 1 3/4                   | 7.50       |
| 423         | Violent   | 75 ft                                            | 4 1/2                   | 440                                      | 3 x 10           | Br'ss L'd        | Outside      | 74 lbs | 1 3/4                   | 8.50       |
| 424         | Violet    | 75 ft                                            | 3 3/4                   | 440                                      | 3 x 10           | Se'm'l's B       | Outside      | 69 lbs | 1 3/4                   | 9.25       |
| 425         | Violin    | 75 ft                                            | 3 3/4                   | 440                                      | 3 x 12           | Se'm'l's B       | Inside       | 68 lbs | 1 3/4                   | 9.50       |
| 426         | Viper     | 50 ft                                            | 4 1/2                   | 600                                      | 3 1/2 x 10       | Iron             | Outside      | 74 lbs | 1 3/4                   | 8.25       |
| 427         | Virago    | 50 ft                                            | 4 1/2                   | 600                                      | 3 1/2 x 10       | Br'ss L'd        | Outside      | 76 lbs | 1 3/4                   | 9.25       |
| 428         | Virelay   | 50 ft                                            | 4 1/2                   | 600                                      | 3 1/2 x 10       | Se'm'l's B       | Outside      | 70 lbs | 1 3/4                   | 9.75       |
| 429         | Vireo     | 50 ft                                            | 3 3/4                   | 600                                      | 3 1/2 x 12       | Se'm'l's B       | Inside       | 70 lbs | 1 3/4                   | 10.00      |
| 430         | Virid     | Stand only,..... 1 1/2 in. Pipe reduced to 1 1/4 |                         |                                          |                  |                  |              | 63 lbs | 1 1/2 & 1 3/4           | 5.50       |
| 431         | Virga     | Tubular, Stand only, 2 in Pipe reduced to 1 1/4  |                         |                                          |                  |                  |              | 62 lbs | 2 & 1 1/4               | 6.00       |
| 432         | Virgin    | Tubular, Stand only, with't Pipe & Reducer       |                         |                                          |                  |                  |              | 52 lbs | 2                       | 5.00       |
|             | Vegetal   | For Iron Valve Seat..... deduct from list        |                         |                                          |                  |                  |              |        |                         | .25        |
|             | Vacuity   | Galvanizing Pump complete..... add to list       |                         |                                          |                  |                  |              |        |                         | 2.25       |
|             | Vacuna    | Galvanizing Cylinder only..... add to list       |                         |                                          |                  |                  |              |        |                         | .75        |

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## HAYES ADJUSTABLE STROKE WINDMILL LIFT PUMP

Fig. 802



Adjustable Stroke, Six, Eight and Ten Inch,  
Adjustable Base and Large Steel Pins, Reser-  
voir Head with Siphon Spout, Long Fulcrum  
Support, Renewal Rod Guide, Brass Valve  
Seat. Anti-Freezing ❄ ❄ ❄ ❄ ❄ ❄

All windmill heads on this style of pump have a renew-  
able rod guide. All friction is received on this guide, thus  
protecting the fulcrum support, while it is but a small ex-  
pense to replace the guide when worn out. On tubular well  
pumps, this guide is removed in place of the entire fulcrum  
support to allow the plunger to be withdrawn.

### Price List as Represented by Fig. 802

#### Four-Foot Set Length

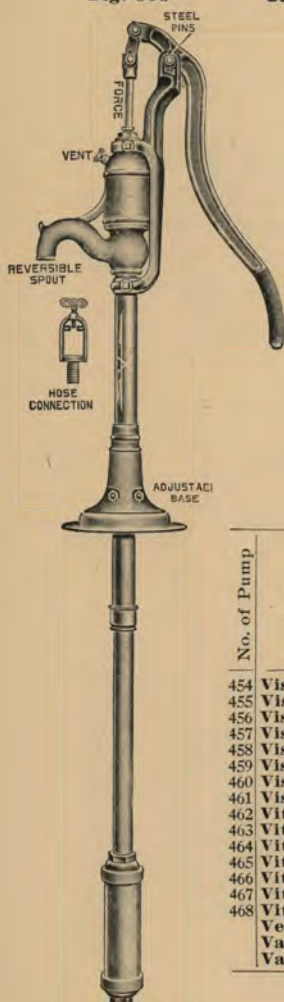
| No. of Pump | Code Word | Adapted for Wells up to                                   | Diam. Pump will work in | Gals. per hour 40 strokes per minute | Size of Cylinder | Kind of Cylinder | Kind of Caps | Weight | Size of Pipe tapped for | Price List |
|-------------|-----------|-----------------------------------------------------------|-------------------------|--------------------------------------|------------------|------------------|--------------|--------|-------------------------|------------|
| 436         | Virile    | 150 ft                                                    | 3 3/4 in                | 510                                  | 2 1/2 x 14       | Iron             | Outside      | 74 lbs | 1 1/4                   | \$ 8.75    |
| 437         | Virl      | 150 ft                                                    | 3 3/4 in                | 510                                  | 2 1/2 x 14       | Br'ss L'd        | Outside      | 75 lbs | 1 1/4                   | 9.75       |
| 438         | Viron     | 150 ft                                                    | 3 3/4 in                | 510                                  | 2 1/2 x 14       | Se'm'l's B       | Outside      | 70 lbs | 1 1/4                   | 10.25      |
| 439         | Virose    | 150 ft                                                    | 2 1/2 in                | 510                                  | 2 1/2 x 16       | Se'm'l's B       | Inside       | 70 lbs | 1 1/4                   | 10.50      |
| 440         | Virtual   | 75 ft                                                     | 4 1/4 in                | 730                                  | 3 x 14           | Iron             | Outside      | 75 lbs | 1 1/4                   | 9.00       |
| 441         | Virus     | 75 ft                                                     | 4 1/4 in                | 730                                  | 3 x 14           | Br'ss L'd        | Outside      | 77 lbs | 1 1/4                   | 10.25      |
| 442         | Vis       | 75 ft                                                     | 3 3/4 in                | 730                                  | 3 x 14           | Se'm'l's B       | Outside      | 72 lbs | 1 1/4                   | 10.75      |
| 443         | Visage    | 75 ft                                                     | 3 3/4 in                | 730                                  | 3 x 16           | Se'm'l's B       | Inside       | 71 lbs | 1 1/4                   | 11.00      |
| 444         | Viscera   | 50 ft                                                     | 4 1/4 in                | 1000                                 | 3 1/2 x 14       | Iron             | Outside      | 77 lbs | 1 1/2                   | 9.75       |
| 445         | Viscid    | 50 ft                                                     | 4 1/4 in                | 1000                                 | 3 1/2 x 14       | Br'ss L'd        | Outside      | 79 lbs | 1 1/2                   | 10.75      |
| 446         | Viscount  | 50 ft                                                     | 4 1/4 in                | 1000                                 | 3 1/2 x 14       | Se'm'l's B       | Outside      | 73 lbs | 1 1/2                   | 11.25      |
| 447         | Viscum    | 50 ft                                                     | 3 3/4 in                | 1000                                 | 3 1/2 x 16       | Se'm'l's B       | Inside       | 73 lbs | 1 1/2                   | 11.50      |
| 448         | Vise      | Stand only, 1 1/2-in. Pipe reduced to 1 1/4-in. ....      |                         |                                      |                  |                  |              | 66 lbs | 1 1/4                   | 6.25       |
| 449         | Vishna    | Tubular, Stand only, 2-in. pipe reduced to 1 1/4-in. .... |                         |                                      |                  |                  |              | 65 lbs | 2, 1 1/4                | 6.75       |
| 450         | Visible   | Tubular, Stand only, without Pipe and Reducer....         |                         |                                      |                  |                  |              | 55 lbs | 2                       | 5.75       |
|             | Vegetal   | For Iron Valve Seat, deduct from list.....                |                         |                                      |                  |                  |              |        |                         | .25        |
|             | Vacuity   | For Galvanizing Pump complete, add to list.....           |                         |                                      |                  |                  |              |        |                         | 2.25       |
|             | Vacuna    | For Galvanizing Cylinder only, add to list.....           |                         |                                      |                  |                  |              |        |                         | .75        |

THEY'RE PAINTED YELLOW

## HAYES SINGLE ACTING HAND FORCE PUMP

Adjustable Base and Large Steel Pins. Reservoir Head with Siphon Spout. Large Polished Rod and Brass Packing Box. Long Fulcrum Support. Brass Valve Seat. Brass Screw Vent. Anti-Freezing ❄ ❄ ❄ ❄

Fig. 803



This is a very desirable and first-class force pump. The reservoir head forms a large air chamber when used for forcing water, and when not forcing water the brass screw vent gives the pump a free, steady stream.

### Price List as Represented by Fig. 803

#### Four-Foot Set Length

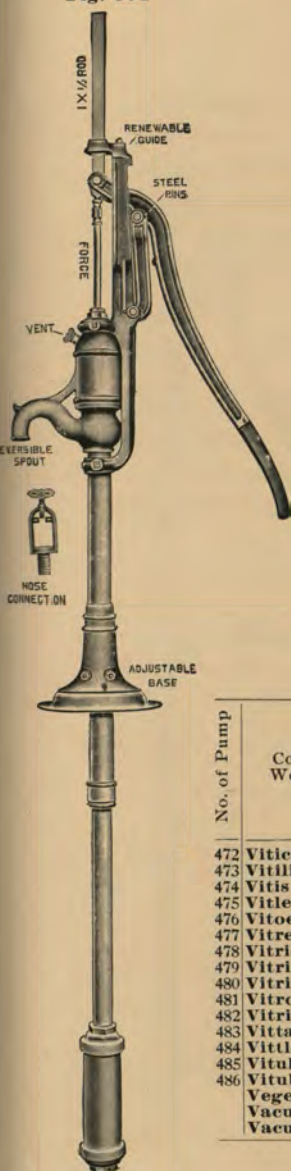
| No. of Pump | Code Word | Adapted for Wells up to                         | Diam. Pump will work in | Gals. per hr. Forty strokes per minute | Size of Cylinder | Kind of Cylinder | Kind of Caps | Weight | Size of Pipe Tapped for | Price List    |      |
|-------------|-----------|-------------------------------------------------|-------------------------|----------------------------------------|------------------|------------------|--------------|--------|-------------------------|---------------|------|
| 454         | Vision    | 150 ft                                          | 3 3/4                   | 306                                    | 2 1/2 x 10       | Iron             | Outside      | 62 lbs | 1 1/4                   | \$ 7.25       |      |
| 455         | Visit     | 150 ft                                          | 3 3/4                   | 306                                    | 2 1/2 x 10       | Br'ss L'd        | Outside      | 63 lbs | 1 1/4                   | 8.25          |      |
| 456         | Visitant  | 150 ft                                          | 3 3/4                   | 306                                    | 2 1/2 x 10       | Se'm'l's B       | Outside      | 58 lbs | 1 1/4                   | 8.75          |      |
| 457         | Visitor   | 150 ft                                          | 2 3/4                   | 306                                    | 2 3/4 x 12       | Se'm'l's B       | Inside       | 58 lbs | 1 1/4                   | 9.00          |      |
| 458         | Vison     | 75 ft                                           | 4 1/4                   | 440                                    | 3 x 10           | Iron             | Outside      | 63 lbs | 1 1/4                   | 7.50          |      |
| 459         | Vista     | 75 ft                                           | 4 1/4                   | 440                                    | 3 x 10           | Br'ss L'd        | Outside      | 65 lbs | 1 1/4                   | 8.50          |      |
| 460         | Visual    | 75 ft                                           | 3 3/4                   | 440                                    | 3 x 10           | Se'm'l's B       | Outside      | 60 lbs | 1 1/4                   | 9.25          |      |
| 461         | Visualize | 75 ft                                           | 3 3/4                   | 440                                    | 3 x 12           | Se'm'l's B       | Inside       | 60 lbs | 1 1/4                   | 9.50          |      |
| 462         | Vital     | 50 ft                                           | 4 3/4                   | 600                                    | 3 3/4 x 10       | Iron             | Outside      | 65 lbs | 1 1/2                   | 8.25          |      |
| 463         | Vitalize  | 50 ft                                           | 4 3/4                   | 600                                    | 3 3/4 x 10       | Br'ss L'd        | Outside      | 67 lbs | 1 1/2                   | 9.25          |      |
| 464         | Vitality  | 50 ft                                           | 4 3/4                   | 600                                    | 3 3/4 x 10       | Se'm'l's B       | Outside      | 61 lbs | 1 1/2                   | 9.75          |      |
| 465         | Vittellin | 50 ft                                           | 3 3/4                   | 600                                    | 3 3/4 x 12       | Se'm'l's B       | Inside       | 61 lbs | 1 1/2                   | 10.00         |      |
| 466         | Vittelus  | Stand only.....1 1/2 in. Pipe reduced to 1 1/4  |                         |                                        |                  |                  |              |        | 51 lbs                  | 1 1/2 & 1 1/4 | 5.50 |
| 467         | Vitesse   | Tubular, Stand only, 2 in Pipe reduc'd to 1 1/4 |                         |                                        |                  |                  |              |        | 50 lbs                  | 2 & 1 1/4     | 6.00 |
| 468         | Vitiate   | Tubular, Stand only, with't Pipe & Reducer      |                         |                                        |                  |                  |              |        | 42 lbs                  | 2             | 5.00 |
|             | Vegetal   | Iron Valve Seat.....deduct from list            |                         |                                        |                  |                  |              |        |                         |               | .25  |
|             | Vacuity   | Galvanizing Pump complete.....add to list       |                         |                                        |                  |                  |              |        |                         |               | 2.25 |
|             | Vacuna    | Galvanizing Cylinder only.....add to list       |                         |                                        |                  |                  |              |        |                         |               | .75  |

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## HAYES SINGLE ACTING WINDMILL FORCE PUMP

Fig. 804



Six Inch Stroke. Adjustable Base and Large Steel Pins. Reservoir Head with Siphon Spout. Large Polished Rod and Brass Packing Box. Long Fulcrum Support. Renewable Rod Guide. Brass Valve Seat. Anti-Freezing. Brass Screw Vent

This pump is substantially the same as Fig. 803, except it has a windmill top. The slide bar is made of steel, one-inch by one-half-inch, and all other parts in proportion,, making it a reliable windmill force pump.

### Price List as Represented by Fig. 804

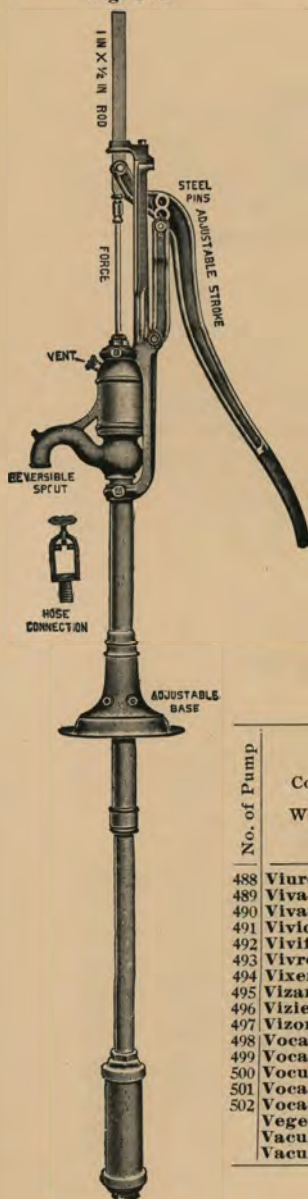
#### Four-Foot Set Length

| No. of Pump | Code Word | Adapted for Wells up to                                   | Diam. Pump will work in | Gals. per hour 40 strokes per minute | Size of Cylinder | Kind of Cylinder | Kind of Caps | Weight | Size of Pipe tapped for | Price List |
|-------------|-----------|-----------------------------------------------------------|-------------------------|--------------------------------------|------------------|------------------|--------------|--------|-------------------------|------------|
| 472         | Viticula  | 150 ft                                                    | 3 3/4 in                | 306                                  | 2 1/2 x 10       | Iron             | Outside      | 74 lbs | 1 3/4                   | 8.25       |
| 473         | Vitiligo  | 150 ft                                                    | 3 3/4 in                | 306                                  | 2 1/2 x 10       | Br'ss L'd        | Outside      | 75 lbs | 1 3/4                   | 9.25       |
| 474         | Vitis     | 150 ft                                                    | 3 3/4 in                | 306                                  | 2 1/2 x 10       | Se'm'l's B       | Outside      | 70 lbs | 1 3/4                   | 9.75       |
| 475         | Vitler    | 150 ft                                                    | 2 3/4 in                | 306                                  | 2 1/2 x 12       | Se'm'l's B       | Inside       | 70 lbs | 1 3/4                   | 10.00      |
| 476         | Vitoe     | 75 ft                                                     | 4 1/4 in                | 440                                  | 3 x 10           | Iron             | Outside      | 75 lbs | 1 3/4                   | 8.50       |
| 477         | Vitrenum  | 75 ft                                                     | 4 1/4 in                | 440                                  | 3 x 10           | Br'ss L'd        | Outside      | 77 lbs | 1 3/4                   | 9.50       |
| 478         | Vitric    | 75 ft                                                     | 3 3/4 in                | 440                                  | 3 x 10           | Se'm'l's B       | Outside      | 72 lbs | 1 3/4                   | 10.25      |
| 479         | Vitrified | 75 ft                                                     | 3 3/4 in                | 440                                  | 3 x 12           | Se'm'l's B       | Inside       | 72 lbs | 1 3/4                   | 10.50      |
| 480         | Vitrina   | 50 ft                                                     | 4 3/4 in                | 600                                  | 3 1/2 x 10       | Iron             | Outside      | 77 lbs | 1 3/4                   | 9.25       |
| 481         | Vitrol    | 50 ft                                                     | 4 3/4 in                | 600                                  | 3 1/2 x 10       | Br'ss L'd        | Outside      | 79 lbs | 1 3/4                   | 10.25      |
| 482         | Vitrite   | 50 ft                                                     | 4 3/4 in                | 600                                  | 3 1/2 x 10       | Se'm'l's B       | Outside      | 73 lbs | 1 3/4                   | 10.75      |
| 483         | Vitta     | 50 ft                                                     | 3 3/4 in                | 600                                  | 3 1/2 x 12       | Se'm'l's B       | Inside       | 73 lbs | 1 3/4                   | 11.00      |
| 484         | Vittle    | Stand only, 1 1/4-in. Pipe reduced to 1 1/2-in. ....      |                         |                                      |                  |                  |              | 63 lbs | 1 1/4                   | 6.50       |
| 485         | Vitular   | Tubular, Stand only, 2-in. Pipe reduced to 1 1/2-in. .... |                         |                                      |                  |                  |              | 62 lbs | 2, 1 1/4                | 7.00       |
| 486         | Vitular   | Tubular, Stand only, without Pipe and Reducer....         |                         |                                      |                  |                  |              | 54 lbs | 2                       | 6.00       |
|             | Vegetal   | Iron Valve Seat deduct from list.....                     |                         |                                      |                  |                  |              |        |                         | .25        |
|             | Vacuity   | Galvanizing Pump Complete, add to list.....               |                         |                                      |                  |                  |              |        |                         | 2.25       |
|             | Vacuna    | Galvanizing Cylinder only, add to list.....               |                         |                                      |                  |                  |              |        |                         | .75        |

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## HAYES SINGLE ACTING ADJUSTABLE STROKE WINDMILL FORCE PUMP

Fig. 805



Adjustable Stroke, Six, Eight and Ten Inch. Adjustable Base and Large Steel Pins. Reservoir Head with Siphon Spout. Large Polished Rod and Brass Packing Box. Long Fulcrum Support. Renewable Rod Guide. Brass Valve Seat. Brass Screw Vent. Anti-Freezing ❖ ❖ ❖ ❖ ❖ ❖ ❖

This pump has our adjustable stroke, and can be used in shallow or deep wells, as the stroke can be set long for shallow or medium wells, where a large amount of water is desired, and short, so as to work easily in deep wells.

### Price List as Represented by Fig. 805

Four-Foot Set Length

| No. of Pump | Code Word | Adapted for Wells up to                         | Diam. Pump will work in         | Gals. per hr. Forty strokes per minute | Size of Cylinder | Kind of Cylinder | Kind of Caps | Weight | Size of Pipe Tapped for | Price List |
|-------------|-----------|-------------------------------------------------|---------------------------------|----------------------------------------|------------------|------------------|--------------|--------|-------------------------|------------|
| 488         | Viure     | 150 ft                                          | 3 3/4                           | 510                                    | 2 1/2 x 14       | Iron             | Outside      | 77 lbs | 1 1/4                   | \$ 9.75    |
| 489         | Viva      | 150 ft                                          | 3 3/4                           | 510                                    | 2 1/2 x 14       | Br'ss L'd        | Outside      | 78 lbs | 1 1/4                   | 10.75      |
| 490         | Vivary    | 150 ft                                          | 3 3/4                           | 510                                    | 2 1/2 x 14       | Se'ml's B        | Outside      | 73 lbs | 1 1/4                   | 11.25      |
| 491         | Vivid     | 150 ft                                          | 2 1/2                           | 510                                    | 2 1/2 x 16       | Se'ml's B        | Inside       | 73 lbs | 1 1/4                   | 11.50      |
| 492         | Vivify    | 75 ft                                           | 4 1/4                           | 730                                    | 3 x 14           | Iron             | Outside      | 82 lbs | 1 1/4                   | 10.00      |
| 493         | Vivre     | 75 ft                                           | 4 1/4                           | 730                                    | 3 x 14           | Br'ss L'd        | Outside      | 80 lbs | 1 1/4                   | 11.25      |
| 494         | Vixen     | 75 ft                                           | 3 3/4                           | 730                                    | 3 x 14           | Se'ml's B        | Outside      | 74 lbs | 1 1/4                   | 11.75      |
| 495         | Vizard    | 75 ft                                           | 3 1/4                           | 730                                    | 3 x 16           | Se'ml's B        | Inside       | 73 lbs | 1 1/4                   | 12.00      |
| 496         | Vizier    | 50 ft                                           | 4 1/4                           | 1000                                   | 3 1/4 x 14       | Iron             | Outside      | 92 lbs | 1 1/2                   | 10.75      |
| 497         | Vizor     | 50 ft                                           | 4 1/4                           | 1000                                   | 3 1/4 x 14       | Br'ss L'd        | Outside      | 85 lbs | 1 1/2                   | 11.75      |
| 498         | Vocal     | 50 ft                                           | 4 1/4                           | 1000                                   | 3 1/4 x 14       | Se'ml's B        | Outside      | 75 lbs | 1 1/2                   | 12.25      |
| 499         | Vocalize  | 50 ft                                           | 3 3/4                           | 1000                                   | 3 1/2 x 16       | Se'ml's B        | Inside       | 75 lbs | 1 1/2                   | 12.50      |
| 500         | Vocule    | Stand only.....                                 | 1 1/2 in. Pipe reduced to 1 1/4 |                                        |                  |                  |              | 64 lbs | 1 1/4 & 1 1/2           | 7.25       |
| 501         | Vocation  | Tabular, Stand only, 2 in Pipe reduc'd to 1 1/4 |                                 |                                        |                  |                  |              | 63 lbs | 1 1/4 & 2               | 7.75       |
| 502         | Vocative  | Tabular, Stand (without Pipe) for 2 in. Pipe    |                                 |                                        |                  |                  |              | 57 lbs | 2                       | 6.75       |
|             | Vegetal   | Iron Valve Seat.....                            |                                 |                                        |                  |                  |              |        |                         | .25        |
|             | Vacuity   | Galvanizing Pump complete.....                  |                                 |                                        |                  |                  |              |        |                         | 2.25       |
|             | Vacuna    | Galvanizing Cylinder only.....                  |                                 |                                        |                  |                  |              |        |                         | .75        |

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## HAYES HAND LIFT PUMP

Adjustable Base and Large Steel Pins.  
Reservoir Head with Siphon Spout.  
Brass Valve Seat. Anti-Freezing

Fig. 806



This pump has our large steel handle pins with long bearings, held so they cannot turn, insuring long life and a smooth and noiseless pump. It contains many new improvements and is very neat in design.

### Price List as Represented by Fig. 806

#### Four-Foot Set Length

| No. of Pump | Code Word | Adapted for Wells up to   | Diam. Pump will work in | Gals. per hr.—Forty strokes per minute | Size of Cylinder | Kind of Cylinder | Kind of Caps     | Weight | Size of Pipe Tapped for | Price List |
|-------------|-----------|---------------------------|-------------------------|----------------------------------------|------------------|------------------|------------------|--------|-------------------------|------------|
| 508         | Vulgarity | 60 ft                     | 3 3/4 in                | 306                                    | 2 1/2 x 10       | Iron             | Outside          | .....  | 1 1/4                   | \$ 4.75    |
| 509         | Vulgarize | 60 ft                     | 3 3/4 in                | 306                                    | 2 1/2 x 10       | Br'ss L'd        | Outside          | .....  | 1 1/4                   | 5.75       |
| 510         | Vulgarly  | 60 ft                     | 3 3/4 in                | 306                                    | 2 1/2 x 10       | Se'ml's B        | Outside          | .....  | 1 1/4                   | 6.25       |
| 511         | Vulgate   | 60 ft                     | 2 3/4 in                | 306                                    | 2 1/2 x 12       | Se'ml's B        | Inside           | .....  | 1 1/4                   | 6.50       |
| 512         | Vulgas    | 40 ft                     | 4 1/4 in                | 440                                    | 3 x 10           | Iron             | Outside          | .....  | 1 1/4                   | 5.00       |
| 513         | Vuln      | 40 ft                     | 4 1/4 in                | 440                                    | 3 x 10           | Br'ss L'd        | Outside          | .....  | 1 1/4                   | 6.00       |
| 514         | Vulnera   | 40 ft                     | 3 3/4 in                | 440                                    | 3 x 10           | Se'ml's B        | Outside          | .....  | 1 1/4                   | 6.75       |
| 515         | Vulnific  | 40 ft                     | 3 3/4 in                | 440                                    | 3 x 12           | Se'ml's B        | Inside           | .....  | 1 1/4                   | 7.00       |
| 516         | Vulnus    | Stand only                |                         |                                        |                  |                  | 1 1/4 in. Pipe   | .....  |                         | 3.50       |
|             | Vegetal   | For Iron Valve Seat       |                         |                                        |                  |                  | deduct from list |        |                         | .25        |
|             | Vacuity   | Galvanizing Pump Complete |                         |                                        |                  |                  | add to list      |        |                         | 1.75       |
|             | Vacuna    | Galvanizing Cylinder only |                         |                                        |                  |                  | add to list      |        |                         | .75        |

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## ANTI-FREEZING SET LENGTH PUMP

Fig. 900



This cut represents a new anti-freezing set length pump. It is adapted to shallow wells, cisterns or driven wells. This pump is furnished with revolving cap and handle. These pumps are all tapped at spout, and are furnished with three feet set length of wrought iron pipe. The cylinders are bored perfectly true and then polished.

Price List as Represented by Fig. 900

| No. of Pump | Code Word | Size of Cylinder | Kind of Cylinder | Size of Pipe tapped for | Weight | Price List |
|-------------|-----------|------------------|------------------|-------------------------|--------|------------|
| 525         | Vocist    | 3x10             | Iron             | 1 1/4 in.               | 60     | \$5.00     |
| 526         | Vocule    | Stand only.....  |                  | 1 1/4 in.               | 34     | 3.50       |

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Fig. 903



## HAND LIFT SET LENGTH PUMP

Revolving Top. Tapped at Spout.  
Brass Valve Seat. Anti-Freezing

This cut represents a heavier set length than our Fig. 900. It has a well proportioned standard and a favorite with pump men. Has a  $\frac{3}{8}$ -inch plunger rod fastened to the handle with a set screw. It has the  $\frac{7}{16}$ -inch handle pins. It will thus be seen that the pump is as well and as strongly made as a medium weight pump of this kind can well be.

Particular attention is called to the brass lower valve seat which gives you a high grade pump. This pump is furnished in iron cylinders only, tapped  $1\frac{1}{4}$ .

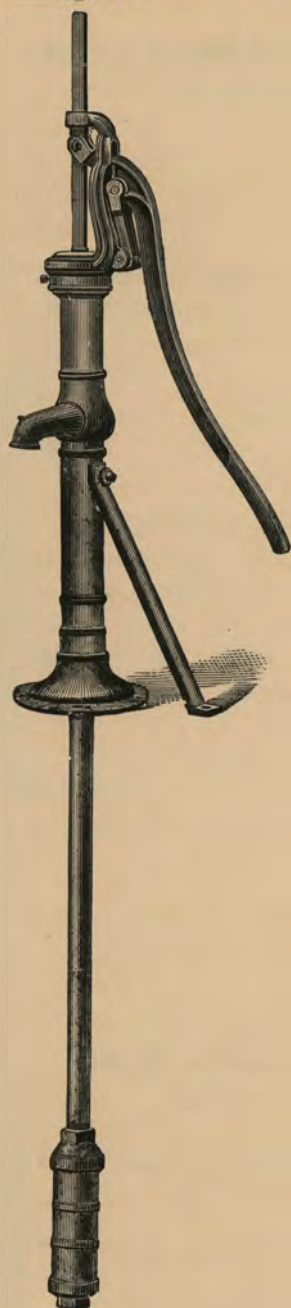
### Price List as Represented by Fig. 903

#### Four-foot Set Length

| No. of Pump | Code Word | Size of Cylinder | Weight | Price List |
|-------------|-----------|------------------|--------|------------|
| 527         | Waalie    | 3 x 10 iron      | 65     | \$5.50     |

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Fig. 904



## HAND AND WINDMILL LIFT SET LENGTH PUMP

Revolving Top. Tapped at Spout.  
Brass Valve Seat. Anti-Freezing \*

This is our light set length windmill pump, used for shallow wells, cisterns or drive wells. Some prefer this style of top on account of the rod working perpendicularly. The top revolves as in other pumps of this class. Painted two coats of orange yellow and varnished, in fact, a first-class job in every respect. This pump is furnished only with a 3 x 10 iron cylinder with a brass lower valve seat.

### Price List as Represented by Fig. 904

#### Four-foot Set Length

| No. of Pump | Code Word | Size of Cylinder | Weight | Price List |
|-------------|-----------|------------------|--------|------------|
| 528         | Wabbly    | 3 x 10 iron      | 70     | \$6.50     |

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Fig. 905



## HAND AND WINDMILL LIFT SET PUMP

Revolving Top. Tapped at Spout  
Brass Valve Seat. Anti-Freezing

This pump is heavily constructed and is designed for use on windmills. The standard is well proportioned and we can thoroughly recommend it in every way as a first class windmill pump or for other heavy work. We furnish this pump with all sizes and styles of cylinders. It is also furnished with brass lower valve seat. This pump has a rod coupling at top of cylinder.

### Price List as Represented by Fig. 905

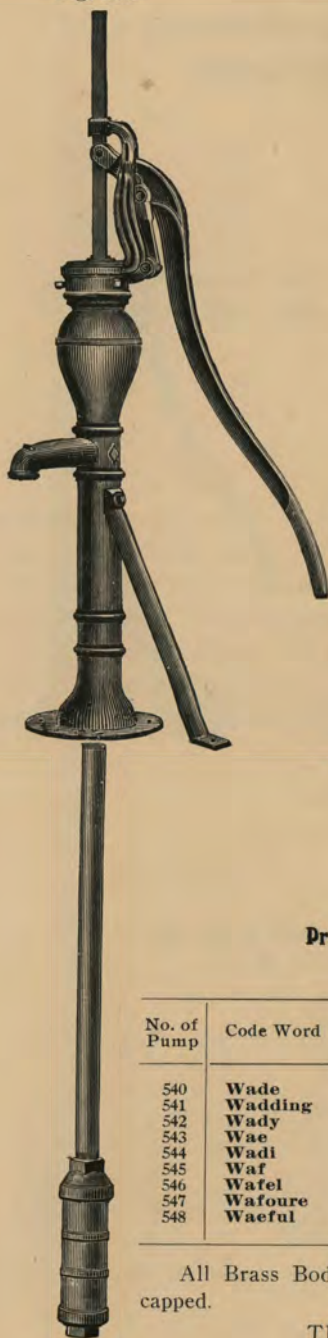
Four-foot Set Length

| No. of Pump | Code Word | Size of Cylinder | Kind of Cylinder | Tapped | Weight | Price List |
|-------------|-----------|------------------|------------------|--------|--------|------------|
| 529         | Wabble    | 2½ x 10          | Iron             | 1¼     | 75     | \$ 7.25    |
| 530         | Wabend    | 2½ x 10          | Brass Lined      | 1¼     | 77     | 9.00       |
| 531         | Wabrn     | 2½ x 10          | Brass Body       | 1¼     | 72     | 9.50       |
| 532         | Wabster   | 3 x 10           | Iron             | 1¼     | 77     | 7.50       |
| 533         | Wacelle   | 3 x 10           | Brass Lined      | 1¼     | 78     | 9.00       |
| 534         | Wacit     | 3 x 10           | Brass Body       | 1¼     | 74     | 9.50       |
| 535         | Wacke     | 3½ x 10          | Iron             | 1½     | 80     | 8.00       |
| 536         | Wacky     | 3½ x 10          | Brass Lined      | 1½     | 82     | 10.00      |
| 537         | Wacken    | 3½ x 10          | Brass Body       | 1½     | 78     | 11.00      |

All Brass Body Cylinders outside capped unless ordered flush capped.

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Fig. 906



## HEAVY HAND AND WINDMILL LIFT SET LENGTH PUMP

Revolving Top. Tapped at Spout.  
Brass Valve Seat. Anti-Freezing ❄

This pump is heavily constructed. It has the swell top or reservoir feature above the spout which prevents water spurting out through the cap as it sometimes does in other styles.

This pump is furnished with Iron, Brass Lined and Brass Body Cylinder. Flush Caps will be sent when so ordered. Brass Lower Valve Seat furnished with this pump. This pump has a rod coupling at top of cylinder.

### Price List as Represented by Fig. 906

#### Four-Foot Set Length

| No. of Pump | Code Word | Size of Cylinder | Kind of Cylinder | Tapped | Weight | Price List |
|-------------|-----------|------------------|------------------|--------|--------|------------|
| 540         | Wade      | 2½ x 10          | Iron             | 1¼     | 75     | \$ 8.25    |
| 541         | Wadding   | 2½ x 10          | Brass Lined      | 1¼     | 77     | 9.50       |
| 542         | Wady      | 2½ x 10          | Brass Body       | 1¼     | 72     | 10.00      |
| 543         | Wae       | 3 x 10           | Iron             | 1¼     | 77     | 8.50       |
| 544         | Wadi      | 3 x 10           | Brass Lined      | 1¼     | 78     | 10.00      |
| 545         | Waf       | 3 x 10           | Brass Body       | 1¼     | 74     | 10.50      |
| 546         | Wafel     | 3½ x 10          | Iron             | 1½     | 80     | 9.00       |
| 547         | Wafoure   | 3½ x 10          | Brass Lined      | 1½     | 82     | 11.00      |
| 548         | Waeful    | 3½ x 10          | Brass Body       | 1½     | 78     | 12.00      |

All Brass Body Cylinders outside capped unless ordered flush capped.

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**Fig. 907**  
BOLTED SPOUT

**Fig. 908**  
COCK SPOUT

## HAND FORCE SET LENGTH PUMP

Bolted or Cock Spout. Back Outlet. Revolving Top. Tapped at Spout. Polished Rod. Brass Stuffing Box. Brass Air Vent. Brass Valve Seat. Anti-Freezing ❄ ❄

This pump represents a new Hand Force Set-length Pump. This pump is adapted for medium depth wells. The pump is strong and substantially made and one of our best hand force pumps. The oscillating link is the most complete and practical combination offered to the trade. With this there is no possible chance for the piston rod to cramp. This pump has a rod coupling at top of cylinder.

### Price List as Represented by Fig. 907

FOR FIG. 908 ADD \$1.50 LIST

#### Four-foot Set Length

| No. of Pump | Code Word | Size of Cylinder                | Kind of Cylinder | Tapped | Weight | Price List |      |
|-------------|-----------|---------------------------------|------------------|--------|--------|------------|------|
| 550         | Waeg      | 2½ x 10                         | Iron             | 1¼     | 73     | \$ 9.00    |      |
| 551         | Waeful    | 2½ x 10                         | Brass Lined      | 1¼     | 75     | 10.50      |      |
| 552         | Waeness   | 2½ x 10                         | Brass Body       | 1¼     | 70     | 11.00      |      |
| 553         | Waesome   | 3 x 10                          | Iron             | 1¼     | 75     | 9.50       |      |
| 554         | Waetul    | 3 x 10                          | Brass Lined      | 1¼     | 76     | 11.00      |      |
| 555         | Wafture   | 3 x 10                          | Brass Body       | 1¼     | 72     | 11.50      |      |
| 556         | Wage      | 3½ x 10                         | Iron             | 1½     | 78     | 10.00      |      |
| 557         | Waggish   | 3½ x 10                         | Brass Lined      | 1½     | 80     | 12.00      |      |
| 558         | Wagnak    | 3½ x 10                         | Brass Body       | 1½     | 76     | 13.00      |      |
|             | Wagner    | For Cock Spout add to list..... |                  |        |        |            | 1.50 |

All Brass Body Cylinder outside capped unless ordered flushed capped.

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**Fig. 909**  
BOLTED SPOUT

**Fig. 910**  
COCK SPOUT  
6-in. Stroke

## HAND AND WINDMILL FORCE SET LENGTH PUMP

Bolted or Cock Spout, Back Outlet, Revolving Top, Tapped at Spout, Polished Rod, Brass Stuffing Box, Brass Air Vent, Brass Valve Seat. Anti-Freezing ❀ ❀

This is a popular set length force pump for windmill use and is a favorite with pump men. It is substantially made and will give good service. The spout is bolted on and should it become broken can be cheaply replaced. This pump is furnished with Iron, Brass Lined or Brass Body Cylinder, all with Brass lower valve seat. The Brass Body Cylinder will be furnished with flush caps when so ordered. This pump has a rod coupling at top of cylinder.

### Price List as Represented by Fig. 909

For Fig. 910 add \$1.50 to the List

#### Four-Foot Set Length

| No. of Pump | Code Word | Size of Cylinder               | Kind of Cylinder | Tapped | Wt. | Price List |
|-------------|-----------|--------------------------------|------------------|--------|-----|------------|
| 560         | Wagship   | 2½ x 10                        | Iron             | 1¼     | 85  | \$ 9.75    |
| 561         | Wagsome   | 2½ x 10                        | Brass Lined      | 1¼     | 87  | 11.25      |
| 562         | Wahabi    | 2½ x 10                        | Brass Body       | 1¼     | 82  | 11.50      |
| 563         | Wahoo     | 3 x 10                         | Iron             | 1¼     | 87  | 10.00      |
| 564         | Wahwah    | 3 x 10                         | Brass Lined      | 1¼     | 88  | 11.50      |
| 565         | Walbling  | 3 x 10                         | Brass Body       | 1¼     | 84  | 12.00      |
| 566         | Wallful   | 3½ x 10                        | Iron             | 1½     | 90  | 10.50      |
| 567         | Wain      | 3½ x 10                        | Brass Lined      | 1½     | 92  | 12.50      |
| 568         | Wainman   | 3½ x 10                        | Brass Body       | 1½     | 88  | 13.50      |
|             | Wagner    | For Cock Spout.....add to list |                  |        |     | 1.50       |

All Brass Body Cylinders outside capped unless ordered flush capped.

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## HAND AND WINDMILL LIFT STANDARDS

Revolving Top. Tapped at Spout

Fig. 912  
Windmill Lift

Fig. 911  
Hand Lift



These pumps are of medium weight, well proportioned and will give good satisfaction as a medium grade pump. They have  $\frac{7}{16}$ -inch handle pins and are as well and strongly made as a medium weight of pump of this kind can well be.

**Price List as Represented by Fig. 911**

| No. of Pump | Code Word  | Tapped          | Weight | Price List |
|-------------|------------|-----------------|--------|------------|
| 570         | Waist belt | 1 $\frac{1}{4}$ | 40     | \$3.50     |

**Price List as Represented by Fig. 912**

| No. of Pump | Code Word | Tapped          | Weight | Price List |
|-------------|-----------|-----------------|--------|------------|
| 580         | Waisting  | 1 $\frac{1}{4}$ | 46     | \$4.25     |

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Fig. 913



## HAND AND WINDMILL LIFT PUMP STANDARDS

Revolving Top, Tapped  
at Spout. 6 Inch and Ad-  
justable Stroke. Tapped  
1 $\frac{1}{4}$ , 1 $\frac{1}{2}$  and 2 Inches  $\times \times$

These pumps are heavily  
constructed, are adapted for  
hard and severe use as  
windmill pumps.

Figure 914 has a swell or  
reservoir feature above the  
spout which prevents the  
water spurting through the  
cap as it sometimes does in  
other styles.

Fig. 914



### Price List as Represented by Fig. 913

Six Inch or Adjustable Stroke

| No. of Pump | Code Word | Tapped               | Stroke     | Weight | Price List |
|-------------|-----------|----------------------|------------|--------|------------|
| 590         | Waltress  | 1 $\frac{1}{4}$ inch | 6-inch     | 55     | \$ 4.60    |
| 591         | Walvode   | 1 $\frac{1}{2}$ inch | 6-inch     | 55     | 4.60       |
| 592         | Walvure   | 2 inch               | 6-inch     | 55     | 4.60       |
| 593         | Wakashan  | 1 $\frac{1}{4}$ inch | Adjustable | 59     | 5.30       |
| 594         | Wakerobin | 1 $\frac{1}{2}$ inch | Adjustable | 59     | 5.30       |
| 595         | Wakerod   | 2 inch               | Adjustable | 59     | 5.30       |

### Price List as Represented by Fig. 914

Six Inch or Adjustable Stroke

| No. of Pump | Code Word | Tapped               | Stroke     | Weight | Price List |
|-------------|-----------|----------------------|------------|--------|------------|
| 600         | Waking    | 1 $\frac{1}{4}$ inch | 6-inch     | 60     | \$ 5.00    |
| 601         | Waketox   | 1 $\frac{1}{2}$ inch | 6-inch     | 60     | 5.00       |
| 602         | Walchup   | 2 inch               | 6-inch     | 60     | 5.00       |
| 603         | Waldaf    | 1 $\frac{1}{4}$ inch | Adjustable | 64     | 5.70       |
| 604         | Waldenear | 1 $\frac{1}{2}$ inch | Adjustable | 64     | 5.70       |
| 605         | Waldenta  | 2 inch               | Adjustable | 64     | 5.70       |

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## HAND AND WINDMILL LIFT PUMP STANDARDS WITH LONG FULCRUM

Revolving Top. Tapped at Spout. Six  
Inch or Adjustable Stroke. Tapped  $1\frac{1}{4}$ ,  $1\frac{1}{2}$   
and 2 Inches ❀ ❀ ❀ ❀ ❀ ❀

Fig. 915



These standards are heavy cast iron, suitable for deep well, hand or windmill work.

The long fulcrum insures a much easier operation, thereby, more rapid pumping and increased capacity of pump. The long fulcrum throws all the strain of the lever on the base of the pump instead of on the pump top. Furnished with slotted brace.

Price List as Represented by  
Fig. 915

| No. of Pump | Code Word | Tapped         | Stroke | Weight | Price List |
|-------------|-----------|----------------|--------|--------|------------|
| 610         | Waldflute | $1\frac{1}{4}$ | 6-in.  | 61     | \$5.50     |
| 611         | Waldjay   | $1\frac{1}{2}$ | 6-in.  | 61     | 5.50       |
| 612         | Waleknot  | 2              | 6-in.  | 61     | 5.50       |

Price List as Represented by  
Fig. 916

| No. of Pump | Code Word | Tapped         | Stroke | Weight | Price List |
|-------------|-----------|----------------|--------|--------|------------|
| 620         | Walhal    | $1\frac{1}{4}$ | Adj.   | 65     | \$6.20     |
| 621         | Walkout   | $1\frac{1}{2}$ | Adj.   | 65     | 6.20       |
| 622         | Wall      | 2              | Adj.   | 65     | 6.20       |

Fig. 916



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## HAND FORCE PUMP STANDARDS

Bolted or Cock Spout. Back Outlet. Revolving Top.  
Tapped at Spout. Polished Piston Rod. Brass Stuff-  
ing Box. Brass Air Vent. Tapped, 1 $\frac{1}{4}$ , 1 $\frac{1}{2}$  and 2 Inches

These cuts represent a new and desirable style of Hand Force Pump. They are strong and substantially made, well designed, painted two coats of orange yellow and varnished, and are among the most attractive force pumps made.

The cap is adjustable and can be placed in any desired position. Has turned and polished piston rod and brass stuffing box. The pump has a detachable spout which can be replaced with a faucet spout, and has a back outlet tapped for 1-inch pipe. The oscillating link with the coupling prevents the piston rod from binding in the stuffing box at any elevation of the handle.

**Fig. 917**  
**BOLTED SPOUT**



**Price List as Represented by  
Fig. 917**

| No. of Pump | Code Word | Tapped             | Weight | Price List |
|-------------|-----------|--------------------|--------|------------|
| 630         | Walleha   | 1 $\frac{1}{4}$ in | 52     | \$6.00     |
| 631         | Wallert   | 1 $\frac{1}{2}$ in | 52     | 6.00       |
| 632         | Wallersp  | 2 in               | 52     | 6.00       |

**Price List as Represented by  
Fig. 918**

| No. of Pump | Code Word | Tapped             | Weight | Price List |
|-------------|-----------|--------------------|--------|------------|
| 640         | Walleye   | 1 $\frac{1}{4}$ in | 55     | \$7.50     |
| 641         | Wallless  | 1 $\frac{1}{2}$ in | 55     | 7.50       |
| 642         | Walloon   | 2 in               | 55     | 7.50       |

**Fig. 918**  
**COCK SPOUT**



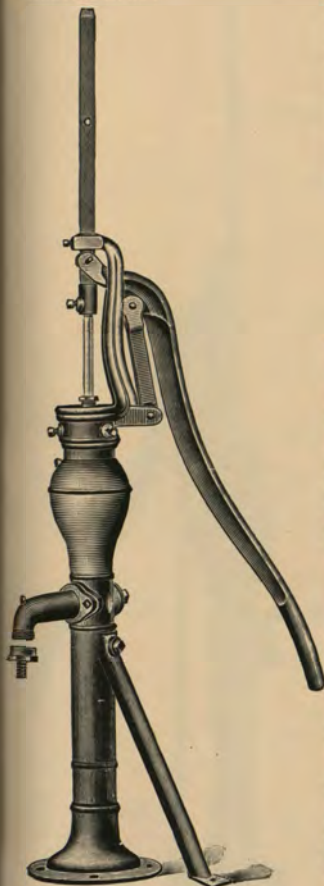
**THEY'RE PAINTED YELLOW**



## HAND AND WINDMILL FORCE PUMP STANDARDS

Bolted or Cock Spout. Back Outlet. Six Inch or Adjustable Stroke. Revolving Top. Tapped at Spout. Polished Piston Rod. Brass Stuffing Box and Air Vent. Tapped  $1\frac{1}{4}$ ,  $1\frac{1}{2}$  and 2 Inches

**Fig. 919**  
6-inch Stroke  
BOLTED SPOUT



These cuts show a popular windmill force pump; there is a tube in the air chamber through which the piston rod passes, preventing the escape of air. They are a very desirable style of force pump for all styles of wells, strongly and substantially made, painted with two coats of orange yellow and varnished, and present a highly finished force pump in every particular.

**Price List as Represented by Fig. 919**

Six Inch or Adjustable Stroke

| No. of Pump | Code Word | Tapped         | Stroke     | Weight | Price List |
|-------------|-----------|----------------|------------|--------|------------|
| 650         | Wallsend  | $1\frac{1}{4}$ | 6 inch     | 65     | 6.00       |
| 651         | Wallwort  | $1\frac{1}{2}$ | 6 inch     | 65     | 6.00       |
| 652         | Wally     | 2              | 6 inch     | 65     | 6.00       |
| 653         | Walmup    | $1\frac{1}{4}$ | Adjustable | 70     | 6.70       |
| 654         | Walpy     | $1\frac{1}{2}$ | Adjustable | 70     | 6.70       |
| 655         | Walwe     | 2              | Adjustable | 70     | 6.70       |

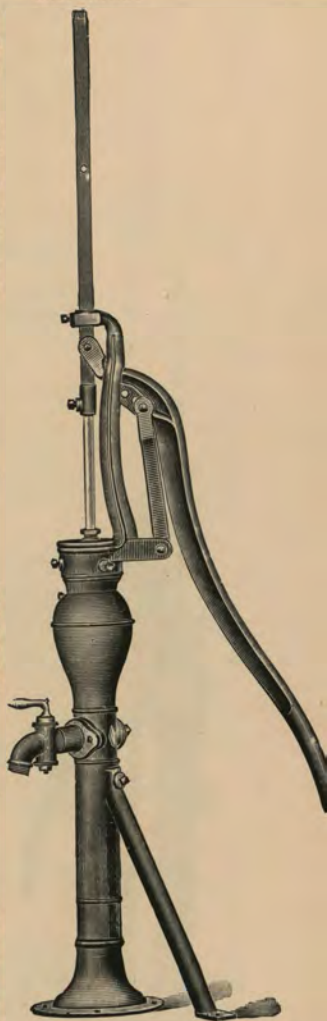
**Price List as Represented by Fig. 920**

Six Inch or Adjustable Stroke

| No. of Pump | Code Word | Tapped         | Stroke     | Weight | Price List |
|-------------|-----------|----------------|------------|--------|------------|
| 660         | Wambable  | $1\frac{1}{4}$ | 6 inch     | 68     | 7.50       |
| 661         | Wambals   | $1\frac{1}{2}$ | 6 inch     | 68     | 7.50       |
| 662         | Wamerah   | 2              | 6 inch     | 68     | 7.50       |
| 663         | Wamhole   | $1\frac{1}{4}$ | Adjustable | 73     | 8.20       |
| 664         | Wamkup    | $1\frac{1}{2}$ | Adjustable | 73     | 8.20       |
| 665         | Wampok    | 2              | Adjustable | 73     | 8.20       |

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**Fig. 920**  
Adjustable Stroke  
COCK SPOUT



## HAND AND WINDMILL FORCE PUMP STANDS WITH LONG FULCRUM

Bolted or Cock Spout. Back Outlet. Six Inch or Adjustable Stroke. Revolving Top. Tapped at the Spout. Polished Piston Rod. Brass Stuffing Box and Air Vent. Tapped  $1\frac{1}{4}$ ,  $1\frac{1}{2}$  and 2 Inches ❀ ❀ ❀

**Fig. 922**  
Adjustable Stroke  
BOLTED COCK SPOUT

These standards are heavy cast iron suitable for deep well, hand or windmill work. The long fulcrum insures a much easier operation thereby, more rapid pumping and increased capacity of pump.

The long fulcrum throws all the strain of the lever on the base of the pump instead of on the pump top.

Furnished with slotted brace.

**Price List as Represented by Fig. 921**  
6 inch or Adjustable Stroke

| No. of Pump | Code Word | Tapped         | Stroke | Weight | Price List |
|-------------|-----------|----------------|--------|--------|------------|
| 670         | Waneyed   | $1\frac{1}{4}$ | 6-in   | 70     | \$7.00     |
| 671         | Wandal    | $1\frac{1}{2}$ | 6-in   | 70     | 7.00       |
| 672         | Wandoo    | 2              | 6-in   | 70     | 7.00       |
| 673         | Waney     | $1\frac{1}{4}$ | Adj.   | 75     | 7.70       |
| 674         | Wang      | $1\frac{1}{2}$ | Adj.   | 75     | 7.70       |
| 675         | Wanghee   | 2              | Adj.   | 75     | 7.70       |

**Price List as Represented by Fig. 922**  
6 inch or Adjustable Stroke

| No. of Pump | Code Word | Tapped         | Stroke | Weight | Price List |
|-------------|-----------|----------------|--------|--------|------------|
| 680         | Wanhope   | $1\frac{1}{4}$ | 6-in   | 73     | \$8.50     |
| 681         | Wanhorn   | $1\frac{1}{2}$ | 6-in   | 73     | 8.50       |
| 682         | Wanrufe   | 2              | 6-in   | 73     | 8.50       |
| 683         | Wansaf    | $1\frac{1}{4}$ | Adj.   | 78     | 9.20       |
| 684         | Wansaha   | $1\frac{1}{2}$ | Adj.   | 78     | 9.20       |
| 685         | Wansox    | 2              | Adj.   | 78     | 9.20       |

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**Fig. 921**  
6-inch Stroke  
BOLTED SPOUT





## HAYES DOUBLE-CYLINDER TANK AND FIRE PUMP

THE THRESHERMAN'S FRIEND

Fig. 718



### Five Reasons Why the Hayes Tank Pump is the Best

**First.**—The large air chamber acts as a cushion and gives a steady pressure.

**Second.**—Having no packing box, the friction is reduced to a minimum, and the trouble of packing is entirely overcome.

**Third.**—The cylinders being of seamless brass, they will not rust, and the plunger leather will last almost indefinitely.

**Fourth.**—By using a brass valve seat turned perfectly true in a lathe, we are always certain of a perfect seat.

**Fifth.**—The valve is also made of brass, provided with a leather face, which prevents it from wearing the seat, making the most perfect valve and valve seat ever constructed.

While this pump may cost you a little more than some other pumps, you must consider the difference in material, quality and durability, and that it is really cheaper than any iron-cylinder pump you can buy for half the money. Connections for attaching suction or discharge hose will be furnished with each pump.

### The Hayes Double-Cylinder Tank and Fire Force Pump

The Hayes Double-cylinder Tank and Fire Force Pump was first constructed with the idea of filling the increasing demand for a tank pump that can be relied upon to raise a large amount of water, and at the same time be a powerful force pump. That we have succeeded even beyond our expectations is fully demonstrated by the pump itself. We unhesitatingly claim the Hayes to be the best tank pump on the market.

#### PRICE LIST

| Telegraph Code   |                                                                                                                                                                                                                    | Price   |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>Vaneplate</b> | Tank Pump only, with two 3½-inch cylinder. Shipping weight, 100 lbs.                                                                                                                                               | \$20.00 |
| <b>OUTFIT A</b>  |                                                                                                                                                                                                                    |         |
| <b>Van</b>       | Tank Pump with 15 ft. of 2-in. concealed wire suction hose, complete, and 15 ft. of 1¼-in. 3-ply conducting hose, complete with strainer, couplings and nozzles, Shipping weight, 130 lbs.                         | 34.00   |
| <b>OUTFIT B</b>  |                                                                                                                                                                                                                    |         |
| <b>Vanda</b>     | Tank Pump with 20 ft. of 2-in. concealed wire suction hose, complete, and 15 ft. of 1¼-in. 3-ply conducting hose, complete, with strainer, couplings and nozzles. Shipping weight, 140 lbs.                        | 37.00   |
| <b>OUTFIT C</b>  |                                                                                                                                                                                                                    |         |
| <b>Vanadic</b>   | Tank Pump with 20 ft. of 2-in. concealed wire suction hose, complete, and 5 ft. of 2-in. pipe and 25 ft. of 1¼-in. 3-ply conducting hose, complete with strainer, couplings and nozzles. Shipping weight, 140 lbs. | 40.00   |

All our 2-inch suction hose is made with concealed wire, leaving the inside perfectly smooth, which not only protects the wire but creates less friction in pumping. It is also made with enlarged ends so that it will fit 2-inch pipe nipple, thus giving it a capacity equal to 2¼-inch hose not having the enlarged ends.

## HAYES THREE-CYLINDER POWER FORCE PUMP

Fig. 721

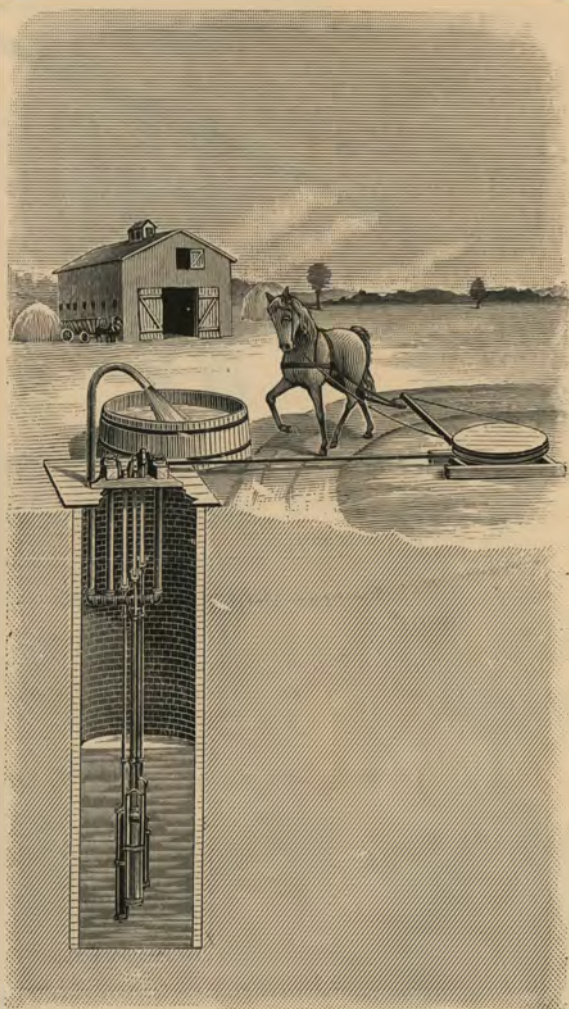
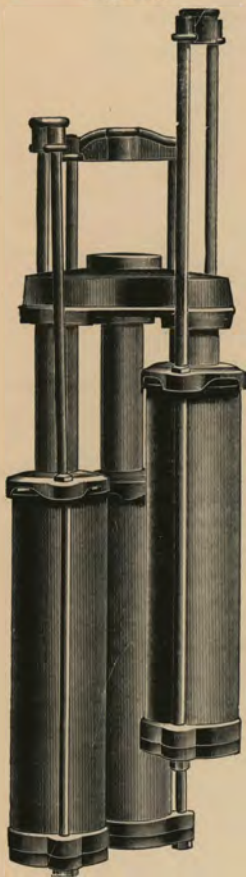


Fig. 726



This pump has been in practical operation for some time and is a grand success. A large number of them are in use on stock farms, in coal shafts, and in California and other western states, for irrigating purposes, all giving excellent satisfaction.

These pumps are made to run by engine or horse-power. They are fitted up with crank shaft and pitmans, one end of crank shaft being squared to fit a 1-inch knuckle, or will be made round to attach pulley for engine.

Where a large quantity of water is desired, as on stock farms and for irrigation, this pump cannot be excelled.

They are made in four sizes with 3, 3½, 4 and 6-inch brass cylinders, and are adapted for any depth well, the only difference being the larger the pump the more power will be required. The well must be at least 12 inches in diameter for the smallest pump, and 16 inches for the largest size.

These pumps should be run from 30 to 40 revolutions per minute, and will raise from 1,800 to 7,200 gallons per hour. One horse is quite sufficient to pump from any ordinary well.



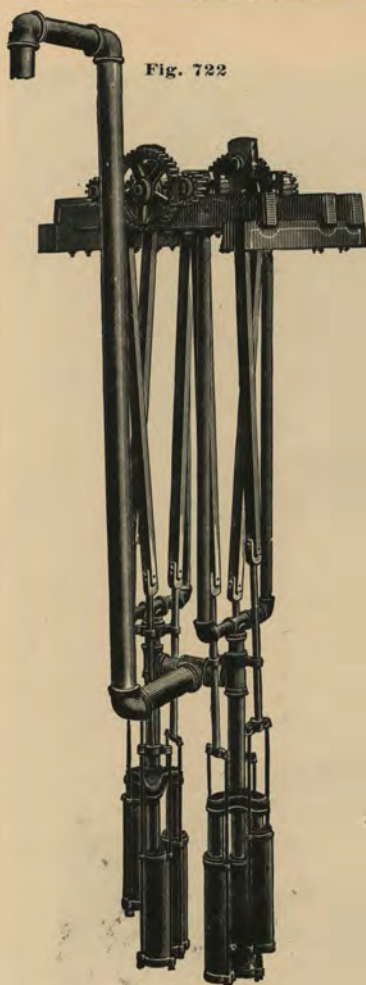


Fig. 722

## HAYES SIX-CYLINDER GEARED POWER FORCE PUMP

For Shallow or Deep Wells. Seamless  
Drawn Brass Cylinders. Brass Valve  
Seats with Leather-Faced Brass Valves.  
Anti-Freezing ❀ ❀ ❀ ❀ ❀ ❀

This pump is made by placing two of our three-cylinder pumps side by side, and connecting them together by gearing, giving twice the capacity, and we think making it more desirable than one large pump, from the fact that if anything should go wrong with one, we still have the other pump to rely on.

We also make the geared pump, using only three cylinders, as shown by Fig. 723. This pump will have the same capacity as the plain crank pump, but is more desirable when wanted for deep wells, or where heavy work is required, as the gearing on both ends of the crank shaft doubles the strength of the same. This gearing increases the speed of the tumbling rod  $2\frac{1}{2}$  times.

These geared pumps are specially recommended when wanted for use in connection with steam or gasoline power, as the proper speed can be obtained with a smaller pulley, and it also releases the crank shaft entirely from the belt strain.

### Price List as Represented by Figs. 721, 722 and 723

#### Three-Cylinder for Steam or Horse-Power. Fig. 721

| Telegraph Code | Number of Pump | Diam. of Cylinder | Size of Discharge Pipe | Size of Connecting Pipe | Length of Stroke | Gallons Str'k's per minute<br>50 Strokes | Depth of Well adapt'd for<br>1 h. p. estm. | Least Diameter Pump will work in | Shipping Weight | List Price |
|----------------|----------------|-------------------|------------------------|-------------------------|------------------|------------------------------------------|--------------------------------------------|----------------------------------|-----------------|------------|
| Vandalle       | No. 14         | 3 in.             | 1½ in.                 | 2½ in.                  | 8 in.            | 28                                       | 80 ft.                                     | 12 in.                           | 275 lbs.        | \$ 45.00   |
| Vandyke        | No. 15         | 3½ in.            | 1½ in.                 | 2 in.                   | 8 in.            | 40                                       | 60 ft.                                     | 14 in.                           | 300 lbs.        | 47.50      |
| Vanessa        | No. 16         | 4 in.             | 2 in.                  | 1 in.                   | 8 in.            | 52                                       | 40 ft.                                     | 16 in.                           | 325 lbs.        | 50.00      |
| Vanessot       | No. 25         | 6 in.             | 3 in.                  | 3 in.                   | 9 in.            | 120                                      | 60 ft.                                     | 20 in.                           | 400 lbs.        | 100.00     |

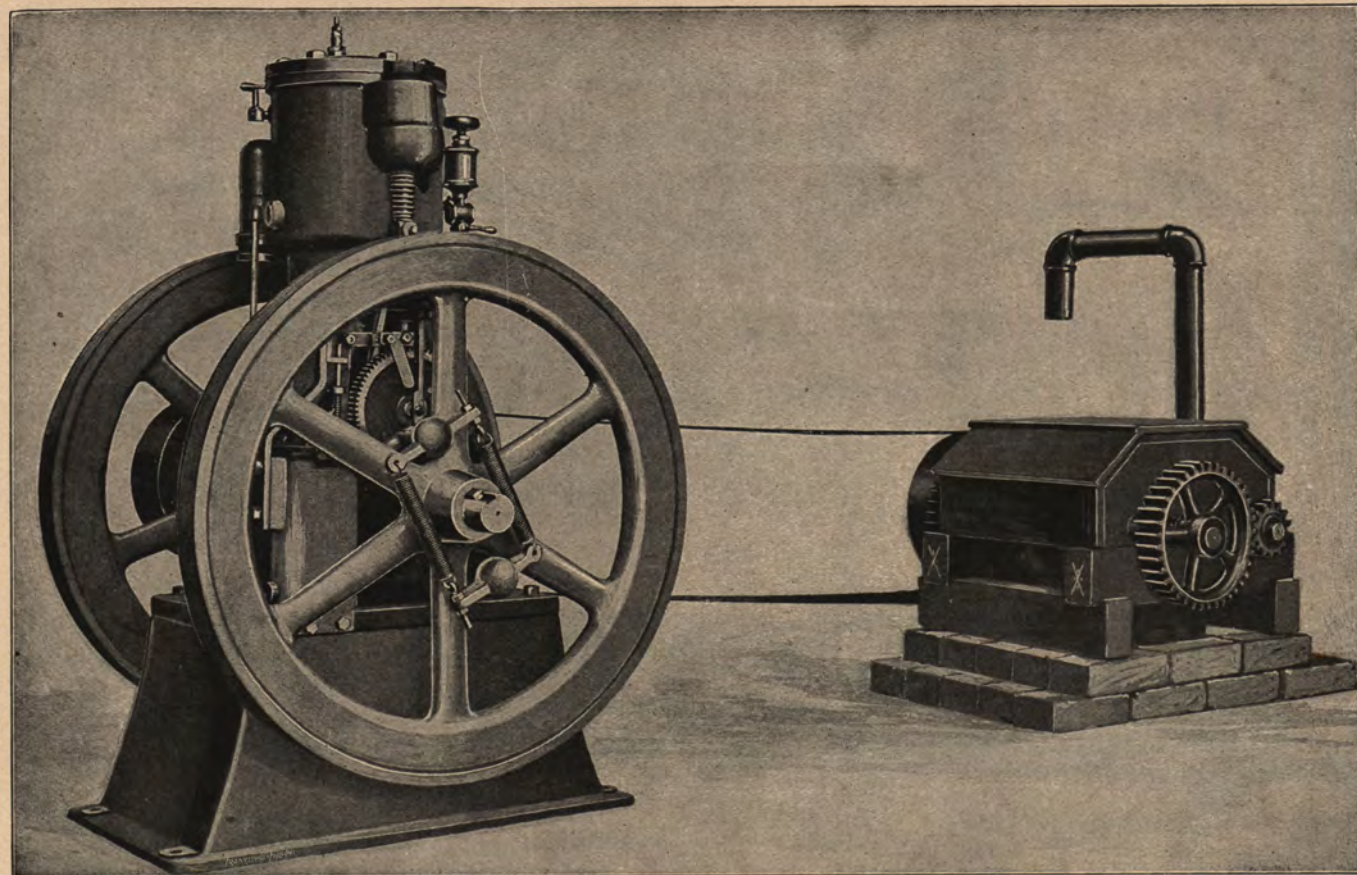
#### Three-Cylinder Geared Pumps, for Steam or Horse-Power. Fig. 723

|          |        |        |        |        |       |     |        |        |          |        |
|----------|--------|--------|--------|--------|-------|-----|--------|--------|----------|--------|
| Vanfoss  | No. 17 | 3 in.  | 1½ in. | 1½ in. | 8 in. | 28  | 80 ft. | 12 in. | 375 lbs. | 70.00  |
| Vanga    | No. 18 | 3½ in. | 1½ in. | 2 in.  | 8 in. | 40  | 60 ft. | 14 in. | 400 lbs. | 72.50  |
| Vanguard | No. 19 | 4 in.  | 2 in.  | 2 in.  | 8 in. | 52  | 40 ft. | 16 in. | 425 lbs. | 75.00  |
| Vanille  | No. 26 | 6 in.  | 3 in.  | 3 in.  | 9 in. | 120 | 60 ft. | 20 in. | 500 lbs. | 125.00 |

#### Six-Cylinder, Double-Geared Pumps, for Steam or Horse-Power. Fig. 722

|         |        |        |       |       |       |     |        |        |           |        |
|---------|--------|--------|-------|-------|-------|-----|--------|--------|-----------|--------|
| Vanish  | No. 20 | 3 in.  | 3 in. | 2 in. | 8 in. | 56  | 80 ft. | 24 in. | 750 lbs.  | 130.00 |
| Vanity  | No. 21 | 3½ in. | 3 in. | 2 in. | 8 in. | 80  | 60 ft. | 28 in. | 800 lbs.  | 135.00 |
| Vanmost | No. 22 | 4 in.  | 3 in. | 2 in. | 8 in. | 104 | 40 ft. | 32 in. | 850 lbs.  | 140.00 |
| Vanner  | No. 27 | 6 in.  | 5 in. | 3 in. | 9 in. | 240 | 66 ft. | 40 in. | 1000 lbs. | 225.00 |

Fig. 723



The above cut shows a Gasoline Engine running one of our Geared Three-Cylinder Force Pumps.  
Sizes can be had to handle from 1,700 to 14,400 gallons an hour.



## TWO HORSE-POWER, FOR THE HAYES THREE-CYLINDER POWER FORCE PUMP



Above cut represents a Two Horse-power which is especially adapted for running our power pumps.

These powers are well made of good material, are strong and durable, and warranted to stand the work of two horses. They are made in two styles; one having only one speed, which is adapted to run our plain crank pumps; the other having two speeds—the slow speed adapted for our plain crank, and the fast speed for our geared crank pumps. The fast speed is also adapted for running corn shellers, feed grinders, or any other light work for which a small power might be desired.

They will be furnished complete with one lever, one lead pole, coupling and tumbling rod, or two levers can be used when desired, which will be furnished at a small additional cost.

In ordering by wire use telegraph code, being careful to spell word correctly.

### TELEGRAPH CODE AND PRICE LIST

TELEGRAPH  
CODE  
Ezekiel  
Ezra

|                                                | PRICE<br>LIST |
|------------------------------------------------|---------------|
| 1 Two Horse-power, complete, single speed..... | \$50.00       |
| 1 Two Horse-power, complete, double speed..... | 60.00         |

## HAYES ONE, TWO, THREE AND DRIVE- WELL FORCE PUMP CYLINDERS

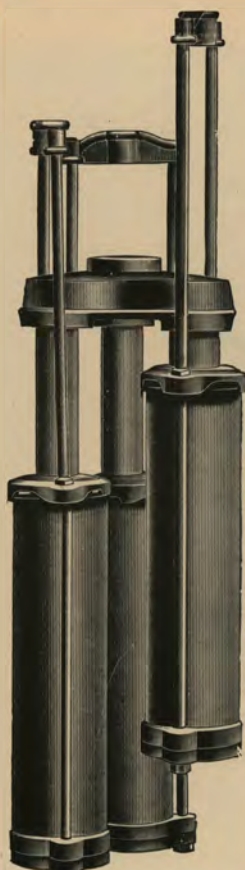


Fig. 726

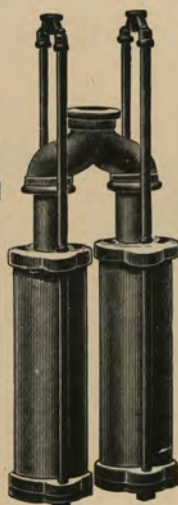


Fig. 727



Fig. 728

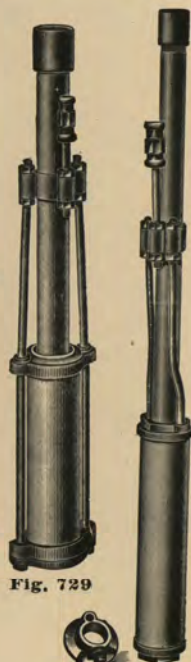


Fig. 729



Fig. 731

### Price List and Telegraph Code

| Telegraph Code |            |                                         | Price List |            |
|----------------|------------|-----------------------------------------|------------|------------|
| Plain          | Galvaniz'd |                                         | Plain      | Galvaniz'd |
| Wabber         | Wabeno     | No. 1 Pump Cylinders, Fig. 727.....     | \$ 9.00    | \$10.50    |
| Wabron         | Wad        | No. 2 Pump Cylinders, Fig. 727.....     | 8.50       | 10.00      |
| Wabudle        | Wadder     | No. 3 Pump Cylinders, Fig. 727.....     | 8.00       | 9.50       |
| Waddle         | Wader      | No. 3½ Pump Cylinders, Fig. 727.....    | 8.00       | 9.50       |
| Wadge          | Wadmol     | No. 4 Pump Cylinders, Fig. 730.....     | 7.50       | 9.00       |
| Wadna          | Wadset     | No. 5 Pump Cylinders, Fig. 729.....     | 6.00       | 6.75       |
| Wafer          | Waffle     | No. 6 Pump Cylinders, Fig. 729.....     | 5.50       | 6.25       |
| Waft           | Waftage    | No. 7 Pump Cylinders, Fig. 729.....     | 5.00       | 5.75       |
| Wafted         | Waftop     | No. 7½ Pump Cylinders, Fig. 731.....    | 6.00       | 6.75       |
| Wag            | Wager      | No. 10 Pump Cylinders, Fig. 728.....    | 8.00       | 9.50       |
| Waggle         | Wagld      | No. 11 Pump Cylinders, Fig. 728.....    | 7.50       | 9.00       |
| Wagner         | Wagon      | No. 12 Pump Cylinders, Fig. 727.....    | 10.00      | 11.50      |
| Wagtail        | Wah        | No. 13 Pump Cylinders, Fig. 727.....    | 12.00      | 13.50      |
| Waif           | Waller     | No. 14, 17, 20 Pump Cylinders, Fig. 726 | 15.00      |            |
| Wainscot       | Walst      | No. 15, 18, 21 Pump Cylinders, Fig. 726 | 17.50      |            |
| Waiter         | Walve      | No. 16, 19, 22 Pump Cylinders, Fig. 726 | 20.00      |            |
| Wake           | Wakeful    | No. 26, 27 Pump Cylinders, Fig. 726...  | 50.00      |            |



Fig. 730



## HAYES PLUNGERS

The plunger, next to the valve seat, is the most important part of the pump. If the plunger and valve seat are defective, no matter what care is taken in the construction of the balance of the pump, it will not operate satisfactorily.

Below we illustrate a full line of plungers as used in the Hayes Pumps. We recommend the Sand Plunger, Fig. 850, in wells where sand gives trouble.

All Hayes Cylinders, 10, 12 and 14-inch, also 16-inch flush cap cylinders are fitted regularly with Fig. 851 plunger. Cylinders, 16, 18 and 20 inches long, except the 16-inch flush cap are fitted regularly with Double Leather Plunger, Fig. 855. If any other style plunger is required, any of the following plungers will be furnished when specified.

### Single Leather Plungers



**Fig. 850**  
Sand  
Plunger



**Fig. 851**  
Cage Valve  
Plunger  
1/2-inch  
Follower



**Fig. 852**  
Cage Valve  
Plunger  
1 1/4-inch  
Follower



**Fig. 853**  
Cage Valve  
Plunger  
2 1/2-inch  
Follower



**Fig. 854**  
Cage Valve  
Plunger  
4 inch  
Follower

### Double Leather Plungers



**Fig. 855**  
Cage Valve  
Plunger  
1/2-in Follower



**Fig. 856**  
Cage Valve  
Plunger  
1 1/4-in. Follower



**Fig. 857**  
Cage Valve  
Plunger  
2 1/2-in. Follower



**Fig. 858**  
Cage Valve  
Plunger  
4-in. Follower

## PRICE LIST OF PLUNGERS WHEN FURNISHED AS EXTRAS PLUNGERS ALL IRON WITH STEEL STEM

| Diameter—inches                      |          | 2    | 2½   | 2½   | 2¾   | 3    | 3¼   | 3½   | 4    | 4½   | 5    | 6     | 8     |
|--------------------------------------|----------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| SINGLE LEATHER                       |          | Code |      |      |      |      |      |      |      |      |      |       |       |
| Fig. 850 sand plunger                | Wrist    | 55   | 55   | 55   | 60   | 60   | 75   | 75   | 1 00 | 1 50 | 2 25 | 3 00  | 6 00  |
| Fig. 851 cage valve, ½ in. follower  | Wrist    | 55   | 55   | 55   | 60   | 60   | 75   | 75   | 1 25 | 2 00 | 3 00 | 4 00  | 8 00  |
| Fig. 852 cage valve, ¾ in. follower  | Writ     | 90   | 90   | 90   | 1 00 | 1 00 | 1 20 | 1 20 | 1 60 | 2 50 | 3 50 | 5 00  | 10 00 |
| Fig. 853 cage valve, 2½ in. follower | Writer   | 1 00 | 1 00 | 1 00 | 1 20 | 1 20 | 1 40 | 1 40 | 1 80 | 3 00 | 4 25 | 6 50  | 12 00 |
| Fig. 854 cage valve, 4 in. follower  | Writhe   | 1 10 | 1 10 | 1 10 | 1 35 | 1 35 | 1 50 | 1 50 | 2 10 | 3 50 | 5 00 | 8 00  | 15 00 |
| TWO LEATHERS                         |          |      |      |      |      |      |      |      |      |      |      |       |       |
| Fig. 855 cage valve, ½ in. follower  | Writing  | 1 00 | 1 00 | 1 00 | 1 20 | 1 20 | 1 40 | 1 40 | 1 80 | 2 50 | 3 00 | 6 00  | 12 00 |
| Fig. 856 cage valve, ¾ in. follower  | Written  | 1 35 | 1 35 | 1 35 | 1 65 | 1 65 | 2 00 | 2 00 | 2 60 | 3 50 | 4 75 | 7 50  | 16 00 |
| Fig. 857 cage valve, 2½ in. follower | Wrizzle  | 1 40 | 1 40 | 1 40 | 1 70 | 1 70 | 2 10 | 2 10 | 2 90 | 4 50 | 6 00 | 9 50  | 20 00 |
| Fig. 858 cage valve, 4 in. follower  | Wroughte | 1 55 | 1 55 | 1 55 | 1 95 | 1 95 | 2 50 | 2 50 | 3 25 | 5 00 | 7 50 | 12 50 | 24 00 |

### PLUNGERS HALF BRASS WITH STEEL STEM

Fig. 850 the upper half is brass, and on all cage valve plungers the cage and valve are brass with iron followers.

| Diameter—inches                      |           | 2    | 2½   | 2½   | 2¾   | 3    | 3¼   | 3½   | 4    | 4½    | 5     | 6     | 8     |
|--------------------------------------|-----------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|
| SINGLE LEATHER                       |           | Code |      |      |      |      |      |      |      |       |       |       |       |
| Fig. 850 sand plunger                | Wroken    | 95   | 95   | 95   | 1 20 | 1 20 | 1 40 | 1 40 | 1 90 | 3 25  | 4 65  | 6 50  | 11 00 |
| Fig. 851 cage valve, ½ in. follower  | Wrong     | 1 20 | 1 20 | 1 20 | 1 45 | 1 45 | 2 35 | 2 35 | 3 15 | 5 50  | 6 00  | 8 50  | 14 50 |
| Fig. 852 cage valve, ¾ in. follower  | Wronger   | 1 65 | 1 65 | 1 65 | 2 00 | 2 00 | 2 75 | 2 75 | 3 60 | 5 25  | 7 00  | 10 00 | 17 50 |
| Fig. 853 cage valve, 2½ in. follower | Wrongful  | 1 90 | 1 90 | 1 90 | 2 40 | 2 40 | 3 10 | 3 10 | 4 35 | 6 25  | 8 40  | 11 75 | 21 00 |
| Fig. 854 cage valve, 4 in. follower  | Wrongless | 2 30 | 2 30 | 2 30 | 2 95 | 2 95 | 3 65 | 3 65 | 5 15 | 7 25  | 10 00 | 15 00 | 25 50 |
| TWO LEATHERS                         |           |      |      |      |      |      |      |      |      |       |       |       |       |
| Fig. 855 cage valve, ½ in. follower  | Wrongly   | 1 90 | 1 90 | 1 90 | 2 40 | 2 40 | 3 10 | 3 10 | 4 35 | 6 25  | 8 75  | 12 50 | 22 00 |
| Fig. 856 cage valve, ¾ in. follower  | Wrote     | 2 25 | 2 25 | 2 25 | 2 70 | 2 70 | 3 65 | 3 65 | 5 05 | 7 25  | 11 40 | 15 25 | 28 00 |
| Fig. 857 cage valve, 2½ in. follower | Wroth     | 2 45 | 2 45 | 2 45 | 2 95 | 2 95 | 3 95 | 3 95 | 5 85 | 8 75  | 12 00 | 18 25 | 34 00 |
| Fig. 858 cage valve, 4 in. follower  | Wrung     | 2 90 | 2 90 | 2 90 | 3 75 | 3 75 | 5 40 | 5 40 | 7 40 | 10 00 | 13 75 | 21 75 | 40 00 |

### PLUNGERS ALL BRASS WITH STEEL STEM

| Diameter—inches                      |           | 2    | 2½   | 2½   | 2¾   | 3    | 3¼   | 3½   | 4     | 4½    | 5     | 6     | 8     |
|--------------------------------------|-----------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|
| SINGLE LEATHER                       |           | Code |      |      |      |      |      |      |       |       |       |       |       |
| Fig. 850 sand plunger                | Wry       | 1 35 | 1 35 | 1 35 | 1 75 | 1 75 | 2 00 | 2 00 | 2 80  | 5 00  | 7 00  | 10 00 | 16 00 |
| Fig. 851 cage valve, ½ in. follower  | Wrybill   | 1 80 | 1 80 | 1 80 | 2 25 | 2 25 | 3 30 | 3 30 | 5 00  | 7 00  | 9 00  | 13 00 | 21 00 |
| Fig. 852 cage valve, ¾ in. follower  | Wryneck   | 2 40 | 2 40 | 2 40 | 3 00 | 3 00 | 4 25 | 4 25 | 5 60  | 8 00  | 10 50 | 15 00 | 25 00 |
| Fig. 853 cage valve, 2½ in. follower | Wud       | 2 75 | 2 75 | 2 75 | 3 60 | 3 60 | 4 80 | 4 80 | 6 90  | 9 50  | 12 50 | 18 00 | 30 00 |
| Fig. 854 cage valve, 4 in. follower  | Wudder    | 3 50 | 3 50 | 3 50 | 4 50 | 4 50 | 5 75 | 5 75 | 8 20  | 11 00 | 15 00 | 22 00 | 36 00 |
| TWO LEATHERS                         |           |      |      |      |      |      |      |      |       |       |       |       |       |
| Fig. 855 cage valve, ½ in. follower  | Wuddy     | 2 75 | 2 75 | 2 75 | 3 60 | 3 60 | 4 80 | 4 80 | 6 90  | 10 00 | 14 00 | 19 00 | 32 00 |
| Fig. 856 cage valve, ¾ in. follower  | Wuffs     | 3 15 | 3 15 | 3 15 | 3 75 | 3 75 | 5 25 | 5 25 | 7 50  | 11 00 | 16 00 | 23 00 | 40 00 |
| Fig. 857 cage valve, 2½ in. follower | Wulfenite | 3 50 | 3 50 | 3 50 | 4 20 | 4 20 | 5 75 | 5 75 | 8 75  | 13 00 | 18 00 | 27 00 | 48 00 |
| Fig. 858 cage valve, 4 in. follower  | Wull      | 4 25 | 4 25 | 4 25 | 5 50 | 5 50 | 8 30 | 8 30 | 11 50 | 15 00 | 20 00 | 31 00 | 56 00 |

When any of the above plungers are wanted in place of those listed with the cylinders, the net difference in price of the plungers must be added or deducted from the net price of the cylinders.

When ordering by the code, follow the cylinder code word with the code word of the plunger wanted. When ordering plungers only by the code, be sure to give the size wanted.

Fig. 860

### SPECIAL BOTTOM CAGE VALVE FOR CYLINDERS

This cut shows our lower cage valve for use in any of the different kinds or sizes of cylinders we manufacture. These special valves are only furnished with cylinders when ordered that way.



#### Sizes and Prices

| Size—inches          | 2  | 2½ | 2½ | 2¾ | 3  | 3¼   | 3½   | 4    |
|----------------------|----|----|----|----|----|------|------|------|
| Iron.....Price each  | 50 | 50 | 50 | 50 | 50 | 60   | 60   | 75   |
| Brass.....Price each | 75 | 75 | 75 | 75 | 75 | 1 00 | 1 00 | 1 50 |

### BRASS LOWER VALVE SEATS

We can furnish on any of our cylinders a brass lower valve seat. We would especially recommend that you order your cylinders that way as the expense is but little and the advantage of a brass seat is well known.

#### Sizes and Prices

| Size—inches     | 2  | 2½ | 2½ | 2¾ | 3  | 3¼ | 3½ | 4  | 4½ |
|-----------------|----|----|----|----|----|----|----|----|----|
| Price each..... | 25 | 25 | 25 | 25 | 25 | 30 | 30 | 40 | 50 |



## IRON CYLINDERS

WITH ALL IRON PLUNGERS AND BRASS VALVE SEATS



**Fig. 840**



**Fig. 850**  
Sand Plunger



**Fig. 851**  
Cage Valve Plunger  
 $\frac{1}{2}$ -in follower  
used regularly



**Fig. 855**  
Cage Valve Plunger  
2 leathers  
 $\frac{1}{2}$ -in. follower



**Fig. 841**

Figure 851 Plunger, furnished regularly on all 10, 12 and 14-inch cylinders, also on the 16-inch inside capped cylinder.

Figure 850 furnished when specified only.

Figure 855 Cage Valve, 2-Leather Plunger, furnished regularly on all 16, 18 and 20-inch cylinders except the 16-inch inside capped cylinder.

For special or different plungers and valves, see the list preceding the cylinder list. The net difference in price of these extras must be added or deducted from the net price of the cylinder.

### PRICE LIST AND TELEGRAPH CODE

| Size                | Tap'd<br>for    | Code        | List    | Size                | Tap'd<br>for    | Code       | List    |
|---------------------|-----------------|-------------|---------|---------------------|-----------------|------------|---------|
| 2 x10               | 1 $\frac{1}{4}$ | Wakefulness | \$ 3.75 | 2 x16               | 1 $\frac{1}{4}$ | Wallop     | \$ 6.00 |
| 2 $\frac{1}{4}$ x10 | 1 $\frac{1}{4}$ | Waken       | 4.00    | 2 $\frac{1}{4}$ x16 | 1 $\frac{1}{4}$ | Wallop     | 6.50    |
| 2 $\frac{1}{2}$ x10 | 1 $\frac{1}{4}$ | Wakening    | 4.35    | 2 $\frac{1}{2}$ x16 | 1 $\frac{1}{4}$ | Wallop     | 7.00    |
| 2 $\frac{3}{4}$ x10 | 1 $\frac{1}{4}$ | Wakerife    | 4.70    | 2 $\frac{3}{4}$ x16 | 1 $\frac{1}{4}$ | Wallow     | 7.50    |
| 3 x10               | 1 $\frac{1}{4}$ | Wakiki      | 5.00    | 3 x16               | 1 $\frac{1}{4}$ | Wallowish  | 8.00    |
| 3 $\frac{1}{4}$ x10 | 1 $\frac{1}{4}$ | Wakon       | 6.00    | 3 $\frac{1}{4}$ x16 | 1 $\frac{1}{4}$ | Walnut     | 9.75    |
| 3 $\frac{1}{2}$ x10 | 1 $\frac{1}{2}$ | Walawa      | 7.00    | 3 $\frac{1}{2}$ x16 | 1 $\frac{1}{2}$ | Walpurkite | 11.25   |
| 4 x10               | 2               | Walcheron   | 9.00    | 4 x16               | 2               | Walrus     | 14.50   |
| 4 $\frac{1}{2}$ x10 | 2               | Walchia     | 12.50   | 4 $\frac{1}{2}$ x16 | 2               | Walter     | 18.50   |
| 5 x10               | 2 $\frac{1}{2}$ | Walchowite  | 16.50   | 5 x16               | 2 $\frac{1}{2}$ | Waltrom    | 25.00   |
| 6 x10               | 3               | Wald        | 24.00   | 6 x16               | 3               | Waltz      | 37.50   |
|                     |                 |             |         | 8 x16               | 4               | Waltzer    | 75.00   |
| 2 x12               | 1 $\frac{1}{4}$ | Waldenses   | 5.50    |                     |                 |            |         |
| 2 $\frac{1}{4}$ x12 | 1 $\frac{1}{4}$ | Waldgrave   | 5.75    | 2 x18               | 1 $\frac{1}{4}$ | Waltzing   | 6.75    |
| 2 $\frac{1}{2}$ x12 | 1 $\frac{1}{4}$ | Waldgravine | 6.00    | 2 $\frac{1}{4}$ x18 | 1 $\frac{1}{4}$ | Wamara     | 7.00    |
| 2 $\frac{3}{4}$ x12 | 1 $\frac{1}{4}$ | Waldhorn    | 6.50    | 2 $\frac{1}{2}$ x18 | 1 $\frac{1}{4}$ | Wamble     | 7.50    |
| 3 x12               | 1 $\frac{1}{4}$ | Wale        | 7.00    | 2 $\frac{3}{4}$ x18 | 1 $\frac{1}{4}$ | Wambling   | 8.00    |
| 3 $\frac{1}{4}$ x12 | 1 $\frac{1}{4}$ | Waler       | 8.00    | 3 x18               | 1 $\frac{1}{4}$ | Wame       | 8.50    |
| 3 $\frac{1}{2}$ x12 | 1 $\frac{1}{2}$ | Walle       | 9.00    | 3 $\frac{1}{4}$ x18 | 1 $\frac{1}{4}$ | Wammerah   | 10.75   |
| 4 x12               | 2               | Walise      | 11.50   | 3 $\frac{1}{2}$ x18 | 1 $\frac{1}{2}$ | Wammis     | 12.50   |
| 4 $\frac{1}{2}$ x12 | 2               | Walk        | 15.00   | 4 x18               | 2               | Wamp       | 16.00   |
| 5 x12               | 2 $\frac{1}{2}$ | Walkable    | 20.00   | 4 $\frac{1}{2}$ x18 | 2               | Wampish    | 22.50   |
| 6 x12               | 3               | Walker      | 28.50   | 5 x18               | 2 $\frac{1}{2}$ | Wampum     | 30.00   |
|                     |                 |             |         | 6 x18               | 3               | Wam        | 42.50   |
| 2 x14               | 1 $\frac{1}{4}$ | Walking     | 6.00    | 8 x18               | 4               | Wannish    | 90.00   |
| 2 $\frac{1}{4}$ x14 | 1 $\frac{1}{4}$ | Walla       | 6.25    |                     |                 |            |         |
| 2 $\frac{1}{2}$ x14 | 1 $\frac{1}{4}$ | Wallaba     | 6.50    | 2 x20               | 1 $\frac{1}{4}$ | Wander     | 7.50    |
| 2 $\frac{3}{4}$ x14 | 1 $\frac{1}{4}$ | Wallach     | 7.00    | 2 $\frac{1}{4}$ x20 | 1 $\frac{1}{4}$ | Wandering  | 8.00    |
| 3 x14               | 1 $\frac{1}{4}$ | Wallachian  | 7.50    | 2 $\frac{1}{2}$ x20 | 1 $\frac{1}{4}$ | Wanderment | 8.50    |
| 3 $\frac{1}{4}$ x14 | 1 $\frac{1}{4}$ | Wallaroo    | 8.75    | 2 $\frac{3}{4}$ x20 | 1 $\frac{1}{4}$ | Wandy      | 9.00    |
| 3 $\frac{1}{2}$ x14 | 1 $\frac{1}{2}$ | Wallee      | 10.00   | 3 x20               | 1 $\frac{1}{4}$ | Wangala    | 9.50    |
| 4 x14               | 2               | Wallerian   | 13.00   | 3 $\frac{1}{4}$ x20 | 1 $\frac{1}{4}$ | Wanger     | 11.50   |
| 4 $\frac{1}{2}$ x14 | 2               | Wallet      | 17.50   | 3 $\frac{1}{2}$ x20 | 1 $\frac{1}{2}$ | Wanlon     | 13.50   |
| 5 x14               | 2 $\frac{1}{2}$ | Walling     | 22.50   | 4 x20               | 2               | Wankle     | 17.00   |
| 6 x14               | 3               | Wallis      | 33.50   | 4 $\frac{1}{2}$ x20 | 2               | Wannigan   | 25.00   |
|                     |                 |             |         | 5 x20               | 2 $\frac{1}{2}$ | Wanse      | 34.00   |
|                     |                 |             |         | 6 x20               | 3               | Wanter     | 50.00   |
|                     |                 |             |         | 8 x20               | 4               | Wantage    | 100.00  |

## BRASS-LINED CYLINDERS

WITH HALF BRASS PLUNGERS AND BRASS VALVE SEATS



Fig. 842

Fig. 850  
Sand PlungerFig. 851  
Cage Valve Plunger  
1/2-in. follower  
used regularlyFig. 855  
Cage Valve Plunger  
2 leathers  
1/2-in. follower

Fig. 843

Fig. 851 plunger, furnished regularly on all 10, 12 and 14-inch cylinders, also on the 16-inch inside capped cylinder. Fig. 850 plunger, furnished when specified only. Fig. 855, cage valve 2-leather plunger, furnished regularly on all 16, 18 and 20-inch cylinders, except the 16-inch inside capped cylinder. For special or different plungers and valves, see the list preceding the cylinder list. The net difference in price of these extras must be added or deducted from the net price of the cylinder.

### PRICE LIST AND TELEGRAPH CODE

| Size      | Tapp'd<br>for | Code       | List    | Size      | Tapp'd<br>For | Code         | List    |
|-----------|---------------|------------|---------|-----------|---------------|--------------|---------|
| 2 x10     | 1 1/4         | Wanton     | \$ 7.50 | 2 x16     | 1 1/4         | Warrantable  | \$ 9.00 |
| 2 1/4 x10 | 1 1/4         | Wantoning  | 7.75    | 2 1/4 x16 | 1 1/4         | Warren       | 9.75    |
| 2 1/2 x10 | 1 1/4         | Wantonness | 8.00    | 2 1/2 x16 | 1 1/4         | Warrior      | 10.25   |
| 2 3/4 x10 | 1 1/4         | Wapen      | 8.50    | 2 3/4 x16 | 1 1/4         | Wart         | 10.75   |
| 3 x10     | 1 1/4         | Wapiti     | 9.00    | 3 x16     | 1 1/4         | Warty        | 11.25   |
| 3 1/4 x10 | 1 1/4         | Wappato    | 9.75    | 3 1/4 x16 | 1 1/4         | Washable     | 12.00   |
| 3 1/2 x10 | 1 1/4         | Wapping    | 10.50   | 3 1/2 x16 | 1 1/2         | Washed       | 13.50   |
| 4 x10     | 2             | Waraba     | 13.00   | 4 x16     | 2             | Washiness    | 17.50   |
| 4 1/4 x10 | 2             | Warab      | 20.00   | 4 1/4 x16 | 2             | Wasite       | 25.00   |
| 5 x10     | 2 1/2         | Waratah    | 26.50   | 5 x16     | 2 1/2         | Wasium       | 35.00   |
| 6 x10     | 3             | Warble     | 40.00   | 6 x16     | 3             | Wasplish     | 55.00   |
|           |               |            |         | 8 x16     | 4             | Wassail      | 100.00  |
| 2 x12     | 1 1/4         | Warbling   | 8.00    |           |               |              |         |
| 2 1/4 x12 | 1 1/4         | Warblet    | 8.25    | 2 x18     | 1 1/4         | Wastage      | 9.50    |
| 2 1/2 x12 | 1 1/4         | Warden     | 8.50    | 2 1/4 x18 | 1 1/4         | Waste        | 10.50   |
| 2 3/4 x12 | 1 1/4         | Wardless   | 9.00    | 2 3/4 x18 | 1 1/4         | Wasteful     | 11.25   |
| 3 x12     | 1 1/4         | Wardrobe   | 9.50    | 2 3/4 x18 | 1 1/4         | Watch        | 11.75   |
| 3 1/4 x12 | 1 1/4         | Wareless   | 10.25   | 3 x18     | 1 1/4         | Watcher      | 12.25   |
| 3 1/2 x12 | 1 1/2         | Warfare    | 11.25   | 3 1/4 x18 | 1 1/4         | Watchful     | 13.00   |
| 4 x12     | 2             | Warful     | 14.25   | 3 1/2 x18 | 1 1/2         | Watchfulness | 14.75   |
| 4 1/4 x12 | 2             | Wargus     | 22.00   | 4 x18     | 2             | Watchword    | 19.25   |
| 5 x12     | 2 1/2         | Warily     | 30.00   | 4 1/4 x18 | 2             | Water        | 30.00   |
| 6 x12     | 3             | Warine     | 45.00   | 5 x18     | 2 1/2         | Watteau      | 40.00   |
|           |               |            |         | 6 x18     | 3             | Wattle       | 60.00   |
| 2 x14     | 1 1/4         | Wariness   | 8.50    | 8 x18     | 4             | Wave         | 115.00  |
| 2 1/4 x14 | 1 1/4         | Warison    | 9.00    |           |               |              |         |
| 2 1/2 x14 | 1 1/4         | Warlock    | 9.25    | 2 x20     | 1 1/4         | Waveless     | 10.00   |
| 2 3/4 x14 | 1 1/4         | Warm       | 9.75    | 2 1/4 x20 | 1 1/4         | Waveros      | 11.25   |
| 3 x14     | 1 1/4         | Warmer     | 10.25   | 2 1/2 x20 | 1 1/4         | Wax          | 12.25   |
| 3 1/4 x14 | 1 1/4         | Warming    | 11.00   | 2 3/4 x20 | 1 1/4         | Waxen        | 12.75   |
| 3 1/2 x14 | 1 1/2         | Warmful    | 12.25   | 3 x20     | 1 1/4         | Waxiness     | 13.25   |
| 4 x14     | 2             | Warmness   | 15.75   | 3 1/4 x20 | 1 1/4         | Wayfare      | 14.00   |
| 4 1/4 x14 | 2             | Warp       | 24.00   | 3 1/2 x20 | 1 1/2         | Waylay       | 16.25   |
| 5 x14     | 2 1/2         | Warping    | 33.00   | 4 x20     | 2             | Wayside      | 21.00   |
| 6 x14     | 3             | Warrant    | 50.00   | 4 1/4 x20 | 2             | Wayward      | 34.00   |
|           |               |            |         | 5 x20     | 2 1/2         | Weak         | 45.00   |
|           |               |            |         | 6 x20     | 3             | Weaken       | 65.00   |
|           |               |            |         | 8 x20     | 4             | Weakening    | 125.00  |



## SEAMLESS DRAWN BRASS CYLINDERS

WITH ALL BRASS PLUNGERS AND BRASS VALVE SEATS



Fig. 844



Fig. 850  
Sand Plunger



Fig. 851  
Cage Valve Plunger  
1/2-in. follower  
used regularly



Fig. 855  
Cage Valve Plunger  
2 leathers  
1/2-in. follower



Fig. 845

Figure 851 Plunger furnished regularly on all 10, 12 and 14-inch cylinders; also on the 16-inch inside capped cylinders. Figure 850 Plunger furnished when specified only. Figure 855 Cage Valve 2-Leather Plunger furnished regularly on all 16, 18 and 20-inch cylinders, except the 16-inch inside capped cylinders. For special or different plungers or valves, see the list preceding the cylinder list. The net difference in price of these extras must be added or deducted from the net price of the cylinder.

### PRICE LIST AND TELEGRAPH CODE.

| Size      | Tap for | Fig. 844<br>Outside Cap<br>Code | Fig. 845<br>Flush Cap<br>Code | List    | Size      | Tap for | Fig. 844<br>Outside Cap<br>Code | Fig. 845<br>Flush Cap<br>Code | List     |
|-----------|---------|---------------------------------|-------------------------------|---------|-----------|---------|---------------------------------|-------------------------------|----------|
| 2 x10     | 1 1/4   | Weal                            | Weighty                       | \$ 8.00 | 2 x16     | 1 1/4   | Wheaten                         | Whip                          | \$ 10.50 |
| 2 1/2 x10 | 1 1/2   | Wealden                         | Weighting                     | 8.25    | 2 1/4 x16 | 1 1/2   | Wheeze                          | Whipper                       | 11.25    |
| 2 1/2 x10 | 1 1/2   | Wealdish                        | Weird                         | 8.50    | 2 1/2 x16 | 1 1/2   | Wheezing                        | Whipperin                     | 11.75    |
| 2 1/2 x10 | 1 1/2   | Wealth                          | Weirdless                     | 9.00    | 2 3/4 x16 | 1 1/2   | Whelp                           | Whippet                       | 12.25    |
| 3 x10     | 1 1/2   | Wealthiness                     | Welcome                       | 9.75    | 3 x16     | 1 1/2   | Whemmel                         | Whipping                      | 12.75    |
| 3 1/4 x10 | 1 1/2   | Weapon                          | Welfare                       | 10.50   | 3 1/4 x16 | 1 1/2   | Wherefore                       | Whipster                      | 14.00    |
| 3 1/2 x10 | 1 1/2   | Wearable                        | Welkin                        | 11.50   | 3 1/2 x16 | 1 1/2   | Wherein                         | Whirl                         | 16.00    |
| 4 x10     | 2       | Wearer                          | Wellington                    | 15.50   | 4 x16     | 2       | Wherne                          | Whirler                       | 20.50    |
| 4 1/2 x10 | 2       | Weariness                       | Welsh                         | 22.50   | 4 1/2 x16 | 2       | Wherry                          | Whirling                      | 30.50    |
| 5 x10     | 2 1/2   | Wearisome                       | Welter                        | 30.00   | 5 x16     | 2 1/2   | Whet                            | Whirligig                     | 42.00    |
| 6 x10     | 3       | Weasel                          | Wendish                       | 45.00   | 6 x16     | 3       | Whetting                        | Whirlpool                     | 62.00    |
|           |         |                                 |                               |         | 8 x16     | 4       | Whetstone                       | Whirlwind                     | 124.00   |
| 2 x12     | 1 1/4   | Weather                         | Wergild                       | 9.25    | 2 x18     | 1 1/4   | Whew                            | Whirtle                       | 11.00    |
| 2 1/4 x12 | 1 1/4   | Weathering                      | Wernerite                     | 9.50    | 2 1/4 x18 | 1 1/4   | Whey                            | Whisk                         | 12.00    |
| 2 1/2 x12 | 1 1/2   | Weave                           | Wesand                        | 9.75    | 2 1/2 x18 | 1 1/2   | Whick                           | Whisker                       | 12.75    |
| 2 1/2 x12 | 1 1/2   | Weavable                        | Wesleyan                      | 10.50   | 2 3/4 x18 | 1 1/2   | Whicker                         | Whisking                      | 13.25    |
| 3 x12     | 1 1/2   | Weazand                         | Wester                        | 11.00   | 3 x18     | 1 1/2   | Whid                            | Whisper                       | 13.75    |
| 3 1/4 x12 | 1 1/2   | Weazen                          | Westerling                    | 12.00   | 3 1/4 x18 | 1 1/2   | Whiff                           | Whist                         | 15.00    |
| 3 1/2 x12 | 1 1/2   | Web                             | Western                       | 13.75   | 3 1/2 x18 | 1 1/2   | Whidder                         | Whistle                       | 17.25    |
| 4 x12     | 2       | Webbing                         | Westward                      | 18.00   | 4 x18     | 2       | Whiffer                         | Whistler                      | 22.25    |
| 4 1/2 x12 | 2       | Weberian                        | Whack                         | 26.00   | 4 1/2 x18 | 2       | Whig                            | Whistling                     | 35.00    |
| 5 x12     | 2 1/2   | Webster                         | Whacking                      | 35.00   | 5 x18     | 2 1/2   | Whiggery                        | Whiten                        | 47.00    |
| 6 x12     | 3       | Wedded                          | Whale                         | 50.00   | 6 x18     | 3       | Whiggism                        | Whitens                       | 67.00    |
|           |         |                                 |                               |         | 8 x18     | 4       | Whilk                           | Whitening                     | 134.00   |
| 2 x14     | 1 1/4   | Wedding                         | Whaling                       | 9.75    | 2 x20     | 1 1/4   | Whilom                          | Whitewash                     | 11.50    |
| 2 1/4 x14 | 1 1/4   | Wedge                           | Whang                         | 10.25   | 2 1/4 x20 | 1 1/4   | Whim                            | Whitish                       | 12.75    |
| 2 1/2 x14 | 1 1/2   | Wedging                         | Whanghee                      | 10.50   | 2 1/2 x20 | 1 1/2   | Whimbrel                        | Whittle                       | 13.50    |
| 2 1/2 x14 | 1 1/2   | Weed                            | Whapper                       | 11.25   | 2 3/4 x20 | 1 1/2   | Whimper                         | Whittling                     | 14.25    |
| 3 x14     | 1 1/2   | Weedless                        | Wharf                         | 11.75   | 3 x20     | 1 1/2   | Whimpering                      | Whiz                          | 14.75    |
| 3 1/4 x14 | 1 1/2   | Weekly                          | Wharfage                      | 12.75   | 3 1/4 x20 | 1 1/2   | Whimsical                       | Whizzer                       | 16.00    |
| 3 1/2 x14 | 1 1/2   | Weep                            | Wharfing                      | 14.75   | 3 1/2 x20 | 1 1/2   | Whimsy                          | Whizzing                      | 19.00    |
| 4 x14     | 2       | Weeper                          | Wharfinger                    | 19.00   | 4 x20     | 2       | Whindle                         | Whizzingly                    | 24.00    |
| 4 1/2 x14 | 2       | Weeping                         | Whaul                         | 28.00   | 4 1/2 x20 | 2       | Whinny                          | Whoa                          | 39.50    |
| 5 x14     | 2 1/2   | Weevil                          | Whaup                         | 38.00   | 5 x20     | 2 1/2   | Whinstone                       | Wholeness                     | 52.00    |
| 6 x14     | 3       | Weft                            | Wheave                        | 56.00   | 6 x20     | 3       | Whinyard                        | Wholesome                     | 72.00    |
|           |         |                                 |                               |         | 8 x20     | 4       | Whinger                         | Wholesomely                   | 144.00   |

## ALL BRASS CYLINDERS



Fig. 846



Fig. 850  
Sand Plunger  
Used Regularly



Fig. 851  
Cage Valve Plunger  
½-in. follower  
used regularly



Fig. 855  
Cage Valve Plunger  
2 leathers  
½-in. follower



Fig. 847

Figure 851 Plunger furnished regularly on all 10, 12 and 14-inch cylinders; also on the 16-inch inside capped cylinders. Figure 850 Plunger furnished when specified only. Figure 855 Cage Valve, 2-Leather Plunger furnished regularly on all 16, 18 and 20-inch cylinders, except the 16-inch inside capped cylinders. For special or different plungers or valves, see the list preceding the cylinder list. The net difference in price of these extras must be added or deducted from the net price of the cylinder.

### PRICE LIST AND TELEGRAPH CODE.

| Size      | Tap for | Fig. 846 Outside Cap Code | Fig. 847 Flush Cap Code | List    | Size      | Tap for | Fig. 846 Outside Cap Code | Fig. 847 Flush Cap Code | List     |
|-----------|---------|---------------------------|-------------------------|---------|-----------|---------|---------------------------|-------------------------|----------|
| 2 x10     | 1 1/4   | Whoith                    | Wight                   | \$10 75 | 2 x16     | 1 1/4   | Windage                   | Wintry                  | \$ 13.75 |
| 2 1/4 x10 | 1 1/4   | Whome                     | Wightly                 | 11.00   | 2 1/4 x16 | 1 1/4   | Winder                    | Winy                    | 14.50    |
| 2 1/2 x10 | 1 1/4   | Whoop                     | Wigless                 | 12 25   | 2 1/2 x16 | 1 1/4   | Windfall                  | Winze                   | 16.00    |
| 2 3/4 x10 | 1 1/4   | Whooping                  | Wigreve                 | 12.75   | 2 3/4 x16 | 1 1/4   | Windness                  | Wipe                    | 16.50    |
| 3 x10     | 1 1/4   | Whorkle                   | Wigwag                  | 13.50   | 3 x16     | 1 1/4   | Windingly                 | Wipper                  | 17.25    |
| 3 1/4 x10 | 1 1/4   | Whummie                   | Wigwam                  | 14.75   | 3 1/4 x16 | 1 1/4   | Windlass                  | Wippen                  | 19.00    |
| 3 1/2 x10 | 1 1/2   | Whyab                     | Wild                    | 16.75   | 3 1/2 x16 | 1 1/2   | Window                    | Wirble                  | 22.25    |
| 4 x10     | 2       | Whyler                    | Wildcat                 | 21.50   | 4 x16     | 2       | Windpipe                  | Wiredraw                | 28.00    |
| 4 1/2 x10 | 2       | Whyte                     | Wildering               | 30.00   | 4 1/2 x16 | 2       | Windrow                   | Wireman                 | 38.75    |
| 5 x10     | 2 1/2   | Wichita                   | Wilderness              | 40.00   | 5 x16     | 2 1/2   | Windsor                   | Wiresmith               | 53.50    |
| 6 x10     | 3       | Wick                      | Wildgrave               | 60.00   | 6 x16     | 3       | Windstroke                | Wirework                | 75.00    |
|           |         |                           |                         |         | 8 x16     | 4       | Windthrush                | Wiring                  | 150.00   |
| 2 x12     | 1 1/4   | Wicked                    | Wildish                 | 11 25   | 2 x18     | 1 1/4   | Windup                    | Wisdom                  | 14.25    |
| 2 1/4 x12 | 1 1/4   | Wickedly                  | Wilful                  | 11.50   | 2 1/4 x18 | 1 1/4   | Windward                  | Wise                    | 15.25    |
| 2 1/2 x12 | 1 1/4   | Wickedness                | Wilfully                | 12.75   | 2 1/2 x18 | 1 1/4   | Windway                   | Wisacre                 | 17.00    |
| 2 3/4 x12 | 1 1/4   | Wickered                  | Wilfulness              | 13.25   | 2 3/4 x18 | 1 1/4   | Windy                     | Wisellke                | 17.50    |
| 3 x12     | 1 1/4   | Wicopy                    | Willness                | 14.00   | 3 x18     | 1 1/4   | Wine                      | Wisely                  | 18.25    |
| 3 1/4 x12 | 1 1/4   | Widdow                    | Wilcox                  | 15.25   | 3 1/4 x18 | 1 1/4   | Winesap                   | Wiserite                | 20.00    |
| 3 1/2 x12 | 1 1/2   | Widawake                  | Willemite               | 17.50   | 3 1/2 x18 | 1 1/2   | Winery                    | Wish                    | 23.50    |
| 4 x12     | 2       | Widely                    | Willingly               | 22.50   | 4 x18     | 2       | Winful                    | Wishful                 | 29.75    |
| 4 1/2 x12 | 2       | Widener                   | Willinessly             | 34.00   | 4 1/2 x18 | 2       | Wing                      | Wisket                  | 43.25    |
| 5 x12     | 2 1/2   | Wideness                  | Willow                  | 46.00   | 5 x18     | 2 1/2   | Winger                    | Wispen                  | 58.50    |
| 6 x12     | 3       | Widgeon                   | Willowish               | 65.00   | 6 x18     | 3       | Wingless                  | Wistaria                | 80.00    |
|           |         |                           |                         |         | 8 x18     | 4       | Winglet                   | Wistful                 | 160.00   |
| 2 x14     | 1 1/4   | Widower                   | Willowing               | 13.00   | 2 x20     | 1 1/4   | Wingseed                  | Wit                     | 14.75    |
| 2 1/4 x14 | 1 1/4   | Widual                    | Willy                   | 13.50   | 2 1/4 x20 | 1 1/4   | Wink                      | Witan                   | 16.00    |
| 2 1/2 x14 | 1 1/4   | Wieldy                    | Wilsome                 | 14.75   | 2 1/2 x20 | 1 1/4   | Winker                    | Witch                   | 17.75    |
| 2 3/4 x14 | 1 1/4   | Wieldness                 | Wilsomeness             | 15.50   | 2 3/4 x20 | 1 1/4   | Winkle                    | Witchcraft              | 18.50    |
| 3 x14     | 1 1/4   | Wierde                    | Wilt                    | 16.25   | 3 x20     | 1 1/4   | Winkt                     | Witchen                 | 19.25    |
| 3 1/4 x14 | 1 1/4   | Wife                      | Wimble                  | 17.75   | 3 1/4 x20 | 1 1/4   | Winner                    | Witchery                | 21.00    |
| 3 1/2 x14 | 1 1/2   | Wifeless                  | Wimple                  | 21.00   | 3 1/2 x20 | 1 1/2   | Winning                   | Witching                | 25.25    |
| 4 x14     | 2       | Wig                       | Wince                   | 26.50   | 4 x20     | 2       | Winnock                   | Witen                   | 31.50    |
| 4 1/2 x14 | 2       | Wigan                     | Wincingly               | 36.00   | 4 1/2 x20 | 2       | Winnow                    | Witfish                 | 47.75    |
| 5 x14     | 2 1/2   | Wigging                   | Wincey                  | 50.00   | 5 x20     | 2 1/2   | Winsome                   | Witthal                 | 63.50    |
| 6 x14     | 3       | Wiggler                   | Wind                    | 70.00   | 6 x20     | 3       | Winter                    | Withamite               | 85.00    |
|           |         |                           |                         |         | 8 x20     | 4       | Wintered                  | Withdraw                | 170.00   |



Fig. 950



## ALL BRASS EUREKA TUBULAR WELL CYLINDERS

This cylinder is made of seamless drawn brass tubing, and fitted with poppet plunger and check valve. It is set in place after the well is made, using a seating tool attached to the drill rod to crowd it down to its place. The dog spring coupling holds firmly to the walls of the inside of pipe or well casing, while the cylinder proper is revolved by the seating as it screws down on the coupling, expanding the rubber packing between the cylinder and coupling, and locking it to the pipe. It may be attached to the screen point in the same manner. Printed directions for use sent with each cylinder.

### PRICE LIST OF No. 950

Complete with valves and Spring Dog Coupling.

| Size of Well | Inside Diameter | Strokes | Price of Cylinder Complete |
|--------------|-----------------|---------|----------------------------|
| 2-inch       | 1 13-16-inch    | 12      | \$ 6.40                    |
| 2-inch       | 1 13-16-inch    | 16      | 7.60                       |
| 2½-inch      | 2¼-inch         | 12      | 11.00                      |
| 2½-inch      | 2¼-inch         | 16      | 12.50                      |
| 3-inch       | 2¾-inch         | 12      | 15.00                      |
| 3-inch       | 2¾-inch         | 16      | 17.00                      |

## ALL BRASS EUREKA TUBULAR WELL CYLINDERS WITH BRONZE BALL VALVES

This cylinder is made of seamless drawn brass tubing fitted with four leather plunger and bronze ball valves. It is designed for use in deep wells where heavy work is performed, and where a large capacity is wanted. It is fastened into the walls of the pipe by a seating tool attached to the drill rod. The spring dog coupling holds firmly to pipe while the cylinder proper is revolved by the seating tool as it screws down on the coupling, expanding the rubber packing between the cylinder and coupling, and locking it to the pipe.

### PRICE LIST OF No. 953

Complete with valves and Spring Dog Coupling.

| Size of Well | Inside Diameter | Stroke  | Price of Cylinder Complete |
|--------------|-----------------|---------|----------------------------|
| 2-inch       | 1 13-16-inch    | 10-inch | \$ 4.50                    |
| 2-inch       | 1 13-16-inch    | 16-inch | 5.00                       |
| 2½-inch      | 2¼-inch         | 10-inch | 9.00                       |
| 2½-inch      | 2¼-inch         | 16-inch | 10.50                      |
| 3-inch       | 2¾-inch         | 10-inch | 12.50                      |
| 3-inch       | 2¾-inch         | 16-inch | 13.00                      |

## WROUGHT IRON TUBULAR WELL CYLINDERS

This engraving represents a No. 931 polished tubular well cylinder, made of galvanized or plain extra strong wrought iron pipe, bored and polished, fitted with driving shoe, turned coupling, two-leather plunger valve and three-foot sixty gauze flush well point.

**PRICE LIST OF NO. 931**

| Diameter of Cylinder Inches | Length of Cylinder Inches | Price Painted | Price Galvanized |
|-----------------------------|---------------------------|---------------|------------------|
| 2                           | 24                        | \$ 7.65       | \$ 8.10          |
| 2                           | 36                        | 8.50          | 9.10             |
| 2                           | 48                        | 9.50          | 10.00            |
| 2½                          | 36                        | 16.50         | 17.00            |
| 2½                          | 48                        | 18.50         | 19.00            |
| 3                           | 36                        | 22.50         | 23.50            |
| 3                           | 48                        | 25.00         | 26.00            |

## BRASS LINED TUBULAR WELL CYLINDERS

This engraving represents the No. 942 galvanized brass lined tubular well cylinder, fitted complete with driving shoe, turned coupling, four-leather plunger valve and brass jacket, flush three-foot well point, covered with sixty gauze; 2-inch and 2½-inch cylinders take 1¼-inch well point, 3-inch takes a 2-inch well point.

**PRICE LIST OF NO. 942**

| Diameter of Cylinder Inches | Length of Cylinder Inches | Price with Three-foot Regular Well Point |
|-----------------------------|---------------------------|------------------------------------------|
| 2                           | 24                        | \$ 12.00                                 |
| 2                           | 36                        | 14.00                                    |
| 2                           | 48                        | 15.50                                    |
| 2½                          | 24                        | 18.00                                    |
| 2½                          | 36                        | 20.00                                    |
| 2½                          | 48                        | 24.00                                    |
| 3                           | 24                        | 23.25                                    |
| 3                           | 36                        | 26.00                                    |
| 3                           | 48                        | 30.25                                    |

**Fig. 942**

Please Order by Trade Number.



## TUBULAR WELL VALVES

These tubular well valves are made heavy and strong, and of the best quality brass, carefully and well finished inside and out; fitted with best oak tan leathers.



**No. 960**  
2-leather Plunger



**No. 961**  
Check



**No. 970**  
Ball Plunger



**No. 971**  
Ball Check



**No. 975**  
4-leather Plunger



**No. 972**  
Bale Top Check



**No. 973**  
4-leather Ball Plunger



**No. 974**  
Bale Top Ball Check

### PRICE LIST FOR SET OF CHECK AND PLUNGER VALVES

| Size      |            | Price  |            | Price   |
|-----------|------------|--------|------------|---------|
| 2 inches  | 2 leathers | \$2.40 | 4 leathers | \$ 3.20 |
| 2½ inches | 2 leathers | 6.00   | 4 leathers | 7.00    |
| 3 inches  | 2 leathers | 8.00   | 4 leathers | 10.00   |

## SEATING TOOL FOR EUREKA BRASS CYLINDERS



| Size of Cylinder | No. 951 | Price of Seating Tool |
|------------------|---------|-----------------------|
| 2 inches         |         | \$ .60                |
| 2½ inches        |         | .90                   |
| 3 inches         |         | 1.20                  |

Please order by trade number.

## BRASS JACKET POINTS

Made of Wrought-Iron Pipe, Galvanized

| Trade No. | Size in Diameter | Length of Point | Length of Jacket | No. Square in. of Openings. | No. of Gauze 60, Price per doz. | No. of Gauze 70, Price per doz. | No. of Gauze 80, Price per doz. | No. of Gauze 90, Price per doz. | No. of Gauze 100, Price per doz. |
|-----------|------------------|-----------------|------------------|-----------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|----------------------------------|
|           |                  |                 |                  |                             |                                 |                                 |                                 |                                 |                                  |
| 74        | 1                | 24              | 18               | 15                          | \$ 33                           | \$ 40                           | \$ 46                           | \$ 52                           | \$ 62                            |
| 76        | 1                | 30              | 24               | 20                          | 42                              | 49                              | 56                              | 64                              | 78                               |
| 78        | 1                | 36              | 30               | 25                          | 51                              | 59                              | 66                              | 76                              | 94                               |
| 80        | 1                | 42              | 36               | 30                          | 60                              | 68                              | 76                              | 88                              | 120                              |
| 82        | 1                | 48              | 42               | 35                          | 69                              | 78                              | 85                              | 100                             | 136                              |
| 84        | 1                | 54              | 48               | 40                          | 78                              | 87                              | 96                              | 112                             | 152                              |
| 85        | 1                | 66              | 60               | 50                          | 96                              | 105                             | 116                             | 136                             | 184                              |
| 86        | 1 1/4            | 20              | 14               | 15                          | 30                              | 36                              | 42                              | 50                              | 64                               |
| 90        | 1 1/4            | 24              | 18               | 20                          | 36                              | 44                              | 52                              | 60                              | 80                               |
| 94        | 1 1/4            | 30              | 24               | 26 1/2                      | 46                              | 55                              | 64                              | 75                              | 100                              |
| 98        | 1 1/4            | 36              | 30               | 33                          | 56                              | 66                              | 76                              | 90                              | 120                              |
| 100       | 1 1/4            | 42              | 36               | 39 1/4                      | 66                              | 77                              | 88                              | 105                             | 140                              |
| 102       | 1 1/4            | 48              | 42               | 45 1/2                      | 76                              | 88                              | 100                             | 120                             | 160                              |
| 106       | 1 1/4            | 54              | 48               | 52                          | 86                              | 99                              | 112                             | 135                             | 180                              |
| 110       | 1 1/4            | 60              | 54               | 58 1/4                      | 96                              | 110                             | 124                             | 150                             | 200                              |
| 112       | 1 1/4            | 66              | 60               | 65                          | 106                             | 121                             | 136                             | 165                             | 220                              |
| 114       | 1 1/4            | 72              | 66               | 71 1/4                      | 116                             | 132                             | 148                             | 180                             | 240                              |
| 114 1/2   | 1 1/4            | 78              | 72               | 78                          | 126                             | 143                             | 160                             | 195                             | 260                              |
| 136       | 1 1/2            | 24              | 18               | 22 1/2                      | 48                              | 57                              | 65                              | 78                              | 94                               |
| 140       | 1 1/2            | 30              | 24               | 30                          | 60                              | 70                              | 80                              | 96                              | 118                              |
| 144       | 1 1/2            | 36              | 30               | 37 1/2                      | 72                              | 84                              | 95                              | 114                             | 142                              |
| 146       | 1 1/2            | 42              | 36               | 45                          | 84                              | 97                              | 110                             | 132                             | 166                              |
| 148       | 1 1/2            | 48              | 42               | 52 1/2                      | 96                              | 111                             | 125                             | 150                             | 188                              |
| 150       | 1 1/2            | 54              | 48               | 60                          | 108                             | 124                             | 140                             | 168                             | 204                              |
| 152       | 1 1/2            | 60              | 54               | 67 1/2                      | 120                             | 138                             | 155                             | 186                             | 228                              |
| 154       | 1 1/2            | 66              | 60               | 75                          | 132                             | 151                             | 170                             | 204                             | 252                              |
| 156       | 1 1/2            | 72              | 66               | 82 1/2                      | 144                             | 165                             | 185                             | 222                             | 276                              |
| 160       | 2                | 24              | 18               | 26                          | 75                              | 85                              | 94                              | 110                             | 130                              |
| 164       | 2                | 30              | 24               | 35                          | 90                              | 101                             | 112                             | 132                             | 160                              |
| 168       | 2                | 36              | 30               | 43 1/2                      | 105                             | 118                             | 130                             | 154                             | 190                              |
| 170       | 2                | 42              | 36               | 52 1/2                      | 120                             | 134                             | 148                             | 176                             | 220                              |
| 172       | 2                | 48              | 42               | 62                          | 135                             | 151                             | 166                             | 198                             | 250                              |
| 174       | 2                | 54              | 48               | 70                          | 150                             | 167                             | 184                             | 220                             | 280                              |
| 176       | 2                | 60              | 54               | 78 1/2                      | 165                             | 184                             | 202                             | 242                             | 310                              |
| 178       | 2                | 66              | 60               | 87 1/2                      | 180                             | 200                             | 220                             | 264                             | 340                              |
| 180       | 2                | 72              | 66               | 96                          | 195                             | 217                             | 238                             | 286                             | 370                              |
| 182       | 2                | 84              | 78               | 113                         | 225                             | 251                             | 274                             | 330                             | 430                              |
| 184       | 2 1/4            | 36              | 30               | 50                          | 180                             | 205                             | 230                             | 260                             | 300                              |
| 188       | 2 1/4            | 48              | 42               | 70                          | 230                             | 265                             | 300                             | 340                             | 400                              |
| 192       | 2 1/4            | 60              | 54               | 90                          | 280                             | 325                             | 370                             | 420                             | 500                              |
| 196       | 2 1/4            | 72              | 66               | 110                         | 330                             | 385                             | 440                             | 500                             | 600                              |
| 197       | 2 1/4            | 84              | 78               | 130                         | 380                             | 445                             | 510                             | 580                             | 700                              |
| 200       | 3                | 36              | 30               | 67 1/2                      | 240                             | 275                             | 310                             | 340                             | 410                              |
| 204       | 3                | 48              | 42               | 94 1/2                      | 300                             | 345                             | 390                             | 430                             | 520                              |
| 208       | 3                | 60              | 54               | 111 1/2                     | 360                             | 415                             | 470                             | 520                             | 630                              |
| 212       | 3                | 72              | 66               | 138 1/2                     | 420                             | 485                             | 550                             | 610                             | 740                              |
| 214       | 3                | 84              | 78               | 165 1/2                     | 480                             | 555                             | 630                             | 700                             | 850                              |
| 216       | 4                | 48              | 36               | 90                          | 480                             | 520                             | 560                             | 600                             | 700                              |
| 220       | 4                | 72              | 60               | 150                         | 630                             | 695                             | 760                             | 840                             | 1000                             |
| 224       | 4                | 96              | 84               | 210                         | 780                             | 870                             | 960                             | 1080                            | 1300                             |
| 228       | 4                | 120             | 108              | 270                         | 930                             | 1045                            | 1160                            | 1320                            | 1600                             |

Discount.....

The engraving on the left shows the completed point with gauze and jacket on; the one on the right shows the point punched with elliptical holes before the gauze and jacket are put on.

These points have the holes punched a uniform distance apart, are galvanized outside and in after the holes are punched; are therefore non-corrosive, and are the only pipe points made which are galvanized after the holes are put in.

**PLEASE ORDER BY TRADE NUMBER.**



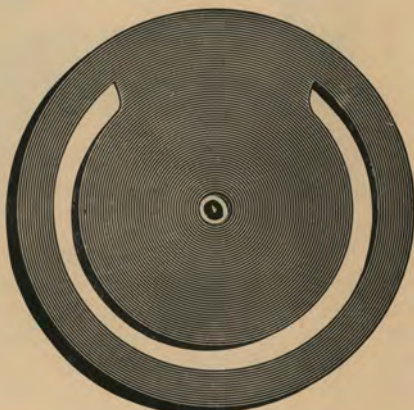
## VALVE AND PLUNGER LEATHERS, ETC.

We make our own leathers from specially prepared oiled tanned hides, of the best quality, and not from scraps and cheap leather, used by many manufacturers. These leathers will outwear two of the cheap kind.



**Fig. 880**

Ring packings for cylinders



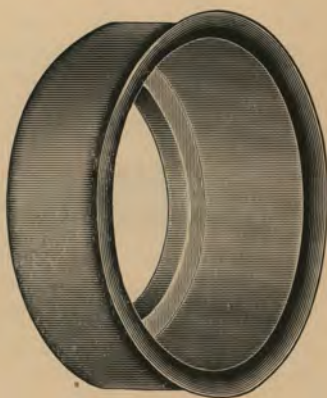
**Fig. 881**

Lower valve leather



**Fig. 882**

Plunger leather, not crimped



**Fig. 883**

Plunger leather, crimped

### PRICE LIST OF STANDARD SIZE PUMP LEATHERS

|                                     |     |       |       |       |     |       |       |     |       |     |     |      |
|-------------------------------------|-----|-------|-------|-------|-----|-------|-------|-----|-------|-----|-----|------|
| Diameter of cylinder, inches.....   | 2   | 2 1/4 | 2 1/2 | 2 3/4 | 3   | 3 1/4 | 3 1/2 | 4   | 4 1/2 | 5   | 6   | 8    |
| Fig. 880, ring packing, each.....   | .07 | .07   | .07   | .07   | .11 | .11   | .11   | .15 | .18   | .22 | .30 | .40  |
| Fig. 881, lower valve leather.....  | .11 | .11   | .11   | .11   | .15 | .15   | .15   | .19 | .24   | .30 | .40 | .45  |
| Fig. 882, plunger, not crimped..... | .12 | .12   | .12   | .12   | .15 | .15   | .15   | .20 | .25   | .35 | .45 | 1.00 |
| Fig. 883, plunger, crimped.....     | .12 | .12   | .12   | .15   | .18 | .22   | .25   | .35 | .45   | .55 | .70 | 1.00 |
| Flush cap valve leathers.....       | .11 | .11   | .11   | .11   | .15 | .15   | .15   | .20 | .25   | .35 | .45 |      |

### PRICE LIST OF PUMP LEATHERS FOR HAYES DOUBLE ACTING FORCE PUMP

|                                     |       |       |       |       |       |       |
|-------------------------------------|-------|-------|-------|-------|-------|-------|
| Diameter of cylinder, inches.....   | 1 1/2 | 2 1/2 | 2 3/4 | 3 1/2 | 3 3/4 | 5 1/2 |
| Fig. 881, lower valve leather.....  | .11   | .12   | .15   | .18   | .22   | .35   |
| Fig. 882, plunger, not crimped..... | .12   | .12   | .15   | .18   | .30   | .40   |
| Fig. 883, plunger, crimped.....     | .12   | .12   | .15   | .18   | .30   | .40   |
| Check valve leather.....            | .08   | .08   | .08   | .10   | .12   | .15   |

### PRICE LIST OF UPPER CYLINDER LEATHERS

|                                   |     |       |       |     |       |       |
|-----------------------------------|-----|-------|-------|-----|-------|-------|
| Diameter of cylinder, inches..... | 1   | 1 1/2 | 1 3/4 | 2   | 2 1/2 | 2 3/4 |
| Plunger leather, crimped.....     | .12 | .12   | .12   | .12 | .15   | .15   |
| Plunger leather, not crimped..... | .12 | .12   | .12   | .12 | .15   | .15   |

## WOOD ROD COUPLINGS

### 2, 3 AND 4 HOLE



These couplings are made with a socket for the end of the rods to be driven into to prevent them splitting.

| Trade No.                                                                                 | Price per set |
|-------------------------------------------------------------------------------------------|---------------|
| 430 For 1 and $1\frac{1}{8}$ -in. rod, plain, 2-hole.....                                 | \$.10         |
| 432 For 1 and $1\frac{1}{8}$ -in. rod, galvanized, 2-hole.....                            | .14           |
| 435 For 1 and $1\frac{1}{8}$ -in. rod, plain 3-hole.....                                  | .16           |
| 435 For 1 and $1\frac{1}{8}$ -in. rod, galvanized, 3-hole.....                            | .20           |
| 436 For $1\frac{1}{4}$ and $1\frac{3}{8}$ -in. rod, plain, 3-hole.....                    | .20           |
| 436 For $1\frac{1}{4}$ and $1\frac{3}{8}$ -in. rod, galvanized, 3-hole.....               | .24           |
| 437 For $1\frac{1}{2}$ and $1\frac{3}{4}$ -in. rod, plain, 4-hole.....                    | .60           |
| 437 For $1\frac{1}{2}$ and $1\frac{3}{4}$ -in. rod, galvanized, 4-hole.....               | .80           |
| 438 $\frac{1}{2}$ For 1 and $1\frac{1}{8}$ -in. rod, plain, 4-hole.....                   | .20           |
| 438 $\frac{1}{2}$ For 1 and $1\frac{1}{8}$ -in. rod, galvanized, 4-hole.....              | .24           |
| 439 $\frac{1}{2}$ For $1\frac{1}{4}$ and $1\frac{3}{8}$ -in. rod, plain, 4-hole.....      | .24           |
| 439 $\frac{1}{2}$ For $1\frac{1}{4}$ and $1\frac{3}{8}$ -in. rod, galvanized, 4-hole..... | .28           |

### RED JACKET WOOD ROD COUPLING



These couplings are made of malleable iron, either plain or galvanized, and are, by far, the most practical couplings made, because:

FIRST—There are no joints to unscrew or become loose.

SECOND—They are instantly adjusted by placing together and sliding the ring.

THIRD—Will not come apart by the rods turning while in use.

FOURTH—The cross-rivet prevents splitting of the rod when riveting through the sides.

|                                                              | Price per set |
|--------------------------------------------------------------|---------------|
| No. 1 3 holes, 3 rivets, for 1-inch, rod, plain.....         | \$.16         |
| No. 1 3 holes, 3 rivets, for 1-in. rod galvanized.....       | .20           |
| No. 2 4 rivets, for $1\frac{3}{8}$ -in. rod, plain.....      | .34           |
| No. 2 4 rivets, for $1\frac{3}{8}$ -in. rod, galvanized..... | .40           |
| No. 3 5 rivets, for $1\frac{5}{8}$ -in. rod, plain.....      | .64           |
| No. 3 5 rivets, for $1\frac{5}{8}$ -in. rod, galvanized..... | .80           |
| No. 4 6 rivets, for $2\frac{1}{4}$ -in. rod, plain.....      | .94           |
| No. 4 6 rivets, for $2\frac{1}{4}$ -in. rod, galvanized..... | 1.20          |



## SUCTION PIPE STRAINERS



**Fig. 890**  
With Set Screw



**Fig. 891**  
With Male Thread



**Fig. 892**  
With Female Thread

These suction pipe strainers are made of malleable iron; will not break and are a great improvement over the cast iron ones now used. They are covered with a good quality of brass wire cloth and are non-corrosive.



| Size Pipe     | Plain  | Galvanized | Galvanized with brass wire gauze |
|---------------|--------|------------|----------------------------------|
| 1 -inch, each | \$0.18 | \$0.22     | \$0.28                           |
| 1¼-inch, each | .20    | .24        | .32                              |
| 1½-inch, each | .24    | .26        | .36                              |
| 2 -inch, each | .36    | .40        | .50                              |

## WATER CONDUCTORS

An article every hardware, agricultural, implement, and pump dealer should carry in stock.

This arrangement, as can be readily understood, is for the purpose of carrying water from the spouts of pumps to troughs and tanks situated in different parts of the farm or yard.

These conductors are connected to pump by simply hanging the bail, as shown in cut, over the spout of the pump. The swivel arrangement allows the conductor to be placed in different directions without removing it from the spout of the pump.

Price each for 1¼ and 1½-inch pipe, \$0.60; 2-inch, \$0.80.

## WHITE ASH PUMP ROD

This rod is made from the best clear, straight-grained northern white ash, thoroughly seasoned, is surfaced four sides and corners chamfered, thus making a very desirable rod to handle.



**Fig. 910**

### PRICE LIST

|                          |        |                         |        |
|--------------------------|--------|-------------------------|--------|
| 1x1¼-inch (square) ..... | \$0.03 | 1½-inch (octagon) ..... | \$0.08 |
| 1¾-inch (octagon) .....  | .06    | 2¼-inch (octagon) ..... | .14    |

## TANKS AND CISTERNS

WOOD TANKS OF ALL SIZES



Made from white pine, cypress or red cedar, with lug, riveted, or round hoops

### TELEGRAPH CODE AND PRICE LIST FOR STOCK AND RESERVOIR TANKS

Larger tanks than shown on list will be made to order at proportionate prices

#### STOCK TANKS

| Telegraph Code | Length of Stave | Diam. of Bottom | No. of Hoops | Estimated Weight | No. of Barrels | Price List of Tanks | Price List of Covers |
|----------------|-----------------|-----------------|--------------|------------------|----------------|---------------------|----------------------|
| Tabard         | 2               | 6               | 2            | 415              | 11             | \$ 12.00            | \$ 3.25              |
| Tabaret        | 2               | 7               | 2            | 535              | 15             | 14.00               | 4.40                 |
| Tabby          | 2               | 8               | 2            | 640              | 20             | 17.00               | 5.75                 |
| Tabernacle     | 2-4             | 6               | 3            | 460              | 13½            | 13.50               | 3.25                 |
| Table          | 2-4             | 7               | 3            | 575              | 18             | 16.00               | 4.40                 |
| Tablet         | 2-4             | 8               | 3            | 700              | 24             | 19.00               | 5.75                 |
| Tabor          | 2-4             | 9               | 3            | 830              | 30             | 22.00               | 7.25                 |
| Taborite       | 2-4             | 10              | 3            | 970              | 37             | 25.50               | 9.00                 |
| Tabula         | 2-6             | 7               | 3            | 595              | 20             | 17.00               | 4.40                 |
| Tacht          | 2-6             | 8               | 3            | 725              | 26             | 20.00               | 5.75                 |
| Tackle         | 2-6             | 9               | 3            | 860              | 33             | 23.00               | 7.25                 |
| Tactics        | 2-6             | 10              | 3            | 1000             | 40             | 26.00               | 9.00                 |

#### RESERVOIR TANKS OR CISTERNS

|            |     |     |   |      |     |          |         |
|------------|-----|-----|---|------|-----|----------|---------|
| Tadpole    | 4   | 5   | 4 | 520  | 17  | \$ 16.00 | \$ 2.30 |
| Taffeta    | 4   | 6   | 4 | 650  | 25  | 18.50    | 3.25    |
| Taffy      | 4   | 7   | 4 | 795  | 34  | 21.00    | 4.40    |
| Tallor     | 5-4 | 4-8 | 4 | 580  | 20  | 17.00    | 2.00    |
| Talbot     | 5-4 | 5-4 | 4 | 690  | 25  | 19.00    | 2.60    |
| Talent     | 5-4 | 5-8 | 4 | 730  | 28½ | 20.50    | 2.75    |
| Talisman   | 5-4 | 6-4 | 4 | 800  | 35  | 22.00    | 3.60    |
| Tallow     | 6   | 6-2 | 5 | 850  | 39  | 24.00    | 3.40    |
| Tamarind   | 6   | 7   | 5 | 1050 | 52  | 28.00    | 4.40    |
| Tamarisk   | 6   | 8   | 5 | 1260 | 68  | 33.00    | 5.75    |
| Tambour    | 7   | 7   | 5 | 1180 | 61  | 32.00    | 4.40    |
| Tambourine | 7   | 8   | 5 | 1350 | 80  | 36.00    | 5.75    |
| Tammany    | 7   | 9   | 5 | 1600 | 101 | 42.00    | 7.25    |
| Tandem     | 8   | 8   | 6 | 1550 | 92  | 43.00    | 5.75    |
| Tangent    | 8   | 9   | 6 | 1790 | 116 | 48.00    | 7.25    |
| Tangible   | 8   | 10  | 6 | 2050 | 144 | 55.00    | 9.00    |
| Tannic     | 8   | 11  | 6 | 2380 | 174 | 64.00    | 11.00   |
| Tansy      | 8   | 12  | 6 | 2650 | 208 | 70.00    | 13.00   |
| Tantalize  | 9   | 9   | 7 | 1980 | 131 | 55.00    | 7.25    |
| Tantrum    | 9   | 10  | 7 | 2260 | 162 | 61.00    | 9.00    |
| Tapestry   | 9   | 11  | 7 | 2630 | 196 | 71.00    | 11.00   |
| Tapoca     | 9   | 12  | 7 | 2925 | 234 | 78.50    | 13.00   |
| Tapair     | 9   | 14  | 7 | 3500 | 319 | 93.00    | 17.50   |
| Tarantula  | 10  | 10  | 7 | 2440 | 181 | 66.00    | 9.00    |
| Taraxis    | 10  | 11  | 7 | 2840 | 220 | 78.00    | 11.00   |
| Tardiness  | 10  | 12  | 7 | 3190 | 260 | 86.00    | 13.00   |
| Target     | 12  | 12  | 9 | 3750 | 315 | 105.00   | 13.00   |
| Tariff     | 12  | 14  | 9 | 4530 | 429 | 111.50   | 17.50   |

The above prices are for tanks made of 2-inch lumber with lug hoops. Tanks will be made of 3 or 4-inch lumber if so ordered. If wanted with riveted hoops, a proper reduction will be made. Discounts on pine tanks will include painting inside and outside. Discount on cypress, cedar or fir tanks will be for tanks not painted.



## STEAM, GAS AND WATER PIPE

ADOPTED MARCH 1, 1900

| Size in Inches  | Standard, per Foot |                   | X Heavy Black | X X Heavy Black |
|-----------------|--------------------|-------------------|---------------|-----------------|
|                 | Black              | Galvanized        |               |                 |
| $\frac{1}{8}$   | .05 $\frac{1}{2}$  | .05 $\frac{1}{2}$ | .11           | ....            |
| $\frac{1}{4}$   | .05 $\frac{1}{2}$  | .05 $\frac{1}{2}$ | .11           | ....            |
| $\frac{3}{8}$   | .05 $\frac{1}{2}$  | .05 $\frac{1}{2}$ | .11           | ....            |
| $\frac{1}{2}$   | .08 $\frac{3}{4}$  | .08 $\frac{1}{2}$ | .12           | .25             |
| $\frac{3}{4}$   | .11 $\frac{1}{2}$  | .11 $\frac{1}{2}$ | .15           | .30             |
| 1               | .16 $\frac{1}{2}$  | .16 $\frac{1}{2}$ | .22           | .37             |
| 1 $\frac{1}{4}$ | .22 $\frac{1}{2}$  | .22 $\frac{1}{2}$ | .30           | .52             |
| 1 $\frac{1}{2}$ | .27                | .27               | .36           | .65             |
| 2               | .36                | .36               | .50           | .95             |
| 2 $\frac{1}{4}$ | .57 $\frac{1}{4}$  | .57 $\frac{1}{4}$ | .81           | 1.37            |
| 3               | .75 $\frac{1}{2}$  | .75 $\frac{1}{2}$ | 1.05          | 1.92            |
| 3 $\frac{1}{2}$ | .95                | .95               | 1.33          | 2.45            |
| 4               | 1.08               | 1.08              | 1.50          | 2.85            |
| 4 $\frac{1}{2}$ | 1.30               | 1.30              | 1.95          | 3.30            |
| 5               | 1.45               | 1.45              | 2.16          | 3.80            |
| 6               | 1.88               | 1.88              | 2.90          | 5.30            |

### TOOLS FOR CUTTING AND THREADING PIPE ADAPTED FOR FITTING UP PUMPS

#### ENTERPRISE RATCHET DIE STOCKS



**SPECIALLY DESIGNED FOR THE USE OF PLUMBERS, GAS FITTERS, PUMP DEALERS AND WELL MAKERS**

Capable of a wider range of work than any other pattern in stock. With it pipe can be threaded in corners of rooms, in trenches or other difficult positions where other stocks could not be used. By removing the handle, pipe can be threaded while in the well. Made of malleable iron and consequently light, yet strong and durable. Desirable for outside work and equal to any for bench work in the shop. Each stock is fitted with Lead Screw Sleeve provided with steel centering screws, by means of which the die is quickly and easily centered with the pipe, and a full and perfect thread assured. Made in two sizes, Nos. 1 and 2.

Bushings are sent with each stock to adapt for each of the sizes named below.

The usual style of solid dies of the sizes named fit the stock and can be used with them.

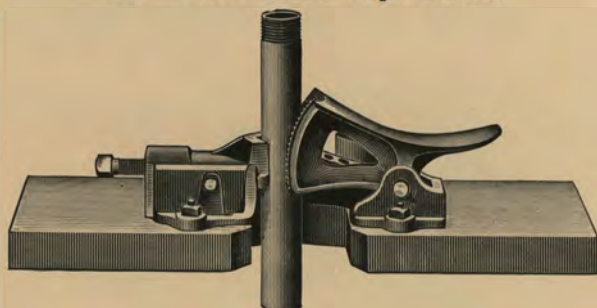
| Stocks.                                                                                                     | Threads Pipe.                        | Bushings.                            | Takes Dies. | Special Die Holder. | Price without Dies. |
|-------------------------------------------------------------------------------------------------------------|--------------------------------------|--------------------------------------|-------------|---------------------|---------------------|
| No. 1.....                                                                                                  | $\frac{1}{4}$ to 1 $\frac{1}{2}$ in. | $\frac{1}{4}$ to 1 $\frac{1}{2}$ in. | 3 x 3 in.   | 2 x 2 in.           | <b>\$10.00</b>      |
| No. 2.....                                                                                                  | $\frac{1}{2}$ to 2 in.               | $\frac{1}{2}$ to 2 in.               | 4 x 4 in.   | 3 x 3 in.           | <b>15.00</b>        |
| Dies 2 x 2 for $\frac{1}{4}$ , $\frac{3}{8}$ and $\frac{1}{2}$ -inch pipe, each.....                        |                                      |                                      |             |                     | <b>\$1.50</b>       |
| Dies 3 x 3 for $\frac{1}{2}$ , $\frac{3}{4}$ , 1, 1 $\frac{1}{4}$ and 1 $\frac{1}{2}$ -inch pipe, each..... |                                      |                                      |             |                     | <b>2.50</b>         |
| Dies 4 x 4 for 1, 1 $\frac{1}{4}$ , 1 $\frac{1}{2}$ and 2-inch pipe, each.....                              |                                      |                                      |             |                     | <b>3.50</b>         |

### TANK CONNECTIONS.

| Right and Left, Hexagon Nut in Center. |               |               |     |                 |         |
|----------------------------------------|---------------|---------------|-----|-----------------|---------|
| Size....                               | $\frac{1}{2}$ | $\frac{3}{4}$ | 1   | 1 $\frac{1}{2}$ | 2 in.   |
| Each....                               | \$0.25        | .25           | .30 | .40             | .50 .70 |

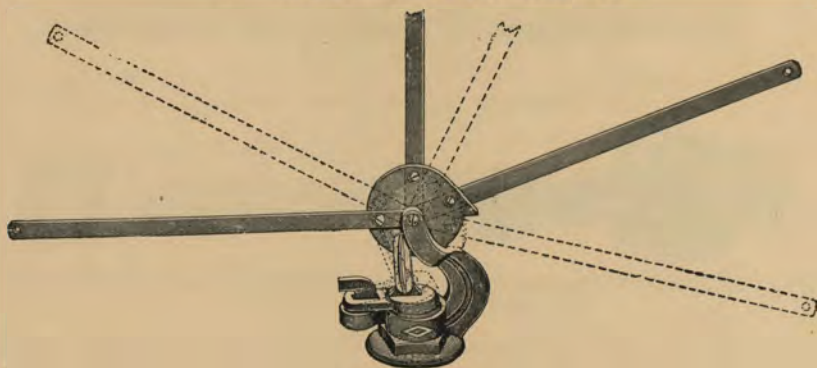
| For Wood Tanks. |               |               |     |                 |                 |
|-----------------|---------------|---------------|-----|-----------------|-----------------|
| Size.....       | $\frac{1}{2}$ | $\frac{3}{4}$ | 1   | 1 $\frac{1}{4}$ | 1 $\frac{1}{2}$ |
| Length ...      | 6             | 6             | 6   | 6               | 6               |
| Black.....      | \$0.40        | .45           | .60 | .70             | .85             |
| Galvan'z'd      | .50           | .60           | .70 | .95             | 1.20            |
|                 |               |               |     |                 | 1.50 each       |

### The "Little Giant" Pipe Holder



Price complete, No. 1, for 1, 1½ and 1¾ inch pipe.....\$3.50 net  
 Price complete, No. 2, for 1, 1½, 2 and 2½ inch pipe.....\$5.00 net

### Diamond Tank and Float Valve



For automatically controlling the flow of water in reservoirs, tanks, cisterns, stock watering tanks, etc. It is positive in opening and closing under a high or low pressure. No chance of friction or sticking in position; will resist most any pressure, as the pitman connecting fulcrum and valve comes in a straight line with the thrust of pressure when the valve is closed. Has a brass valve seat, and by changing the position of the lever, the valve is made either to open or close when used either on the bottom or side of the tank. The base is large enough to make a good joint when used as a lock nut.

|                   |        |        |        |        |        |        |         |         |
|-------------------|--------|--------|--------|--------|--------|--------|---------|---------|
| Size, inches..... | ¾      | 1      | 1¼     | 1½     | 2      | 2½     | 3       | 4       |
| Price, each.....  | \$1.25 | \$1.38 | \$1.50 | \$3.00 | \$5.00 | \$7.50 | \$10.00 | \$22.00 |

### Enterprise Patent Improved Float Valve



#### PRICE LIST

|        |      |       |       |      |       |       |
|--------|------|-------|-------|------|-------|-------|
| ¾-in   | 1-in | 1¼-in | 1½-in | 2-in | 2½-in | 3-in  |
| \$1.25 | 1.38 | 1.50  | 3.00  | 5.00 | 7.50  | 10.00 |

For automatically controlling the flow of water in reservoir tanks, cisterns, stock tanks, etc. The only positive closing float valve in use. Equally effective under high or low pressure. Valve opens with the flow instead of against it. Will not chatter. Has brass valve seat. Valve will not stick. Is not injured by freezing, as all plug valves are. Pressure is resisted by pivot bolt in arch, instead of the buoyancy of float. By reversing the lever a perfect working outlet valve is had.



## Screw Plates, Malleable Iron with Solid Dies



**C AND D STOCK AND DIE**

|                                      |                                   |                              |
|--------------------------------------|-----------------------------------|------------------------------|
| Plate .....                          | C                                 | D                            |
| Dies furnished with each plate.....  | $\frac{1}{4}$ to 1                | 1 to $1\frac{1}{2}$ -inch    |
| Dimensions of dies.....              | $2\frac{1}{2} \times \frac{3}{4}$ | $3 \times \frac{7}{8}$ -inch |
| Screw plate, with dies complete..... | \$15.00                           | \$13.50 each                 |
| Screw plate, without dies.....       | 5.00                              | 6.00 each                    |



**DIES AND BUSHINGS**

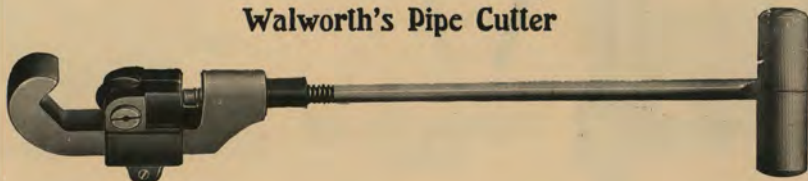
|                                     |        |             |
|-------------------------------------|--------|-------------|
| Plate .....                         | C      | D           |
| Extra dies, right or left hand..... | \$2.00 | \$2.50 each |
| Extra bushings .....                | .35    | .45 each    |

## D. Saunders' Sons' Wheel Pipe Cutters



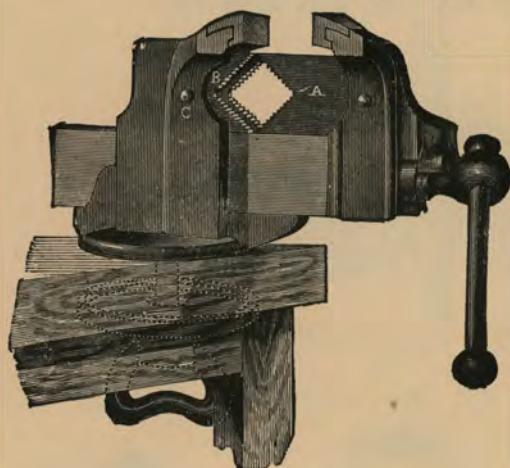
|                                   | No. 1                  | No. 2      | No. 3        |
|-----------------------------------|------------------------|------------|--------------|
| Cuts pipe from.....               | $\frac{1}{8}$ to 1-in. | 1 to 2-in. | 2 to 3-in.   |
| Price, complete .....             | \$3.00                 | \$4.50     | \$11.00 each |
| Price, extra block and wheel..... | 1.25                   | 1.75       | 2.75 each    |
| Price, extra wheels.....          | .24                    | .32        | .60 each     |
| Price, extra rollers.....         | .24                    | .32        | .50 each     |

## Walworth's Pipe Cutter



|                               | No. 1                  | No. 2      | No. 3       |
|-------------------------------|------------------------|------------|-------------|
| Cuts pipe from.....           | $\frac{1}{8}$ to 1-in. | 1 to 2-in. | 2 to 3-in.  |
| Complete .....                | \$1.50                 | \$2.25     | \$7.00 each |
| Cutter wheels .....           | .15                    | .20        | .30 each    |
| Cutter blocks and wheels..... | .50                    | .75        | 1.25 each   |

### Smith's Combination Pipe Vice



No. 1

No. 2

Holds pipe from...  $\frac{1}{8}$ -inch to 2-inch

Price .....\$16.00 each

 $\frac{1}{8}$  to 3-inch

\$20.00 each

### Enterprise Improved Pipe Vice



One of the most convenient and cheapest pipe vises ever made. As serviceable as the more expensive vises usually sold. Can be bolted to bench or fastened to pump wagon. Often used also as a pipe jack for suspending pipe in the well when setting pumps. Clamping jaw reversible, giving different sizes of pipe openings, and can be thrown back entirely out of the way to receive pipe. Capacity, from  $\frac{3}{8}$ -inch rod to 2-inch pipe.

Price.....\$3.00.



### Gas Pliers

|              |        |         |         |                 |
|--------------|--------|---------|---------|-----------------|
| Size .....   | 5      | 6       | 7       | 8-inch          |
| Polished.... | \$4.80 | \$6.50  | \$7.40  | \$8.25 per doz  |
| Size .....   | 9      | 10      | 12      | 14-inch         |
| Polished ..  | \$9.25 | \$10.70 | \$13.00 | \$17.00 per doz |



### Lightning Die and Holder



|                                    |               |        |
|------------------------------------|---------------|--------|
| Inches .....                       | $\frac{3}{8}$ | 7-16   |
| Die, Tap and Holder, complete..... | \$2.25        | \$2.35 |
| Die only .....                     | 1.00          | 1.15   |
| Tap only .....                     | .60           | .70    |
| Holders, separately .....          | each          | .65    |

Unless otherwise ordered, we supply these Taps and Dies 1-32 oversize, V thread.



## Trimo Pipe Wrench



|                      |                                |                                |                    |                                 |                    |                                 |                                 |              |
|----------------------|--------------------------------|--------------------------------|--------------------|---------------------------------|--------------------|---------------------------------|---------------------------------|--------------|
| Length, open.....    | 6                              | 8                              | 10                 | 14                              | 18                 | 24                              | 36                              | 48 inches    |
| Takes pipe from..... | $\frac{1}{8}$ to $\frac{1}{2}$ | $\frac{1}{8}$ to $\frac{3}{4}$ | $\frac{1}{8}$ to 1 | $\frac{1}{4}$ to $1\frac{1}{2}$ | $\frac{1}{4}$ to 2 | $\frac{1}{4}$ to $2\frac{1}{2}$ | $\frac{1}{2}$ to $3\frac{1}{2}$ | 1 to 5-inch  |
| Price.....           | \$2.00                         | \$2.00                         | \$2.25             | \$3.00                          | \$4.00             | \$6.00                          | \$12.00                         | \$18.00 each |
| Price, jaws.....     | .67                            | .67                            | .75                | 1.00                            | 1.33               | 2.00                            | 4.00                            | 6.00 each    |
| Price, nuts.....     | .20                            | .20                            | .27                | .35                             | .42                | .50                             | .65                             | .80 each     |
| Price, inserted jaws | .25                            | .25                            | .33                | .50                             | .55                | .65                             | 1.00                            | 1.25 each    |
| Price, frames.....   | .25                            | .25                            | .33                | .45                             | .55                | .65                             | .75                             | 1.00 each    |

## Brown's Adjustable Pipe Tongs



|                      |                                |                    |                                 |        |                     |                     |
|----------------------|--------------------------------|--------------------|---------------------------------|--------|---------------------|---------------------|
|                      | No. 1                          | No. $1\frac{1}{2}$ | No. 2                           | No. 3  | No. 4               | No. 5               |
| Takes pipe from..... | $\frac{1}{8}$ to $\frac{3}{4}$ | $\frac{1}{8}$ to 1 | $\frac{1}{2}$ to $1\frac{1}{4}$ | 1 to 2 | $1\frac{1}{2}$ to 3 | $2\frac{1}{2}$ to 4 |
| Price.....           | \$1.20                         | \$1.50             | \$1.70                          | \$2.40 | \$5.40              | \$12.00             |

## Crane's Pipe Vices



Shut



Open

MALLEABLE IRON

The Malleable Iron Pipe Vice is preferable to the Cast Iron Vice in every respect, being much lighter, more durable and cheaper; has interchangeable cut steel jaws, and constructed to do the heaviest work, great care having been taken in manufacturing the various parts, and the strength put where it is most required.

|        |                             |                        |        |                             |                        |
|--------|-----------------------------|------------------------|--------|-----------------------------|------------------------|
| No. 1. | Holds pipe from.....        | $\frac{1}{8}$ to 2 in. | No. 2. | Holds pipe from.....        | $\frac{1}{8}$ to 3 in. |
|        | Weight.....                 | 16 lbs.                |        | Weight.....                 | 26 lbs.                |
|        | Price.....                  | \$10.00                |        | Price.....                  | \$14.00                |
|        | Extra jaws (set 3) net..... | .60                    |        | Extra jaws (set 3) net..... | .90                    |

### Boston Hose Strap



PATENTED MAY 15 1872

|         |                                                  | Per doz. |
|---------|--------------------------------------------------|----------|
| No. 4.  | $\frac{1}{2}$ -inch, $3\frac{3}{4}$ inches long  | .40      |
| No. 8.  | $\frac{3}{4}$ -inch, $4\frac{1}{2}$ inches long  | .60      |
| No. 12. | 1 -inch, $5\frac{3}{8}$ inches long              | .80      |
| No. 16. | $1\frac{1}{4}$ -inch, $6\frac{3}{8}$ inches long | 1.00     |
| No. 20. | $1\frac{1}{2}$ -inch, $7\frac{3}{8}$ inches long | 1.20     |

### Hose Clamps



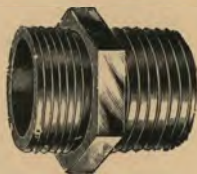
| Size  | $\frac{1}{2}$ | $\frac{3}{4}$ | 1    | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2    | $2\frac{1}{2}$ | 3-inch         |
|-------|---------------|---------------|------|----------------|----------------|------|----------------|----------------|
| Price | \$1.50        | 1.50          | 2.00 | 2.50           | 3.00           | 4.00 | 7.00           | 10.00 per doz. |

### Hose Couplings



| Size             | $\frac{1}{2}$ | $\frac{3}{4}$ | 1   | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2    | $2\frac{1}{2}$ | 3-inch |
|------------------|---------------|---------------|-----|----------------|----------------|------|----------------|--------|
| Hose pipe thread | \$0.20        | .20           | .38 | .85            | 1.20           | 2.00 | 4.00           | 6.25   |
| Iron pipe thread | 0.25          | .25           | .40 | .90            | 1.30           | 2.20 | 4.20           | 6.50   |

### Hose Nipples



| Size  | $\frac{1}{2}$ | $\frac{3}{4}$ | 1   | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2    | $2\frac{1}{2}$ | 3    | $3\frac{1}{2}$ -inch |
|-------|---------------|---------------|-----|----------------|----------------|------|----------------|------|----------------------|
| Price | \$0.30        | .30           | .42 | .75            | .85            | 1.20 | 2.35           | 3.35 | 4.20 each            |

### Hose Pipes---Screw Tips



| Size                     | $\frac{3}{4}$   | $\frac{1}{2}$ | 1               | 1                | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 1       | $1\frac{1}{2}$ -inch |
|--------------------------|-----------------|---------------|-----------------|------------------|----------------|----------------|---------|----------------------|
| Length                   | 7 $\frac{1}{2}$ | 12            | 8 $\frac{1}{2}$ | 12 $\frac{1}{2}$ | 12             | 15             | 13-inch | 25 00                |
| Hose pipe thread per doz | \$8.00          | 12.00         | 10.00           | 12.00            | 20.00          | 24.00          |         |                      |





## Couplings

### MALLEABLE IRON

Right Hand



Right and Left



| Size.....                     | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1   | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2-inch   |
|-------------------------------|---------------|---------------|---------------|---------------|-----|----------------|----------------|----------|
| Right hand, plain.....        | \$0.03        | .04           | .07           | .10           | .14 | .20            | .25            | .35 each |
| Right and left, plain.....    | .04           | .05           | .08           | .12           | .16 | .25            | .36            | .52 each |
| Right hand, galvanized.....   | .05           | .07           | .10           | .17           | .23 | .30            | .40            | .55 each |
| Right and left, galvanized... | .06           | .08           | .10           | .17           | .25 | .35            | .55            | .75 each |

### STANDARD WROUGHT IRON COUPLINGS

| Size.....                   | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1   | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2   | $2\frac{1}{2}$ | 3    |
|-----------------------------|---------------|---------------|---------------|---------------|-----|----------------|----------------|-----|----------------|------|
| Right hand, plain.....      | \$.05         | .06           | .07           | .10           | .13 | .17            | .21            | .28 | .40            | .60  |
| Right and left, plain.....  | .07           | .08           | .11           | .15           | .20 | .25            | .30            | .50 | .85            | 1.20 |
| Right hand, galvanized..... | .06           | .08           | .10           | .13           | .18 | .25            | .32            | .40 | .55            | .80  |

## Flange Unions

### CAST IRON



| Size.....                 | $\frac{3}{4}$ | 1              | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2              | $2\frac{1}{2}$ | 3              |
|---------------------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Diameter of flange.....   | 3 5-16        | $3\frac{3}{8}$ | $4\frac{1}{8}$ | 4 11-16        | $5\frac{1}{4}$ | 6 1-16         | $6\frac{3}{4}$ |
| No. of bolts in each..... | 3             | 3              | 4              | 4              | 4              | 4              | 4              |
| Price.....                | \$0.46        | .52            | .64            | .78            | 1.00           | 1.25           | 1.50           |

## Malleable Iron Unions



Standard



Union Ell



Union Tee

| Size, inches.....           | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1    | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2     | $2\frac{1}{2}$ | 3     |
|-----------------------------|---------------|---------------|---------------|---------------|------|----------------|----------------|-------|----------------|-------|
| Unions.....                 | \$1.18        | .20           | .22           | .27           | .33  | .46            | .58            | .75   | 1.55           | 2.10  |
| Unions, galvanized.....     | .27           | .30           | .33           | .40           | .50  | .70            | .90            | 1.15  | 2.35           | 3.15  |
| Union elbows.....           | .42           | .42           | .54           | .63           | .90  | 1.05           | 1.55           | 2.85  | 4.30           | ..... |
| Union elbows, galvanized... | .63           | .81           | .81           | .95           | 1.35 | 1.58           | 2.35           | 4.30  | 3.20           | ..... |
| Union tees.....             | .45           | .57           | .70           | .95           | 1.15 | 1.70           | 2.55           | 4.80  | .....          | ..... |
| Union tees, galvanized....  | .68           | .86           | 1.05          | 1.45          | 1.75 | 2.55           | 4.80           | ..... | .....          | ..... |



# Cast Iron and Malleable Fittings



Elbows



Reducers



Bushings



Tees



Lock Nuts



Caps



Plugs



Street Elbows

| SIZE, INCHES                               | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1                 | 1 $\frac{1}{4}$ | 1 $\frac{1}{2}$ | 2     | 2 $\frac{1}{2}$ | 3     |
|--------------------------------------------|---------------|---------------|---------------|---------------|-------------------|-----------------|-----------------|-------|-----------------|-------|
| Elbows, cast iron.....                     | .05           | .05           | .06           | .08           | .10 $\frac{1}{2}$ | .16             | .20             | .28   | .50             | .75   |
| Elbows, cast iron, galvanized.....         | .10           | .10           | .12           | .16           | .21               | .32             | .40             | .56   | 1.00            | 1.50  |
| Elbows, cast iron, R. & L.....             | .06           | .06           | .07           | .09           | .12               | .18             | .23             | .32   | .60             | .85   |
| Elbows, cast iron, 45°.....                | .06           | .06           | .07           | .10           | .12               | .19             | .24             | .34   | .60             | .90   |
| Elbows, malleable.....                     | .04           | .06           | .10           | .15           | .22               | .25             | .35             | .50   | .80             | 1.50  |
| Elbows, malleable, galvanized.....         | .05           | .08           | .14           | .20           | .32               | .40             | .60             | .90   | 1.35            | 2.60  |
| Elbows, malleable, 45°.....                | .08           | .10           | .12           | .18           | .26               | .36             | .54             | .82   | 1.25            | 2.50  |
| Elbows, malleable, 45° galvanized.....     | .12           | .15           | .20           | .25           | .40               | .50             | .85             | 1.35  | 1.90            | 3.75  |
| Street Elbows, malleable.....              | .10           | .10           | .12           | .20           | .25               | .40             | .55             | .90   | 1.50            | ..... |
| Street Elbows, galvanized.....             | .12           | .12           | .15           | .28           | .35               | .55             | .80             | 1.30  | .....           | ..... |
| Reducers, malleable.....                   | .03           | .03           | .05           | .10           | .16               | .20             | .28             | .45   | .70             | 1.00  |
| Reducers, malleable, galvanized.....       | .....         | .....         | .08           | .15           | .25               | .35             | .45             | .75   | 1.05            | 1.65  |
| Bushings, cast iron.....                   | .....         | .....         | .04           | .05           | .06               | .07             | .09             | .14   | .21             | .30   |
| Bushings, cast iron, galvanized.....       | .....         | .....         | .08           | .10           | .12               | .14             | .18             | .28   | .42             | .60   |
| Bushings, malleable.....                   | .....         | .04           | .04           | .05           | .06               | .07             | .09             | .14   | .21             | ..... |
| Bushings, malleable, galvanized.....       | .....         | .08           | .08           | .10           | .12               | .14             | .18             | .28   | .42             | ..... |
| Tees, cast iron.....                       | .08           | .08           | .09           | .12           | .15               | .23             | .29             | .41   | .73             | 1.10  |
| Tees, cast iron, galvanized.....           | .16           | .16           | .18           | .24           | .30               | .46             | .58             | .82   | 1.46            | 2.20  |
| Tees, malleable.....                       | .07           | .08           | .11           | .15           | .25               | .30             | .45             | .60   | 1.05            | 1.70  |
| Tees, malleable, galvanized.....           | .09           | .10           | .16           | .20           | .38               | .50             | .70             | 1.00  | 1.90            | 3.00  |
| Lock nuts, cast iron.....                  | .....         | .....         | .....         | .....         | .07               | .09             | .11             | .18   | .27             | .34   |
| Lock nuts, cast iron, galvanized.....      | .....         | .....         | .....         | .....         | .10               | .14             | .20             | .30   | .54             | .68   |
| Lock nuts, malleable.....                  | .02           | .03           | .04           | .05           | .07               | .09             | .11             | .18   | .....           | ..... |
| Lock nuts, malleable, galvanized.....      | .03           | .04           | .05           | .07           | .10               | .14             | .20             | .30   | .....           | ..... |
| Caps, malleable.....                       | .03           | .04           | .05           | .08           | .12               | .16             | .24             | .32   | .45             | .85   |
| Caps, malleable, galvanized.....           | .04           | .05           | .08           | .12           | .17               | .24             | .38             | .52   | .76             | 1.30  |
| Plugs, cast iron.....                      | .02           | .02           | .02           | .03           | .04               | .05             | .07             | .10   | .18             | .25   |
| Plugs, cast iron, galvanized.....          | .04           | .04           | .04           | .06           | .08               | .10             | .14             | .20   | .36             | .50   |
| Plugs, cast iron, countersunk.....         | .....         | .....         | .....         | .06           | .08               | .09             | .11             | .15   | .....           | ..... |
| Plugs, cast iron, solid.....               | .....         | .....         | .....         | .06           | .08               | .09             | .11             | .15   | .....           | ..... |
| Plugs, cast iron, left hand.....           | .....         | .....         | .....         | .06           | .08               | .09             | .11             | .15   | .....           | ..... |
| Plugs, cast iron, tapp'd for air cock..... | .....         | .....         | .12           | .15           | .20               | .25             | .30             | ..... | .....           | ..... |

## Wrought Iron Nipples



Close



Shoulder

Table of Sizes and Lengths Kept in Stock.

### PLAIN RIGHT HAND

| LENGTH, INCHES |       |       |       |       |       |       | Size<br>Inches |        | Prices               |        | PRICE OF EXTRA LONG NIPPLES |        |        |        |        |        |        |        |  |  |
|----------------|-------|-------|-------|-------|-------|-------|----------------|--------|----------------------|--------|-----------------------------|--------|--------|--------|--------|--------|--------|--------|--|--|
| Close          | Short | Long  |       |       |       |       |                |        | Close<br>or<br>Short | Long   | Inches                      |        |        |        |        |        |        |        |  |  |
|                |       | 4     | 5     | 6     | 7     | 8     |                |        |                      |        | 9                           | 10     | 11     | 12     |        |        |        |        |  |  |
| 3/4            | 1 1/8 | 2     | 2 1/8 | 3     | 3 1/8 | 3 3/8 | 1 1/4          | \$0.04 | \$0.06               | \$0.07 | \$0.08                      | \$0.10 | \$0.12 | \$0.14 | \$0.15 | \$0.17 | \$0.18 | \$0.19 |  |  |
| 1              | 1 1/8 | 2     | 2 1/8 | 3     | 3 1/8 | 3 3/8 | 1 1/4          | .04    | .06                  | .07    | .08                         | .10    | .12    | .14    | .15    | .17    | .18    | .19    |  |  |
| 1 1/8          | 1 1/2 | 2     | 2 1/8 | 3     | 3 1/8 | 3 3/8 | 1 1/2          | .04    | .06                  | .07    | .08                         | .10    | .12    | .14    | .15    | .17    | .18    | .19    |  |  |
| 1 1/8          | 1 1/2 | 2     | 2 1/8 | 3     | 3 1/8 | 3 3/8 | 1 1/2          | .05    | .07                  | .08    | .10                         | .12    | .14    | .16    | .18    | .20    | .22    | .23    |  |  |
| 1 1/2          | 2     | 2 1/8 | 3     | 3 1/8 | 4     | 4 1/8 | 1 3/4          | .06    | .09                  | .....  | .11                         | .13    | .17    | .18    | .20    | .22    | .24    | .26    |  |  |
| 1 1/2          | 2     | 2 1/8 | 3     | 3 1/8 | 4     | 4 1/8 | 1 3/4          | .08    | .13                  | .....  | .15                         | .18    | .23    | .25    | .28    | .31    | .34    | .36    |  |  |
| 1 3/4          | 2 1/8 | 3     | 3 1/8 | 4     | 4 1/8 | 4 1/2 | 2              | .11    | .17                  | .....  | .20                         | .24    | .29    | .33    | .36    | .40    | .44    | .47    |  |  |
| 2              | 2 1/8 | 3     | 3 1/8 | 4     | 4 1/8 | 4 1/2 | 2              | .13    | .20                  | .....  | .25                         | .29    | .36    | .40    | .45    | .50    | .54    | .59    |  |  |
| 2 1/8          | 3     | 3 1/8 | 4     | 4 1/8 | 4 1/2 | 5     | 2 1/8          | .18    | .7                   | .....  | .32                         | .38    | .50    | .54    | .59    | .65    | .72    | .77    |  |  |
| 2 1/8          | 3     | 3 1/8 | 4     | 4 1/8 | 4 1/2 | 5     | 2 1/8          | .39    | .59                  | .....  | .68                         | .90    | .97    | 1.06   | 1.17   | 1.26   | 1.35   |        |  |  |
| 2 1/2          | 3     | 3 1/8 | 4     | 4 1/8 | 4 1/2 | 5     | 2 1/2          | .48    | .72                  | .....  | .85                         | 1.08   | 1.20   | 1.33   | 1.45   | 1.58   | 1.70   | 1.85   |  |  |
| 2 1/2          | 3     | 3 1/8 | 4     | 4 1/8 | 4 1/2 | 5     | 2 1/2          | .75    | 1.05                 | .....  | 1.30                        | 1.45   | 1.60   | 1.75   | 1.90   | 2.05   | 2.20   | 2.40   |  |  |
| 3              | 4     | 4 1/8 | 5     | 5 1/8 | 5 1/2 | 6     | 3              | .85    | 1.20                 | .....  | 1.52                        | 1.69   | 1.87   | 2.05   | 2.22   | 2.40   | 2.60   | 2.85   |  |  |

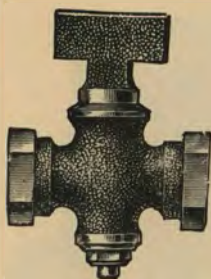
### GALVANIZED, RIGHT HAND

| LENGTH, INCHES |       |       |       |       |       |       | Size<br>Inches | Prices               |        | PRICE OF EXTRA LONG NIPPLES |        |        |        |        |        |        |        |        |  |
|----------------|-------|-------|-------|-------|-------|-------|----------------|----------------------|--------|-----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--|
| Close          | Short | Long  |       |       |       |       |                | Close<br>or<br>Short | Long   | Inches                      |        |        |        |        |        |        |        |        |  |
|                |       | 4     | 5     | 6     | 7     | 8     |                |                      |        | 9                           | 10     | 11     | 12     |        |        |        |        |        |  |
| 3/4            | 1 1/8 | 2     | 2 1/8 | 3     | 3 1/8 | 3 3/4 | 1/4            | \$0.06               | \$0.11 | \$0.12                      | \$0.15 | \$0.17 | \$0.21 | \$0.24 | \$0.26 | \$0.29 | \$0.31 | \$0.34 |  |
| 1              | 1 1/8 | 2     | 2 1/8 | 3     | 3 1/8 | 3 3/4 | 1/2            | .06                  | .11    | .12                         | .15    | .17    | .21    | .24    | .26    | .29    | .31    | .34    |  |
| 1 1/8          | 1 1/8 | 2     | 2 1/8 | 3     | 3 1/8 | 3 3/4 | 3/4            | .06                  | .11    | .12                         | .15    | .17    | .21    | .24    | .26    | .29    | .31    | .34    |  |
| 1 1/8          | 1 1/8 | 2     | 2 1/8 | 3     | 3 1/8 | 3 3/4 | 1 1/4          | .06                  | .11    | .13                         | .16    | .18    | .23    | .26    | .28    | .31    | .33    | .36    |  |
| 1 1/8          | 2     | 2 1/8 | 3     | 3 1/8 | 3 3/4 | 4     | 3/4            | .08                  | .14    | .....                       | .18    | .21    | .26    | .29    | .32    | .35    | .38    | .41    |  |
| 1 1/8          | 2     | 2 1/8 | 3     | 3 1/8 | 3 3/4 | 4     | 1              | .11                  | .19    | .....                       | .24    | .28    | .34    | .38    | .42    | .47    | .51    | .55    |  |
| 1 1/8          | 2 1/8 | 3     | 3 1/8 | 4     | 4 1/8 | 4 1/2 | 1 1/4          | .17                  | .29    | .....                       | .32    | .38    | .45    | .51    | .57    | .63    | .69    | .75    |  |
| 1 1/8          | 2 1/8 | 3     | 3 1/8 | 4     | 4 1/8 | 4 1/2 | 1 1/2          | .21                  | .35    | .....                       | .39    | .46    | .55    | .63    | .70    | .77    | .84    | .91    |  |
| 1 1/8          | 2 1/8 | 3     | 3 1/8 | 4     | 4 1/8 | 4 1/2 | 2              | .27                  | .47    | .....                       | .52    | .61    | .74    | .83    | .93    | 1.03   | 1.13   | 1.23   |  |
| 2              | 2 1/8 | 3     | 3 1/8 | 4     | 4 1/8 | 4 1/2 | 2 1/4          | .56                  | .86    | .....                       | 1.00   | 1.26   | 1.41   | 1.56   | 1.71   | 1.86   | 2.01   | 2.16   |  |
| 2              | 2 1/8 | 3     | 3 1/8 | 4     | 4 1/8 | 4 1/2 | 3              | .70                  | 1.10   | .....                       | 1.30   | 1.60   | 1.80   | 2.00   | 2.20   | 2.40   | 2.60   | 2.80   |  |
| 2 1/8          | 3     | 4     | 4 1/8 | 5     | 5 1/8 | 5 1/2 | 3 1/2          | 1.20                 | 1.70   | .....                       | 2.10   | 2.35   | 2.60   | 2.85   | 3.15   | 3.40   | 3.60   | 3.80   |  |
| 3              | 4     | 4 1/8 | 5     | 5 1/8 | 5 1/2 | 5 3/4 | 4              | 1.35                 | 1.87   | .....                       | 2.30   | 2.60   | 2.90   | 3.20   | 3.50   | 3.80   | 4.10   | 4.40   |  |

Nipples Made to Order From Extra Heavy Pipe at Double Above List



### Rough Stop Cocks---Tee Handle



Standard



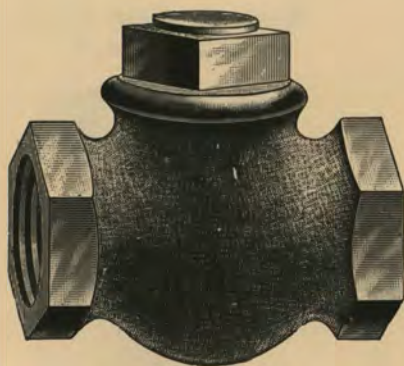
Check and Waste



Hydrant Clamp

| Size Inches              | $\frac{1}{2}$ | $\frac{3}{4}$ | 1    | 1 $\frac{1}{4}$ | 1 $\frac{1}{2}$ | 2     |
|--------------------------|---------------|---------------|------|-----------------|-----------------|-------|
| Straight-way each        | 1.42          | 2.17          | 3.17 | 5.00            | 7.50            | 15.00 |
| Straight check and waste | 1.59          | 2.34          | 3.42 | 5.34            | 8.00            | 15.84 |
| Round-way                | 1.75          | 2.75          | 4.50 | 7.00            | 10.50           | 20.84 |
| Round-way check & waste  | 1.92          | 2.84          | 4.75 | 7.34            | 11.00           | 21.67 |
| Hydrant clamp per lb.    | .15           |               |      |                 |                 |       |

### Standard Brass Check Valves



Horizontal



Vertical

| Size Inches            | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1    | 1 $\frac{1}{4}$ | 1 $\frac{1}{2}$ | 2    |
|------------------------|---------------|---------------|---------------|---------------|---------------|------|-----------------|-----------------|------|
| Horizontal check valve | 65            | 65            | 70            | 90            | 1.15          | 1.60 | 2.25            | 3.15            | 4.75 |
| Vertical check valve   |               | 72            | 77            | 1.00          | 1.26          | 1.80 | 2.52            | 3.50            | 5.30 |

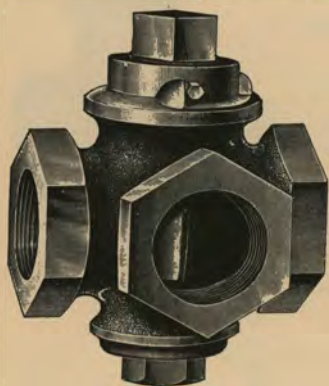
### Three-Ply Rubber Hose

This hose is made to stand a pressure of 100 pounds to the square inch, and is suitable for hydrants, force pumps, etc.

| Size          | Per Foot | Size            | Per Foot | Size            | Per Foot |
|---------------|----------|-----------------|----------|-----------------|----------|
| $\frac{1}{2}$ | \$ .25   | 1               | \$ .40   | 1 $\frac{1}{2}$ | \$ .60   |
| $\frac{3}{4}$ | .30      | 1 $\frac{1}{4}$ | .50      | 1 $\frac{3}{4}$ | .70      |

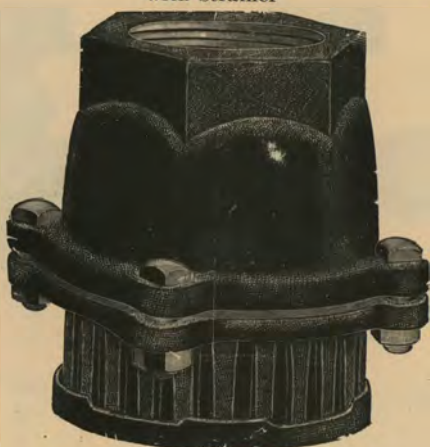
### Three-Way Steam Cocks

Brass, with Check, Extra Heavy



### Foot Valves

with Strainer



| Size Inches     | $\frac{1}{2}$ | $\frac{3}{4}$ | 1    | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2     | $2\frac{1}{2}$ | 3     |
|-----------------|---------------|---------------|------|----------------|----------------|-------|----------------|-------|
| Three-way cocks | 2.50          | 3.00          | 3.75 | 5.75           | 7.15           | 11.00 | 18.75          | 26.00 |
| Foot Valves     |               | 1.15          | 1.30 | 1.40           | 1.90           | 2.40  | 3.30           | 3.90  |

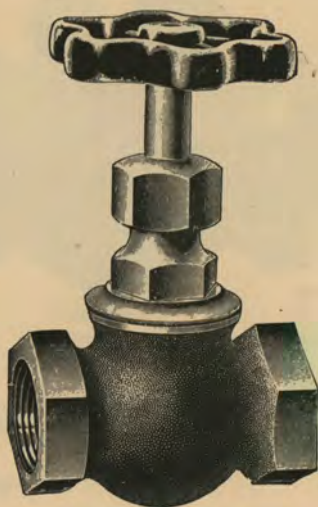
### Straight-Way Valves

Brass, Double Gate



### Standard Globe Valve

Brass, with Gland



| Size Inches         | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1    | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2    | $2\frac{1}{2}$ | 3     |
|---------------------|---------------|---------------|---------------|---------------|------|----------------|----------------|------|----------------|-------|
| Straight-way valves | 1.25          | 1.25          | 1.30          | 1.75          | 2.50 | 3.50           | 5.00           | 7.50 | 14.00          | 20.00 |
| Globe valves        |               |               | 1.00          | 1.26          | 1.80 | 2.52           | 3.50           | 5.30 |                |       |



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