

THE
WORCESTER-BUCKEYE
FARM IMPLEMENTS

THE RICHARDSON MANUFACTURING CO.
WORCESTER MASS.

MODERN tools are a necessity under present methods of agriculture, and it is only by modern methods that we can increase the profits of the farm.

The requirements of the East are not the same as those of the West. We need better tools here than are required elsewhere. The following pages show machines manufactured for the East with her acres of intense cultivation, big meadows as well as her hilly land. You demand longer wear from your implements than does the Western farmer.

Quality, or value received, is properly the first consideration in the selection of implements, and it is reasonable to presume that implements designed on a farm like yours, made for the East and manufactured in a plant where the supervision is personal and close, are the best in the world.

With the increasing use of machinery on the farm comes a new factor of importance, that of service, prompt deliveries and assistance that can be given in regulating a machine out of adjustment, also the quickness with which new parts can be gotten to replace worn ones.

We ship repairs promptly for machines thirty-five years old. Our aim is to provide implements in which trouble is at a minimum, but when trouble does occur our dealers can supply a new part quickly.

The value derived from a machine is the work which it will perform. The accessibility of the manufacturer is important, for no machine is of great value unless it can be depended upon when it is most needed. The implement that is holding up a crew of men while waiting for repairs is worse than useless—it is a bill of expense.

In the space which this catalogue affords it is impossible to show our implements fully. Special catalogues have been prepared and will be gladly mailed, giving fuller details.

We respectfully request your consideration of the machines shown herein and of the service we can render you.

THE RICHARDSON MANUFACTURING COMPANY.

The Worcester-Buckeye Mower

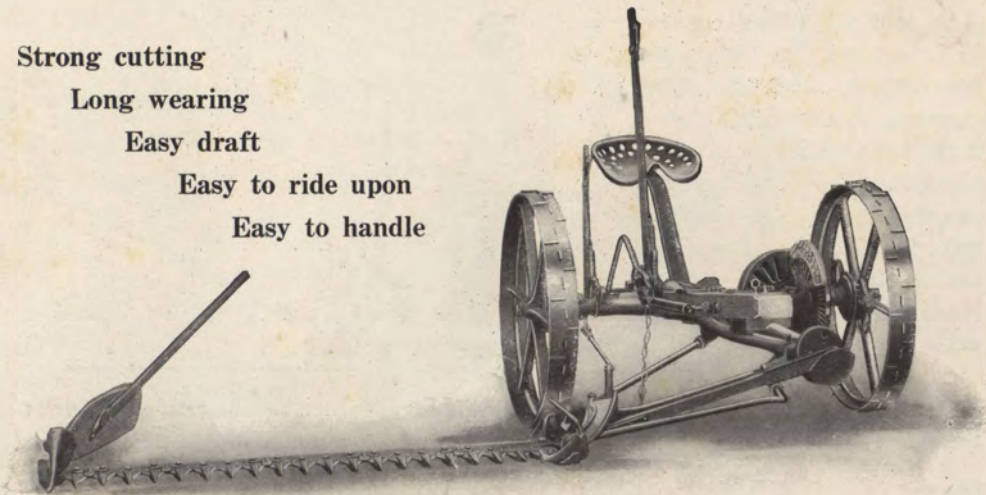
Strong cutting

Long wearing

Easy draft

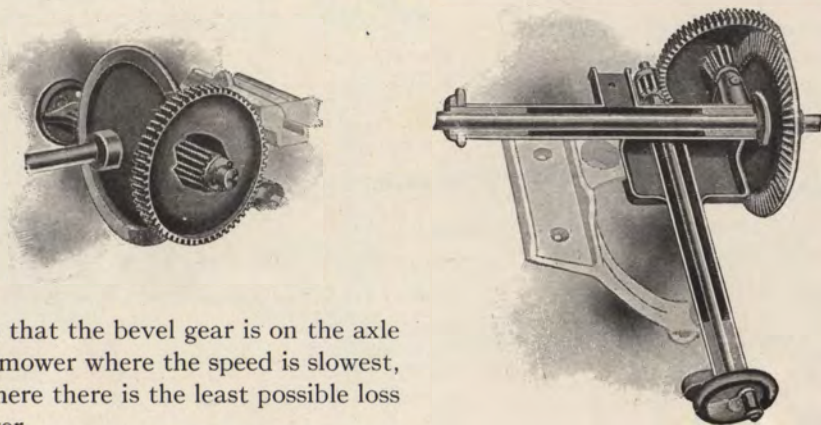
Easy to ride upon

Easy to handle



We have manufactured this mower for over forty years, beginning with a crude wooden frame machine, and step by step have developed the present modern mower.

The gearing of this mower is strong, and there are few parts. It is of simple, clean design, far enough from the ground to clear cut grass and ordinary obstructions. The connecting rod is long and gives a straight push on the knife. The hinge bar connections are wide and strong, and parts are well lubricated.

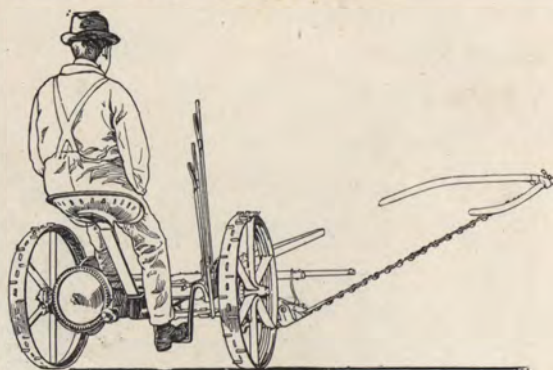


Notice that the bevel gear is on the axle of the mower where the speed is slowest, and where there is the least possible loss of power.

Ask for special catalogue on Mowers

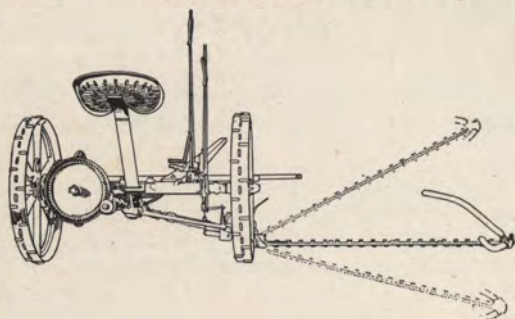
The Worcester-Buckeye Mower

The foot-lift raises the bar high enough to clear any obstruction, and the hinge coupling at the inside shoe is sufficiently flexible to allow the bar to be carried in any position likely to be found on hay land, and cut without undue friction. The mower is balanced so that there is no neck weight on the horses.



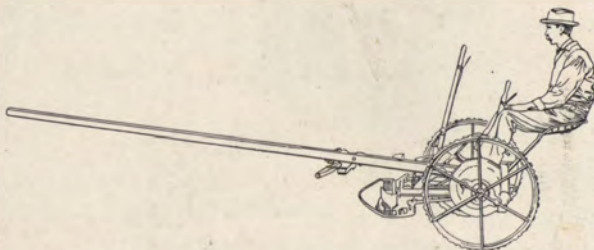
The folding bar that lies flat across the pole is a feature peculiar to our mower alone. It is convenient for the operator in going to and from the field, as his

reins are not in danger of being cut and the bar is out of his way. It is the only practical method of disposing of the bar when the machine is in winter storage, and during the summer season the farmyard is safer for children and animals with a mower bar folded in this manner.



The weight of driver perfectly balances the machine.

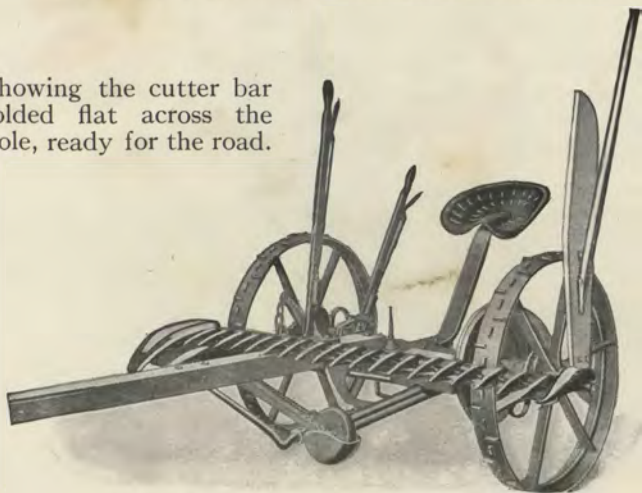
Every mower we build is run and thoroughly tested by power before it is shipped. No mower is allowed to leave our works until it is pronounced perfect, even to the smallest detail of workmanship. When you buy a Worcester-Buckeye mower you get a machine that is ready for field work.



Ask for special catalogue on Mowers

The Worcester-Buckeye Mower

Showing the cutter bar
folded flat across the
pole, ready for the road.



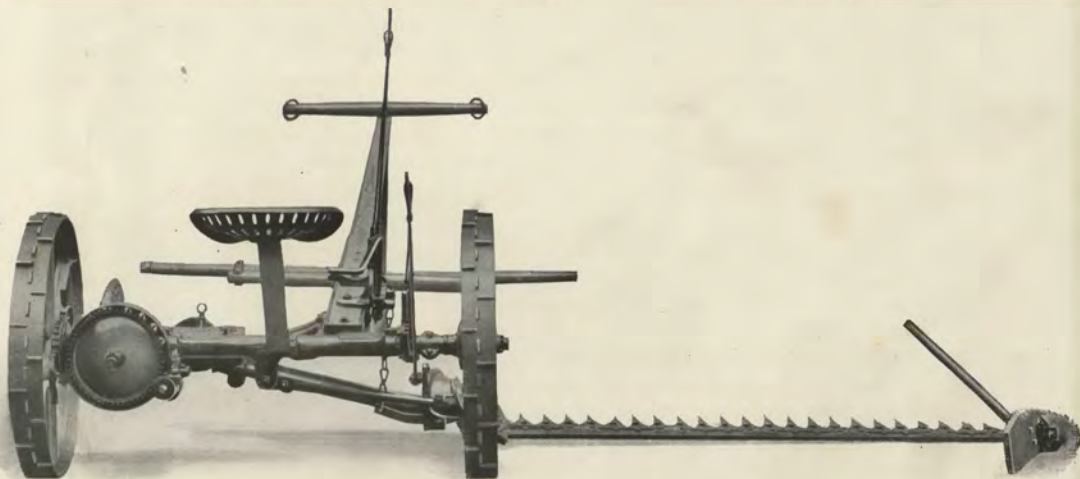
No. 5 mower is built to carry a $4\frac{1}{2}$ and 5 ft. bar. No. 6 mower is designed to carry a 6 ft. and a 7 ft. bar.

List of Sizes

No. 6 Mower
6 ft. cut
7 ft. cut

No. 5 Mower
 $4\frac{1}{2}$ ft. cut
5 ft. cut

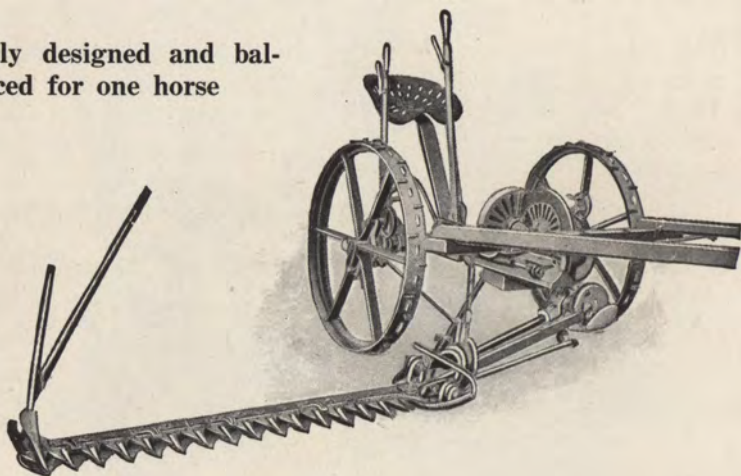
No. 3 Mower
 $3\frac{1}{2}$ ft. cut
4 ft. cut



Ask for special catalogue on Mowers

The Worcester-Buckeye Mower

Especially designed and balanced for one horse



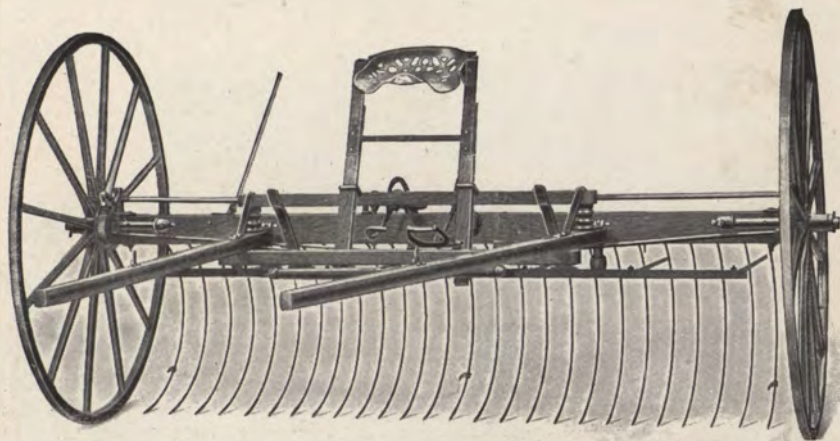
One-Horse Mower

We have always made a specialty of the one-horse mower. There are more one-horse mowers used in the East than in any other section, probably more than all other sections combined. The one-horse mower is growing in popularity, as it is found to be more convenient in orchards and in small fields, for one horse turns quicker than a pair and saves time that a pair of horses waste in turning a corner. One horse handles this machine without apparent effort. There is every improvement on the one-horse mower that is found on the two-horse, larger machine, and there is every attention given to the manufacture of this mower that is given to the larger machine. Our one-horse mowers in use fifteen, twenty-five and thirty years are a better recommendation than pages of catalogue.

Some special features of the Worcester-Buckeye mower not before mentioned, and to which we call your attention, are: Reinforced cutter bar, consisting of a taper rib rolled into the underside of the bar, strengthening it immensely. Reinforced knife back, making an extra strong cutting knife and an extra amount of metal to hold the knife head from working loose. Ball-and-socket pitman head connection. Adjustable drag bar and back brace that centers the knife in the guard fingers, and lines up the cutter bar, if wear should throw it back out of place. Open ratchets on the drive wheel hubs that cannot get out of adjustment. Self-oiling crank pin box that cannot heat. Extra large range of tilt, throwing the guard fingers down or up. Steel and malleable iron used in place of cast iron, wherever there is unusual strain. Crank wheel turns right-handed, not left-handed, pitman rod pushes on the straight stroke and pulls on the angle stroke.

Ask for special catalogue on Mowers

The Worcester Horse Rake



This rake is made of wood, trussed and braced at every corner. It is built of the best grade of timber, with a truss rod running the entire length of the axle bed. It is light, strong and dependable, and has proved itself to outwear any rakes built of steel and to be much lighter draft.

The rake head holding the teeth lifts quickly and drops quickly, remaining up as long as the operator wishes. The rake is dumped with the driver's right foot. The teeth are held firmly on the ground by the driver's left foot or are held up by pressure on this same foot lever. This is useful when an especially large windrow is being dumped, and is a special feature of this rake.

The teeth are sled-runner pattern as shown. Their position on the ground makes them unexcelled for raking heavy hay and green hay, but they will not scratch the grass roots nor dig.

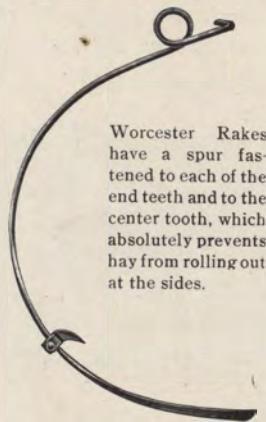
There are no springs, toggles or other contraptions on this rake. It has proved itself to be the most popular type of horse rake sold. The seat is adjustable.

List of Sizes

8 ft. 26 tooth 9 ft. 28 tooth 10 ft. 30 tooth

Special attention is called to the wheels, which are extra heavy, built of the best grade of hickory and ash timber, with strong steel tires.

Ask for special catalogue on Rakes

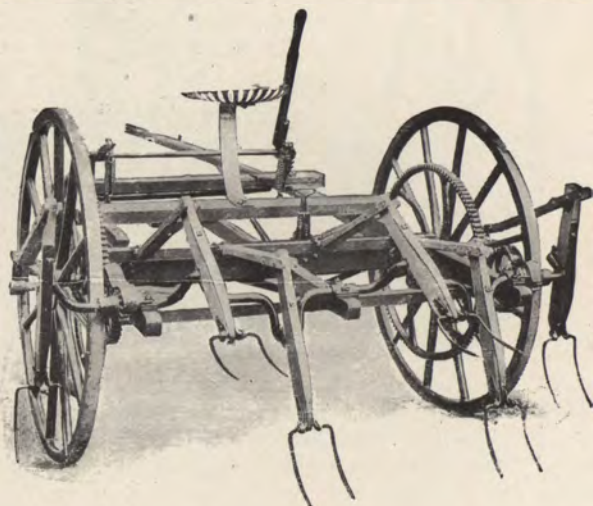


Worcester Rakes have a spur fastened to each of the end teeth and to the center tooth, which absolutely prevents hay from rolling out at the sides.

The Bullard Hay Tedder

This is a wood-frame tedder with which we have had the best of success the past twenty-five years. Wood parts bolted together withstand the shake of a tedder more satisfactorily than steel parts, and the tedder can be more easily repaired in case of breakage.

This tedder is equipped with platform springs, which ease the fork springs and assist them materially.



The crank shaft is cut in the middle so that either wheel drives the forks on its side only. This materially reduces the draft when turning a corner, and prolongs the life of a tedder.



List of Sizes

Bullard Tedder 6 fork
(can be equipped with combination
for one or two horses)

Bullard Tedder 8 fork
(for two horses only)

The Worcester Wind Shield (patented) prevents hay from winding on the crank shaft and enables the tedder to do good work on a windy day. This is built for both 6 and 8 fork sizes.

Worcester-Kemp Manure Spreader



Simple
Strong
Dependable

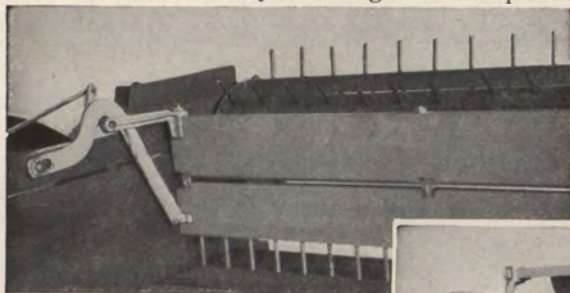
In the history of manure spreader development the Worcester-Kemp spreader has a proud record and the Worcester-Kemp model shown above is the result of over thirty years of manure spreader building. Parts have been simplified, strengthened, and several patented features have been added, together with roller bearings and other features that will give ultimate satisfaction to the man on the seat.

Sizes

L-0, small size, 35 to 40 bushels.

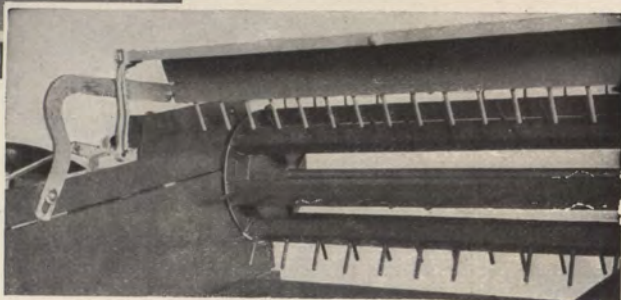
L-1, medium size, 40 to 45 bushels.

Five years' experience in building this present model with practically no change has brought this spreader to as near perfection in strength of parts and smoothness with which they work together as is possible for us to attain.



Showing the patented jointed end gate as it holds the load away from the beater while going to the field.

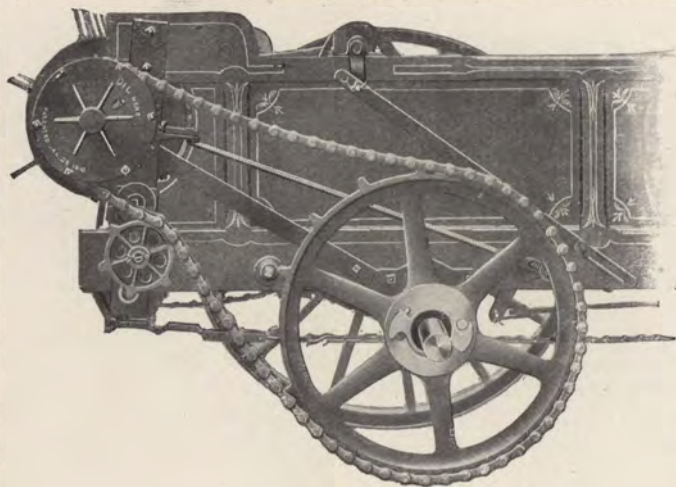
Showing the position of the end gate when raised and ready to spread.



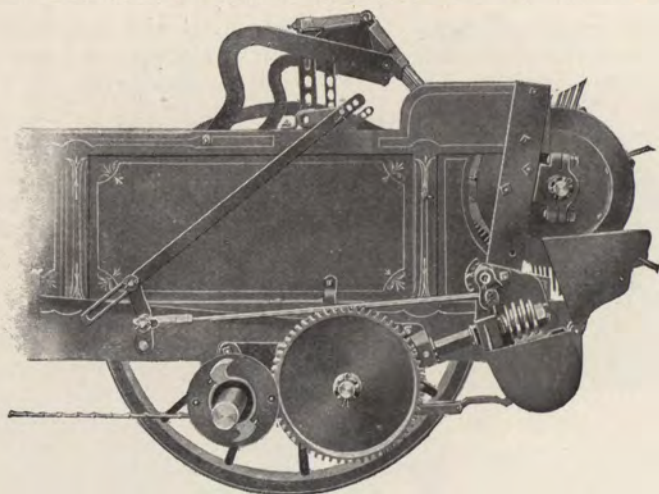
While not as low down as the Curtis Easy Pull spreader shown on pages 10, 11, and 12, it is not a high manure spreader and has all our latest patents except the hump in the floor, described on page 12.

Ask for special catalogue on Worcester-Kemp Spreaders

The Worcester-Kemp Manure Spreader

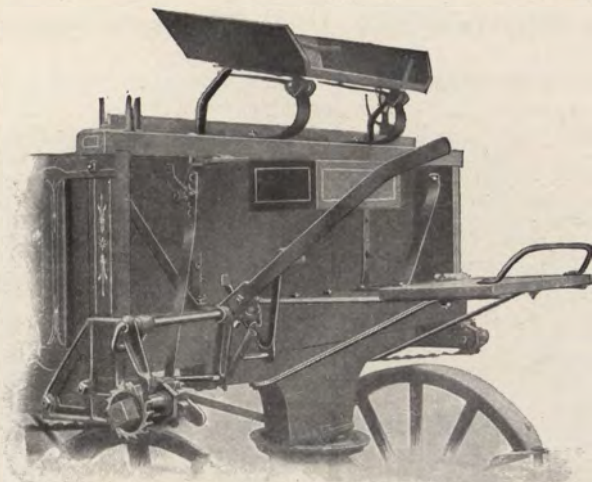


Showing the right side of the spreader with the wheel taken off. Note the strength of the patented Simplex Beater Drive, and the absence of gears or stud shafts.

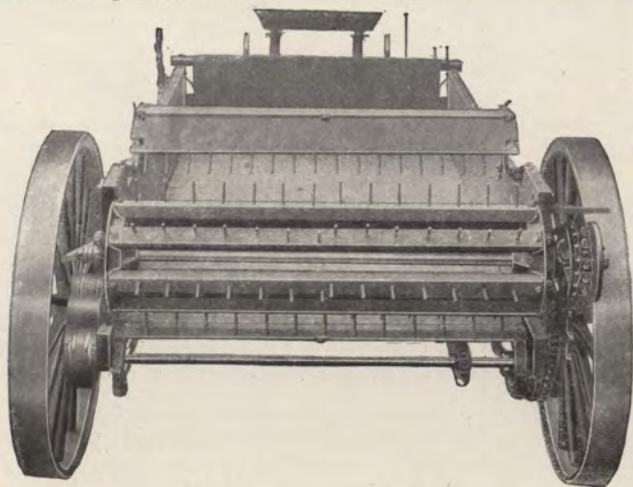


The cut above shows the left hand side of the spreader with the drive wheel taken off. Note the iron case inclosing the feed gears, and which contains a bath of oil in which these gears run, also note the wrought steel beater hangers used.

Ask for special catalogue on Worcester-Kemp Spreaders



Showing front end construction of the Worcester-Kemp spreader and the convenience of the starting lever.



This cut shows the end gate raised and ready to spread. Note that the end gate forms a pulverizer while spreading, and that from its construction it moves away from the load when raising and therefore raises easily.

This spreader is 4 feet 1 inch at its highest point at the rear end and when the end gate is down ready to load, it can be loaded over the rear end as easily as over the sides.

Furnished with either wood or steel wheels.

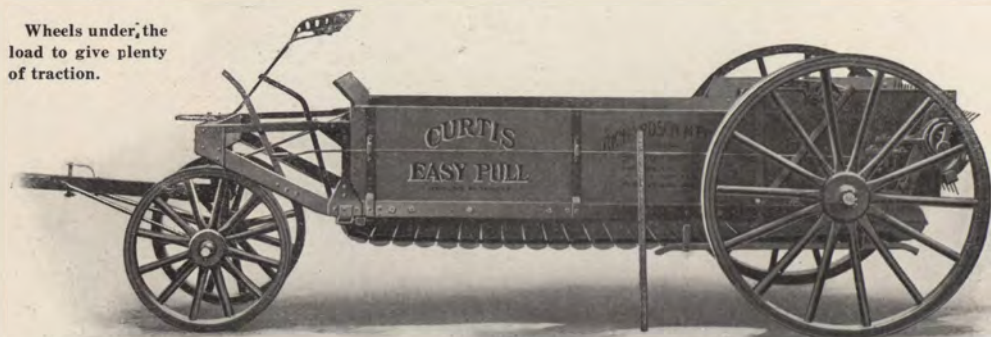
Ask for special catalogue on Worcester-Kemp Spreaders

The Curtis Easy Pull Manure Spreader

The Curtis Easy Pull manure spreader is a new step in spreader development. It is a low down spreader using high 50 inch drive wheels. These wheels are under the load where they get sufficient traction to operate the spreader.

A new principle of this spreader is a hump in the frame of the machine, described on page 12.

Wheels under the load to give plenty of traction.



Drive wheels being well front make easy loading over the rear.

THE CURTIS EASY PULL SPREADER

High drive wheels, 50 inches high

All of the power required to operate the spreader must come from the traction of the rear wheels upon the ground and it is very necessary that these be placed where the greater part of the weight of the spreader comes upon them. All weight carried by the front wheels takes away from the traction on the rear wheels and when these are placed too far back there is not sufficient traction and the spreader will not do good work under all conditions. The design of this low down spreader enables us to get the weight on the rear wheels where it belongs.

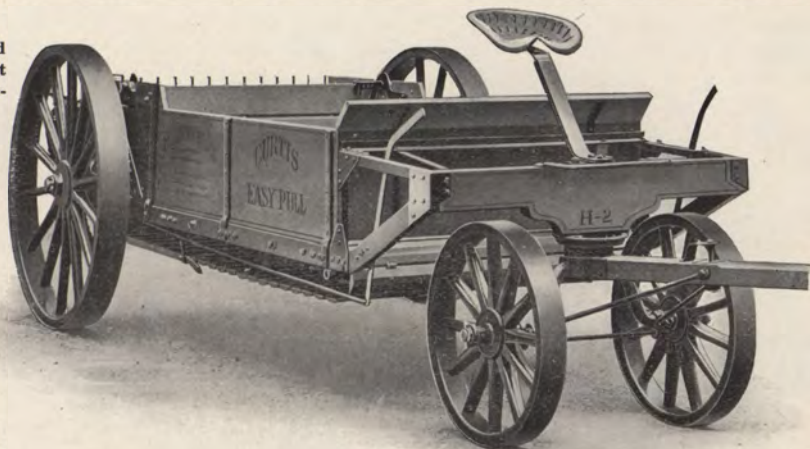
Another particular reason why the drive wheels on a low down spreader should be under the load and as far front as possible, is that in this way they form a protection to the belly of the machine, for while low down spreaders are high enough from the ground as a usual thing, to clear obstructions, unusual conditions, such as a gutter leading from the road into the field, or some unevenness of the field itself, may let the belly of the machine strike.

Many of the parts used on this new spreader are the same parts as have been used for years on the Worcester-Kemp. This machine is not an experiment, but has been carefully worked out in the field and there are hundreds of them in use to-day.

Ask for special catalogue on Curtis Easy Pull Spreaders

The Curtis Easy Pull Manure Spreader

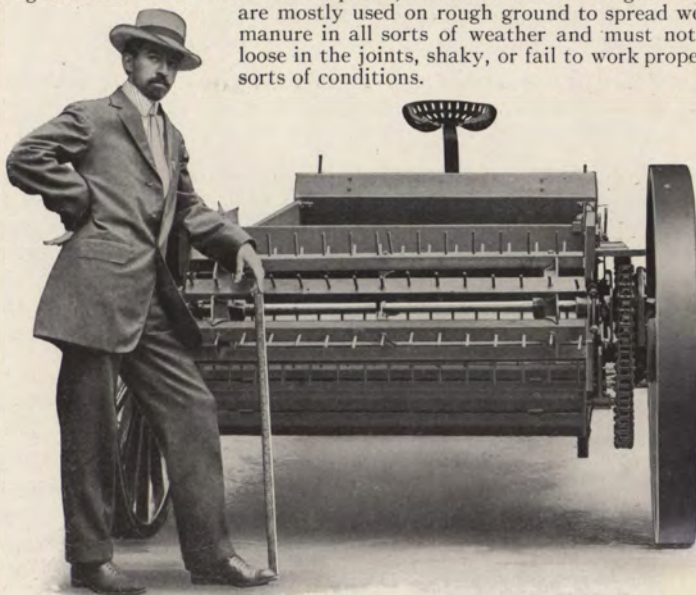
Strong and simple front end construction.



No complicated levers, double leaf spring seat.

FRONT END

This spreader while simple in construction is very strongly made and steel enters much into its making, giving strength and stiffness where it is required, without excessive weight. Spreaders are mostly used on rough ground to spread wet, soggy manure in all sorts of weather and must not become loose in the joints, shaky, or fail to work properly in all sorts of conditions.



No pulverizer to prevent loading over the rear end.

When loading, end gate is down; when spreading, end gate is raised and acts as a pulverizer.

Wheels are not in the way of loading and are out of the way of the manure when spreading.

LOW DOWN

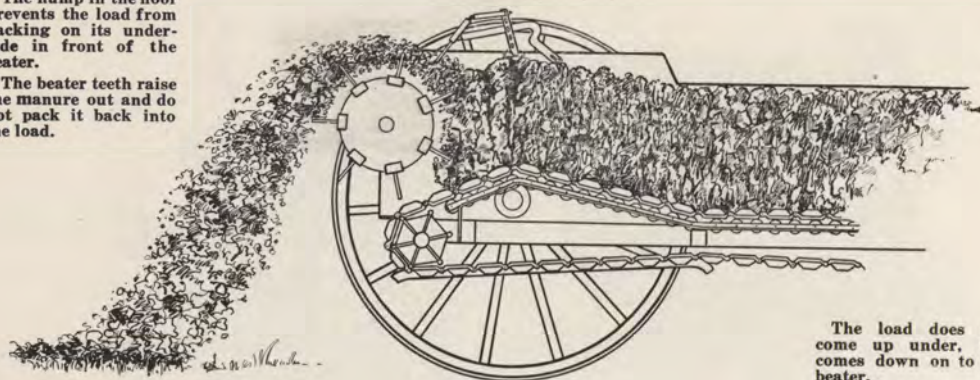
Furnished with either wood or steel wheels.

Ask for special catalogue on Curtis Easy Pull Spreaders

The Curtis Easy Pull Manure Spreader

The hump in the floor prevents the load from packing on its underside in front of the beater.

The beater teeth raise the manure out and do not pack it back into the load.



The load does not come up under, but comes down on to the beater.

In the advancement of the manufacture of manure spreaders there had been thus far no lightening of the work of spreading. The "Curtis Easy Pull" brings forward a new principle, tried out and tested for many months, which successfully lightens the work of the spreader, and by so doing lightens the work of the horses, eases the strain on the machine, and increases its life.

The turning of the beater takes a great deal of power, and very often in the ordinary type of spreader it takes more power than the drawing of the load. The carrying of the load on to the beater takes very little power.

The new principle of this machine is a hump in the frame of the spreader, over which the floor passes. This hump is in front of the beater, and as the load of manure on the rolling floor moves backward toward the revolving beater it rolls up a gentle incline, then breaks over the top of this hump, and the beater catches the manure already partly loosened, and spreads it easily. The load splits on top of the hump and the beater teeth are not obliged to pull the manure out of the solid mass. An examination of the drawing on this page shows this quite clearly.

In the level floor type of spreader the pins on the underside of the beater become packers instead of lifters and pack the lower half of the load against the oncoming manure.

The drawing shows how the hump of the Curtis Easy Pull fills up the space into which the manure was formerly packed and the beater pins now pull the manure out instead of pushing it back into the load. Every pin is a lifter instead of a packer.

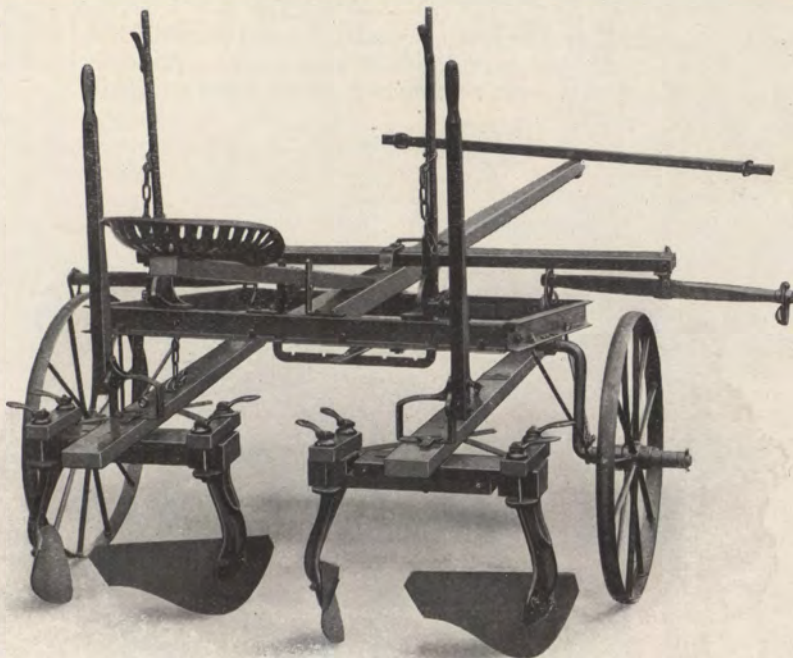
The Curtis Easy Pull is the first manure spreader to make any advancement in lightening the work that the spreader does.

Ask for special catalogue on Curtis Easy Pull Spreaders

Two-Row Riding Hoe

This two-row hoe was first built in 1913 and is the beginning of a new era for the man who raises hoed crops. It has been carefully designed from the needs of potato raisers, but is adaptable to almost any other hoed crop.

This two-row hoe enables one man and two horses to do the work of two men and four horses with the old-fashioned walking horse hoe, shown on page 16. This hoe will follow the row and may be guided by hand or foot, or both, if necessary.



TWO ROW HOE

The hoe frame is made from a design which permits of the hoes being worked opposite to each other in the early stages of the crop, while for later work one hoe can be dropped behind the other and extended so as to work to the center of the row. The hoes are far enough in front of the driver to allow him to see that sods or stones do not tear up the crop.

These hoes are furnished with either wing coverers or discs or with both. These hoes are adjustable to the width of the rows.

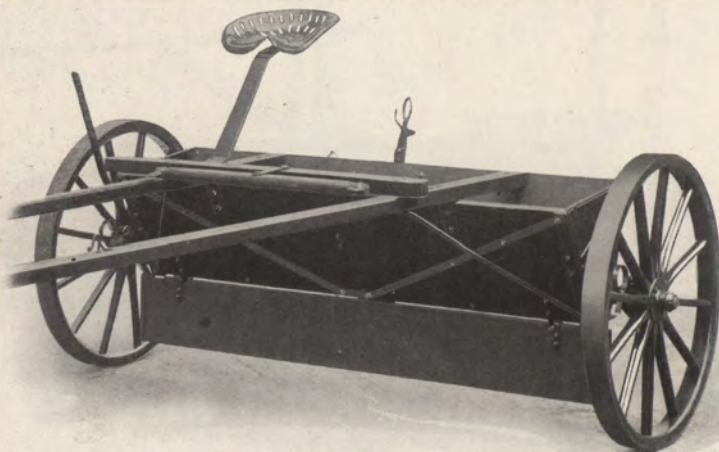
Ask for special catalogue on Two-Row Riding Hoe

Lime and Fertilizer Distributors

This distributor is designed from a careful study of the needs of the up-to-date farmer who wishes to broadcast or drill lime, ashes and commercial fertilizer. It is simple in design, carefully built, is equipped with broad tires and easy riding seat.

The card attached to the machine shows how to set the feed lever for the desired amount of spread. This card gives a fair average for fertilizer in dry condition and if the fertilizer is damp or extra dry, allowance must be made in the setting of the feed lever.

A number of special features not found on any other distributor adapts this machine to the handling of more kinds of material in a satisfactory manner and they keep this distributor from rusting or from the need of repairs.



Six Foot Size

Built in Four Sizes

Six Foot (for One Horse)
Seven Foot (for Two Horses)

Eight Foot (for Two Horses)
Ten Foot (for Two Horses)

The *feed plate* is controlled by a lever at the driver's left hand and regulates the quantity of spread. The openings are so shaped that the feed is nearly as regular with a minimum quantity as when the largest quantity is being spread. The upper feed plate consists of short sections of cast iron plate, separated from the lower feed plate by liners and by this design a large part of the trouble caused by rusting is obviated.

The *change feed register* is provided with stops so that the operator can be certain of spreading the same amount when the machine is reloaded.

For very *fine feed* a special feed plate is furnished, and for *drilling* a special feed plate is furnished to order for any width of rows.

Ask for special catalogue on Distributors

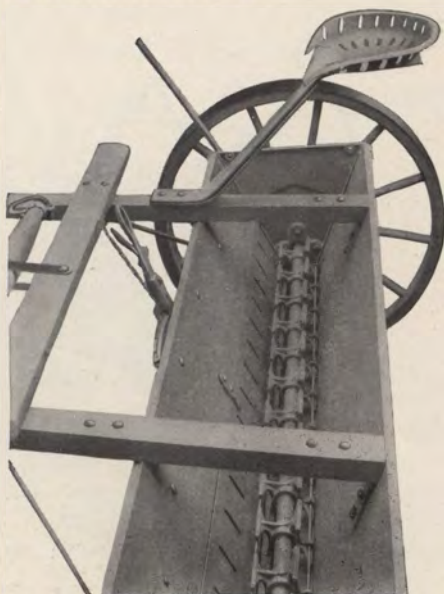
Lime and Fertilizer Distributors

The *special shaker* is a new feature which allows the driver to keep the agitator completely surrounded, and insures an even, regular feed. Many distributors fail to spread evenly because the material "arches" over the agitator or feeding device, but with our special shaker the driver can control this, and by occasionally moving this lever at his right hand all the material in the hopper will be let down on to the agitator.

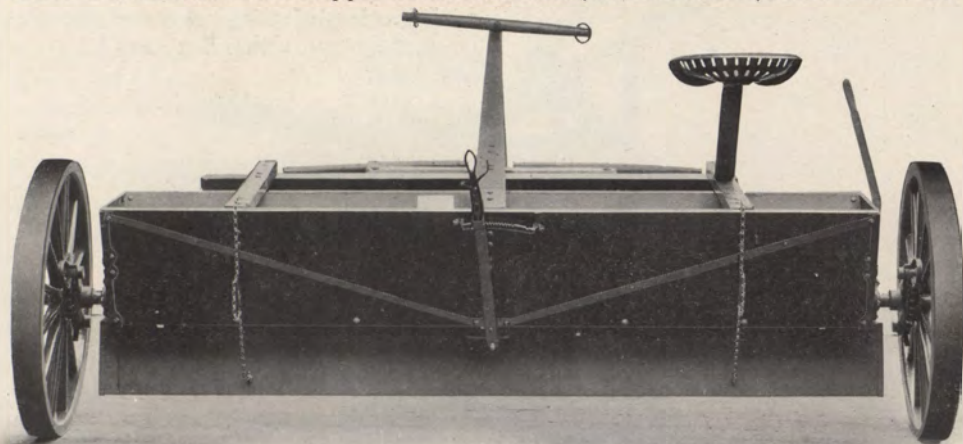
The *wind break* and *shaker board* combined hangs from the underside of the machine and serves a double purpose by distributing the material evenly and preventing the wind from carrying it away. This board is hung so that if an obstruction is met it springs back out of the way and no damage is done.

An *adjustment* is provided that lowers or raises the agitator so that if one side of the machine wears to spread thicker than the other side, one side can be lowered to make even distribution.

Tires. 6 ft. machines are shipped with 3 inch tires; 8 ft. machines, with 4 inch tires.



Interior view showing special shaker operated by hand lever and rotary agitator.



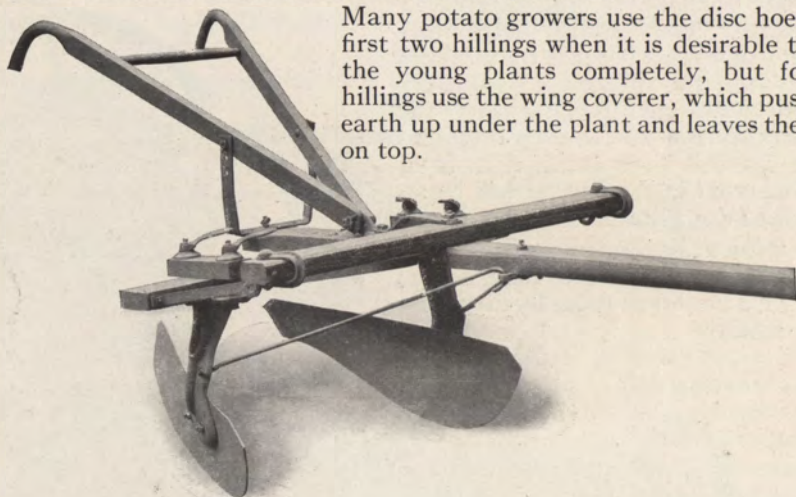
Ask for special catalogue on Distributors

Horse Hoes

For two row riding hoes, see page 13.

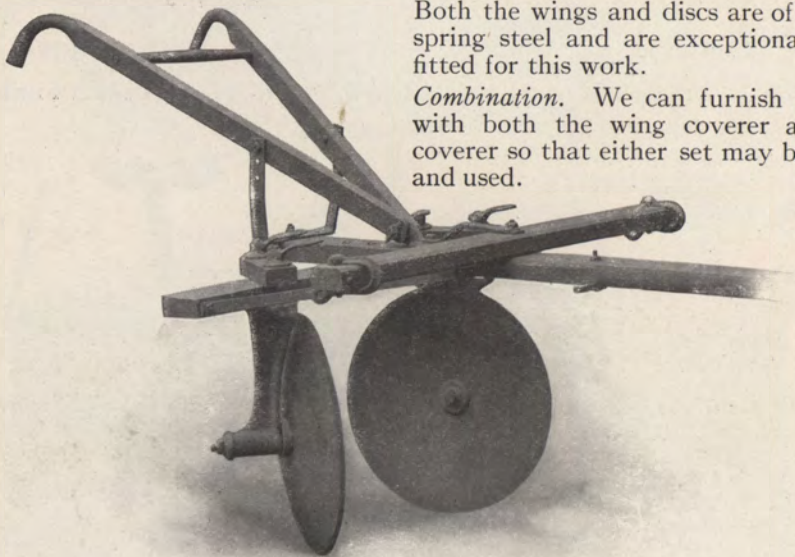
These tools are used for hoeing and hilling corn, potatoes, and other hoed crops.

Many potato growers use the disc hoe for the first two hillings when it is desirable to cover the young plants completely, but for later hillings use the wing coverer, which pushes the earth up under the plant and leaves the foliage on top.



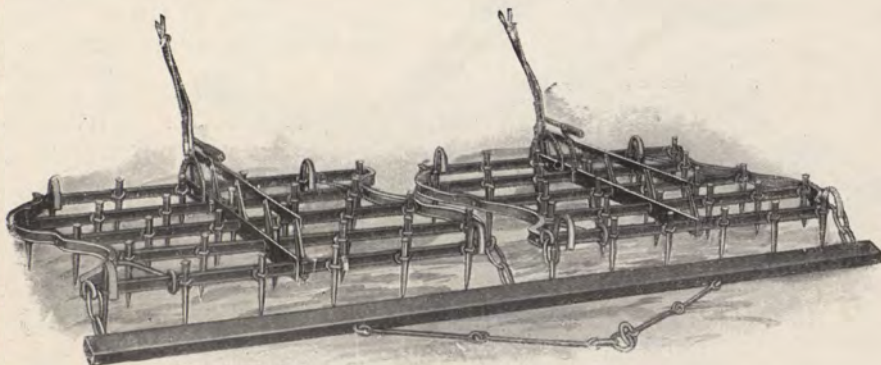
Both the wings and discs are of crucible spring steel and are exceptionally well fitted for this work.

Combination. We can furnish a frame with both the wing coverer and disc coverer so that either set may be put on and used.



Ask for special catalogue on Horse Hoes

Smoothing Harrows



List of Sizes

No. Teeth	No. Sections	Width	No. Teeth	No. Sections	Width
30	1	4½ ft.	60	2	9 ft.
50	2	7½ ft.	75	3	12 ft.

This is a closed end harrow with diamond shape teeth fastened to the tooth bar by a forged steel eye-bolt clamp, making the strongest construction.

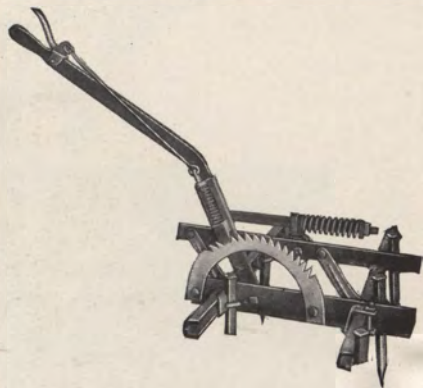
The side bars prevent the tooth bars from catching on trees and shrubbery, and they also keep the teeth in perfect alignment, so there is only 1 inch between the tooth tracks.

This harrow is equipped with runner teeth on the corners for convenience in transportation to and from the field.

Levers are bent to aid the operator in raising the harrow to clear trash.

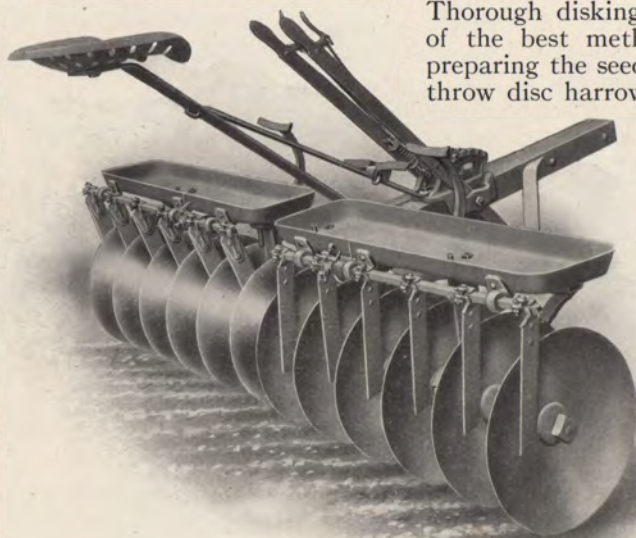
Side bars are of heavy forged "I" bar steel, securely braced at the corners. There is no racking of frame or tracking of teeth.

These harrows are fitted with a relief spring as shown in the accompanying cut, which takes the strain off the harrow when the teeth come in contact with obstructions. The tension of this spring is adjustable.



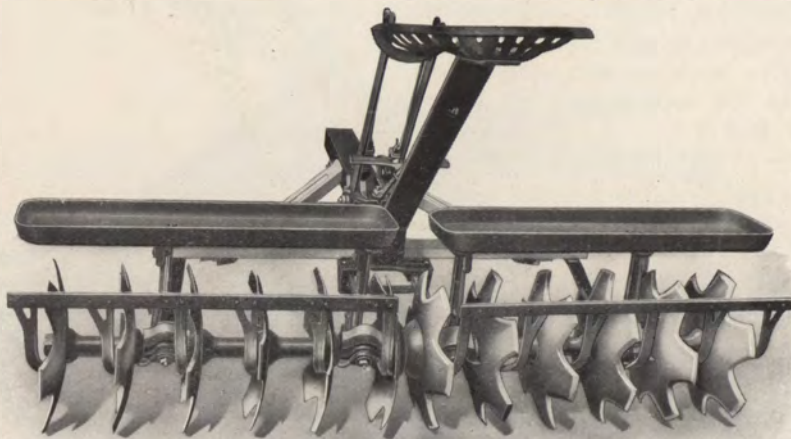
Disc Harrows

Thorough disking has proven one of the best methods of properly preparing the seed bed. The out-throw disc harrows shown on this page and the next have given satisfaction for years.



ROUND DISC HARROW

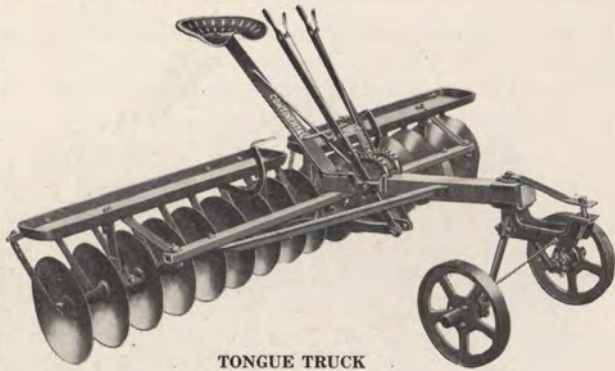
We carry in stock all sizes of disc harrows.



CUT-OUT DISC HARROW

Disc Harrows

These harrows (two-horse sizes) are equipped with steel weight boxes, dirt-proof bearings, Rose scrapers, steel oil tubes from weight boxes to bearings, tubular steel crossbars and steel frame. The gangs are connected directly at the ends of the main frame. The gang frames are made of steel and all frame bars, cross ties and braces are securely fastened together.



TONGUE TRUCK

The discs are of the best steel, very tough and hard to nick, and end pressure of the gangs is taken care of by convex center bumpers rolling against each other.

Tongue Truck shown on this page fits any size of two-horse harrow and does away with jerking and whipping of the pole and makes the harrow easy for the horses.

Reversible In-Throw Harrow. This is a disc harrow used for the orchard and this reversible feature practically gives two implements in one. The gangs are interchangeable in their position on the frame. This makes either an out-throw or an in-throw harrow.

Send for special catalogue on Reversible Harrows

One Horse Harrow. This harrow is built with 8 discs 14 inches in diameter and is built without weight boxes. It is a light weight disc harrow for farmers using but one horse. The frame of the harrow is made of steel angle bars, very strong and stiff. The standards are of cast iron and the discs are of the same quality as is used on our larger harrows.

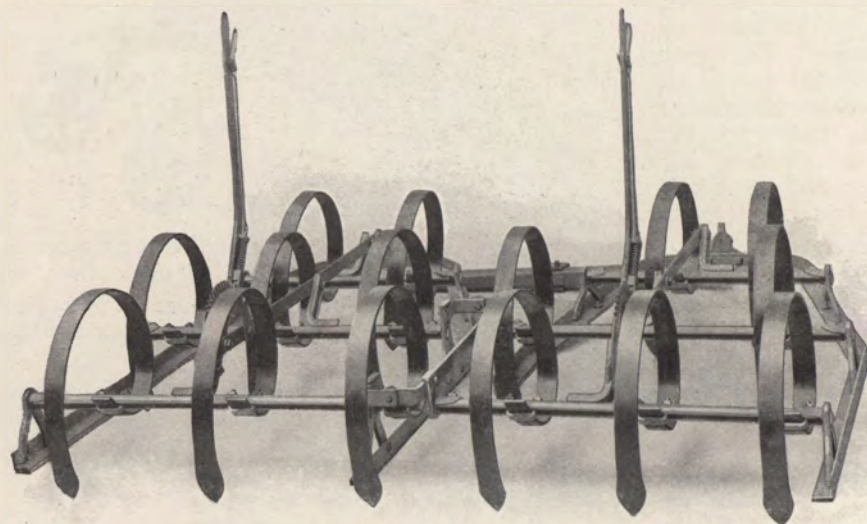


ONE HORSE HARROW

Spring Tooth Harrows

An advantage of a spring tooth harrow over a disc harrow is on stony ground and the extra depth which this harrow can penetrate. The lower strata of soil is dug up, brought to the surface and mixed with the top soil.

The harrow shown on this page is a very popular type.



List of Sizes

No.	No. Teeth	Sections	Width
2-L	9	1	3 ft. (one-horse) with hand lever.
5-L	15	2	5 ft.
7-L	17	2	6 ft.

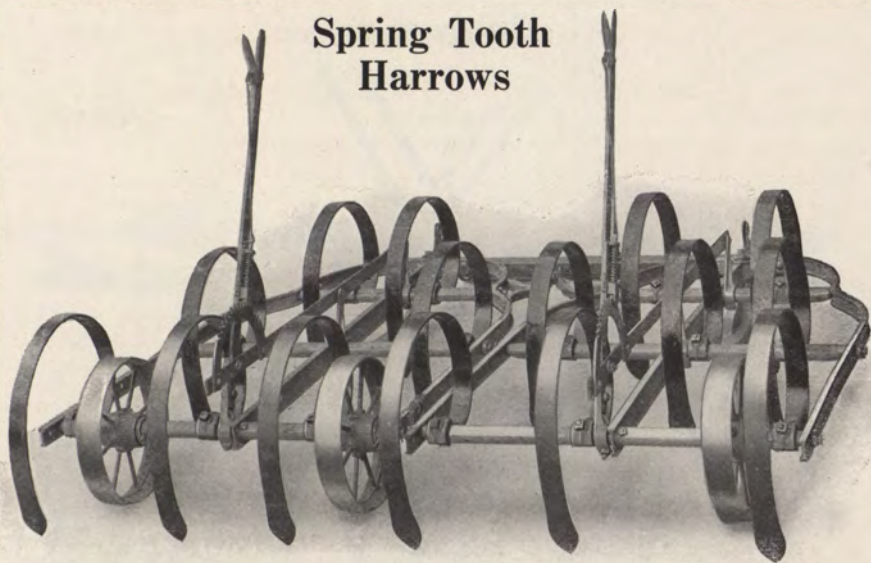
Frame. The frame is made of steel carrying 10 to 20 points of carbon, and is equipped with steel runners riveted to the frame, taking the wear off of the frame. The tooth bars are extra strong and turn on bushings, doing away with the wear on the bolts. On the right section the inner shoe is cut off at the second tooth bar, allowing the harrow to clear itself of trash. The teeth are of 40 to 50 points carbon steel, secured by steel clips to the tooth bars. The depth to which these teeth penetrate can be immediately adjusted. There is a large curve which gives free vibration.

A center section and crossbar can be furnished making a 23 tooth harrow, if desired.

A sulky attachment is furnished if ordered.

Wood Frame Spring Tooth Harrow, shown just opposite, is furnished with 16 teeth, 2 sections, 5½ feet wide. This harrow is steel lined and of the improved Perry pattern.

Spring Tooth Harrows

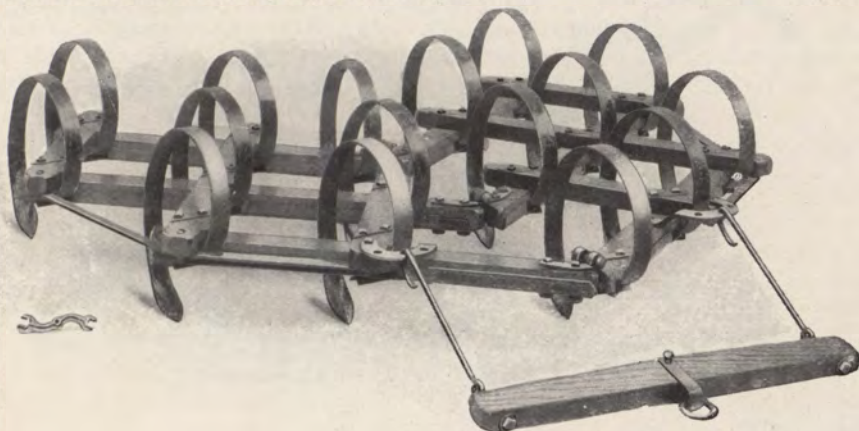


Spring Tooth Harrow (with wheels)

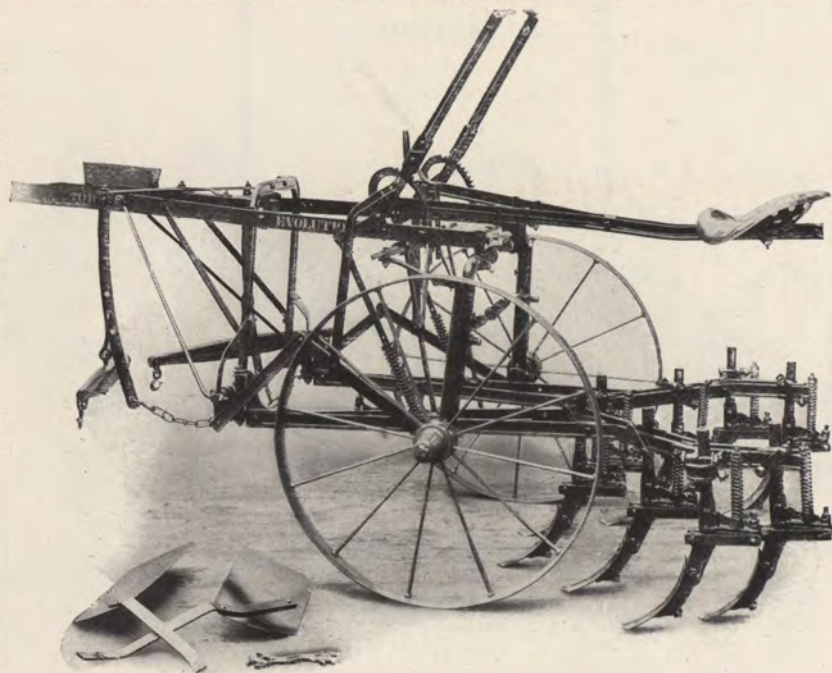
List of Sizes						
No.	No. of Teeth	No. of Sections	Width	No.	No. of Teeth	No. of Sections
5-R	15	2	5 ft.	7-R	17	2
						Width 6 ft.

This harrow is equipped with 12" wheels at rear and pivotal shoe in front. The use of the shoe does away with the tendency of the harrow to run on the horses' heels on a slope and is an advantage over a wheel in front.

Sulky attachment can be furnished if desired.



Cultivators



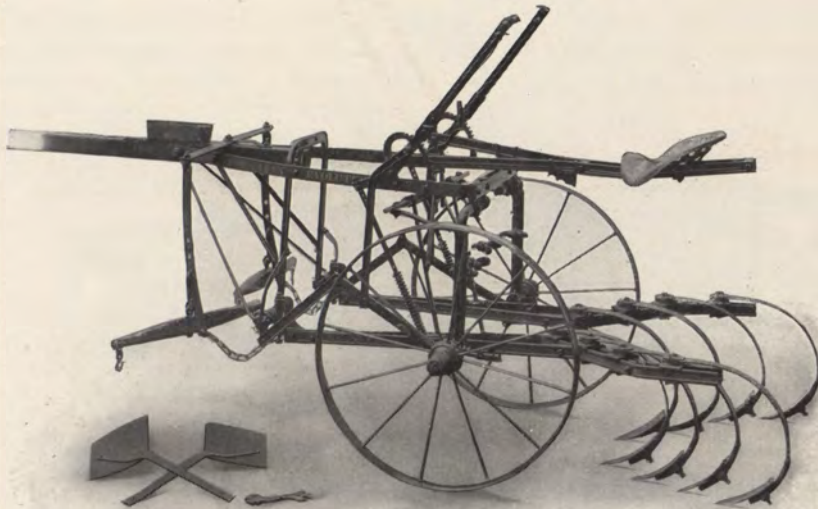
The riding cultivator is a great saving of time and money in the cultivation of corn, potatoes or any hoed crop. This machine will save its cost in a very short time and no farmer cultivating any considerable area can afford to be without it.

This cultivator has special features found on no other cultivator, namely: automatic balance, and the only device that actually spreads or narrows the gangs while the shovels or teeth are in the ground.

Send for special catalogue showing this cultivator.

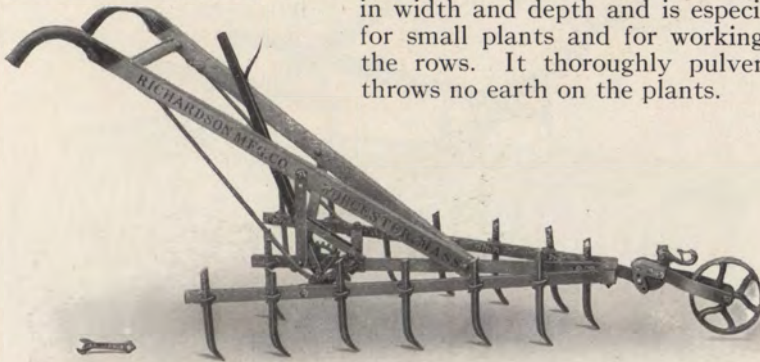


Cultivators



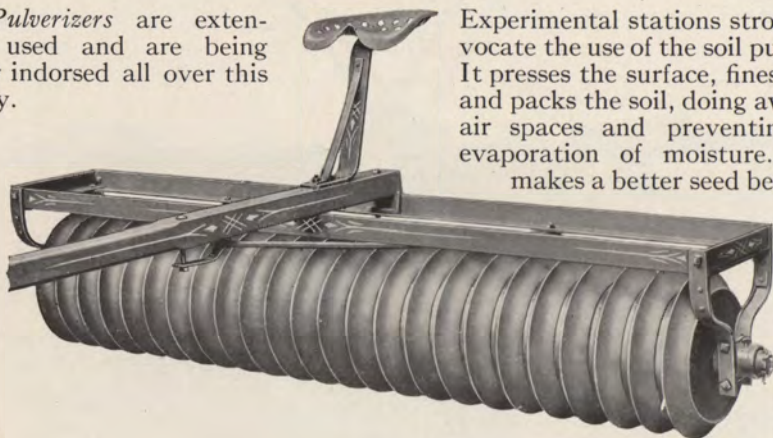
Riding cultivators are furnished with either shovels as shown on the opposite page, or spring teeth as shown on this page.

A general purpose HAND CULTIVATOR is shown on the opposite page. This is adjustable in width and depth. Common horse hoes or extra long hillers can be furnished if desired. The hand cultivator shown below is also adjustable in width and depth and is especially good for small plants and for working close to the rows. It thoroughly pulverizes, but throws no earth on the plants.



Soil Pulverizer and Weeder Corrugated Roller

Soil Pulverizers are extensively used and are being rapidly indorsed all over this country.



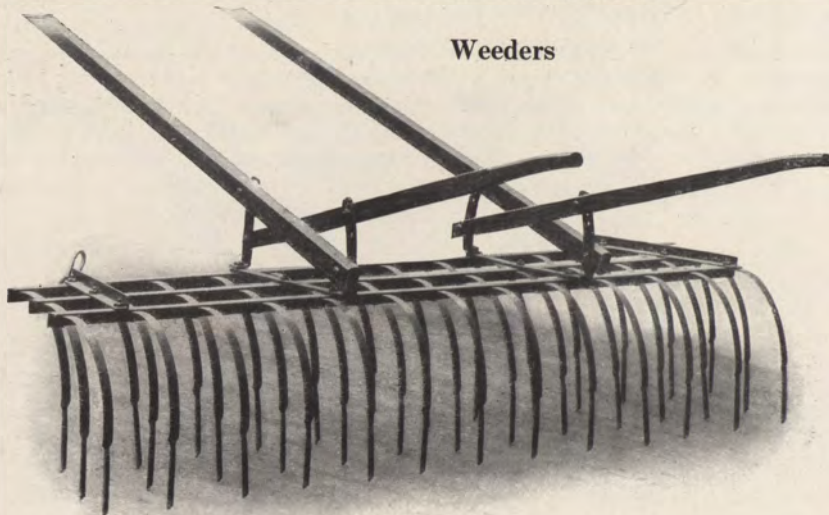
Experimental stations strongly advocate the use of the soil pulverizer. It presses the surface, fines the soil and packs the soil, doing away with air spaces and preventing rapid evaporation of moisture. This makes a better seed bed.

These soil pulverizers are corrugated cast iron rollers and are a combination pulverizer, roller packer and clod crusher. They serve all these purposes and level the soil, leaving the small ridges loose, fine and mellow. This allows the seed bed to more rapidly receive and absorb rainfall.

The corrugated wheels in our pulverizer are 4 inches wide and 18 inches in diameter. These wheels are loose, therefore making a free, easy running machine. The frame is made of heavy high carbon angle steel.

Ask for special catalogue on Soil Pulverizers

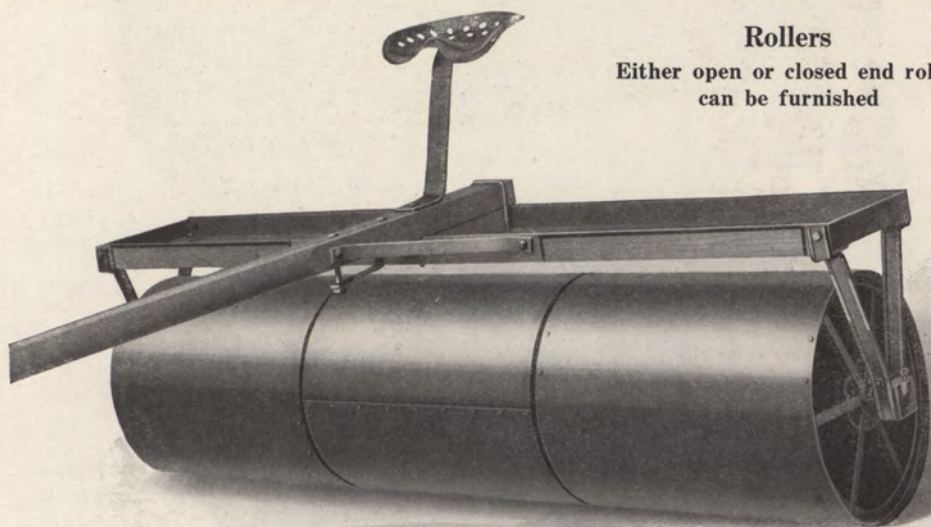
Weeders



Rollers

These weeders are made of angle iron steel. The teeth are attached to the frame with $\frac{3}{8}$ inch bolts and held tight by strong steel lock washers. The curve of the teeth is so made that the teeth chatter in the ground, and produce the effect that is so desirable for the best working of the soil.

These weeders are shipped with or without runners as ordered.



Rollers

Either open or closed end roller
can be furnished

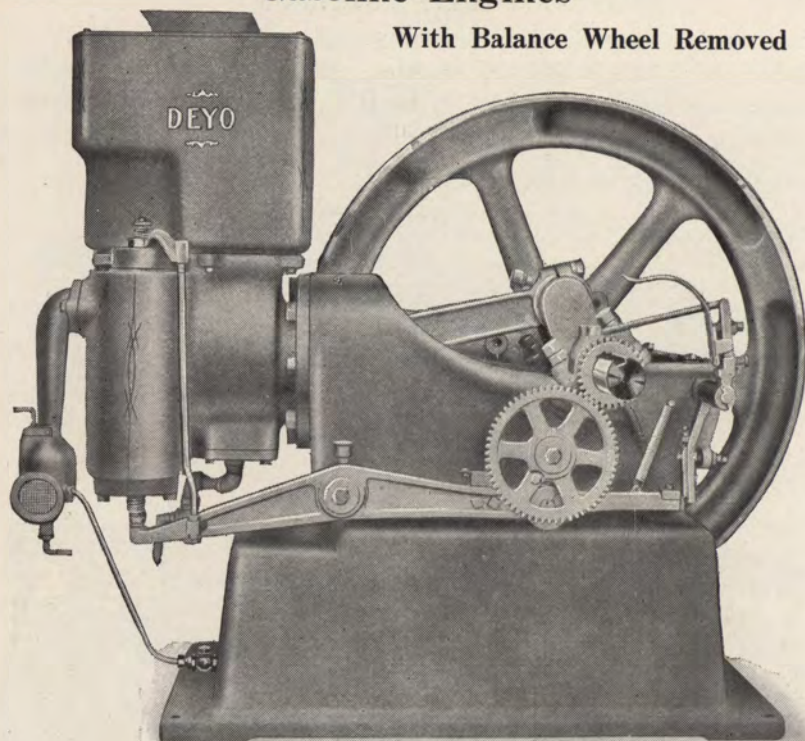
List of Sizes

Width	Diameter	No. Sections	Width	Diameter	No. Sections
4 $\frac{2}{3}$ ft.	24 in.	2 (one-horse)	8 ft.	24 in.	3
6 ft.	24 in.	3	8 ft.	26 in.	3

These rollers are built with steel frame and so made that boards can be fitted on to the top to carry stones as extra weight. Made of the best quality of steel, strong and substantial.

Gasoline Engines

With Balance Wheel Removed



Our engines are of the horizontal, four-cycle type and are manufactured expressly for the ordinary man, who requires a piece of machinery which is absolutely reliable. All working parts are in plain sight and easily accessible, thus making renewal or adjustment easy.

This engine has fewer working parts than any other reliable engine of its kind, thus keeping repair bills to a minimum.

Our engine is the only water-cooled engine built to-day entirely without packing in either jacket or cylinder.

List of Sizes—Stationary Engines

1½ H. P. Hopper Cooled	6 H. P. Hopper Cooled	15 H. P. Hopper Cooled
3 " " " "	8 " " " "	
4½ " " " "	12 " " " "	

Stationary engines are furnished with cooling tank instead of hopper jacket, if required. Skid mounting can be furnished if required.

Portable Engines

4½ H. P. Hopper Cooled	8 H. P. Hopper Cooled	15 H. P. Hopper Cooled
6 " " " "	12 " " " "	

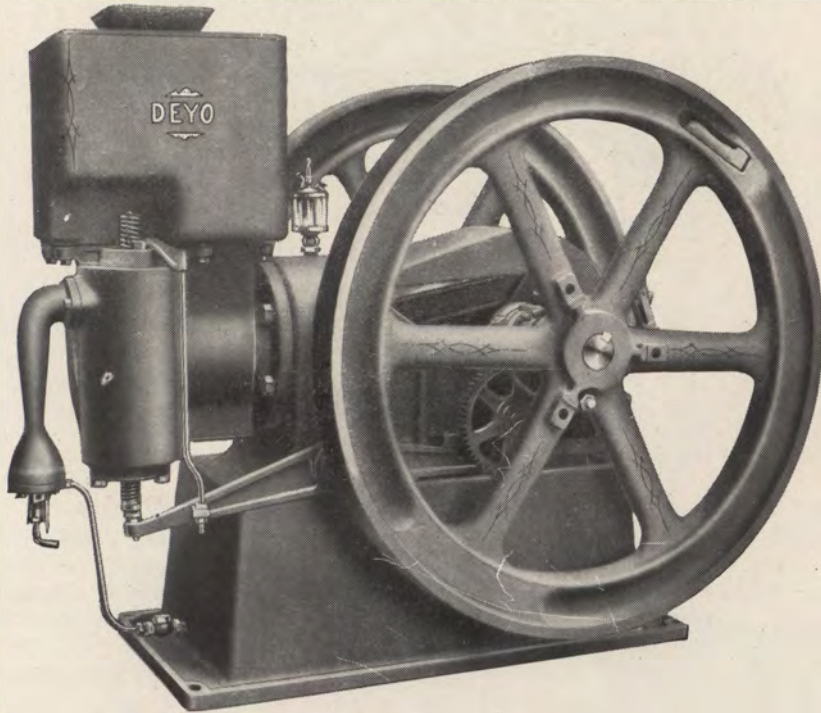
All portable engines are furnished with friction clutch pulley, oilcloth covered, doubletrees and neck yoke.

Gasoline Engines

CYLINDERS. Cast with solid cylinder head, doing away absolutely with all packed or ground joints, large valve openings thoroughly water-cooled.

CRANK SHAFT. All sizes from 1½ H. P. up are of open hearth drop forged steel, accurately ground to size. Extra large crank shafts used on all size engines.

CONNECTING ROD. We use the standard type of connecting rod, having a genuine babbitt bearing on the crank shaft end and a bronze bushing on the piston pin end. These can both be easily adjusted in case of wear.



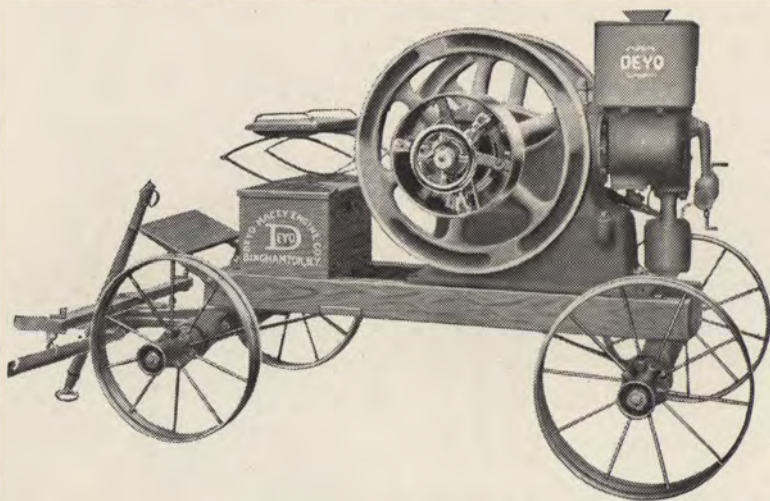
GOVERNOR. The governor on this engine is what is commonly called the "Hit and miss" type. By this means the greatest fuel economy is obtained.

IGNITION. The simple jump spark system of ignition is used on all our engines. This is the same as is used on all automobiles and does away with the troublesome ignitors used on many kinds of engines.

VALVES IN CAGES. Both inlet and exhaust valves on all sizes of engines are set in removable cages. They are easily accessible and can be removed by taking out 2 cap screws.

MIXER. The Venture type of suction mixer is used on all sizes of engines. There are absolutely no moving parts to get out of order and at the same time it does away entirely with the gasoline pump.

Pumps and Spraying Outfits

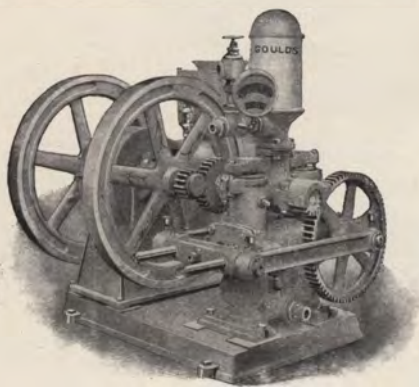


This represents the very latest development in the construction of a modern up-to-date portable gasoline engine. It does away with the clumsy, leaky cooling tank. The hopper jacket takes its place. Only a few pails of water required. Gasoline is stored in hollow, cast iron base. These portable outfits are complete in every detail, ready for business, as shown above, including a large cover for the engine. For list of sizes see page 26.

Pumping Outfits

These pumping outfits are simple, compact and durable. They range from $1\frac{1}{2}$ H. P. to 9 H. P., depending upon the work required and are backed by the most liberal guarantee.

We also are in a position to furnish, upon short notice, all other kinds of pumps with or without engines.



Spraying Outfits

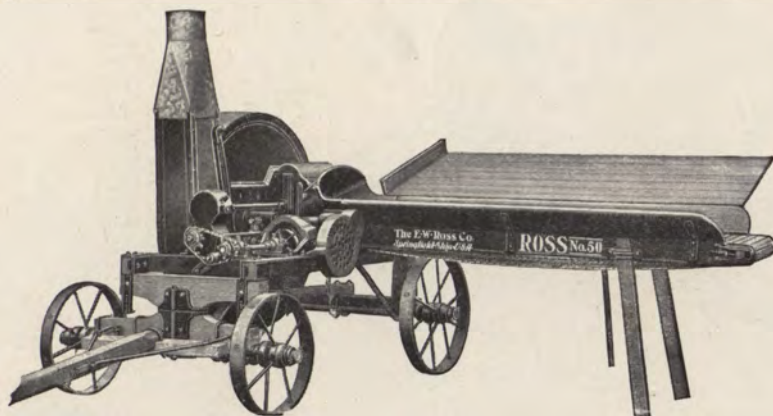
We have a line of spraying outfits mounted on truck, fully equipped for spraying orchard and forest trees.

We also have a smaller line of spraying outfits fully equipped with engine, tank and pump mounted on skids, that can be placed in an ordinary farm wagon.

Send for special catalogue on Spraying Outfits

Ensilage Cutters and Blowers

This blower is of the "fan-on-fly wheel" type and is furnished mounted or unmounted.



MAIN FRAME AND BEARINGS. The frame of this blower is made entirely of angle steel, bent at the corners and hot riveted together.

The main bearings are self-aligning and adjustable, and the main shaft is easily and practically lined up. The bearings are all babbitted with a frictionless metal and extra care has been used to get steel main shafts extra large to stand the work.

FEED ROLLERS. These rollers are a combination of toothed and fluted rollers accompanied by the Ross Comb bar.

TRAVELING FEED TABLE. This feed table is detachable and therefore very convenient when moving from place to place. It is also very compact when storing away.

KNIVES AND CUTTING PLATE. These blowers have two knives varying in length for the different sizes of machines, securely bolted to a heavy, thick disc with extra heavy Swedes iron straight grain bolts. A four-sided reversible steel cutting plate is used, that gives a good cutting edge at all times.

Points to Examine on Our Blower

Positive tension to the feeding rolls.

Special knife adjustment.

Self-aligning and adjustable main shaft bearings and roller shaft bearings.

Extra bearings for main shaft.

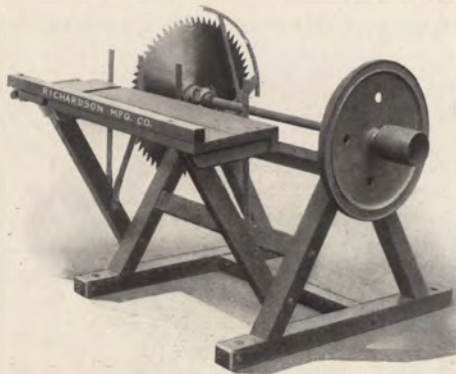
Four-sided reversible steel cutting plate.

Built in four sizes to fit all conditions and for all powers.

EQUIPMENT. These blowers are equipped with pipe for a 30 ft. silo, distributing elbow, traveling feed table, and side feed table.

Ask for special catalogue on Blowers

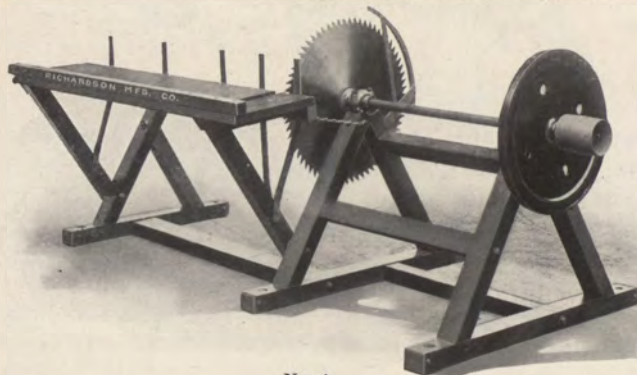
Sawing Outfits



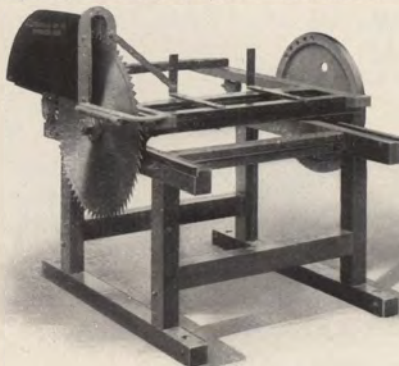
No. 2

The No. 4 saw rig has the advantage over the No. 2 rig shown above, of a 5 foot 7 inch tilting table, so arranged as to extend nearly 5 feet beyond the saw blade, which makes a highly satisfactory *combination* pole and cord-wood saw. The length and arrangement of the

table is such as to enable the operator to handle long poles about as easily and rapidly as cord wood. The table also has a roller at one end.



No. 4



No. 7

These saw rigs are very carefully made, well ironed and substantial and every piece has been put together with the utmost care.

The No. 2 rig is a prime favorite for sawing poles and cord-wood into stove lengths or shorter. The tilting table has a roller at one end for convenience in handling long wood. The balance wheel and pulley are interchangeable so that the saw can be put on the opposite end. Arranged as shown in the illustration the inside distance between balance wheel and blade is 3 feet 6 inches.

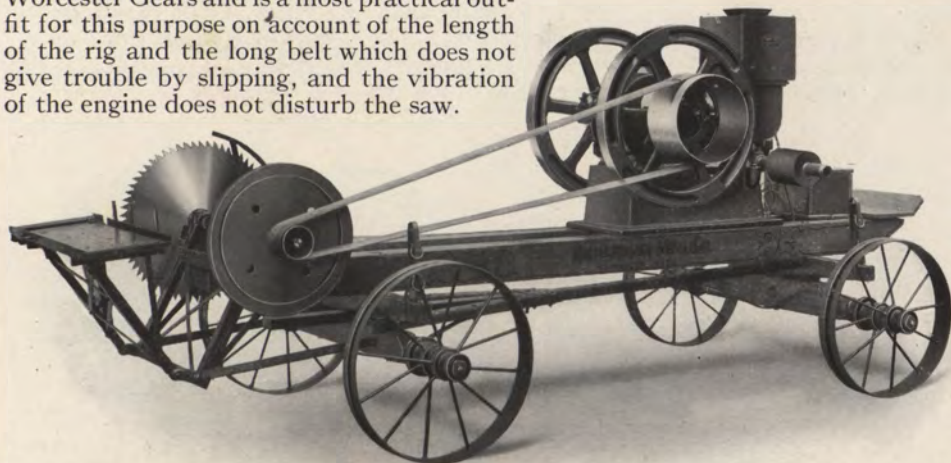
For those preferring a sliding table the No. 7 is especially recommended. The sliding table has anti-friction iron rollers on underside which permits it to slide easily over a metal track that is bolted to the frame. It has a roller at one end of table, which is a great help in getting long poles on the table.

We also can furnish friction feed drag saws and friction feed log saws. Sizes of saws kept in stock are 26 inch, 28 inch and 30 inch.

Saws are not included with rigs unless specially ordered.

Sawing Outfits

The Worcester Portable Wood Sawing Outfit is mounted on one of the regular Worcester Gears and is a most practical outfit for this purpose on account of the length of the rig and the long belt which does not give trouble by slipping, and the vibration of the engine does not disturb the saw.



This truck is equipped with hickory axles $3\frac{1}{4}$ in. x 10 in. steel skein, connected by back hounds and reach. High grade steel wheels with staggard spokes, 28 in. front and 30 in. rear, 4 in. grooved tires, give a gear from which the timbers can be unbolted and the gear used for general work when not needed for the engine and saw mounting.

The timbers on the end of which the saw frame is bolted and on which the engine stands, are of 6 in. x 6 in. shed seasoned oak, 11 ft. 6 in. long.

The saw frame is of heavy bars of angle steel bolted together and firmly braced in every direction by flat steel bars. The tilting table is made to take saws from 20 in. to 30 in. in diameter.

The saw arbor is lathe turned machined steel 4 ft. 4 in. long, $1\frac{1}{2}$ in. in diameter, turned to $1\frac{3}{8}$ in. for saw blade, and to $1\frac{1}{8}$ in. for balance wheel, pulley and boxes.

The boxes are of the ball-and-socket type, well babbitted, dust-proof, non-heating and self-aligning.

The engine is our regular hopper cooled type, described on pages 26 and 27 and is easily drained.

Wood wheels will be furnished if ordered.

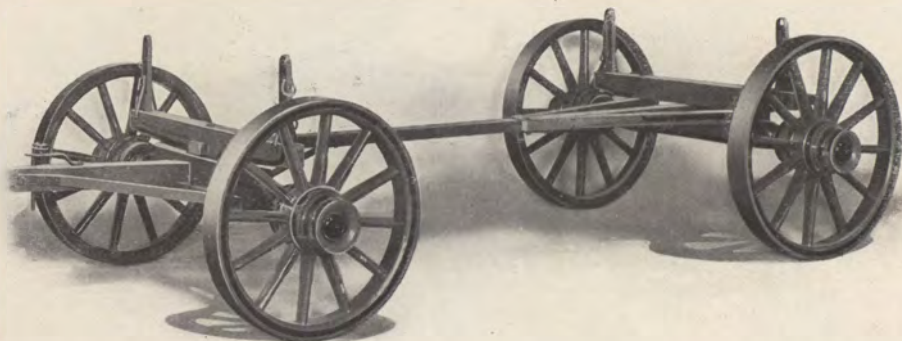
Saw frame with saw at the right and balance wheel at the left will be furnished if ordered.

Pole comes as a part of the regular equipment, but neck yoke, whiffs and eveners will be furnished only if ordered.

Belt will be furnished as ordered, but we recommend our 5 in. 4-ply rubber belting.

Worcester Low Wheel Farm Gears

These gears are made for service, with shed seasoned hickory axles and steel skeins $3\frac{1}{4}$ in. x 10 in., connected by back hounds and reach. The remainder of the gear is made of shed seasoned white oak. The bolster stakes are iron bound, two rings in each, and the truck is thoroughly well ironed, it is a substantial rig that cannot be equaled or approached.



Three sets of wheels can be furnished, 32 in. front and 36 in. rear, 4 in. tires, wood wheels; 36 in. front, 42 in. rear, 3 in. tires, wood wheels; 28 in. front, 30 in. rear, 4 in. tires, steel wheels.

These trucks are furnished in two widths, 5 ft. 2 in. track and 4 ft. 8 in. track.

These trucks are furnished with and without front hounds. The front hounds extend back to take the reach and extend forward to form a connection with the tongue hounds. All trucks have rear hounds. The reach is adjustable.

Hay Presses

The famous Ann Arbor line of hay presses are well known in every section. We are the New England distributors of these presses and have a size to fit every condition.

The Ann Arbor Machine Co. are the largest manufacturers of hay presses in the United States, whose plant is devoted exclusively to these goods. They are guaranteed to bale more tons of hay under equal conditions than any other press built.

Belting

We carry a line of extra good friction surface rubber belting, made of the very best woven duck, the plies being compressed together with a rubber friction that makes it long wearing.

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THE RICHARDSON MANUFACTURING COMPANY
WORCESTER, MASS.

