

DAVID BRADLEY MFG. CO.

SUCCESSORS TO
FURST & BRADLEY
MFG. CO.

CHICAGO



MANUFACTURERS
OF

PLOWS
CULTIVATORS,
RAKES &c

About Hardened Shares and Shovels.

OUR WARRANTY.

We warrant our hardened shares and shovels to be well made, from first-class material, and to be properly shaped and tempered, when they leave the factory.

WE DO NOT WARRANT

Hardened shares or shovels against breakage, except when it occurs from a flaw or other manifest defect; nor will we be responsible for the scouring of hardened shares, or for the proper running of plows from which they have been taken, after the said shares have been in a blacksmith's forge outside of our factory. Neither will we hold ourselves responsible for the scouring or proper shape or suction of hardened shovels, after they have been sharpened or set elsewhere than at our factory; consequently we cannot receive such shares or shovels in exchange for new ones, or for credit in account.

How to Sharpen Hardened Shares or Shovels.

New hardened shares and shovels are drawn as thin as it is safe to make them, considering the usage they are liable to meet with in handling and in transportation. They can be brought down to a sharper edge by grinding the under side of them on a grindstone, using water. A dry stone might draw the temper. If they become so blunt after a while that grinding will not give them as sharp an edge as is wanted, they can then be heated and drawn out. To do this right but a small portion of the point or of the edge of the share should be heated at one time—as much only as can be hammered out before it cools—and repeat the operation until the entire edge and point have been gone over. Heat the steel to a cherry red—never more; or, if it gets hotter, let it cool to a dark cherry color before hammering. Be careful to keep the body of the share or shovel as cool as possible, by putting moist earth or wet rags upon it, so as not to draw the temper except on the extreme edge which is to be heated and hammered.

For use in hard or sticky ground the point and the cutting edge near the point should be set somewhat lower than "regular" set, in order to give it more suction; on the contrary, if to be used in light, mellow or soft ground, it can be set about straight or flat, as plows incline to go much deeper in soft than in hard ground.

Having drawn out the point and cutting edge, and properly shaped them with reference to suction, it should then be re-tempered, to do which they must be heated *uniformly* at one time. Heat the share to a dark cherry red, and plunge it into water for a moment, or until it has been partially cooled. Don't cool it too much. There should be heat enough left in it to "draw the temper" until the extreme point and cutting edge turns to a dark straw or purple color, at which stage it should be cooled off entirely.

How to Put On Hardened Shares.

Remove the old share as follows: Take out the rear bolt *first*, then the one next to it, and so on, removing the one in the landside part of the share *lastly*. Now see that the number stamped in the steel on the under side of the *old* share is the *same* as on the *new* one. In putting on the new share, reverse the order of proceeding by putting bolt in the landside part *first*. If the bolt holes in the share do not match those in the plow sufficiently close to allow the bolts to go in without injuring the threads (which occasionally happens), loosen the nuts on the moldboard bolts a few turns; and, if necessary, the nuts of the bolts that hold the iron landside to the beam or standard. It may be necessary, also, to use a steel drift (which is a piece of $\frac{3}{8}$ round steel tapered at one end), which can be driven through the holes in the share and joining parts until they come into position so the bolts will pass through. When bolts are all in put on the nuts and give a turn or two at a time to each one, it being better to gradually tighten them all round, rather than to tighten each one separately, as it brings the joints together better, which on a steel plow should go together on a slight strain. Be careful when using the drift, as the hardened steel is liable to break.

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DAVID BRADLEY MFG. CO.

(Successors to FURST & BRADLEY MFG. CO.)

MANUFACTURERS OF

STEEL, CHILLED AND COMBINATION



GANG AND SULKY PLOWS,
LISTING PLOWS,
RIDING AND WALKING CULTIVATORS,
SULKY RAKES, HARROWS,
CORN-STALK CUTTERS, HORSE POWERS,
COTTON PLANTERS,
With Corn Planter Attachments,
Wood and Iron Beam Double Shovel Plows,
SINGLE SHOVEL PLOWS,
ROAD SCRAPERS, FIELD ROLLERS,
PORTABLE UPRIGHT HORSE POWERS, Etc.

OFFICE: 53 to 63 North Desplaines Street,

WORKS: { 49 to 85 and 66 to 80 Fulton, and
 { 52 to 70 and 55 to 71 N. Jefferson Sts.

CHICAGO, ILL.

BRANCH HOUSES:

DAVID BRADLEY MFG. CO., ST. LOUIS, MO.
DAVID BRADLEY & CO., MINNEAPOLIS, MINN.
DAVID BRADLEY & CO., COUNCIL BLUFFS, IA.
BRADLEY, WHEELER & CO., KANSAS CITY, MO.
BRADLEY, HOLTON & CO., INDIANAPOLIS, IND.

INTRODUCTORY.

THIS book contains illustrations and concise descriptions of the principal Implements made by us. Considering the growing number of comparatively new manufacturers, and the rather extravagant claims made by some of them, it may not be amiss to state a few facts. Our Mr. David Bradley began the manufacture of plows over half a century ago, and it is fair to assume that our experiences in manufacturing, and our knowledge of the wants of the farming community are superior to those of manufacturers newer in the business. Acting, in the past, on the suggestions of shrewd and ingenious farmers, whose opinions were considered reliable, and upon results of repeated experiments, we have attained to a perfection in the *shapes* of our "Garden City Clipper" Plows, and to a *uniformity in tempering* the steel parts of same, which has not been reached by any other manufacturer. While inferior plows would work passably well in light or sandy land, we have no hesitancy in saying that in difficult soils our plows will scour when others fail.

The same careful attention to the selection of material, to the workmanship and to the adaptability of the Implements to the purposes for which they are intended, which are exercised in the production of our plows are also bestowed upon all other goods of our make. In the line of Cultivators will be found some new ones, in addition to our old and well tried "Bradley" Walker and others, familiar to those who know our goods. For 1887 we have the "Rival" Tongueless and the "Magic" Walking cultivators; also the Bradley Walking, with single pole, about which will be noticed some fine points. We have also brought out our "Square Corner" Sulky and Gang Plows, which are fully described. They have been thoroughly tested the past season and the fact fully demonstrated that the new principle involved in their construction places them ahead of anything in their line yet produced. We have added to our harrow list the "Bradley Lever" and the "Zigzag Iron Frame" Harrows. All of the Implements mentioned above will be more particularly described on their respective pages. Correspondence solicited on any points not made clear by the illustrations and descriptions. You can address us at the home office or write to any of our branches—whichever is most convenient for you.

“SQUARE-CORNER” SULKY PLOW,

EMBRACING

A NEW PRINCIPLE IN CONSTRUCTION,

WHICH PLACES IT

In Advance of any Other Sulky
in the Market.



ALL IRON AND STEEL.

LIGHT, STRONG, EASY RUNNING,

AND WHEN FITTED UP WITH THE

Celebrated “Garden City Clipper Plow” Bottoms,

THEY ARE IN ALL RESPECTS

THE BEST IN THE WORLD!

(See description on next page.)

THE "SQUARE-CORNER" SULKIES AND GANGS

Embrace a new principle in construction, which makes the point of the plowshare a *pivotal* point, around which the large wheels travel in an exact circle, and equidistant from said point. The resistance in turning is thereby greatly reduced; consequently they turn a corner much easier than any other plow without removing them from the ground, and with no side strain on the wheels. As they are all iron and steel, they admit of being made light, yet strong. The side wheels are at all times opposite each other, while the caster wheel is attached directly behind the beam. The plow can be *carried* on the side wheels, and the hitch adjusted so as to relieve the caster wheel of any downward pressure, when desired; or, for plowing across corn rows or other uneven surfaces, the side wheels can be allowed to run independent of the plow, except to guide it, in which case the plow is carried to a great extent by the caster wheel which runs on the bottom of the furrow.

It will at once be seen that the inequalities of the surface of the ground do not cause the plow bottom to raise or lower; therefore, for plowing over corn rows or rough ground it has no equal. Whether the plow is carried by the side wheels or supported by the caster wheel, the bottom or ground friction is relieved, and very light draft is the result. They have the most perfect leveling device yet produced, of which the cut gives a very good idea. They work as well without a pole as with, and many prefer to leave the pole off after having used them that way, as the horses are somewhat freer to turn without it. When the pole is used it can be made rigid or left flexible, but in either case does not press upon the horses' necks. There is no side draft to these plows, consequently no locking of the caster wheel is required to keep them steady. The lever is so attached that it is impossible to force the plow down, or, in other words, to make it carry either the plow frame or the driver, thereby creating friction on the bottom of the plow, and increasing the draft.

In addition to the points of superiority above named, we desire to call attention to the fact that all the steel bottoms used on the "Square-Corner" Sulkies and Gangs will be the well-known "Garden City Clipper" pattern, which are described on page 9.

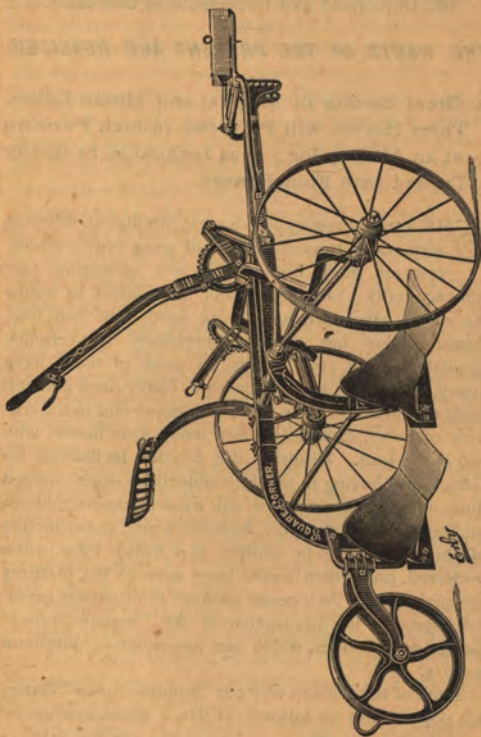
The following brief recapitulation gives some of the reasons why they excel all others.

1. They embrace a new principle in construction.
2. They combine lightness and strength.
3. They are extremely compact.
4. They are very light draft.
5. They work equally as well without a pole as with.
6. They turn a corner without strain on the wheels or plow.
7. They are easily operated.
8. They plow level furrows across corn rows.

Don't buy until you have seen them.

"SQUARE-CORNER" GANG PLOW.

(For description, see pages 4, 6 and 7.)



Cut shows it with land wheel down, as when going to and from the field. A small portion of the pole is shown attached but farmers generally prefer to use it without a pole.

THE "SQUARE-CORNER,"
AS
THE IDEAL MODERN GANG PLOW.

Old Objections and Imperfections Overcome.

THE WANTS OF THE PRESENT AGE REALIZED.

A Great Saving in Manual and Horse Labor.
Three Horses will Plow two 10-inch Furrows
at an All Day Jog ; or 24 Inches can be Easily
Turned with Four Horses.

THE present tendency amongst intelligent, thinking farmers is toward the use of gang plows having two or more bottoms, as any observing person can verify ; for they cannot have failed to notice the many which are now being used upon our best farms. There has existed, heretofore, a prejudice against the old style gangs, as most of them were heavy, expensive, hard to operate, heavy draft and difficult to work with close up to the fences and in the corners of fields, especially when using four horses with two in the lead. Realizing this decided inclination for Gangs, and having in mind the objections urged against them as heretofore constructed, we set ourselves about making one suited to the farmers' wants, the principle of which could also be utilized in a Sulky Plow, when preferred, and which would have none of the features complained of. As a result we have fulfilled our greatest hopes by the production of the "Square-Corner" Gangs and Sulkies, which are described in detail on page 4.

Some of the reasons why our "Square-Corner" Gangs are popular are as follows : First, a given amount of land is pulverized better when plowed in two furrows than it would be if done with one mold-board, so that a single harrowing afterwards, leaves the ground in as good condition for seeding as could be got by harrowing twice after being turned with a single plow. Secondly, with a Gang, one-fourth to one-third more land

can be plowed with the same team in a given time than with a Sulky. Our Gang with two ten-inch bottoms, can be handled easily all day by three horses, and will draw *lighter* than a single plow doing the same work, the reason being that the wider the cut of the plow the further some of the dirt has to be moved by the mold-board, and since it is a well-known law that it requires a given amount of power to move a weight a given distance, it demonstrates the fact that the resistance of a single mold-board against a furrow slice is greater in proportion to the amount of earth turned than would be that of two molds doing the same work. Thirdly, a Gang with two or more bottoms *runs steadier* than a single plow on wheels, and no matter how poorly the team may be driven all furrow-slices, except the first, will be cut neither too wide nor too narrow, but of full and exact width. Fourthly, we now use steel for most of the parts heretofore made of iron, which permits us to make our Gang much lighter than formerly without sacrificing strength. As shown on page 5, it weighs but 459 pounds. This is a great reduction from former weights and will reduce the cost of production to a point which admits of its being sold at a figure within the reach of all thrifty farmers.

We manufacture what we know to be the best Sulky Plow in the world, all things considered, but we do believe that the "Square-Corner" Gang, which embraces all the good points of the Sulky, is bound to be a still greater favorite, for reasons above given, and that the day for it is close at hand.

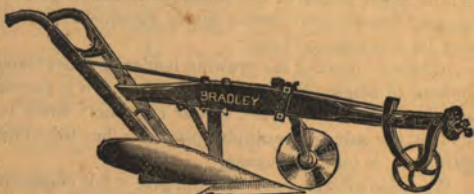
In further proof of the growing tendency to use Gangs instead of single plows, we might add that it is pervading the Old Country also, as our customers there tell us that the sale of "multiple" plows, as they frequently call them, is on the increase.

We hope all who read this will give it fair consideration—not that we can make any more money selling Gangs than Sulkies, but we see the drift of public opinion, in which we think there is great good sense, and we would help it on, to the betterment of the farming community and consequently to our own good.

PRAIRIE BREAKING PLOWS.**COMMON RIGGED PRAIRIE BREAKER.**

Sizes 10 to 20 Inches.

Hereafter all of our Breakers will be made with *slip share* having the landside part of the share *welded on*, instead of turned down, and will be called the "Bradley," to distinguish them from the "Peacemaker," heretofore made by us. They have a broad share lying nearly flat, which position improves its cutting qualities. These breakers are not as bold as some other styles, and consequently draw much easier than those having a more abrupt turn. The mold-board is beautifully shaped, and lays the furrow slice perfectly flat with the least friction possible. It is intended for breaking up original prairie at a depth of two to three inches, for which it is amply strong, the timber being the best of quality and the standard thoroughly braced. The cut above shows a breaker "common rigged," as we call it, except an extra share, which always goes with it. With a gauge wheel on and a rolling colter, instead of the one shown, it would be an "extra rigged" Breaker, as shown below.

EXTRA RIGGED PRAIRIE BREAKER.

Size, 10 to 16 Inches.

This cut shows our "Bradley" Breaker "extra rigged." The difference between this and the "common rigged," shown above, consists in the addition of a gauge wheel, and in substituting a rolling for a standing colter. They are for the same purposes and intended to run the same depth as the "common rigged" Breaker.

"GARDEN CITY CLIPPER"

OLD GROUND OR STUBBLE, AND STUBBLE AND SOD PLOWS.

FOR years these plows have stood in advance of all others in respect to *correct shape* and a *uniformly hard temper*—two qualities which *must* go together, for if one is lacking the other avails nothing. The world-wide reputation of the "Garden City Clipper" Plow (which has now been manufactured for over half a century), has resulted, in a great measure, from a combination of these two points to a degree of perfection not yet reached by other manufacturers. As a consequence, our plows draw light, turn and pulverize the soil perfectly, and scour where others fail to work.

On page 10 are representations of our Old Ground Plows made with the improved tapering landside, showing a mold-board view of the steel beam and a landside view of the wood beam plow. The molds, shares and landsides are cut from rolled sheets of cast-steel, made expressly for us by the best steel manufacturers in this country. They are all tempered. The mold-boards are high—which prevents the dirt from falling back into the furrow—and are wide in the throat or "waist," which carries the dirt well up, covering all weeds and stubble perfectly, also leaving a wide, open furrow.

On page 13 is shown our Stubble and Sod Plow, which has a steel tapering landside. The mold-board, share and landside are tempered.

Plows with low landsides—which will be found in our Price List under the heads of "Long Bar Share Plows," "Missouri Clipper," and "Wood Standard Brush Plows," and which are illustrated on pages 11 and 12 of this pamphlet—have hard rolled cast-steel, untempered shares, welded to low landsides, with the exception of "Missouri Clipper" Plows, shown on page 11, which have tempered shares.

Plows cutting 14 inches and over have a three-horse clevis, also braces back of the standards.

For the wood parts we buy the highest grade of oak that can be procured, put them together in good shape, with perfect fitting joints and finish in excellent style.

Using *only* the best materials, employing our own exclusive processes, and machinery of our own invention, especially adapted to our business, we are able, with long experience, to produce a grade of goods unequaled in any country for their uniformity and effectiveness.

OLD GROUND OR STUBBLE PLOWS.



WOOD BEAM.—Sizes, 10 to 16 Inches.

This illustration gives a landside view of our wood beam Old Ground Plow, showing the taper landside, and the way we attach handles, which prevents clogging. All wood beams on Old Ground Plows are *adjustable*. Three-horse clevises are put on all stubble plows cutting 14 inches or over. With these clevises, either two or three horses can be used. For further description, see page 9.



IRON BEAM.—Sizes, 12 to 16 Inches.

This is a mold-board view of steel beam Stubble, or Old Ground Plow. The landside view of wood beam plow above will show the steel tapering landside as used on this plow; also our way of attaching the handles, which prevents clogging. It is identical in quality, shape of mold-board and construction with plow shown above, except the beam, standard and brace-rod. For further description, see page 9.

OLD GROUND OR STUBBLE PLOW. WITH LONG-BAR SHARE.



Sizes, 11 to 16 Inches.

This plow is wooded precisely the same as, and is identical in shape with plow shown on page 10, excepting the landside and share. The share on this plow is made of hard rolled untempered steel, to which is welded the long-bar low landside. It is for same general use as our other Old Ground Plows, but the welding of the landside to the share makes it somewhat stronger, and well adapted for use in stony and timber land. For further description, see page 9.

"MISSOURI CLIPPER" OLD GROUND PLOW.

With Long-Bar Share and Double Braced Standards.



Sizes, 10 to 14 Inches.

This style of plow derives its name from having been originally made for a certain trade, or section of country, in Missouri. It differs from our regular style Old Ground Plow in having an extra heavy long-bar landside welded to a tempered share, and a strong standard heavily braced, top and bottom, for stony or timbered land. There is also a slight difference in the way we attach landside handle, as the cut shows. The 14-inch plow has a three-horse clevis. For further description, see page 9.

OLD GROUND BRUSH-PLOW.**WOOD STANDARD.**

Sizes, 7 to 16 Inches.

This is a long-bar share plow with same shaped mold-board as our regular Old Ground Plow, but is strongly built with wood standard, for timber and stony land, or heavy plowing. When so wanted we put wrought iron strap under the beam; it passes through the wooden standard, as shown in cut. Also attach Quincy Cutter, as shown in cut, when desired. For further description, see page 9.

CORN PLOW.

Sizes, 7, 8½ and 9½ Inches.

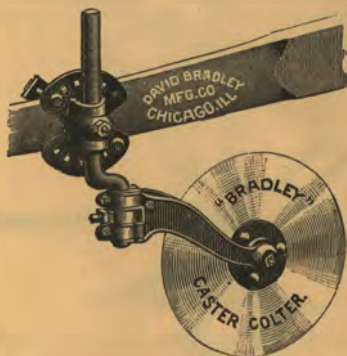
These plows are made of cast-steel, with *hardened* mold-board. They are adapted for light plowing, for cultivation of crops, and for hilling up.

STUBBLE AND SOD PLOW.

These plows, as the name indicates, are intended to do old ground as well as tame sod plowing. They are a medium between the more bold or abrupt old ground plow and the long, slow-turning breaker. They work nicely in old ground, being preferred by some to the regular stubble plow, and turn tame sod, such as blue grass, timothy or clover admirably. They are numbered $19\frac{1}{2}$, $20\frac{1}{2}$, 21 and 77. We make them with steel beam also. The numbers of the steel beam plows of this style are $519\frac{1}{2}$, $520\frac{1}{2}$, 521 and 577.

"BRADLEY" CASTER COLTER.

WITH PATENT ADJUSTABLE BEAM CLAMP.



It will fit wood or steel beam plows, either right or left hand, by changing bolts. The colter-hub and yoke are so shaped that the bearings are perfectly protected. The outer end of the hub is chilled, to increase its wearing qualities, and a leather washer is interposed to prevent dust and dirt from working in between the bearings and cutting them out—a very fruitful source of *wabbling*. The natural wear of the hub and adjacent parts can be taken up by simply tightening the nut on the bolt which passes through the blade and hubs. No wear comes on the bolt, as neither the blade nor the hubs touch it. This Colter will outwear four of ordinary make.

Our Adjustable Beam-Clamp can be changed to fit any size beam. An off-set of two inches in the shank allows a lateral adjustment of four inches. These Colters are put on our Sulky and Gang Plows, and on other plows when so ordered.

"GARDEN CITY SOUTHERN CLIPPER" STEEL PLOWS.



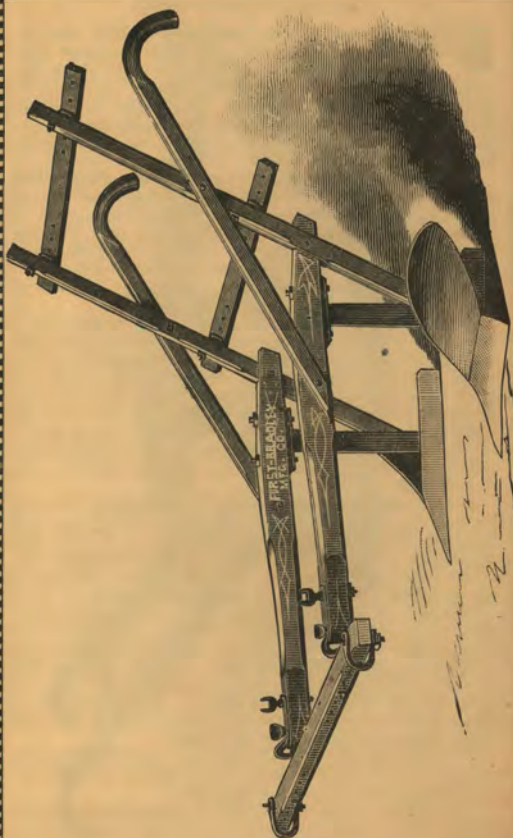
SANDY LAND SERIES.—Sizes 7 to 11 Inches.

The above cut represents the shape and style of our Nos. 79, X80, X82, X84 and X86, Garden City Southern Clippers. They are adapted for plowing and cultivating in all kinds of soil in Texas and Southern States, but more especially for loamy and sandy ground. The mold-boards and shares are made of cast-steel and hardened. The beams are adjustable. We make them with steel beams also. An extra share or point goes with each plow.



BLACK LAND SERIES.—Sizes, 7 to 10 Inches.

This cut represents our Nos. T71, T81, T91 and T101 improved Garden City Southern Clipper. They are especially made and adapted for the black lands of Texas, with sharp cutting angles, and formed in the best possible shape for shedding the dirt. We attach plows of the same shape to our gang and sulky plows, for use in the black lands of Texas and other Southern States. They have hardened cast-steel mold-boards and shares. We also make them with steel beams. An extra share goes with each plow.

DOUBLE DIAMOND PLOWS.

This implement consists of two 7-inch long-bar share plows (right and left) specially wooded and coupled together. They are used for cultivating and hilling up corn, potatoes, etc.; can be changed so as to throw the dirt *to* or *from* the crops, as may be desired. The distance apart can be regulated by the coupling bars.

"BRADLEY" CHILLED PLOWS.

(See cut on opposite page.)

 THE perfection of the "Bradley" Chilled Plows—which is now generally conceded wherever they are introduced—has resulted not only from our own experiments and experiences in the processes of chilling metals, and from our knowledge of proper shapes for plows, but also from the faults which have developed themselves in the products of other manufacturers, which faults we have avoided or overcome.

We will repeat here, as appropriate concerning chilled plows, what we have heretofore said about steel plows, which is, that two things are absolutely necessary to make a good plow, viz., correct shape and extreme hardness of the wearing parts. However well shaped a plow may be, it must also be *chilled hard* or it *will not shed the dirt* in sticky soils; nor will it scour, if ever so hard tempered, unless it is properly shaped.

As to shape, we have had an experience of over half a century in manufacturing steel plows, during which time we have made many experimental and practical tests to prove which *are* the very best models for light draft and good scouring qualities. The result of these trials was the adoption of our present shapes for mold-boards. That our experiments and tests were not in vain is shown by the fact that our plows stand to-day in advance of all others in their scouring qualities, perfect temper, and ease of draft.

In modeling the mold-boards of our Chilled Plows we have kept in mind the shapes of our Steel Plows, well knowing that whether steel or chilled, they require the same general outlines to do perfect work with least draft.

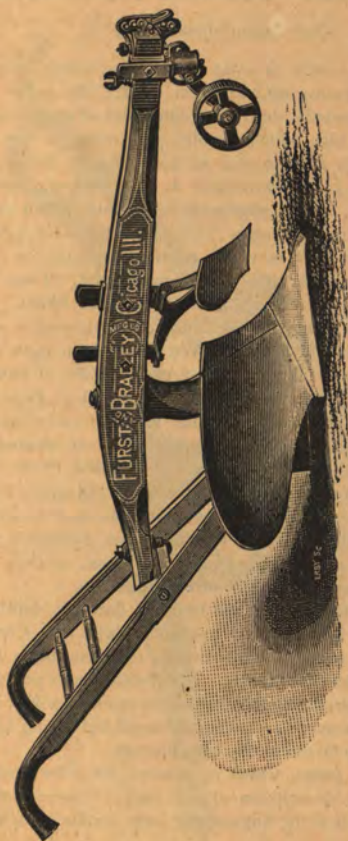
The material from which our Chilled Plows are cast is the very best that can be bought, and consists of such brands of iron as will produce, when used in correct proportions, a mixture susceptible of being chilled to the very extreme of hardness, at the same time retaining uncommon toughness and strength. Points made of this material will stand double the wear and strain that common "pot-metal" points will endure. The beams are of first-class material, nicely finished and covered with two coats of good paint and one of varnish.

We wish also to call your attention especially to our Patent Caster Gauge Wheel, a description of which accompanies the cut on following page.

Our Chilled Plows will be sold by respectable dealers in agricultural implements throughout the United States at prices as low as those of other first-class manufacturers; and we wish to impress it upon the attention of users of goods in our line that they will be amply repaid by giving them a trial. Once having done so, the goods will recommend themselves.

"BRADLEY" CHILLED PLOW.

STYLE A, with Jointer and Patent Caster Gauge Wheel.



We wish to call your attention especially to our Patent Caster Gauge Wheel, which is *always in line*, and by the use of which the annoyance is entirely avoided of having to reset the wheel whenever the beam is changed. It is perfectly adjustable, up and down, and is an improvement well worth your notice, as it takes well with the farmer. See description on opposite page.

Splendidly Shaped for Cleaning and for
Light Draft.

"BRADLEY" COMBINATION PLOW.

(See cut on opposite page.)

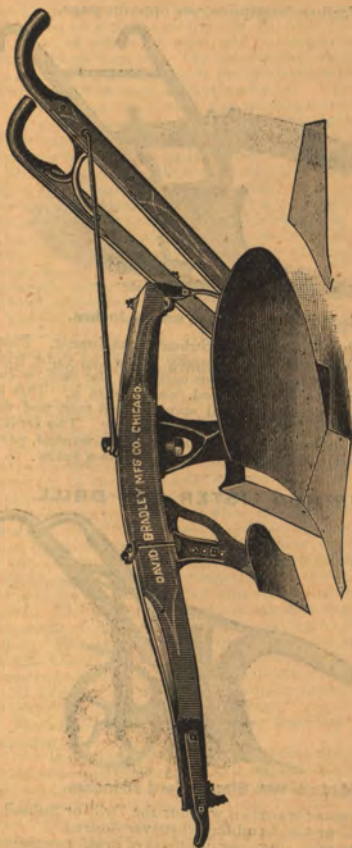
 HIS is a very popular plow, being nicely shaped for scouring and for light draft. We make the mold-boards, shares and landsides of steel and of chilled iron also, which enables purchasers to use the parts in such combination as best suits the soils to be plowed. It can be arranged as an *all* steel or an *all* chilled plow, or with steel mold-board and chilled share or landside, or vice-versa. This adapts them for a great range of work, as they can be made suitable for fine, sticky soils and for sandy or stony ground. They are what is usually termed "General Purpose Plows," the mold-boards being shaped for tame sod plowing as well as for work in old ground. We make them right and left hand, and fit them with any of the styles of cutters commonly used, such as standing, hanging, knee, fin and knife cutters, and with our Patent Caster Gauge Wheel, Jointer and other attachments when, wanted.

What we say under the head of "Chilled Plows," on page 16, concerning *shape* and *temper* will apply here. We use none but the very best material and the finish speaks for itself. Extra molds, shares, landsides and other parts can be supplied at any time, as they are made in duplicate and are interchangeable.

By reference to cut it will be seen that the depth of furrow can be regulated to a nicety with our Clevis, which is of peculiar construction, requiring but a moment to make the change. The Jointer is so attached that any desired adjustment can be made quickly, and it is not necessary to weaken the beam by boring holes through it to fasten on the attachments.

Should a gauge wheel be wanted, we refer you to page 17 for a description of our Patent Caster Gauge Wheel, which is the finest thing ever produced in that line.

The beam of this plow is adjustable, so that it can be set for use with two or with three horses.

"BRADLEY" COMBINATION PLOW.

Mold-boards, Shares and Landsides made either of steel or of chilled iron, and are interchangeable.

All the attachments ordinarily used on this style of plow are furnished when wanted.

(For further description, see opposite page.)

LISTING PLOWS.

WOOD BEAM LISTING PLOW, WITH SUBSOIL ATTACHMENT.

(For further description, see opposite page.)



Made in two Sizes, 14 and 16 Inches.

We sell them with or without Subsoil Attachment. Parties using the Wood Beam Lister usually follow the same with a one-horse drill, which drops the corn into the mellow earth which the subsoiler has loosened, and covers it. This is a great improvement over the old way, as two men and three horses can thus plant ten acres or more a day. The Drill Attachment cannot be put on the above. When wanted, parties can buy a Combined Lister and Drill, as shown below.

COMBINED LISTER AND DRILL.



Made in two Sizes, 14 and 16 inches.

When so wanted we sell it without the Drill or Subsoil Attachment. They can be added whenever desired.

Nothing can equal them for lightness of draft, compactness, ease of handling or uniformity of drop. Absolutely the best in the world. They have dropped, under a test, from 300 to 500 grains without a skip and without breaking a kernel.

BRADLEY LISTING PLOWS.

(See cuts on opposite page.)

IMPROVEMENTS FOR 1887.

Instead of using different plates for dropping at different distances apart, as heretofore, we now use one plate only, on the bottom of which the bevel gear is cast. The inner surface of the hole through the plate is rendered extremely hard by being cast on a chill, and the pin on which the plate revolves is made of tempered steel and is renewable at slight cost should it ever wear out. The *drop* is now varied by changing, the chain-wheels which go on the drive-wheel shaft—three sizes of which go with each Drill Attachment. The smallest wheel drops 18 inches, the next 15 and the largest 12 inches apart.

We send enough chain for use with largest chain-wheel. When using medium size chain-wheel, take out one link, or two links for use with smallest one.

We have improved the cut-off dog and spring by substituting a spiral steel spring for the old style brass one, and by leaving more clearing space under the dog so that corn cannot accumulate there and interfere with its action.

Instead of using two seed spouts (one telescoping into the other, as was done last year) we now make a continuous cast spout, flaring at the top. This entirely avoids the trouble occasionally met with heretofore, of the inner spout sticking to or binding inside the outer one.

The following are some of the reasons why it has no equal:

1st.—The corn passes *outside* the hopper where the operator can see it before and at the time of dropping.

2d.—Our Patent Revolving Star-Shaped Force Drop renders it impossible for any "skip" to occur from corn sticking in the dropper plates, as one of the points of the Force Drop passes into each hole in the plate just as the hole reaches a point directly over the seed spout.

3d.—It *will not break the seed*. We have made a change in the construction of our cut-off which entirely prevents the breaking of the seed and secures a uniformity of dropping which has never been reached before.

4th.—At the end of a row, when the operator desires to stop planting, *the drive wheel can be locked up* by pressing the plow handles down far enough to throw back the lock lever.

5th.—It is *very compact*. Having a double beam, we are able to get our Drill Attachment close to the mold-board, which adds to the ease of handling and makes the draft light.

6th. The double iron beam is much stronger than a *single* one made of metal, the two parts serving as braces one to the other. Being separated at the bottom, the lower ends of the double beam form two heel plates or supports, which make the plow run steadily and reduce the labor of holding it.

In addition to the above specially mentioned points, we would call attention to the following:

The subsoiler is adjustable up or down for deep or shallow planting.

It is impossible for any dirt to get into the top of the spout.

As some prefer flat faced and some V shaped drive wheels, we are prepared to furnish either kind.

The entire Drill Attachment can be removed by taking out two bolts, leaving a Lister and Subsoiler only. The Subsoiler can then be taken off, leaving an iron beam lister without attachments.

Another very important feature is the mold-board, the peculiar shape of which insures light draft, fine scouring qualities, and perfect turning and pulverization of soil.

DOUBLE SHOVEL PLOWS.

WOOD BEAM DOUBLE SHOVEL PLOW, WITH CONVEX SHOVELS.



This is used for cultivating crops of various kinds grown in rows, between which there is room enough to use it. The blades are steel, 6 inches wide, nicely polished, and mild or hard tempered, as wanted.

IRON BEAM DOUBLE SHOVEL PLOW, WITH CONVEX SHOVELS.



The iron beam is for the same purposes as the wood beam Double Shovel Plow shown at top of page. Some farmers prefer it, as they claim it is less liable to choke. We put the same style blades on it as are used on the wood beam. In fine black soils the hard tempered blades are preferred, as they scour better, but the mild tempered are better for rooty or stony ground, as they are less liable to break. We also make one with combination beam, i. e., wood center with iron shanks.

SINGLE SHOVEL PLOWS.

WOOD BEAM SINGLE SHOVEL PLOW.

(WITH CONVEX SHOVEL.)



We use an oval cast-steel blade on these plows, either 11 or 13 inches wide, as may be preferred. What we say about temper of blades, on opposite page, will apply here. They are a splendid implement for cultivating corn, potatoes, and many other crops grown in rows, especially such as need hilling up for last cultivation. We also make one with iron beam, a cut of which is shown below.

IRON BEAM SINGLE SHOVEL PLOW.

(WITH CONVEX SHOVEL.)



This implement is used for the same purposes as the plow shown at top of page. It has an extra heavy iron beam, and is suitable for use in heavy as well as in light soils. The same size, shape and quality of blade is used on this as on the wood beam.

FIVE-TOOTH CULTIVATOR.

With Reversible Blades.



This cultivator can be set to different widths, and makes a very useful implement for cultivating corn, cotton, hops, potatoes, etc. The blades are made of cast-steel, are diamond-shaped, and are attached to a wrought iron shank with brace. When one point is worn out, the blades can be reversed and the other point used.

SEVEN-TOOTH CULTIVATOR.

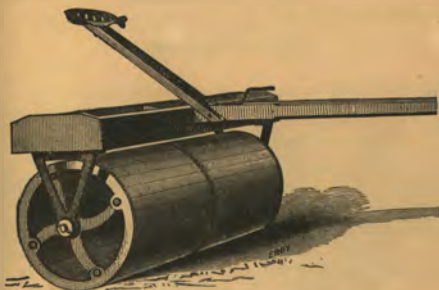
With Reversible Blades.



This is a superior implement for the cultivation of fallow ground. It takes the place of the harrow, but is more thorough in its work. The teeth are diamond shaped and reversible, same as in the Five-Tooth Cultivator. It can readily be changed to a Five-Tooth Cultivator by removing the cross-slat, and taking off the two outside teeth and arms.

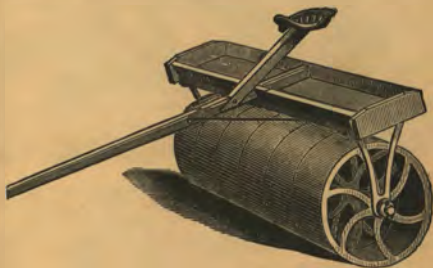
FIELD ROLLERS.

WOOD FIELD ROLLER.



The wood roller illustrated above is made in two sections, each section three feet long. The heads are cast-iron, into which fit wood staves, which are held in place by iron rods which bolt the heads and staves solidly together. We make two sizes, viz.; 24 and 36 inches in diameter. When a set of staves wear out they can be quickly replaced by another set.

IRON FIELD ROLLER.



This cut represents our Iron Field Roller, with six sections, each section one foot in length. We make two sizes, one 20 and the other 30 inches in diameter.

N. B.—We make Lawn Rollers to order, 16, 20 and 30 inches in diameter. Can furnish castings for any of the above named rollers on notice.

EXPLANATION OF SPRING ATTACHMENT AND COUPLING.

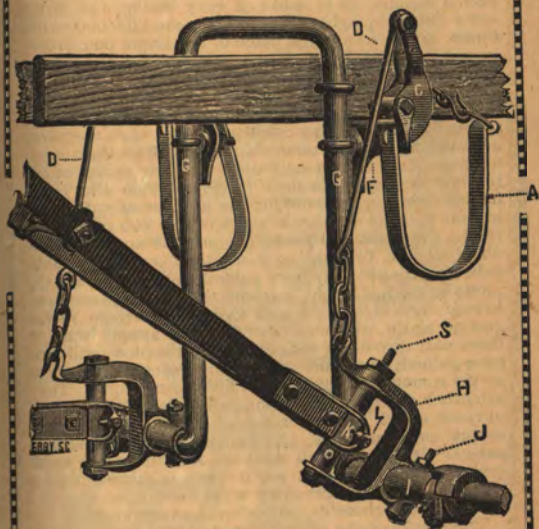
(Shown on opposite page.)

SECURED to the upright part of the arch (G) is a short arm or bracket (F), to the upper edge of which is pivoted the swinging lever (C). The spring (A) is U shaped, having one of its ends bolted to the lower edge of the arm (F). The other, or free end, is formed into an eye, and is attached to the swinging lever (C) by means of a hook and links, as shown in cut. From the upper end of the lever a connecting rod (D) extends downward to a hook formed upon the upper part of the coupling jaw (H). In adjusting for different depths the coupling head (K) is simply moved up or down upon the vertical sleeve (O), and the spring connection (D) being attached to the coupling jaw only, need not be disturbed. The links shown at the lower end of the rod (D) are for the purpose of providing the necessary slack when it is desirable to hook up the beams.

The operation of the spring is as follows; When the beam is down and the shovels are at work, the lever (C) is brought to a horizontal position, and the free end of the spring (A) is drawn back toward the arm (F). When the device is in this position the line of connection from the spring to the lever (C) is brought down near the pivot, thus greatly reducing the power of the spring to turn the lever on its pivot, even though the spring has at the time nearly its utmost tension; the connection (D) to the coupling jaw (H), however, is at its *best* point of leverage in relation to the swinging lever (C), thus affording the beam in this position such perfect control over the spring that the shovels will plow down into dead furrows and other inequalities, and follow the shape of the ground generally, with very little assistance from the operator. When it is desired to raise the plows from the ground a slight elevation of the plows allows the lever (C) to swing upward and forward on its pivot, thereby increasing the leverage of the spring, and diminishing the leverage of the beam until at a certain point the spring obtains sufficient advantage over the beam to automatically complete the operation of lifting and holding the plow up.

The coupling consists of a sleeve (I) free to turn upon the axle part of the arch, with coupling jaw (H) secured to it in any desired position by means of the clamping bolt (J). At the upper extremity of the jaw is formed a hook, to which is attached the rod (D) connecting with the spring lever. Also the sleeve (O) free to turn upon the vertical bolt (S); and the coupling head (K) on beam, secured by means of the clamping bolt (L) to the sleeve (O). By means of this coupling the beam may be raised or lowered, or moved transversely on the axle, thus providing for any necessary adjustment.

**PATENT SPRING ATTACHMENT, AND IM-
PROVED COUPLING ON WALKING
CULTIVATOR.**



(For description, see opposite page.)

"BRADLEY" WALKING CULTIVATOR.

THE cut on next page illustrates our Iron Beam Walking Cultivator with Steel Wheels, Single Pole, Spring Attachment and Improved Couplings, made for cultivating corn, cotton, potatoes, or anything grown in rows far enough apart to admit of its use. The frame is made of wrought iron, thoroughly braced in such a manner as to make it very strong, and at the same time very light. Double poles are attached to this frame, when wanted, in place of the single pole shown in cut. Wood Beam Plows can also be attached in place of Iron Beam when preferred, they being interchangeable.

They can be gauged to plow any desired depth. The spring attachment is so constructed that when the plows are working in the ground the springs affect them least, allowing them to run naturally, with just sufficient *lift* to bring them back to their proper position after being forced down by the hand for the purpose of cultivating in dead furrows or other low places. As you commence raising the plows out of the ground, the springs immediately begin to gain an advantage over them, until (when partly up) they have gained sufficient to raise the plows to the full height, *without further assistance*, and to *hold them there* until you wish to put them in the ground again, which can be done by simply bringing them part way down with the hand; the plows will then have gained an advantage over the springs sufficient to go the remainder of the way of their own weight. They are much used for cultivating fallow ground, for which purpose a fifth or center shovel is attached. It then moves and cultivates all the surface over which it passes. It is also well adapted for putting in small grain, giving the soil a more vigorous stirring than a harrow. They are provided with Reversible Shovels, Breakpin Attachments, and other improvements.

The blocks on the shovels are steel, fastened on with bolts, so they can be taken off if necessary.

The material used in the construction of these cultivators is of the very best quality and finished in excellent style.

We improved it in 1882 by making the arch higher and the beams longer, and by making a radical change in the spring. Also made other improvements, making it by far the most desirable cultivator in the market for effective work and ease of handling.

For description of springs and couplings, see pages 26 and 27.

**"BRADLEY" IRON BEAM WALKING
CULTIVATOR,
WITH SINGLE POLE.**



(For description, see opposite page.)

"MAGIC" EXPANSION-ARCH CULTIVATOR.

(See cut on opposite page.)

HAVING had years of experience in the manufacture of expansion-arch cultivators, we are able to correctly understand the objectionable features which are to be avoided, and the desirable points to be embodied in such an implement. The "Magic" is the result of our past experiences, and we are sure it will fully meet the requirements of the most exacting.

As its name implies, it has an Expansion-Arch, by which we mean that the arch is made in two sections which pass through, and are held in place by, a casting on top of the pole. These arch-sections, and the wheels and plows which are attached to them, can be further separated, or set closer together, which adjustment specially adapts them for the cultivation of different crops in which the distances between the rows vary. It also enables the farmer to get the shovels close up to the plant in the earlier stages of cultivation, and at the same time have the plows draw in line. With the exception of the expansion-arch, it is similar to the celebrated "Bradley" Walking Cultivator, described and illustrated on pages 28 and 29, having the same beams, couplings, springs, etc. The same attachments can be used on this as on the Bradley Walker referred to.

In addition to the regular outfit of shovels, we furnish rolling-colter shields, mold-board shovels, bull tongues, sweeps, etc., when wanted.

Although not so shown in cut, we make them, when so ordered, with extra long front shovel standards, adjustable up and down, by means of which the farmer can raise or lower the front shovels. This adjustment is especially adapted for the cultivation of listed corn, cotton, etc.

By using the mold-board shovels, excellent work can be done ridging up for cotton or for other crops, and for hilling up potatoes and similar crops they work splendidly. Irrigating trenches can be quickly and easily made by putting the plows close together and turning the mold-board shovels to throw the dirt outward. The shovel shanks are adjustable for more or less suction, and the shovels can be set to throw the dirt to or from the crop.

We furnish them with either wood or steel wheels.

Considering the adjustability of the arch, and the variety of shovel shapes which can be attached to the shanks, the "Magic" covers a wide range of work.

Full directions for setting up and operating them accompany each implement.

THE "MAGIC" EXPANSION-ARCH CULTIVATOR,



WITH THE CELEBRATED "BRADLEY" BEAMS, COUPLINGS
AND SPRINGS.

(For description, see opposite page.)

THE "DUPLEX" ADJUSTABLE-ARCH CULTIVATOR.

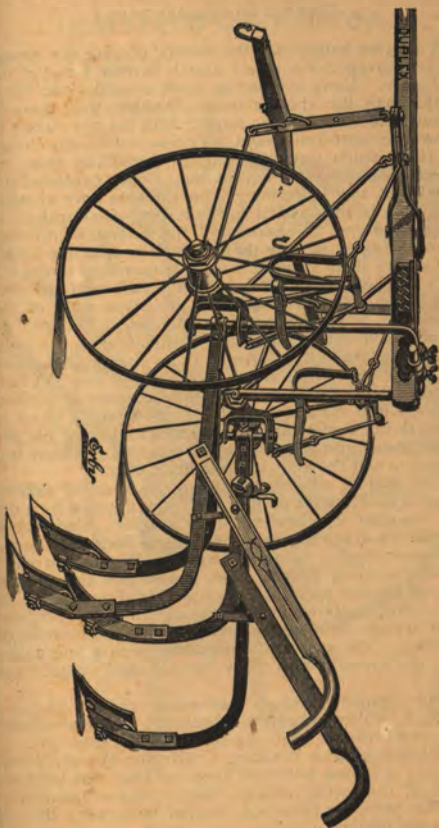
(See cut on opposite page.)

 ONE of the cardinal points of this cultivator—the adjustability of the arch, to accommodate it to the varying distances between the rows of different crops—is identical with that of our "Magic" Cultivator, described and illustrated on pages 30 and 31; it differs, however, in this respect, that the arch-sections, in addition to being adjustable latterally, are so attached as to allow a vibratory or forward and backward motion, the advantage of which is claimed to be that each horse is obliged to do its share of the work, and that the pole is not swayed to the right or left by one horse getting ahead of the other, as is said to be the case with some cultivators not having the adjustable arch.

The well-known "Bradley" Springs, Couplings and Beams are used on this as well as on the Magic.

The uprights to which the springs are attached are always perpendicular, so that the action of the springs is uniform, without regard to the position of the arch. We furnish these cultivators with combination or with iron beam plows; also with steel or wood wheels, as wanted. We also make rolling colter shields, mold-board shovels, and sweeps which can be used on it. See what we say about cultivating cotton, making irrigating trenches, etc., in our description of Magic Cultivator, on page 30. The same attachments can be used on the Duplex, and for the same purposes.

THE "DUPLEX" ADJUSTABLE-ARCH CULTIVATOR.



(For description, see opposite page.)

THE "CHICAGO IMPROVED" COMBINED CULTIVATOR.

(See cut on opposite page.)

IN 1885 we lengthened the beams, placing the wrought arch to which the plows attach further forward than before. Long beams run more steadily and handle easier than the shorter ones; besides, they keep the shovels nearer at right angles with the rows when the plows are moved sideways. We also made some changes in 1886, which were thoroughly tested last year, and which gave universal satisfaction. They consisted principally of the following: The ratchets were changed, and hand latches added to the levers; the shank-blocks were improved in shape, and the manner of attaching them changed, so they do not chafe or split the beams; the shovel-shanks were changed from round to flat iron, with steel sleeves and breakpin attachment, to which can be attached shovels with the same style of steel blocks as are used on the "Bradley," "Magic" and "Duplex" iron beam Walking Cultivators.

The suction of the shovels can be changed by moving the lower end of the shanks forward for less and backward for more. There are three notches in the lower projection of the shank casting, into which a tit on the lower shank washer fits, and by means thereof the pitch of the shank and shovel can be changed as above mentioned to suit the kind and condition of soil.

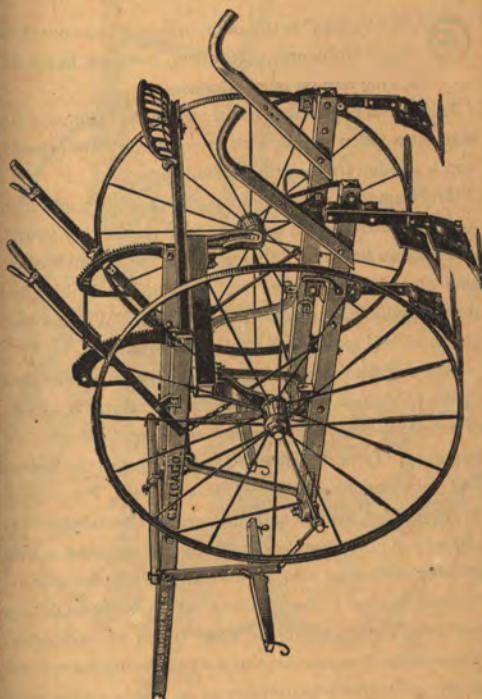
The seat is adjustable, to suit persons of different weights and lengths of limb, and is supported by a double wrought iron seat-raiser or support, made so the operator can see between the arms to dodge the corn or whatever crop is being cultivated. We have strengthened it by using heavier steel, so it is now amply strong to support any person. The frame is of wood with iron axle arms, as shown in cut, making an arch sufficiently high to clear corn without injury as long as it needs cultivating. The cast axle arms have been strengthened, also the wrought iron plow coupler and coupler castings.

Our regular "Chicago" has wood wheels, and is so shipped, unless otherwise ordered. The cut shows it with steel wheels, which we furnish when required.

When used as a Walking Cultivator, the whiffletrees are put at lowest point of hitch, to take the weight of pole off the horses' necks. With these adjustments it can be perfectly balanced, so that in turning, the pole does not fly up.

It works admirably in cultivating fallow ground, and in putting in small grain, by using a fifth or center shovel.

**THE "CHICAGO IMPROVED"
COMBINED CULTIVATOR.**



(For description, see opposite page.)

THE IMPROVED "VULCAN" COM- BINED CULTIVATOR.

(See cut on opposite page.)

 OUR "Vulcan" is the same in principle as our "Chicago" Cultivator. It differs, however, in the following named particulars :

It has iron beams and frame, while the "Chicago" has straight wooden beams, with wrought iron shovel shanks, and a wooden frame with iron axle arms.

The frame is made almost wholly of wrought iron, and is braced in such a way as to make it very strong; at the same time it is light, and, with our patent Suspension Steel Wheel, makes one of the finest looking and most salable implements in the market. Wood wheels are furnished in place of steel, when wanted.

Many of the features found in the "Vulcan" are identical with those of the "Chicago" Cultivator. We therefore refer you to our description of the "Chicago," on page 34, so far as it relates to lengthening of the Beams, and improvements in Levers, Racks, Seat, Plow Coupler, Coupler Castings and Axle arms; also in relation to our way of attaching the whiffletrees when using it as a walking cultivator, etc. We make special plows for the Vulcan having a shovel shank which is adjustable up and down, on the inner or short beam of each plow. These make fine attachments for cultivating listed corn, or any crop grown in trenches or on ridges, as the inner shovels can be raised or lowered to suit the trench or ridge, as the case may be. This device is not shown in cut, as we only furnish them when specially ordered.

THE "VULCAN".
COMBINED CULTIVATOR,
WITH OUR
PATENT STEEL WHEELS.



(For description, see opposite page.)

"CHICAGO RIDER" CULTIVATOR,

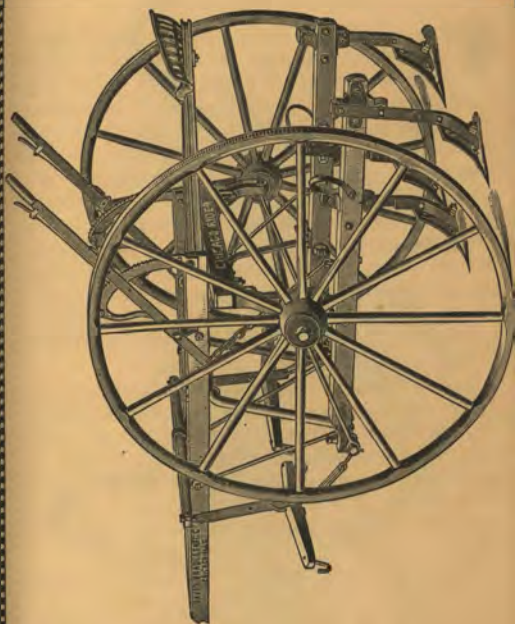
WITH

HIGH WOOD-HUB WHEELS.

 HIS implement is substantially made, nicely finished and easily operated. It has high wooden wheels with wood hub, but we furnish them with steel wheels when so desired; it will be necessary, however, to state that steel wheels are wanted when ordering the cultivators, as they are not interchangeable with wood wheels. By reference to cut it will be seen that the plow beams are quite long, without extending so far back as to raise hard. We accomplish this by putting the bail to which the plows couple further forward than formerly; in this way we secure a *well balanced* cultivator with long beams, which are better than shorter ones, as they handle easier and keep the shovels nearer at right angles with the line of draft when the plows are swung sideways. The depth of plowing is regulated and the plows are raised by levers connected with them by chains, as shown in cut. Foot-treadles are also attached when wanted, although not shown in cut. The shovel shanks are adjustable forward and back, to change the *pitch* of the shovels, which changes the suction; the shovels are also adjustable sideways on the steel sleeves, to throw dirt to or from the crop. The steel sleeves are fastened to the lower end of the shanks, and are supplied with breakpins, which give way when the shovels strike an obstruction, thus saving the shovels from breakage. The whiffletrees can be hitched high or low, which secures a proper balance of the cultivator under the differing conditions of height of team and weight of driver.

Any one wanting a riding cultivator will find ours first-class in every respect.

"CHICAGO RIDER" CULTIVATOR,
WITH
HIGH WOOD-HUB WHEELS.



Steel wheels are furnished instead of wood, when so
wanted.

• (For description, see opposite page.)

THE "RIVAL"
TONGUELESS CULTIVATOR,
WITH
**DOUBLE WROUGHT ARCH AND THE CELEBRATED "BRAD-
LEY" COUPLINGS AND BEAMS.**

(See cut on opposite page.)

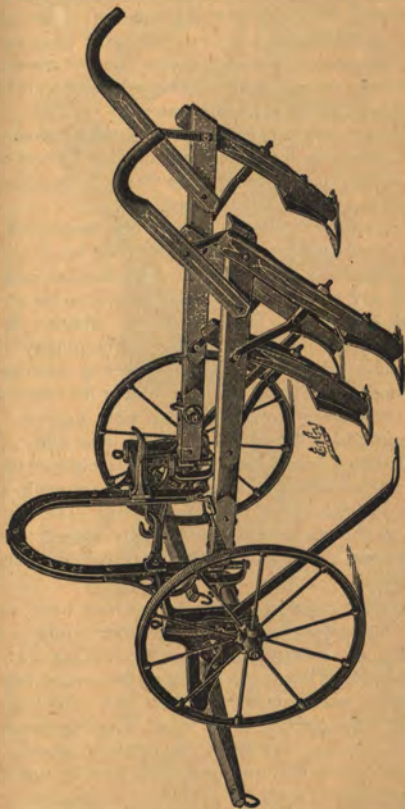
WE have made some decided changes in our Tongueless Cultivator for 1887. It has the same double wrought arch as heretofore, which, owing to its construction, is light, yet amply strong for all purposes. We also retain the well-known principle of the caster wheel, which is now pretty generally adopted, and which overcomes the tendency of cultivators *without* them to run out of the line of draft when one horse gets ahead of the other; but we are now using on the tongueless Cultivator the same coupling as we put on our "Bradley" Walking Cultivator, which is so well known that it seems hardly necessary to refer to a description of it; but as there are probably some who are not familiar with its construction, will say that it is illustrated and fully described on pages 26 and 27.

Another improvement consists of a flat curved steel spring, attached to the coupling jaw and projecting forward and upward, serving to hold the arch in position when the draft of the team is slackened, but which, owing to its elasticity, does not interfere with the running of the plows. Our device for locking the drag-bars up or down is simplicity itself, and worth your while to examine.

The pitch of the shovels can be regulated by raising the front end of the beams on the small sleeve in the coupling-jaw; the plows have also a lateral adjustment at the front ends of the beams where they attach to the axle, of several inches each, by which the shovels can be brought close to the plant for early cultivation and at the same time have the plows draw in line.

The pitch of the shovel standards on the wood beam cultivator can be changed by means of our adjustable standard-brace socket.

THE "RIVAL"
TONGUELESS CULTIVATOR,
WITH
DOUBLE WROUGHT IRON ARCH AND THE WELL-KNOWN
"BRADLEY" COUPLINGS.



(For description, see opposite page.)

"BRADLEY" SULKY RAKE.

HAND DUMP No. 1.

HE illustration on next page shows our No. 1 two-horse Hand-Dump Sulky Rake. It is the same as our one-horse rake, except that it has a pole instead of shafts. A farmer having one of these could have both pole and shafts for it, and use it with one or two horses, as suited his convenience.

They are very convenient when changing from mowing to raking, as the same team can be hitched to the rake without having to separate them. In bunching up, the horses straddle the windrow.

We continue to use in this rake the double coil, cast steel, spring-tempered teeth which we have used for years, believing them to be the most durable and elastic of any manufactured. The twenty inches of tempered spring-steel in the coil, in addition to the spring of the tooth itself, gives extraordinary elasticity and strength to the teeth, rendering them greatly superior for raking on rough ground or for heavy work, such as raking cornstalks, bunching up, etc. The cleaner-head is firmly bolted to the rear ends of the shafts, which extend back of the axle eight or nine inches; this enables us to use short cleaner teeth, which are not liable to break in bunching up. The shafts or pole, as the case may be, are strongly braced to cross-pieces, and the rake, in all its parts, is thoroughly and well made.

Our lever can now be attached in two ways, so that for dumping you can arrange it either to pull or push. We avoid a positive dead-lock for holding this rake head down, as being objectionable, for several reasons; but our lever approaches it so nearly that the mere weight of the operator's foot is all that is necessary to hold the head to its work in the heaviest raking. It is finished in fine style, and made of the very best material. When properly used, we guarantee satisfaction.

"BRADLEY" SULKY RAKE—HAND-DUMP.
For two Horses. (For description, see opposite page.)



THE "BRADLEY NO. 2" HAND-DUMP SULKY HAY RAKE.

(See cut on opposite page.)

IT is THE CHEAPEST SULKY HAY RAKE in the market for the price. It is simple in its construction, therefore not at all likely to get out of order.

THE TEETH are firmly held to their work, when raking, by a locking device in combination with the hand-lever, which remains locked until it is desired to dump the rake.

TO DUMP it, the hand-lever is pressed slightly upward, which throws it out of lock; after which an easy forward pressure upon the lever completes the operation, aided by the weight of the driver.

THE MATERIAL USED IN THIS RAKE is of the same quality as that which we put in our other rakes, viz: the best that can be procured, and it is finished in first-class style.

THE SET OF THE TEETH can be changed quickly to suit the kind of raking which is to be done by simply removing a bolt and lengthening or shortening the connection between the axle and the hand-lever.

THE TEETH ARE CAST-STEEL, TEMPERED IN OIL, and are thoroughly tested at the factory, and again by us before putting them in the rake. This rigid inspection is evidence that the teeth put in these rakes will be without flaw or defect. Having a spring temper, they do not bend out of shape, but return to their original position when the pressure is removed.

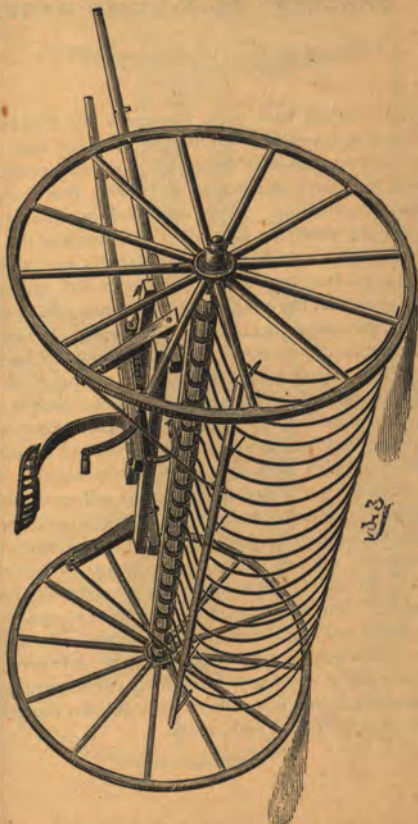
IT IS EASILY OPERATED.

Any boy or girl who can manage a team can handle it.

We attach a pole, instead of shafts, at a slight additional cost, when it is desired to use two horses.

It is made with overhanging cleaner only.

THE "BRADLEY NO. 2"
HAND-DUMP SULKY HAY RAKE,
WITH
LOCK-LEVER AND OVERHANGING CLEANER.

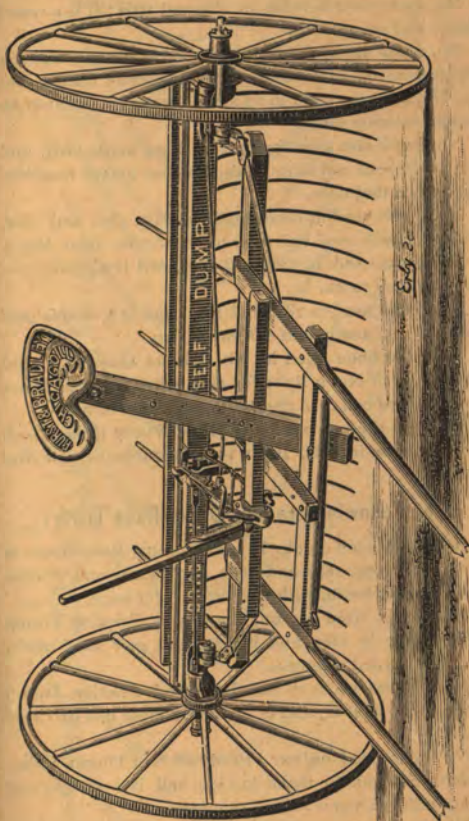


(For description, see opposite page.)

"BRADLEY" SELF-DUMP RAKE.

(See cut on opposite page.)

THE cut on next page illustrates our Self-Dump Horse Hay-Rake. It has the strongest and most durable dumping device of any rake made. It dumps from both wheels, and is entirely free from all side draft or jerking. It can also be dumped on a corner without cramping the rake. It is made of the best material and nicely finished. The shafts are stiffened with forged iron braces which connect with the axle a few inches from the end, thereby preventing lateral motion and increasing the strength of the rake. Any boy or girl who can drive a horse is strong enough to operate it. It has twenty spring steel teeth, tempered in oil, which are given a very thorough test for quality and strength before they are put into the rake. Each tooth is independent, and can be quickly replaced in case of breakage, which with our teeth rarely occurs. We furnish either the "drop" tooth without coil, or our regular double-coil tooth. In heavy raking, the teeth can be held to the ground by the weight of the operator's foot on the lever, which is held nearly in lock as the foot rests upon it, but is relieved immediately upon the foot being taken off. Whenever desired, it can be used as a hand-lever rake, and as such cannot be excelled. By simply taking out a bolt the teeth can be raised or lowered to suit the raking, whether it be stubble-fields, corn-fields or meadows. We make them with pole for those who wish to use them with two horses.

"BRADLEY" SELF-DUMP RAKE.

(For description, see opposite page.)

SULKY-RAKE TEETH.

(See cut on next page.)

No. 1 was used in rakes in 1862 and 1863; it is a *round double coil wire* tooth.

No. 2 was used in part of rakes made in 1864, and is a *single oval coil steel* tooth. This we cannot furnish, but the No. 4 can be used in its stead, or we can furnish the *single coil wire* tooth.

No. 3 was also used for part of rakes made 1864, and is a *double oval coil wire* tooth, 6 inches longer than any used since that date.

No. 4 was used in rakes made in 1865, 1866 and 1867, and is a *double oval coil wire* tooth, shorter than No. 3.

No. 5 was used in 1868 and 1869, and is a *double oval coil cast steel* tooth.

No. 6 was used in 1870 and 1871, and is a *double oval coil cast steel* tooth with end turned up.

No. 7 has been used in No. 1 Rake since 1871, and will be put in No. 2 Rake for 1887, when wanted. It is a *double round coil cast steel* tooth, with end turned up.

No. 13 is used on our No. 2 Hand-Dump Rake, which we first made in 1884. It is a *round double coil cast steel* tooth.

The Following are Self-Dump Rake Teeth :

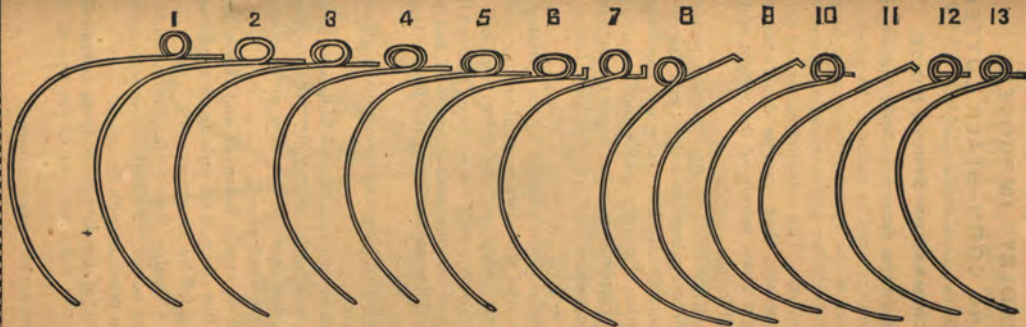
No. 8 was used on our Friction Dump Rake made in 1877, 1878, 1879, 1880 and 1881, and is a *round double coil cast steel* tooth, with end turned sideways.

No. 9 was used on our Improved Friction Dump Rake made in 1882, and is a *straight cast steel* tooth, with end turned sideways.

No. 10 was used on our Improved Friction Dump Rake made in 1882, and is a *round double coil cast steel* tooth.

No. 11 is used on our "Bradley" Self-Dump Rake, which we began to make in 1883, and is a *straight cast steel* tooth, with end turned sideways.

No. 12 is also used on our "Bradley" Self-Dump Sulky Rake beginning with 1883, and is a *round double coil cast steel* tooth.



SULKY RAKE TEETH.

The above cut shows the kinds of teeth we have used in our Sulky Rakes at different times, and numbered for convenience in ordering. For description, see opposite page.  ALWAYS ORDER BY NUMBER.

**"BRADLEY" IMPROVED
COTTON AND CORN-STALK CUTTER**
(DOUBLE AND SINGLE ROW),

WITH COMBINATION SPRING HINGE,

Which is an entirely new feature in Stalk Cutters, and which we have fully covered by patents. Its effect is to produce a rebound of the cylinder frame after having been raised by the cylinder knives operating against the stalks on the ground. This rebound chops the stalks much more effectually than can be done when the knives are brought down merely by the weight of the cylinder head and frame.

The cylinder is covered, to prevent any accident from falling upon or against the knives, and the cover serves as a box into which additional weight can be put, should the condition of the stalks or ground require it. We have also put a platform on the upper frame to prevent any possible accident to the driver from falling in front of the knives.

The cylinder can be easily raised by the operator as he sits in his seat, and is held up by a self-locking device attached to the lever, until ready to lower it again.

The cylinder-heads are sufficiently strong to stand the roughest usage, and the knives are of cast-steel, and can be kept sharp by grinding or filing, the former being preferable.

The seat is supported by a steel spring, making it easy riding for the driver.

We put on high wheels with wooden hubs, which turn on iron spindles, making the draft light. We also furnish steel wheels when wanted, but they are not interchangeable with the wood wheels.

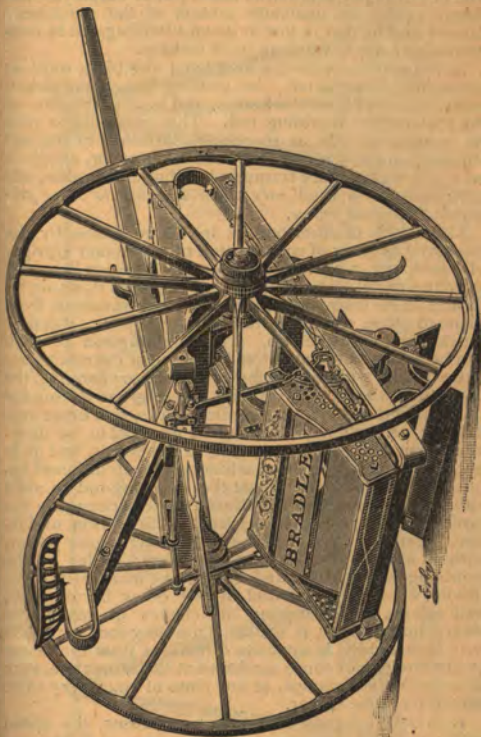
The machine is so evenly balanced and the springs are so arranged that there is no jerking on the horses' necks, and none is felt by the driver.

We also make a Double Row Stalk Cutter, which is arranged for three horses. It has the same style spring and is identical in principle with the other.

As now constructed, the levers are hung behind the axle, and are at one side, and out of the way of the driver.

(See cut on opposite page.)

**"BRADLEY" IMPROVED
COTTON AND CORN-STALK CUTTER**
(DOUBLE AND SINGLE ROW),
WITH COMBINATION SPRING HINGE.



The above cut shows our Single Row Stalk Cutter.
(For description, see opposite page.)

PACKER IMPROVED PORTABLE UPRIGHT HORSE-POWER.

(See cut on opposite page.)

PORTABILITY and an elevated tumbling-rod are very desirable points in a horse-power. It is estimated that when horses have to pass over the tumbling-rod each time they make a circuit, it causes them to slacken their draft, which results in a loss of fifteen per cent of the horse-power employed, besides causing an unsteady motion of the machinery driven, and further, a low or down tumbling-rod is dangerous to persons working in its vicinity.

In horse-powers having overhead tumbling-rods, as heretofore constructed, the gearing has been placed some distance above the horses, and nearly or quite on the plane of the tumbling rod. This construction puts the gearing so high as to require lateral bracing and support, and in such construction no bracing, except it be to some stationary frame or building, is feasible, and such powers are used *only when attached to some permanently located frame.*

The defects of other powers are all overcome by the improved manner of construction of the Packer Upright Horse-Power, a pretty good idea of which can be got by referring to cut on opposite page. It is, as its name indicates, a *portable* power, which can be removed from place to place, as circumstances may require. It can be quickly and easily set up. The tumbling-rod or shaft can be adjusted to any altered position of the machinery to be driven, without moving or otherwise changing the position of the power, which is a very great advantage in running threshers, corn-shellors, saws, and other machinery, as it often occurs that the material to be operated upon is at different angles to the power, and it is necessary to change the machinery to such different angles. To be able to adjust the tumbling-rod to such altered position of the machinery without changing the position of the power, is a great saving of time and labor. Again, this is a combined belt or tight gear power, without any change other than to place a pulley on the tumbling-rod or shaft, and belt to the machinery to be driven, a feature not found in any other horse-power, and adapts it for driving all classes of machinery where horse-power is used. Tumbling-rods or shafts may be extended in opposite directions from the power to operate two or more machines at the same time, such as corn-shellors, pumps, or any class of machinery to be driven by horse-power.

It is well adapted for grain warehouses, the speed being such as not to require the use of large and expensive pulleys on the line shaft, to give the necessary amount of speed. Again, the vertical or upright shaft may be extended to any desired height, so that lines of counter-shafting may be driven by means of bevel gears, at each story of a warehouse having any number of stories, a feature not found in any other horse-power.

PACKER IMPROVED PORTABLE UPRIGHT HORSE-POWER, WITH TUMBLING-ROD OVERHEAD.

We make one, two, four, six and eight-horse powers mounted, when so wanted.

SPEED.

For each complete turn or circuit of the team, the upright shafts and counter-shafts make the number of revolutions which are given below, viz:

*Counter
Shaft.*

50 rev.

*Upright
Shaft.*

30 rev.

37 "

42 "

48 "

63 "

68 "

75 "

80 "

85 "

90 "

95 "

100 "

105 "

110 "

115 "

120 "

125 "

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THE "BRADLEY" PATENT TRUSSED SUS- PENSION STEEL WHEEL.



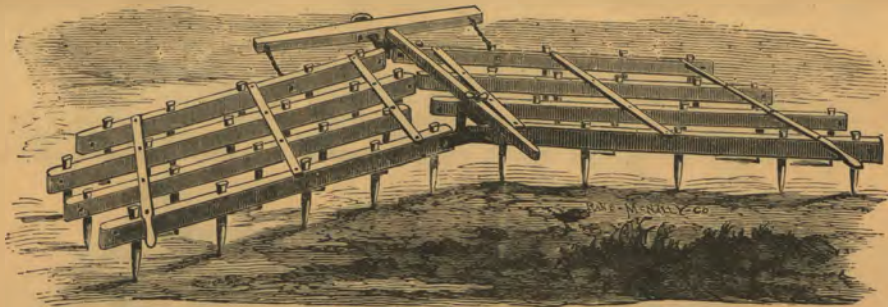
The only wheel made on this principle. Stronger than any other, without being heavier. The spokes are drawn from the rim towards the center by means of our Patent Compressible Hub, the outer portion of which is made in eight longitudinal sections. (See cut.)

The hub is *suspended* from the rim on the same principle as a trussed suspension bridge, so that the load is carried from the *top* of the wheel, instead of depending on the stiffness of the spokes to support it from underneath.

Our wheel is also *trussed sideways*. As our spokes are set staggered, i. e., each alternate spoke is fastened to opposite ends of the hub sections, and drawn tightly towards the center, it forms a perfect truss sideways.

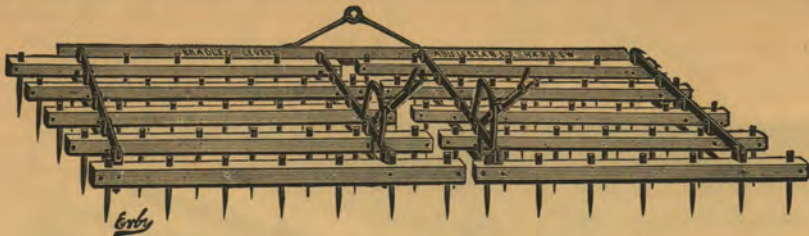
These wheels will be put on all of our Sulky Plows, and on our Cultivators and Sulky Hay Rakes, when wanted.

FRIEDEMAN PATENT HARROW —TWO SIZES, 9 AND 12 FEET WIDE.



This implement has been thoroughly tested, and found to possess superior advantages. The manner in which the two halves are connected allows either side to play several inches above or below the other, at the center, by which it readily conforms to uneven surfaces, such as dead furrows, etc. It is light and strong, easily handled, will not upset in turning, is easily cleared from trash, works splendidly in cornstalks, and does its work thoroughly. No danger of injuring the horses' heels. You can raise the center as well as the sides. They have half-inch steel teeth.

"BRADLEY" LEVER ADJUSTABLE HARROW.



The above cut represents our Lever Harrow, which is so constructed that by means of levers the position of the teeth can be quickly and easily changed to any angle or slant desired, without stopping the team. Should any trash gather on the teeth when set perpendicularly, it could be instantly removed by slanting them backward for a moment. These harrows are adapted for either pulverizing or smoothing purposes. The wood is selected stock, the teeth are half-inch square steel, and the finish is first-class.

We make them with two or with three sections. Each section is five feet wide and has thirty-five teeth, so that a two-section harrow covers ten, and a three-section fifteen feet of ground.

The sections are attached to the evener by links, and work independently of each other. The tooth-bars are riveted at the ends, and the general construction of the harrow is such as to secure greatest strength. The tooth-bars are so arranged that there are no spaces between the sections which the teeth do not cultivate. Be sure to see them before purchasing.

"BRADLEY" IRON ZIGZAG FRAME HARROW.

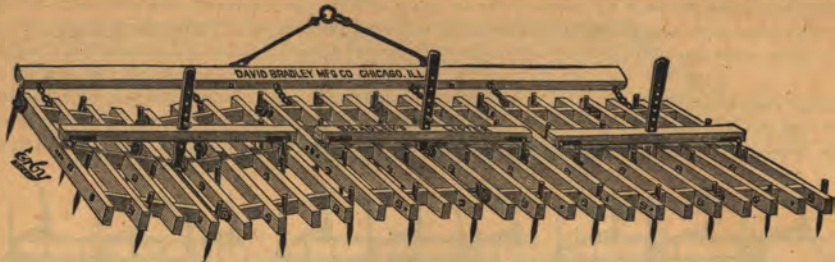


This is all iron and steel except the evener, therefore a very durable implement, which will neither warp nor split. Each section attaches to the draft bar at two points, which prevents swaying sideways; but they are quite independent of each other, and can be raised one at a time to clear them of trash, though the zigzag shape clears *itself* more readily than the ordinary harrow.

The bars are not weakened by having holes punched in them, but are fastened together where they cross each other by the malleable tooth socket or holder and wedge as shown in cut, making a very substantial joint. When the sections are drawn one way the teeth stand straight down, or can be made to slant, for smoothing-harrow purposes, by hitching to the other end. Two, three, four or more sections can be used by having a draft bar of proper length.

GANDY LISTING HARROW.

The Only One which Cultivates THREE Rows at a Time.

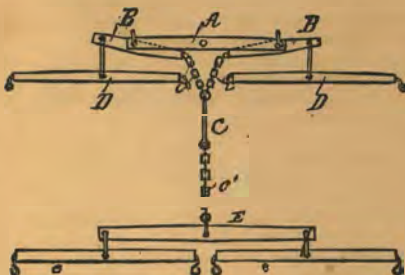


The listing of corn is rapidly increasing in popularity in some parts of the country, and the Listing Harrow becomes at once a necessity for its cultivation. In selecting one it will be to your advantage to remember that ours cultivates THREE ROWS while others are cultivating but ONE at a "through." The angle of the harrow is regulated by a pin in the upright that passes through slot in middle of crossbeam. This pin is inserted *above* cross-beam, because in that position it allows the harrow to freely level when passing from listed to level ground.

The cut shows one section of the harrow upon listed and the other two upon level work. It is ten feet wide, and has forty-eight teeth. In addition to being the best listing harrow in the market it is also one of the best for general purposes. We have many testimonials to its excellence.

PATENT DRAFT EQUALIZER,

FOR TWO OR FOUR HORSES.



It is an invention by a practical farmer, which has now been in the market long enough to substantiate the claim that it is the best equalizer in the world.

When four horses are used to draw a gang plow, or to haul a load of any kind, the draft is of necessity unequally distributed when hitched the usual way, each span drawing the entire load at times, causing a good deal of jerking on the horses' shoulders, often making them sore, and making it much harder on the team, on the harness, and on the implement or vehicle drawn. Our Equalizer obviates this "wear and tear" entirely, saving its cost over and over again in a few years, besides making it much easier on the team.

Its construction and operation can readily be seen by reference to cut. The lead-rod can be disconnected from the short bars, and their inner ends coupled together, which makes it a perfect two-horse equalizer or evenner, and a very strong one, as 27 inches of the center is double.

A lead-rod goes with the equalizer, to which a team can be hitched ahead of the other, by means of a common doubletree.

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Warranty on Hardened Shares and Shovels }	

DIRECTIONS FOR ARRANGING LINES FOR THREE HORSES.



The above cut shows how to arrange lines for three horses. When so arranged the horses are under better control than when using a jockey stick. Figures 1 and 2 indicate the extra lines that are to be added to a common pair to make lines for three horses.

DAVID BRADLEY MFG. CO.



CALENDAR FOR 1887.

1887

JAN.

Sunday	Monday	Tuesday	Wednes.	Thursd.	Friday	Saturd.
2	3	4	5	6	7	8
9	10	11	12	13	14	15
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23	24	25	26	27	28	29
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1887

JULY

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25	26	27	28	29	30	31

CHICAGO, ILL.



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