

The
WORCESTER,

BUCKEYE LINE

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 the profits of the farm can be increased.

Farm implements and machines made for the average conditions all over the world do not always meet the requirements of your particular work. We build machinery for the Eastern farm, for your farm, for intensive cultivation, and for the side hills. We make machinery for the work and wear that the Eastern farm owner expects.

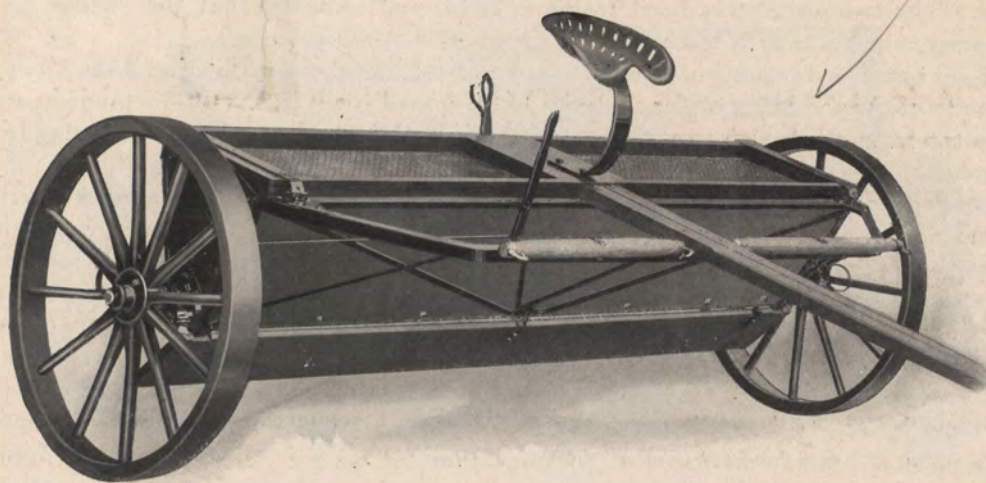
Quality or value received is properly the first consideration in the selection of implements. It is reasonable to presume that implements designed on a farm like yours, made for the East and manufactured in a plant where supervision is personal and close, cannot be excelled.

The value derived from a machine or implement is the work it will perform. The accessibility of the manufacturer is important. No machine is of great value unless it can be depended upon when it is most needed.

It is impossible to illustrate all of our line in one catalogue. We build other implements than shown herein. We carry in quantities for re-sale, additional lines which we do not at present design and manufacture.

Additional catalogues will be mailed showing these lines, if you tell us what your needs are. Also special catalogues showing more in detail each of our implements and machines illustrated herein will be sent you on request.

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

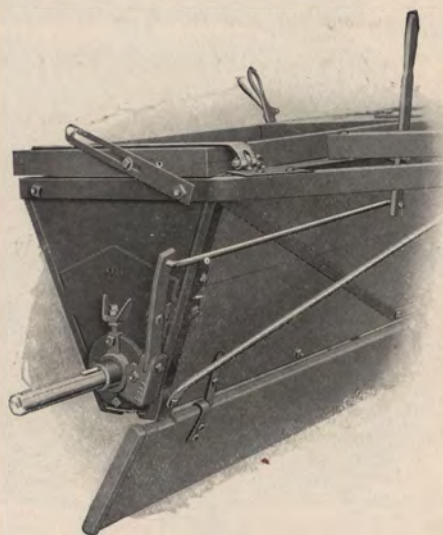


THE WORCESTER LIME AND FERTILIZER SOWER

The use of commercial lime and fertilizer is increasing. Eastern soil requires a range of foods that demand a machine capable of distributing all sorts of material, sometimes not in the best of condition for spreading. To alter the chemical or physical condition of the soil, the material should be broadcasted evenly. The Worcester Lime and Fertilizer Sower accomplishes this purpose. For five years we have consistently worked on perfecting this machine, each year adapting it to a wider range of feed, adapting it to handle lumpy and coarse material, and making our machine longer wearing and rust-proof.

The sower shown herein is our latest model. The truss rods, as shown, support the weight, and draft rods lead directly to the axle.

It is equipped for either one or two horses. The 8 and 10 foot sizes are regularly supplied with combination for this purpose. The 6 foot size is so equipped



SHAKER LEVER

if ordered. The one-piece steel front frame is rigid, and so made that the change from one to two horses requires only a few minutes.

A hinged screen cover prevents the wind from disturbing the spreading, and the $\frac{1}{2}$ inch wire screen admits of the screening of the material to be spread if advisable. This hinged cover also serves as a top hopper in which to carry an additional load, its additional capacity being from one to two bushels.

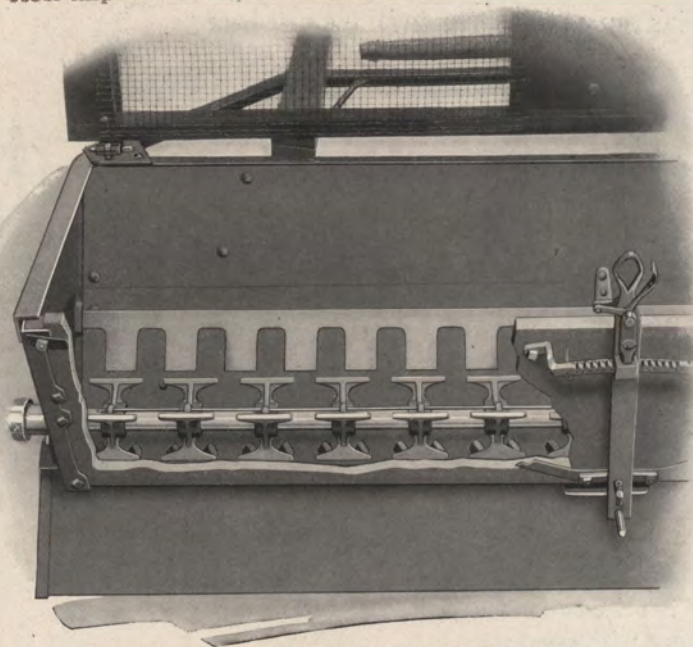
The feeders are shown in the accompanying cut, securely attached to the main axle. They revolve directly over the feed openings, each feeder having four scraping edges and covering two feed openings. They are placed so there is a space of $1\frac{1}{4}$ inches between scrapers, and the feeders are connected by two small steel rods no larger than a pencil. The function of these rods is to prevent "barreling." The rods, being small, cut through the material instead of carrying the material around with them. "Barreling" is not impossible, but the action of these rods is such that when it does occur, it is of very little hindrance to the even distributing of the machine.

The brass feed plate lies underneath the steel bottom plate of the machine. It is controlled

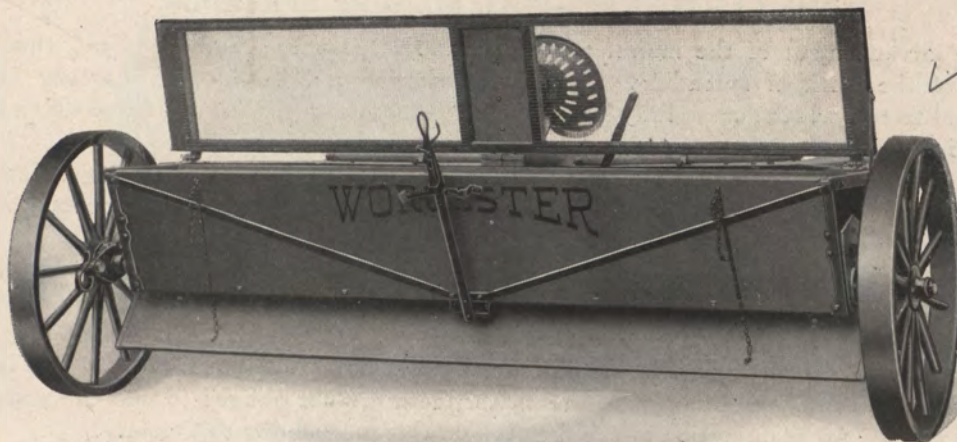
In place of brass feed plate we are using special steel impervious to the action of chemicals.

by the change of feed lever, and its position registers the amount of material spread. It does not rust, and is not affected by the action of chemicals. Neither does it adhere to the steel feed plate. This is one of the special features found only on the Worcester Sower, and adds greatly to its usefulness. The Worcester Sower is always ready to use, for it does not rust.

The shaker fork, also shown, is operated by the lever at the driver's hand. It lies against the front side of the hopper, as shown in the accompanying cut, and a movement of the lever at the driver's hand slides this fork back and forth and



FEEDERS AND SHAKER FORK



8 FOOT SIZE, SCREEN COVER RAISED

drops the material on to the agitator. Its use is only necessary when the material is difficult to spread and "arches" in the hopper. In such cases this distinctive feature of the Worcestor machine is invaluable, and by using this once every 500 to 1000 feet, the driver can spread evenly material that would otherwise be impossible to handle.

The material, passing through the feed plate in the bottom of the machine, drops on to the upper side of the distributing board hanging underneath, as shown. This board, supported on its lower side by a spring chain, distributes the material evenly and prevents the wind from sweeping under and interfering with the spreading. If an obstacle is met the board raises and no harm is done.



In wet weather, when the board might become sticky, the spring chains can be released and the board hangs underneath, still acting as a wind-break and not interfering with the spreading.

It is practical to drill with this distributor by the use of a specially punched drill plate as shown in the accompanying cut, which we supply on receipt of information as to the width of the rows.

Sizes.—The distributors are built in three sizes: 6 foot, 8 foot and 10 foot. A pole iron is regularly included in the equipment of the 8 foot and 10 foot sizes. In the 6 foot size it comes as an extra.

10 foot size is not being built this year.

THE CURTIS EASY-PULL MANURE SPREADER

In the advancement of the manufacture of manure spreaders there has been thus far no lightening of the work of spreading. The Curtis Easy-Pull brings forward a new principle, tried out and tested, 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 basic 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 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.

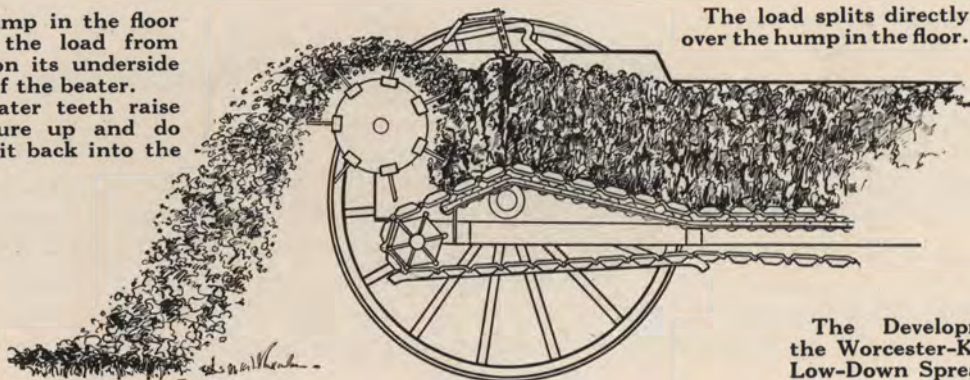
The drawing shows how the hump on the Curtis Easy-Pull fills up the space into which the manure was formerly packed, and the beater pins now pull the manure out instead of pushing it back into the load. Every pin is a lifter instead of a packer.

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

The power to drive the machinery of a manure spreader must come from the rear wheels. These should be large, and the rear axle should take as much of the weight as possible, so as to

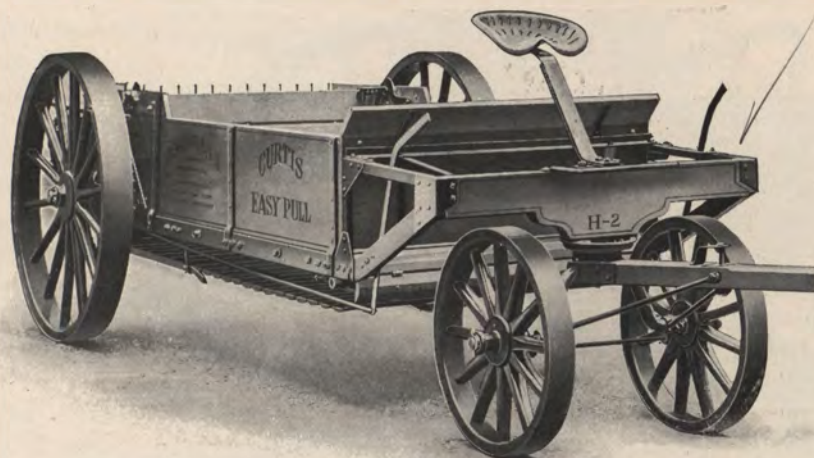
The hump in the floor prevents the load from packing on its underside in front of the beater.

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



The load splits directly over the hump in the floor.

The Development of the Worcester-Kemp in a Low-Down Spreader.



THE CURTIS EASY-PULL MANURE SPREADER

Simple and Strong Easy to Load Easy for the Horses

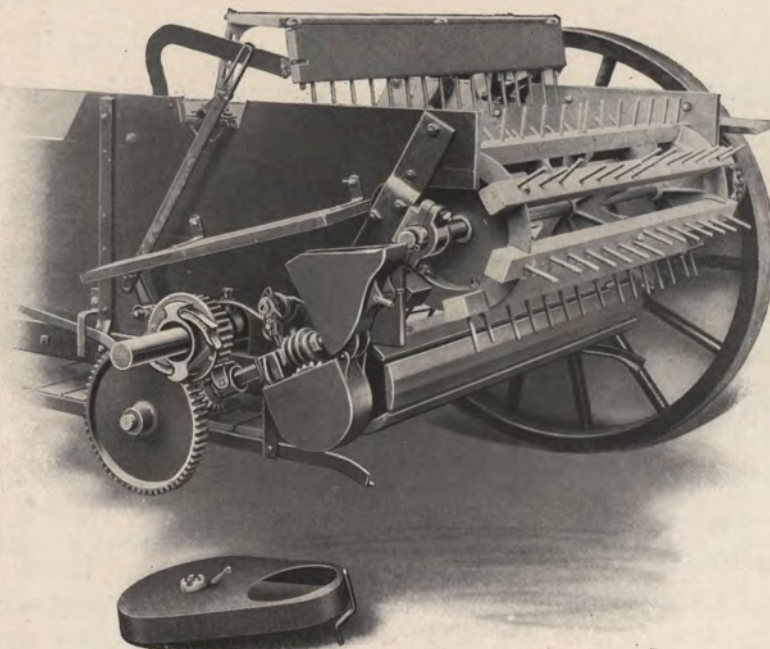
have all possible traction, and not to slip on heavy ground when spreading tough manure. The axle and rear wheels of this spreader are well under the load, and the wood wheels are 50 inches high. They get plenty of traction and raise the body of the spreader over obstructions. They protect the under parts. Large wheels draw easier than small wheels, regardless of the width of the tire, on soft or rough ground. The Curtis Easy-Pull is the only high-wheel, low-down spreader with the axle under the load.

In the East manure is loaded in the cellar, yard, and field. Our spreader can be loaded in the cellar from either the side or rear. It is very low and easy to load—less than 40 inches to pitch over the side and less than 44 inches over the rear.

Our long experience in designing manure spreaders enables us to build this spreader so strong that many thousands of loads have not warped or twisted the body in any way.

An end gate of a manure spreader holds the load away from the beater. The beater is given a free start out of reach of the manure, and attains full speed before the manure comes against it. This ensures an even spread from the start, saves strain on the machine, and makes the box of the spreader tight.

The patented end gate of the Curtis Easy-Pull is jointed and moves away from the manure as it raises. It cannot stick or bind. When raised it forms a perfect pulverizing rake, and is



POSITIVE GEAR FEED THAT CANNOT SLIP

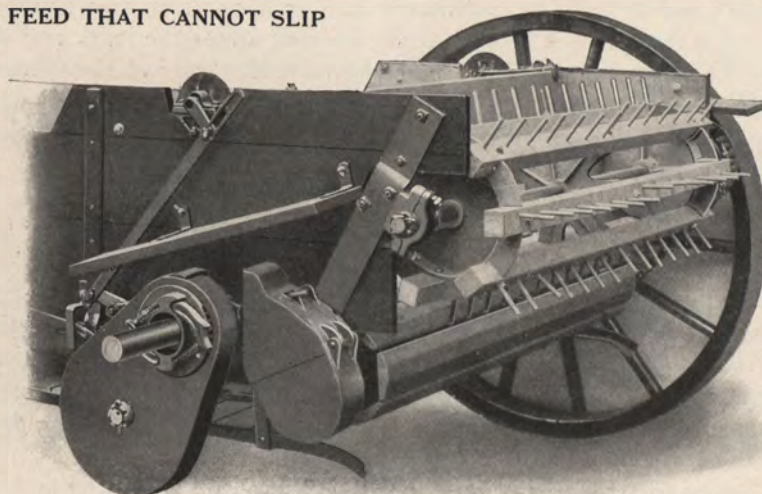
line. We have used this drive for ten years. It is the most efficient drive we have ever made, and a case of breakage is unknown.

List of Sizes.—Spreaders are built both endless and return apron. The endless apron is built in three sizes: C-H-1, small two-horse size; C-H-2, medium size; C-H-3, large size. The return apron is built in one size, R-H-1, small size.

self-adjusting. It drops of its own accord when the load is empty, and therefore is not in the way when loading over the rear end.

The positive floor feed of the Curtis Easy-Pull spreads exactly the amount to the acre that the driver sets it. It cannot slip. It is simple in construction and runs in a bath of oil.

The patented simplex beater drive uses no gearing or stud shafts attached to the frame of the spreader. There are no gears to be filled with manure, and no stud shafts to get out of



GEARS PROTECTED AND RUNNING IN OIL



THE CURTIS EASY-PULL
RETURN APRON MODEL

We build the Worcester-Kemp Spreader, have made it for thirty-five years, and keep in stock the L-0, small size, and L-1, medium size.

LOW-DOWN WITH HIGH WHEELS



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.

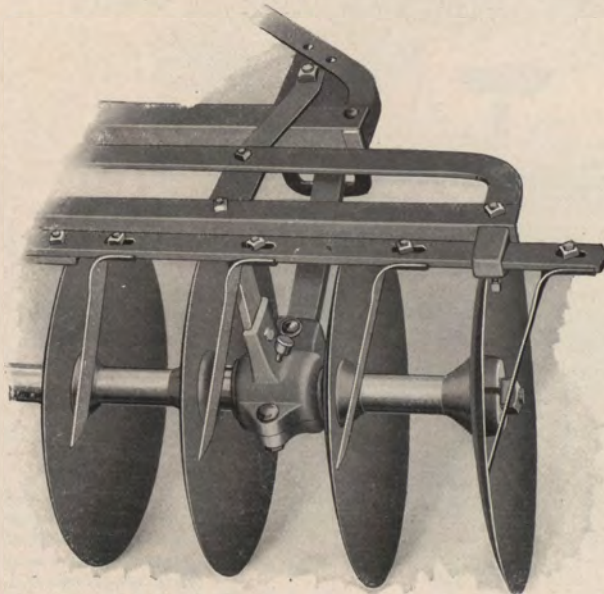
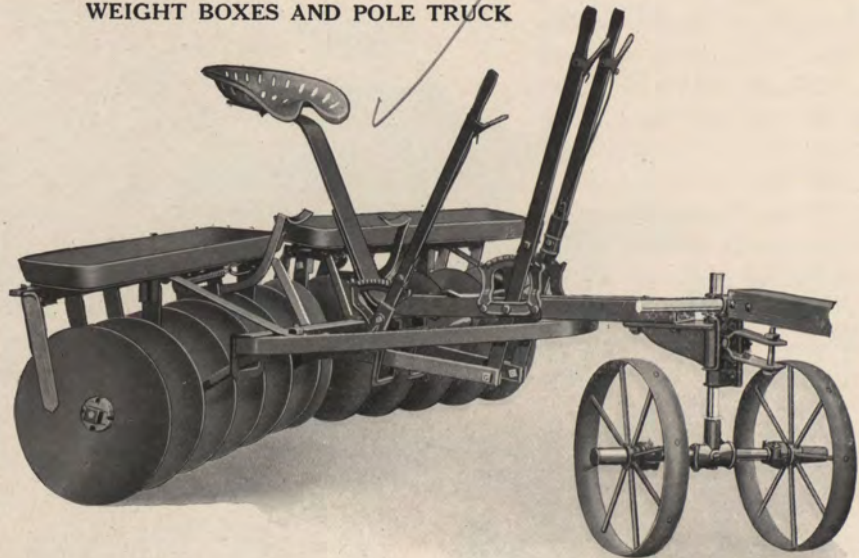
Wheels are not in the way of loading and are out of the way of the manure when spreading.

LOW-DOWN

In no section of the country is the disc harrow subjected to so severe strain as in the East. The long wear demanded makes strength imperative. Even penetration of the gangs through hollows and dead furrows, and over ridges and back furrows, makes flexibility a necessity.

A pressure lever or third lever at the

WEIGHT BOXES AND POLE TRUCK



LARGE BOXES WITH WOOD BUSHINGS

driver's hand controls this depth of penetration, and its action is shown in the opposite cut. This feature ensures flexibility at all times.

The rigid front frame, of angle steel, riveted and braced at the corners, makes it impossible to spring out of shape. The axle is extra size, being $\frac{7}{8}$ inch square. The boxes are fitted with wooden bushings, are dust-proof, and lubricated by grease cups close to the bearing.

The harrow is equipped with or without weight boxes, with or without pole truck.

Cut-out discs or round discs are furnished as ordered, the general construction of the harrow being the same.

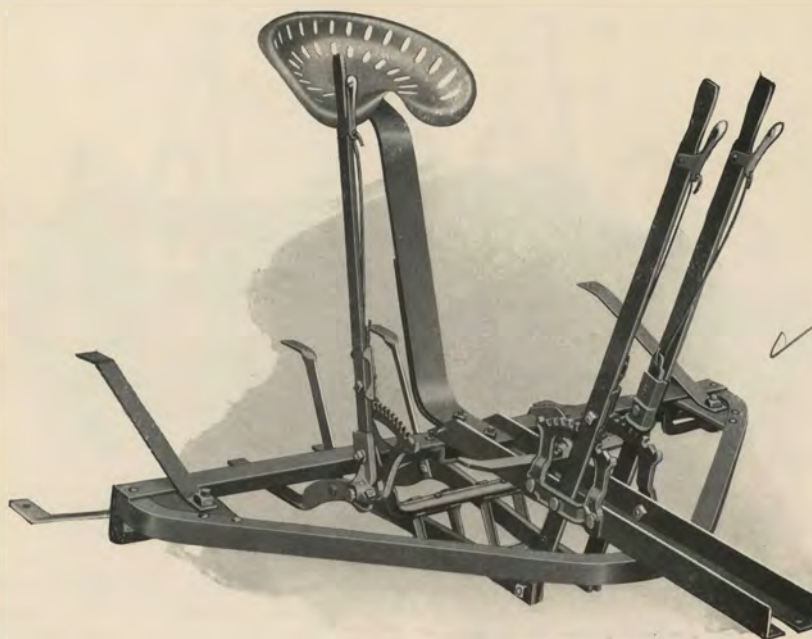
List of Sizes

ROUND DISC

8-14 inch disc, one-horse
10-16 inch disc, two-horse
12-16 inch disc, two-horse
10-18 inch disc, two-horse
12-18 inch disc, two-horse
10-20 inch disc, two-horse
12-20 inch disc, two-horse

CUT-OUT DISC

8-14 inch disc, one-horse
10-16 inch disc, two-horse
12-16 inch disc, two-horse
12-18 inch disc, two-horse
12-20 inch disc, two-horse



FRONT FRAME

The rocking type of scraper is used on the round disc harrow, and a special scraper is furnished for the cut-out disc harrow.



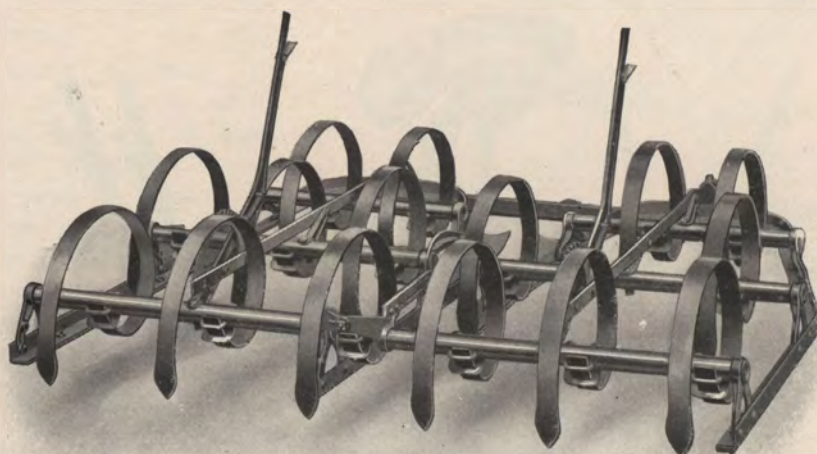
CUT-OUT DISC

Fore carriage or pole truck is supplied if ordered, and prevents lashing of the tongue and therefore eases the team. It aids in turning corners and is very popular wherever used. The regular pole shipped with the harrow fits the fore carriage, and can be used or not, as desired.

Two-horse equipment is regularly furnished with 16 and 18 inch discs; three-horse equipment with 20 inch discs.

A double-action or double-disc harrow is furnished, if ordered.

The 8-14 harrow for one horse is of different construction, not flexible, and cannot be fitted with weight boxes. It has no pressure lever, but is a durable, satisfactory harrow.



HIGH FRAME HARROW

High Frame Harrow. The main frame is bent upward at the front so that it easily passes over trash; the bottom of the frame is equipped with runner shoes, detachable, which protect the main frame from wear. The inner shoe of one section is cut off at the second tooth bar, allowing the harrow to clear itself of trash. The teeth are so placed that they do not trail each other. They are of 40 to 50 point spring steel, and are clamped to the tooth bar with adjustable clamps. The tooth bars are round pipe, of great strength.

Attachments. The sulky or riding attachment provides a spring seat for the 15 and 17 tooth size, if ordered.

The rake or smoothing attachment is a row of trailing teeth that break up the fresh clods. This is for the 15 and 17 tooth sizes, when ordered.

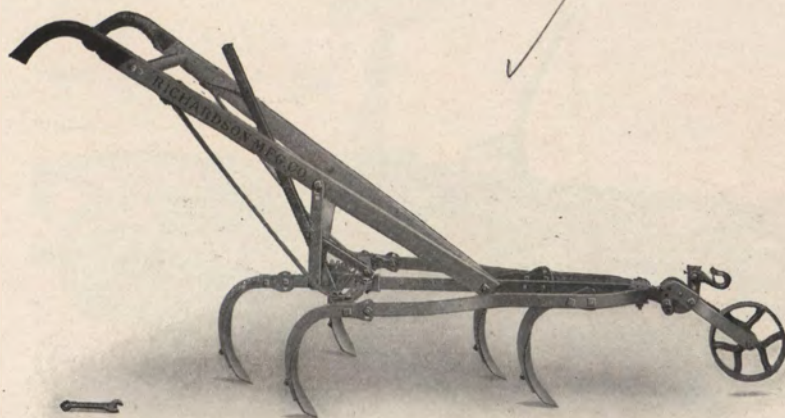
List of Sizes.—9 tooth, 1 section, 3 feet wide (with bail handle); 15 tooth, 2 section, 5 feet wide; 17 tooth, 2 section, 6 feet wide; 23 tooth, 3 section, 7½ feet wide.



PERRY HARROW

The spring tooth harrow is a most valuable implement, and furnishes the only practical means of pulverizing gravelly or stony ground where deep cultivation is required. The spring teeth will penetrate to a greater depth than other harrows. The lower strata of soil will be brought to the surface and mixed with the top soil.

We have several types of spring tooth harrows; two are shown herewith. Each is efficient, and each is carefully designed and well made.



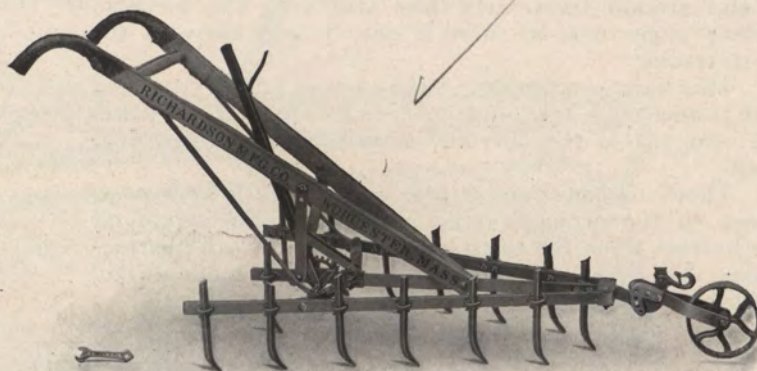
FIVE SHOVEL CULTIVATOR

wheels in the rear and pivotal shoes in front. This is called Spring Tooth and Wheels, and comes in 15 and 17 tooth sizes.

Our 5 shovel cultivator is constructed of 40 carbon steel, both frame and shanks. The shovels are reversible, providing two cutting surfaces. They retain a sharp point until completely worn out. This cultivator is equipped with expanding lever and wheel. It is equipped with hillers or common hoes, if ordered; also with extra long hillers, if ordered.

Our 14 tooth cultivator is particularly desirable where close cultivation is required and where it is important not to throw earth on the small or young plants.

The frame and teeth are both made from 40 carbon steel. The cultivator is extra long and is very substantial. It is equipped with expanding lever and wheel.

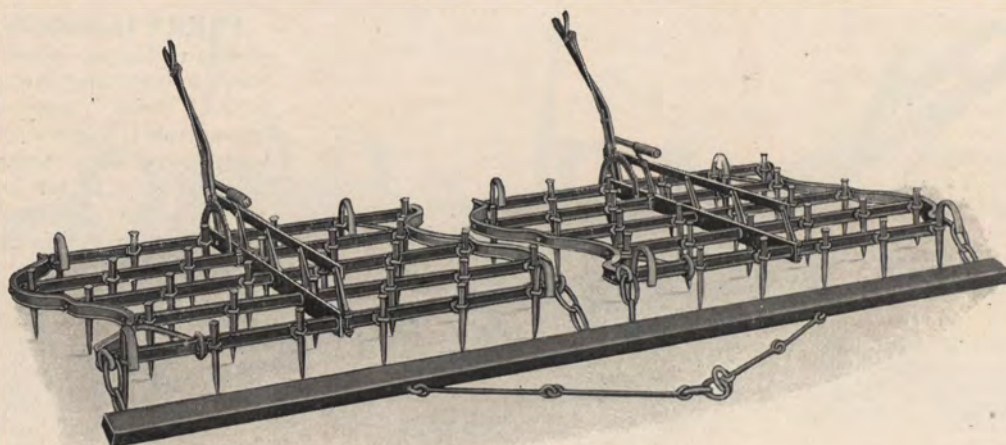


FOURTEEN TOOTH CULTIVATOR

PERRY HARROW. This wooden frame, steel lined harrow has many friends. It is the "Perry" type, and no spring tooth harrow will perform more days' work than this. There is no lever to regulate the penetration of the teeth, as on the pipe bar harrow shown above, and it is therefore inconvenient in taking to and from the field, but is less expensive than the other type. For rough work and service it cannot be excelled.

List of Sizes.—16 tooth, 5½ feet wide.

We also furnish a spring tooth harrow built with "U" bar frame, three 12 inch



SMOOTHING HARROW

The smoothing or "peg tooth" harrow is most efficient for breaking the lumps turned up by the disc harrow. It levels after the disc or the spring tooth harrow and prepares a good seed bed.

This is a closed end smoothing harrow with hand forged diamond-shaped teeth, each tooth being separately forged down to size, and fastened to the tooth bar by a steel eye-bolt clamp. This is the strongest construction.

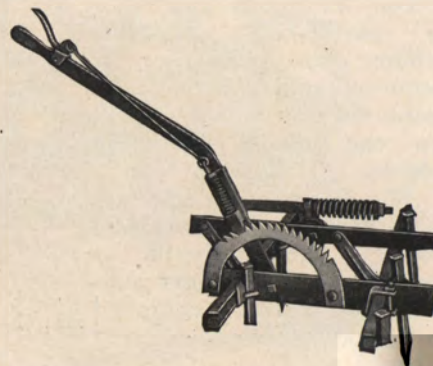
The closed ends prevent the tooth bars from catching on shrubbery; they allow the harrow to slip around trees, and they also keep the teeth in perfect alignment, so there is only 1 inch between the tooth tracks.

This harrow is braced at the corners and is equipped with runner teeth for convenience in transporting. Levers are bent to aid the operator in raising the harrow over trash.

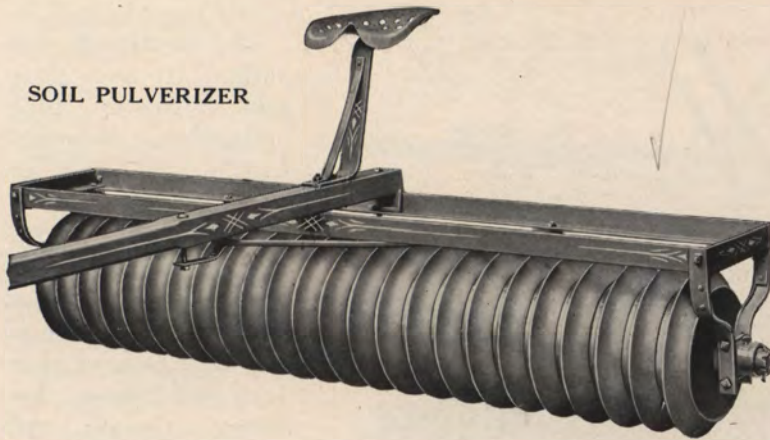
These harrows are fitted with a relief spring, as shown in the accompanying cut, taking the strain off the harrow when the teeth come in contact with obstructions. The relief spring may be tightened to make a rigid tooth harrow, if preferred.

List of Sizes

30 tooth	1 section	4½ foot cut
50 tooth	2 section	7½ foot cut
60 tooth	2 section	9 foot cut
75 tooth	3 section	12 foot cut



SOIL PULVERIZER



The soil pulverizer, or "corrugated roller," as it is often called, is replacing the smooth roller in many sections, and is bound eventually to supersede the smooth roller on most Eastern farms. Whereas the roller rolls and packs, the soil pulverizer rolls, pulverizes, packs, and leaves a mulched top dressing. The soil pulverizer conserves the moisture in the ground with this surface mulch.

Our soil pulverizer is built of cast iron "V" shaped rolls independent of each other

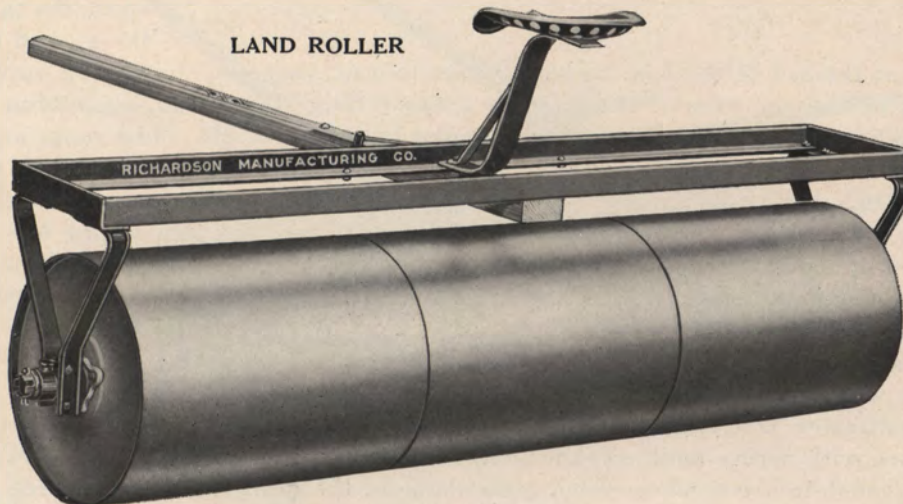
and loose on the axle. It is heavier than the smooth roller. The steel angle frame is stiff and substantial, and adequate boxes, properly lubricated, keep it running freely.

Sizes.—18 inch, 25 wheel, 7 foot.

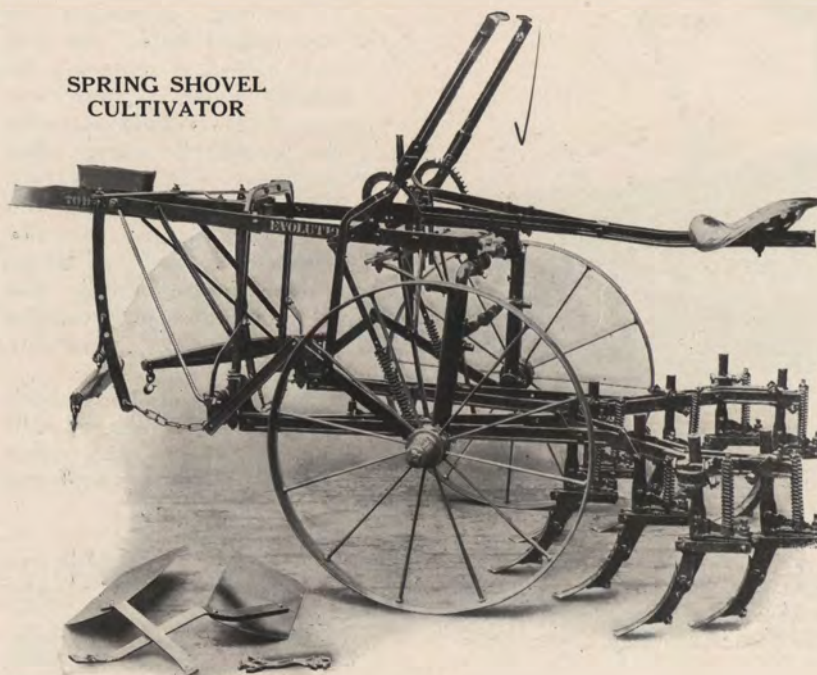
Our round drum rollers are built with substantial steel frame, so made that boards can be laid in to carry extra weight if desired. It is a good leveler and packer, well braced, and built of a high grade of steel and the boxes are fitted with wood bushings.

List of Sizes.—6 foot (one horse), 24 inch, 2 section; 8 foot, 24 inch, 3 section; 8 foot, 26 inch, 3 section.

LAND ROLLER



SPRING SHOVEL
CULTIVATOR



The Evolution is a narrow frame, pivot axle cultivator, auto-
matically balanced, whether the gangs are in the ground or out. It is especially designed for crops planted as narrow as 26 inches, and is equally well adapted for those planted wide. It is well braced, combining strength with light weight. The axles pivot by adjustable foot levers.

The Evolution Cultivator shifts the wheels back when the gangs are raised, thus maintaining a perfect balance, both when the gangs are in the ground and out of

the ground at the end of the row. There is therefore no neck weight or flying up of the pole.

In this section the rows of the crop are comparatively short, and the automatic balance of the Evolution makes the cultivator easy for the horses to handle. The gangs are spread or narrowed while the shovels are still in the ground. It is the only spreader device on a riding cultivator that will actually spread or narrow the gangs while in the ground. It consists of a crank screw arrangement with double screw and heavy thread, the gangs being moved 2 inches at each turn of the crank. Adjustment is therefore possible to a fraction of an inch without stopping the team or interfering with the work, and it is more adaptable to crooked rows and rough ground.

The wheels may be narrowed to 32 inches or widened to 42 inches. They are low, 32 inches in diameter, with dust-proof magazine hub.

This cultivator is equipped with shovels and spring trip as shown on this page. It is also equipped with spring teeth as shown on the opposite page. The spring shovel is the usual cultivator, though in places where witch grass abounds, the spring tooth is preferred.

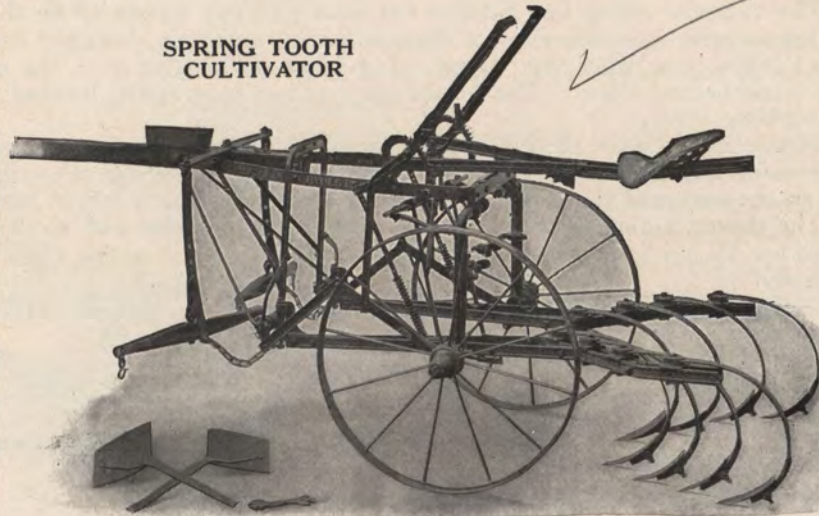
List of Sizes.—

6 shovel spring
break; 8 shovel
spring break; 6
spring tooth; 8
spring tooth.

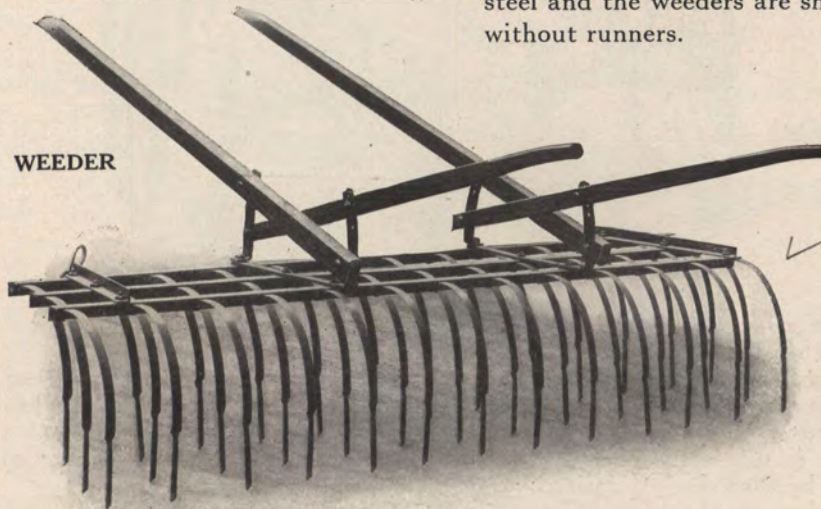
Weeders are of
great assistance in
eradicating weeds
and in forming a
soil mulch. The
Worcester weeder
is equipped with
39 teeth, made of
spring steel, and
they do not break.
They are attached

to the frame with $\frac{3}{8}$ inch bolts and held by spring steel lock washers. The curve is such that the teeth chatter in the ground and produce the effect that is so desirable for the best working of the soil. The frame is of angle iron steel and the weeders are shipped with or without runners.

**SPRING TOOTH
CULTIVATOR**



WEEDER



The two-row riding hoe enables one man and two horses to do the work of two men and four horses with a walking hoe. This is a new machine, designed by us for potato growers, but is adaptable to other hoed crops. Two rows are hoed at once, the man sitting over the hoes and a little behind them. The horses are hitched wide apart, leaving the two rows of planted crop between them.

In the early stages of the crop the hoes are worked opposite to each other, and the gangs are so made that for later work one hoe can be dropped behind the other and extended so as to work to the center of the row, giving plenty of room for both sets of hoes.

The driver, riding above, keeps his feet in the treadles and guides the hoes with his feet. He can use his hands as well. Simply turning the handle in or out guides each hoe independently and easily.



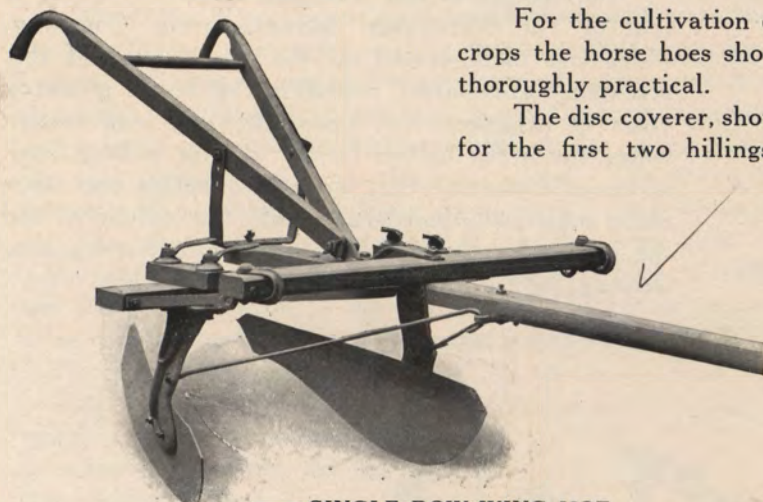
TWO-ROW
RIDING HOE

If the soil is hard, and additional weight is needed, the driver can stand on the hoes without disturbing his position but a little.

A lever in front of the driver throws the front of the gang beams either way to provide for side-hill work. The pole tilt adjusts the machine for any team. The wheels and the gangs are independently adjusted for any width of row.

This hoe is regularly shipped with wing hoes as shown, but disc hoes or both wing and disc hoes can be furnished, if desired.

Competition on the farm is keen, and the man who raises his crops with the least labor has the best profit to show in the fall. This hoe reduces the cost of cultivation one half.



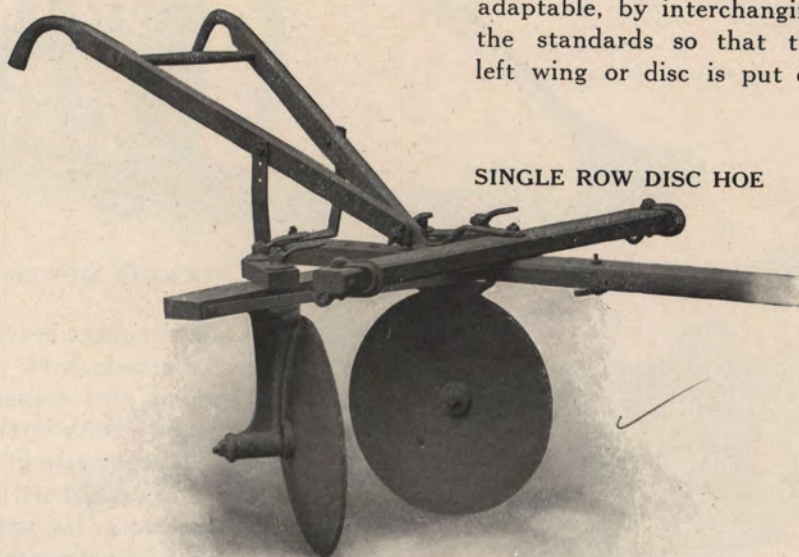
SINGLE ROW WING HOE

For the cultivation of potatoes, corn, and other hoed crops the horse hoes shown on this page have proved to be thoroughly practical.

The disc coverer, shown below, is used by potato growers for the first two hillings, when it is desired to cover the plants completely. The wing coverer, shown above, is used for later hillings, for it pushes the earth up under the plant without covering the foliage. The wing coverer is more commonly used. Both hoes are used for covering. When planting is done by hand, these hoes are used to open furrows, for which work they are especially adaptable, by interchanging the standards so that the left wing or disc is put on

the right side and the right wing or disc on the left side.

The wings and discs are both made of crucible spring steel. The handles are adjustable to either side, so that the driver does not walk on the growing crop. The wings and standards are interchangeable with the discs and standards, so that the user may have both the wing hoe and disc coverer combined in one implement. They are shipped this way when so ordered.

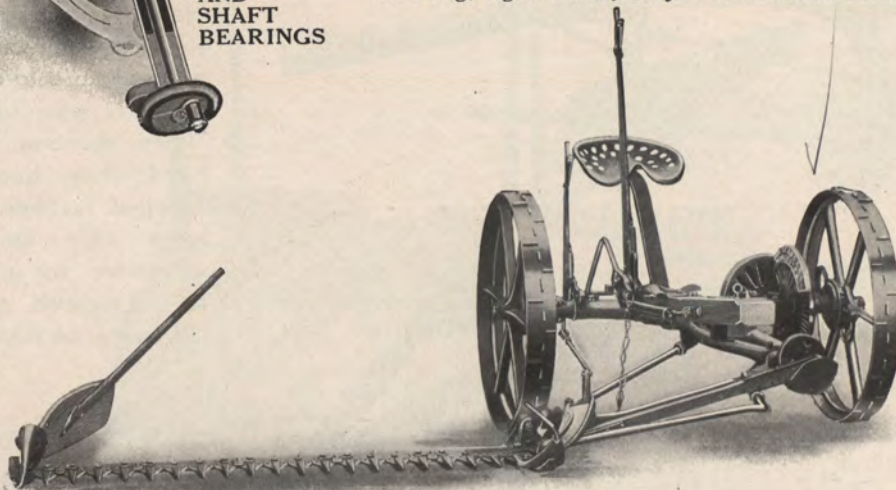


SINGLE ROW DISC HOE

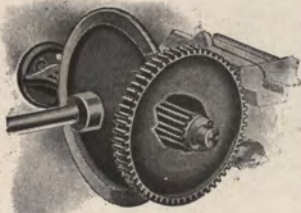


GEARING
AND
SHAFT
BEARINGS

The history of the Worcester-Buckeye Mower is that of The Richardson Manufacturing Company, which was incorporated for the manufacture of this machine. This latest model is the result of many years of experience in mower building in a section where the needs of the farmer are for a long-lived, serviceable machine that will cut smoothly and draw easily under all conditions. Note the simplicity and the points that make this mower strong cutting, long wearing, light draft, easy and safe to ride upon.



THE WORCESTER-BUCKEYE MOWER



ROLLER BEARINGS

The construction of the gearing is such that the bevel gear is large and on the main axle. It runs slowly and therefore creates less friction and transmits more power than fast-running bevel gears. Both intermediate gears are cast in one piece, so that they are nearly in the same plane, causing very little twist on the stud shaft. This gearing runs on roller bearings, and is shown in the upper left and lower left engravings on this page. Adjustments on the mower are such that this gearing may be kept in perfect condition even after many years of hard wear.

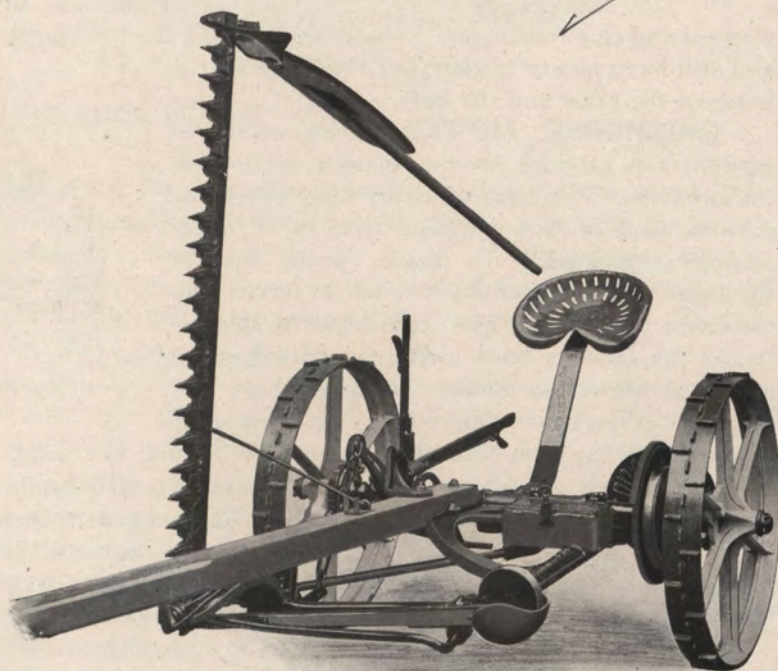
The frame is broad and rigid, and high enough from the ground to clear obstructions; the metal in its composition is carefully distributed for any strain likely to be brought upon it. The frame is the main support of the machine, and is consequently the support of the cutting apparatus. Great care has been used in its design to give the gearing strong support and to brace the cutter bar.

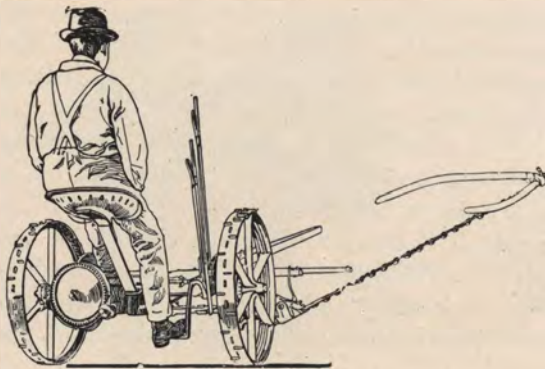
A large, comfortable, reinforced steel seat is bolted to a double-leaf double-bend seat spring. The seat spring is bolted on the main frame. The double bend, together with this position of bolting, will not throw the driver, and brings the seat closer to the ground.

The pitman box provides an oil chamber more than halfway around the crank pin, and if the bushing turns in the box there is an extra oil hole bored so that three holes in the bushing will always furnish oil to the crank pin. The crank pin itself is hollow, and is filled with oil; when the oil chamber in the pitman box is empty, oil will then feed from the center of the crank pin.

The Worcester form of gearing turns the pitman wheel in a right-handed direction as you face the front end of the machine. This brings the push stroke of the pitman at the low point, and brings the pitman and scythe at the straightest angle. The pull stroke of the pitman rod comes when the crank pin is at the upper side, but the push stroke is the friction stroke, and by the push stroke being on the straighter angle, our mower is made longer wearing and easier draft.

Knife Backs on all two-horse mowers are reinforced at the scythe head end, being $\frac{5}{16}$ by $\frac{1}{16}$ inch, and this reinforcement extends 24 inches from the scythe head.

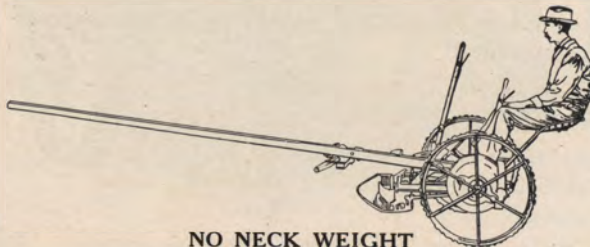




HIGH FOOT LIFT

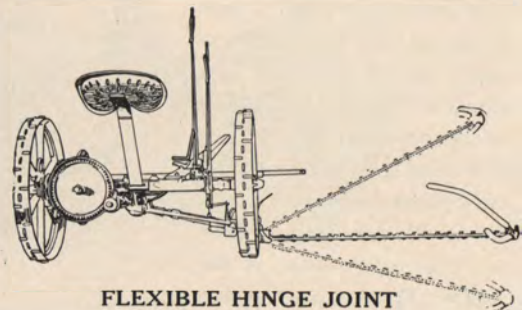
forward and clog the knives. The driver can get and still have plenty of room for the horse that is between the grass and the pole.

ONE-HORSE MOWER. The one-horse mower is a product of the eastern section of the country. There are probably more one-horse mowers used in New England than in all other sections combined. We began years ago to specialize in the manufacture of a serviceable one-horse mower, and have continued to specialize, as the farmers have warmly endorsed every model of one-horse mower which we have developed. We believe that every improvement practical on the two-horse larger machine should be found on this mower. The one-horse



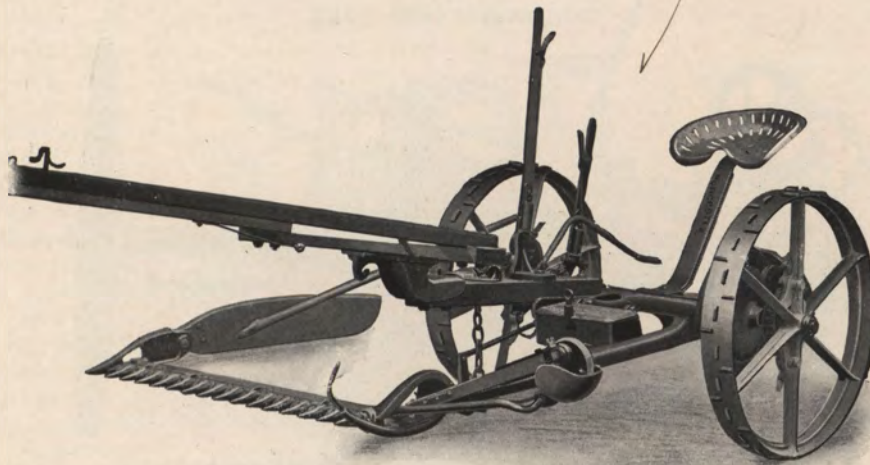
NO NECK WEIGHT

The crank wheel makes $26\frac{1}{2}$ revolutions to one complete revolution of the drive wheel, giving 53 strokes of the knife to one turn of the drive wheel and producing a high cutting speed. For a basis of comparison it must be remembered that the size of the drive wheel and the length of the cut on the sections must be considered; an accurate comparison is impossible without careful figuring. It can be said, however, that this speed is high—high enough to cut a thick bottom with a slow walking team, even after the cutting parts have become worn, but not too high to prevent starting in the standing grass, nor high enough to throw June grass the full length of the cutting knife into the grass



FLEXIBLE HINGE JOINT

machine is found to save time in orchards and in small fields where one horse turns quicker than two. One horse handles the New Standard mower without apparent effort. In some particulars the one-horse mower differs from the larger machine. The more uneven motion of the single horse makes necessary a higher speed of the knife, and we therefore speed this mower about



ONE-HORSE MOWER

3 per cent higher than the two-horse machine. In most other respects the mowers are identical. The same high foot lift and the same flexible hinge joint is used, and there is no weight on the horse's back, for the driver perfectly balances the weight of the shafts. The drive wheels travel in the cleared track left by the swath clearer on the previous trip around the field. Levers and foot lift are convenient, and a double-leaf spring makes the seat comfortable.

List of Sizes.

TWO-HORSE MOWERS

No. 6, 6 foot cut

No. 6, 7 foot cut

No. 5, 4½ foot cut

No. 5, 5 foot cut

ONE-HORSE MOWERS

No. 3, 3½ foot cut

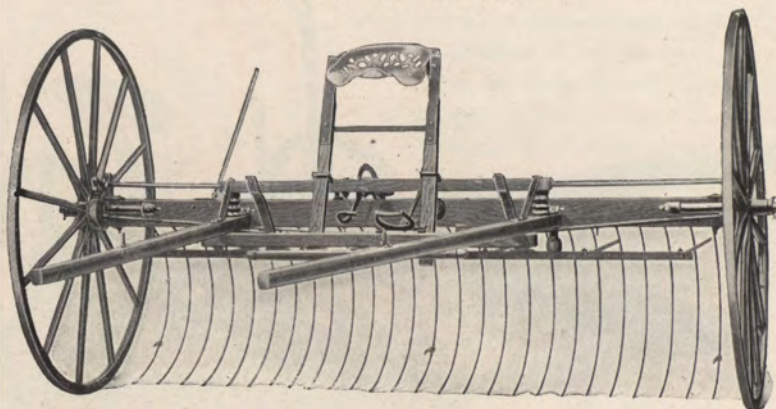
No. 3, 4 foot cut

Before leaving our shop every mower is set up by attaching its cutter bar, and with a belt on one drive wheel the knife is run for ten minutes. The cutter bar is numbered to correspond with the body of the mower, and then packed for shipment.

For satisfactory service of a mower there are five essentials: strength of parts that bear the shock of obstructions; rigidity of parts that bear the strain of cutting; ease of handling; ease of draft; and adequate service when worn or broken parts need replacement. In these five ways The Worcester Mower comes squarely up to the mark, and when, after years of service, it is worn out, you will want another like it.

We can furnish Reaping Attachments for the 4½ and 5 foot Worcester Mower if desired.

THE WORCESTER RAKE



No gears to wind in hay. No springs. Any boy can operate it.

The Worcester Rake, shown above, is of wooden frame, with a steel truss under the axle bed, sufficiently powerful to bow the $4\frac{1}{4} \times 4$ inch bed into an arch, by use of the turnbuckle in the center. The wheels are of ash and hickory, hubs bored accurately to fit the axle. The shaft and cross-bars are braced with short steel braces. Our rake is carefully made and well finished.

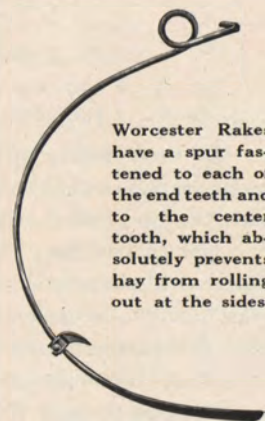
There are places where wooden construction is superior to steel construction. The breadth of a horse rake makes wooden construction, braced with steel, stiffer than all steel and lighter than steel. The natural spring of the wood holds the nuts tight. A well constructed wooden frame rake holds its shape and is light draft.

The teeth are of spring steel, of the sled runner type, tempered in oil. The dump rod operates by a lever at the driver's right foot. It extends the length of the rake and engages open ratchets on each wheel. The rake head dumps quickly and drops at once, beginning to rake hay again just in front of the windrow. It may be made to drop slower or held up, by pressure on a lever at the driver's left foot. Its operation is very simple. There are no concealed pawls and no springs to cause trouble.

The Worcester rakes heavy hay, green hay, or scatterings, but digs no sod. It dumps cleanly and quickly. Any boy can operate it. It is very long wearing and light draft for the horse.

List of Sizes:—8 foot, 26 tooth; 9 foot, 28 tooth; 10 foot, 30 tooth.

All sizes can be equipped for two horses by ordering the combination. The 10 foot size is regularly shipped with combination.



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, shown herewith, leaves the hay in a loose, fluffy condition, permitting the air to circulate freely through it. A mower leaves the hay flat on the ground, where it absorbs moisture and becomes rank and pungent. Tedding the hay allows it to cure alike throughout, and adds greatly to its feeding and market value.

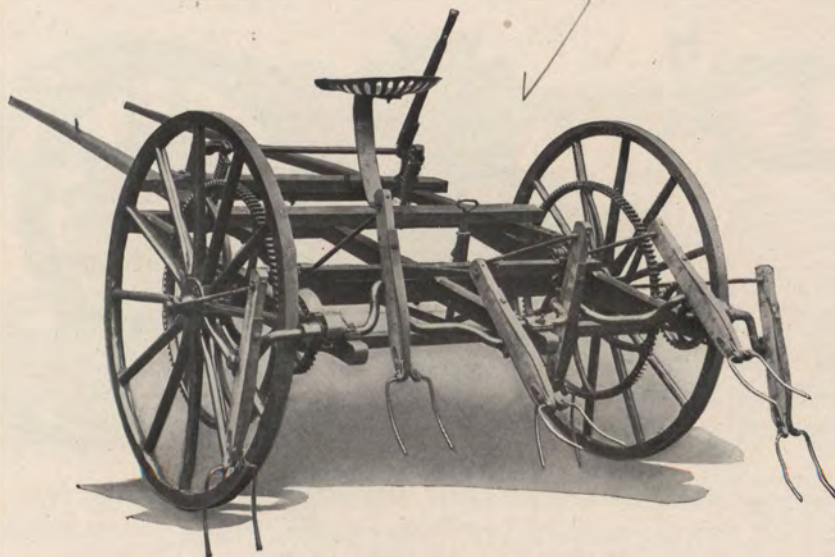
The Bullard Tedder is gear driven, and the *crank shaft supporting* and driving the forks is cut in the center. Each wheel of the tedder drives the forks on its side only. For its most

efficient use in the East a tedder is worked in and out among trees and on side hills, as well as on the flat, long pieces. Owing to the independent driving of each set of forks, the Bullard Tedder can be turned short without strain on the horses or the tedder. The wheel on the outside of the turn drives those forks fast and the forks on the inside of the turn are driven slowly. The Bullard therefore does the best work under all conditions.

The frame is of wood, braced with steel. It is light, and the natural spring of the wood holds the nuts tight. The tilting frame is supported by two platform springs, therefore the fork frame is protected by these springs when striking an obstruction. The forks themselves are protected by a flat Mudgett spring on each fork arm. Our tedder is easy to ride upon and of light draft.

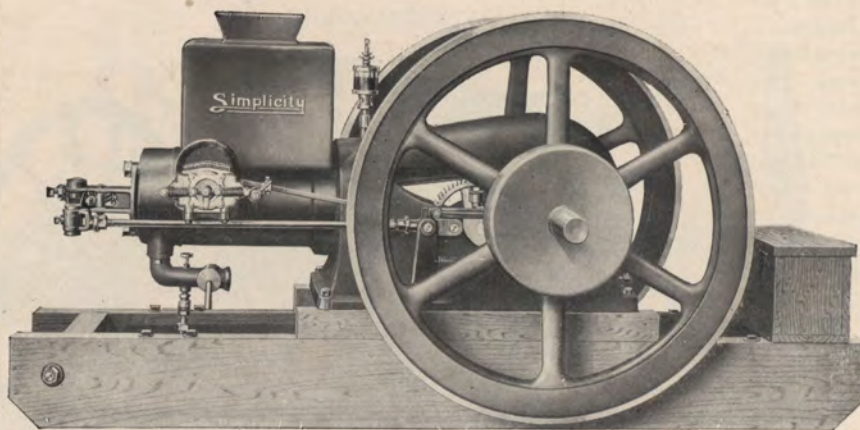
List of Sizes:—6 fork, can be equipped with combination for one or two horses; 8 fork, for two horses only.

The Worcester wind shield, shown herewith, is an attachment for the Bullard tedder, shipped when ordered. The wind shield prevents hay from winding on the crank shaft, and enables the tedder to do good work with a strong following wind, when without it the hay would blow on to the forks and cause annoyance. It is built for both 6 and 8 fork sizes.



THE BULLARD TEDDER





THE SIMPLICITY ENGINE
ON SKIDS

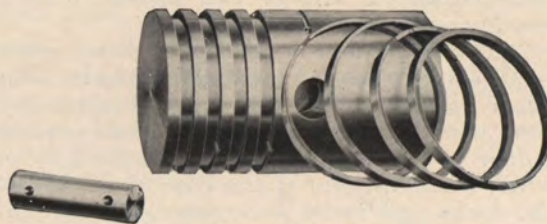
A high-grade engine is a constant source of satisfaction and profit. Our engine is manufactured with the aim of producing a cleanly designed, beautifully built gasoline engine of so few parts that it cannot get out of adjustment. A simple machine always gives the most satisfactory service, because few parts give less chance for trouble.

The Simplicity Engine is economical. It supplies power at the lowest cost for fuel, because it is correctly designed and uses fuel in exact proportion to the work it is doing. The Simplicity is safe, and it is clean, for the crank case is tight at the bottom and is covered with a heavy cast-iron guard so that the flying oil cannot escape. This protection also adds years to the life of the vital working parts by shielding them from any chance of injury.

Every Simplicity Engine is equipped with magneto, built right on to the spark plug. A large, hot spark is always there, whether the engine is turning over fast or slow. There are no batteries or switches. The engine starts without cranking, by turning the fly wheels half a turn backward and tripping the magneto.

Our engine is designed and balanced so that there is little or no vibration. It will run steadily without shaking, whether on a mounted rig, on skids, or on a stationary iron base.

The carburetor is very simple, practical, and safe. It is of the suction feed type. The



LONG PISTON

gasoline is always below the needle valve, therefore overflowing is impossible. It furnishes a powerful mixture of gas and air to the engine under all loads and in all kinds of weather. It is economical, because it operates at high air speed, breaking the fuel into fine particles, thoroughly mixed with air.

The Simplicity Engine is equipped with a single valve rod. This rod has four functions: it opens the exhaust valve, operates the inlet valve lock, trips the igniter, and oscillates the magneto. During the idle strokes of the engine, when the governor has cut in, this single rod holds all of these parts at rest. It is a saving in wear and means long life to these parts. The engine has large valves, a long stroke, and high compression. The inlet valve lock prevents the stealing of gas on the idle stroke.

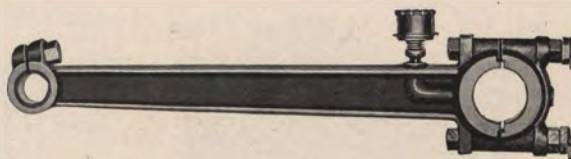
All engines are equipped with a speed regulator that may be set while the engine is running. The governor weights are guarded so they cannot become injured and can injure no one.

Except in size, the smallest Simplicity Engine has the same appearance as the largest. Only one grade of Simplicity is built; no part is slighted, the smallest and the largest engines have the same equipment, including magneto, forged crank shaft, lapped-in piston, machine cut cams, and gears on the inside of the base.

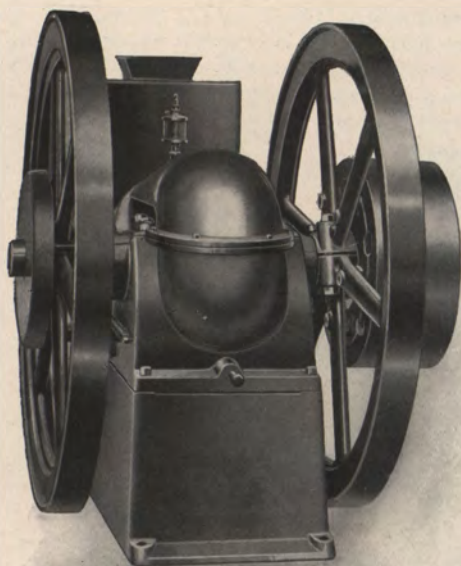
We supply these engines mounted on skids as shown on page 24; on stationary iron base as shown herewith; mounted on wheels as shown on page 26.

Our engines are hopper cooled, but if ordered, the larger sizes, 12 H.P., and up, may be spray and tank cooled, if desired. We can also furnish the engine equipped with tank and pump for outside gasoline storage.

Every engine has had two separate tests, one before it is painted and one on the day it is shipped to you. Each engine is guaranteed to deliver a surplus of power over its rating.



CRUCIBLE STEEL CRANK SHAFT



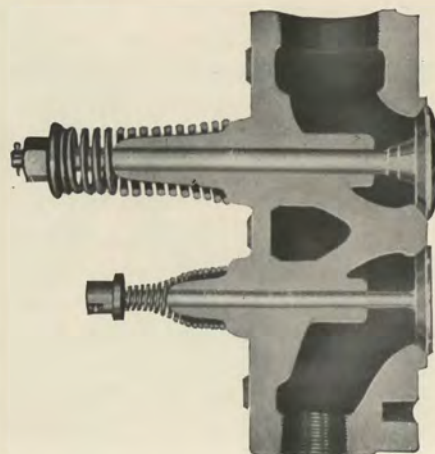
ENGINE ON IRON BASE

List of Sizes

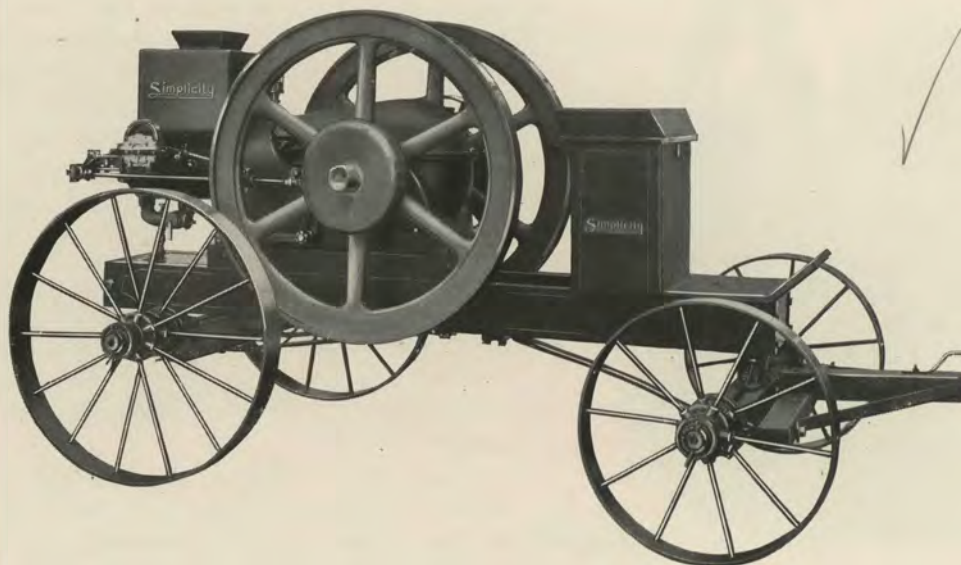
MOUNTED ON STEEL TRUCK	ON STATIONARY BASE	ON SKIDS
6 H.P.	3 H.P.	1½ H.P.
8 H.P.	4 H.P.	2 H.P.
10 H.P.	6 H.P.	4 H.P.
12 H.P.	8 H.P.	6 H.P.
16 H.P.	10 H.P.	8 H.P.
20 H.P.	12 H.P.	10 H.P.
	16 H.P.	12 H.P.
	20 H.P.	16 H.P.

The Simplicity is known as a trouble-proof engine, and the principal reason for this is its extremely simple design.

A pulley is included in the equipment of every engine. A complete assortment is always on hand. We also have a complete line of friction clutch pulleys, if ordered.



LONG VALVE STEMS



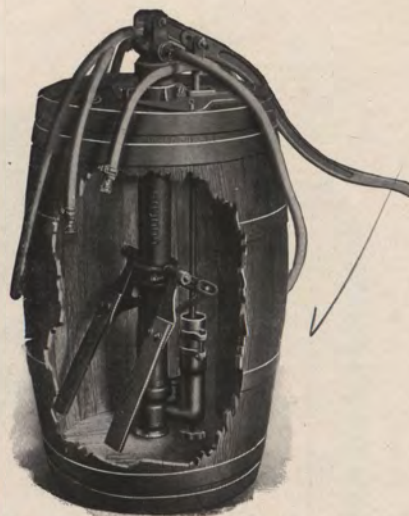
MOUNTED ENGINE

A spray pump protecting trees and plants from insects and disease is profitable in modern fruit growing.

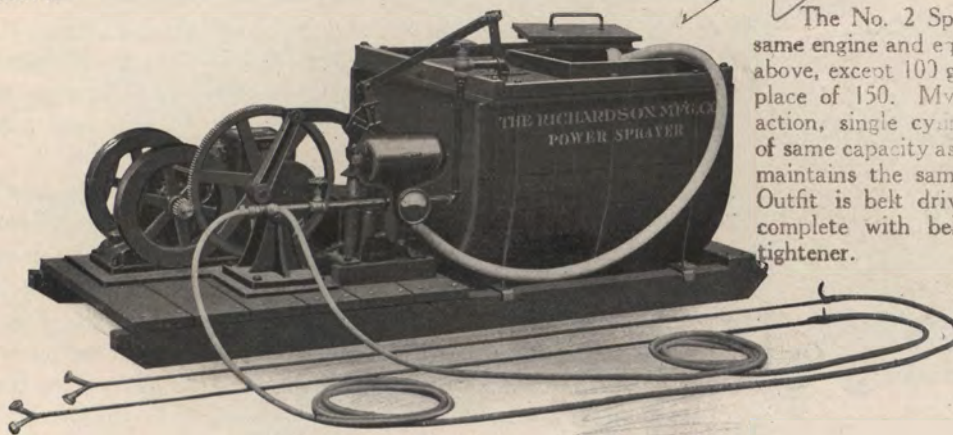
In small orchards a barrel sprayer will be found suitable. In larger orchards the power spraying outfit, shown below, is more economical. Its capacity is larger, higher trees can be reached, and it saves labor.

Our barrel sprayer, shown herewith, is equipped with one of the best makes of spray pumps, with sufficient pressure to supply two leads of hose and four nozzles. It is equipped with either one or two leads of hose, as ordered. It is satisfactory and serviceable.

Our power spray outfit, mounted on platform as shown below, consists of the following: 125 gallon Cypress tank; 2 cylinder high pressure spray pump, brass lined; 1½ H.P. engine geared direct to jack and pump. The engine and jack are mounted on a heavy sheet of plate steel, which serves to keep the engine and jack gears in alignment and prevents breakage. The pump is equipped with a gauge which registers the pressure, and with a relief valve that lets the spray mixture back into the tank. The spray mixture in the tank is kept in motion by an agitator connected to the engine. The outfit is equipped with two leads of 25 foot discharge hose, two 8 foot steel spray pipes, 4 spray nozzles, 7 foot suction hose, and strainer. It is complete and ready to operate. It is guaranteed to carry a pressure of 150 pounds when four nozzles are spraying, or 200 pounds when two nozzles are spraying, but will actually do much more than this. We mount this outfit on one of our Worcester farm trucks, shown on page 32, if ordered.



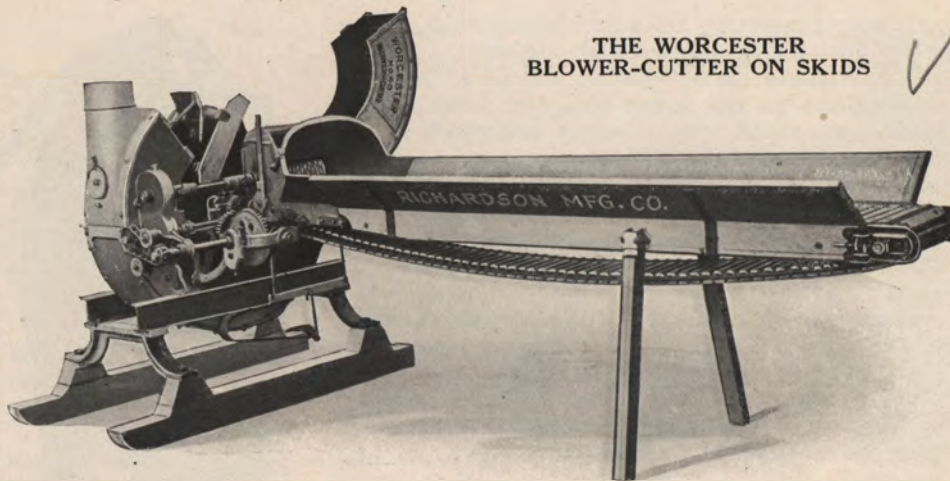
BARREL SPRAYER



POWER SPRAYER

The No. 2 Spray outfit, same engine and equipment as above, except 100 gal. tank in place of 150. Myers double action, single cylinder pump of same capacity as above and maintains the same pressure. Outfit is belt driven and is complete with belt and belt tightener.

THE WORCESTER
BLOWER-CUTTER ON SKIDS

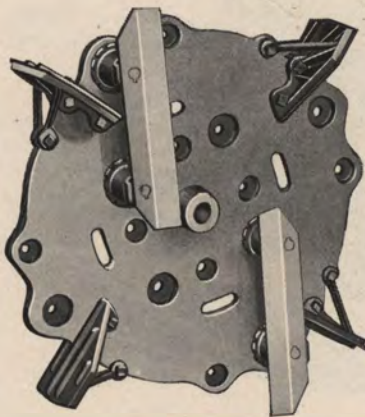


The Blower-Cutter is the newer method of silo filling. It replaces the old fashioned cutter and carrier, because of the ease of setting up and lower labor cost per ton of silage. The Worcester Blower-Cutter is designed on lines that practice has shown to be efficient, durable, and safe, and that delivers the most silage with the lightest power.

The feed lever at the driver's hand stops the feed instantly and starts the feed table backward, if desired. The feed gears are strong, and accurately bored, and run true.

The range of cut may be varied giving $\frac{1}{2}$, $\frac{3}{4}$, 1, $1\frac{1}{4}$ and $1\frac{1}{2}$ inches. By using four knives the above lengths of cut are decreased by one-half. By using one knife and providing a balance weight to replace the knife removed, you double the length of the above cuts.

The disc to which the knives and fan blades are attached is made with ribs running from the rim to the hub and a circular rib between the rim and center. The fast moving parts are made of tested material. We use Norway iron bolts. The knives are attached to the main disc, strongly held by knife posts, adjustable by means of the posts, and the entire disc is brought nearer or farther away from the cutting plate by means of an independent adjustment on the outside of the machine.

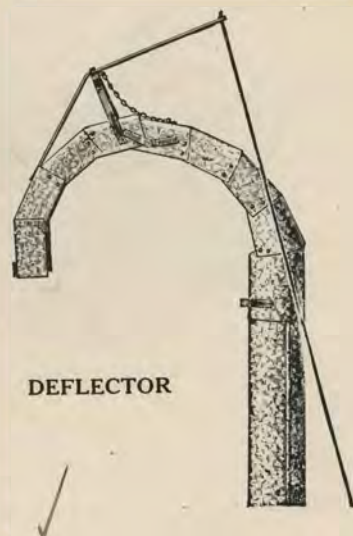


DISC AND KNIVES

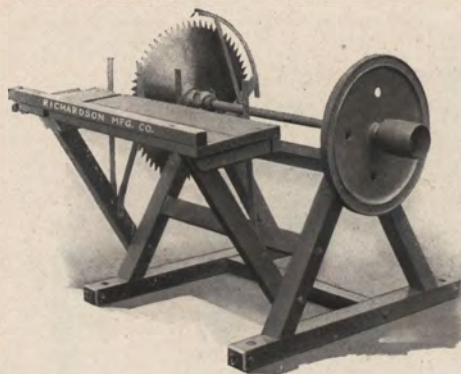
The blowers are mounted on skids as shown, or on wheels as shown, as ordered. When mounted on wheels the machine is placed lengthways on the truck, bringing the pull of the engine belt across the truck and not in the direction it moves. The traveling feed table is not taken off when moving, and the blower is ready to work as soon as the pipe is up.

Our blowers are equipped with traveling feed table, side feed table (not shown in illustration), deflector, and pipe sufficient to fill a 30 foot silo. The outfit is complete with change of feed sprockets and necessary tools. Extra pipe for silo higher than 30 feet may be had at small expense; inside distributor can be furnished if desired.

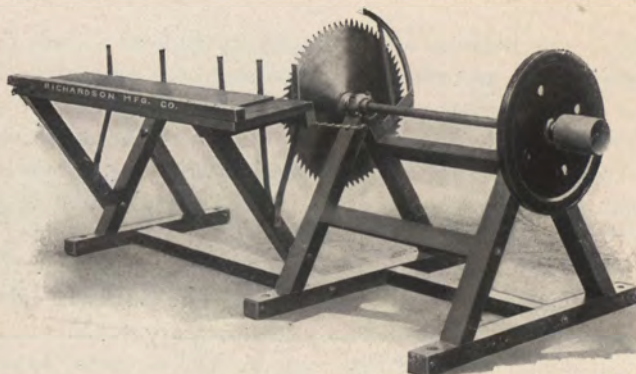
Sizes.—No. 30, 9 inch throat, small size; No. 40, 11 inch throat, medium size; No. 50, 13 inch throat, large size.



THE WORCESTER MOUNTED BLOWER-CUTTER



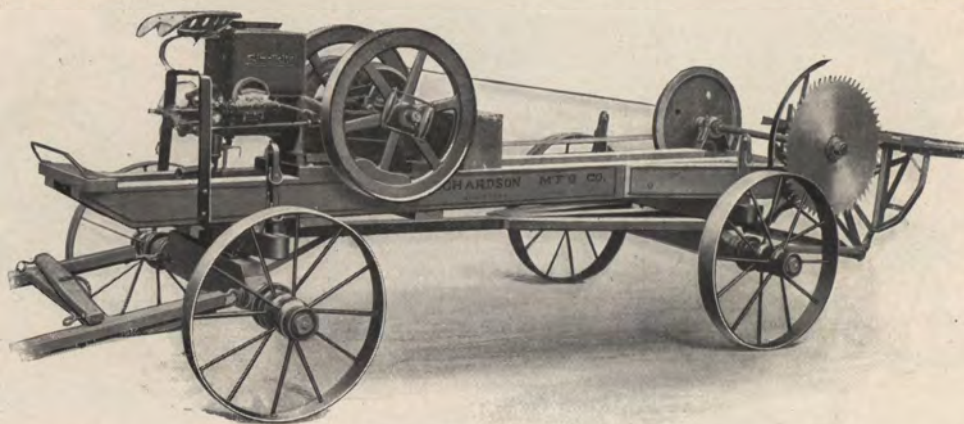
No. 2 SAW RIG



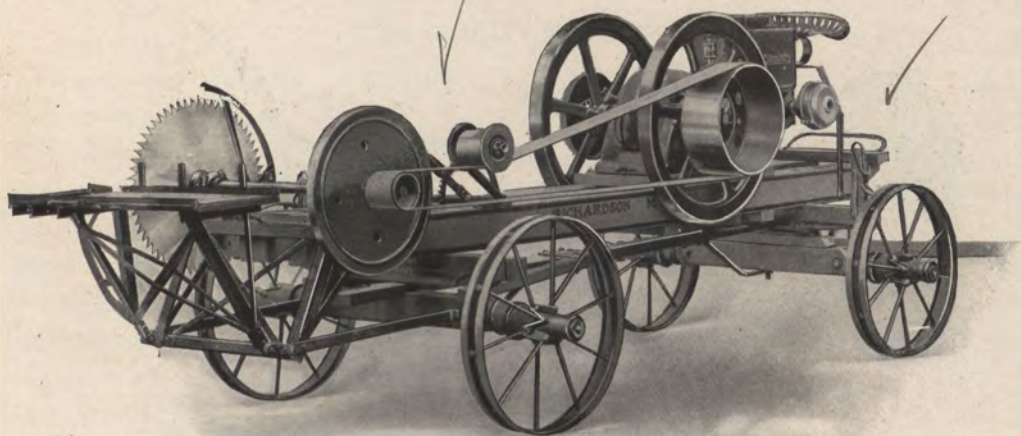
No. 4 SAW RIG

No. 2 is a tilting table saw rig, and a favorite for sawing cord wood into stove lengths or shorter. The tilting table has a roller at one end, for convenience in handling long wood. Between the balance wheel and saw blade is 3 feet 6 inches. Saw is not included unless ordered.

No. 4 is a tilting table saw rig with 5 foot 7 inch tilting table, extending about 5 feet beyond the saw blade. This makes a satisfactory combination pole and cord wood saw. The length and arrangement of the table enables the operator to handle long poles as well as cord wood. This table also has a roller at the end. For extra long wood the balance wheel is removed. Saw is not included unless ordered.



MOUNTED SAW RIG—SMALL SIZE



WELL BRACED SAW FRAME AND LONG BELT

The mounted sawing outfit, shown on this and the opposite page, is a convenient and profitable outfit for use when moving from place to place.

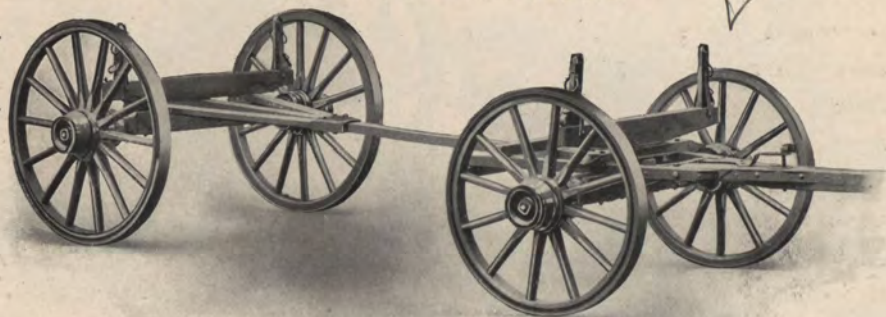
We furnish our Simplicity Engine, illustrated on pages 24, 25, and 26. This makes an ideal engine for outdoor work, as the crank and crank shaft are protected. The engine is equipped with magneto, and there are no batteries, spark coils, or wiring. It starts well in cold weather, and does not take the sawyer's attention from the work. We build these rigs to carry the size of engine you require. These rigs are made solid enough to avoid undue vibration.

We mount these rigs on our Worcester Farm Truck and ship with steel wheels. The timbers are of surplus strength to carry the weight of the engine. The cut on page 30 shows a 4 H.P. engine. These timbers are 4 by 6 inches. When larger engines are furnished, the timbers are 6 by 6 inches. On all rigs they are 11½ feet long and are of oak. The tilting table steel saw frame is mounted at the rear end of the timbers, and braced by an oak block bolted to the side of one of the timbers. The balance wheel on the saw arbor may be taken off if extra long wood is to be sawed. When engines 10 H.P. and larger are mounted on these rigs we truss the front axle.

Every outfit is equipped with belt tightener, operated by a handle with latch. The tightener and long belt prevent slipping. Not much pressure is required on the tightener. The belt does not have to be run as tight and therefore does not waste power. It is the best 5 inch 4-ply rubber, and therefore not affected by water.

A seat is placed directly in front of the engine and a convenient foot rest gives the driver a comfortable, easy riding seat for traveling on the road. We furnish shafts with the smaller sizes and pole for rigs with larger engines.

WORCESTER FARM TRUCKS



36 Inch Front, 38 Inch Rear Wheels, 3 Inch Tires

These gears are made for service, with shed-seasoned hickory axles, skeins $3\frac{1}{4}$ by 10 inches. 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 very substantial rig.

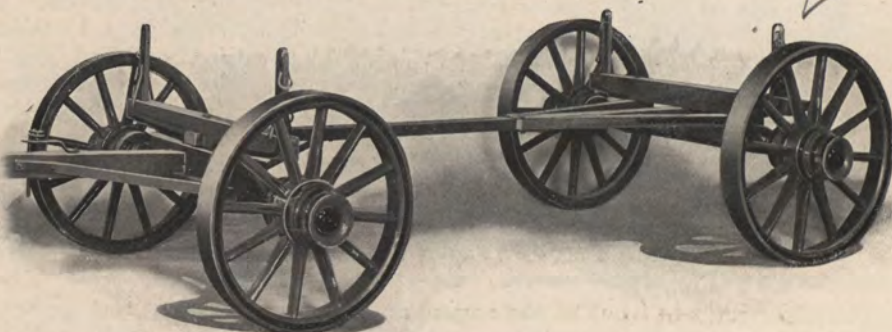
Three sets of wheels are kept in stock:—4 inch tire, 32 inch front, 36 inch rear; 3 inch tire, 36 inch front, 42 inch rear; and steel wheels, 4 inch tire, 28 inch front, 30 inch rear.

These trucks are made in two widths:—5 foot 2 inch and 4 foot 8 inch track.

Our No. 17 truck is equipped with front hounds. The hounds extend back to take the reach and extend forward to form a connection with the tongue hound.

Our No. 11 truck has no front hounds and the cross bar, to which the pole and pole braces are attached, is held by eyebolts to the axle, as shown in the lower cut. Both trucks have rear hounds.

Whiffletrees, evener, and neck yoke are furnished if ordered.



32 Inch Front, 36 Inch Rear Wheels, 4 Inch Tires

	Pages
Blower-cutters (ensilage).....	28, 29
Cultivators, riding.....	14, 15
Cultivators, walking.....	11
Engines.....	24, 25, 26
Farm trucks.....	32
Harrows, disc.....	8, 9
Harrows, smoothing.....	12
Harrows, spring tooth.....	10
Hay rakes.....	22
Hay tedders.....	23
Horse hoes, single-row.....	17
Horse hoes, two-row.....	16
Manure spreaders.....	4, 5, 6, 7
Mowers.....	18, 19, 20, 21
Rollers.....	13
Saw rigs.....	30, 31
Soil pulverizers.....	13
Sowers, lime and fertilizer.....	1, 2, 3
Sprayers, hand.....	27
Sprayers, power.....	27
Weeders.....	15

Lack of space in this book prevents mentioning all of our lines.

Ask for special information on

Farm Tractors

Hay Presses

Grain Drills

Cylinder Ensilage Cutters

Hay Racks for Mounting on Farm Truck

Knapsack Sprayers

If information of the machines and implements as shown herein is insufficient, ask for special catalogues and further details of each.

THE RICHARDSON MANUFACTURING COMPANY

Worcester, Mass.

