R·M·WADE & CO·

SINCE 1865

PORTLAND. ORE.

Illustrated Implement and Tractor Catalogue No. 35

PORTLAND, ORE. SPOKANE, WASH.

WADE QUALITY HAS MEANT
THE BEST IN IMPLEMENTS
FOR OVER HALF A CENTURY

R·M·WADE & CO.

SINCE 1865

PORTLAND, ORE. SPOKANE, WASH.

INCORPORATED

322 to 336 Hawthorne Ave.
321 to 335 East Clay Street
Portland, Oregon
910 N. Howard St., Spokane, Wash.

ILLUSTRATED IMPLEMENT *and* TRACTOR CATALOGUE No. THIRTY-FIVE

We embarked in the implement business 55 years ago and are AT IT YET with the most complete line carried in the Pacific Northwest

E. NEWBEGIN, President

To the Implement Trade of the Pacific Northwest

MORE THAN EVER BEFORE, our 35th catalogue exemplifies "Wade Quality" and "Wade Service."

Through days and nights of ceaseless effort, this book has been prepared with greatest care so that it might be of the most value to the dealer and consumer trade of the Pacific Northwest—it is your guide to "dependable" farm machinery—the kind that has been tested and proven equal to the strenuous requirements of a strenuous West.

Through fifty-five years of "honest dealing" thousands of farmers have learned to place confidence in any machine backed by the name of R. M. Wade & Co. This name alone is "guarantee sufficient" for most of them. They know that the name "Wade" is never placed on an "experiment"—a machine must win a reputation for dependability and service—it must show that it fills Northwestern requirements—before the Wade stamp of approval is put upon it. These are the kind of machines listed and described in this catalogue—every one is backed by the "Wade" reputation and the "Wade" guarantee.

In 1862 Mr. R. M. Wade laid the foundation of "old-fashioned honesty" on which this business has ever stood. His first place of business was in a tent at The Dalles, Oregon. He later moved to Salem, and in 1865 started the business known as R. M. Wade & Co. The headquarters of the company were afterward transferred to Portland, where large stocks are now carried, as well as at several convenient transfer points over the territory. Always his desire was to sell only the best—to give the most in quality and service at the lowest possible price.

This good old-fashioned relationship between wholesaler and retailer is still the spirit of R. M. Wade & Co.—to sell the best in farm machinery, regardless of trusts or combines, is our policy. To in every way possible aid the retailer in his selling problems and through advertising and sales co-operation bring the consumer into touch with the "Wade" dealer.

Let us prove what Wade "service" really means to **you.**

R. M. WADE & CO.

By E. Newbegin

President

SUGGESTIONS TO AGENTS

We are continually striving to better our service, and our patrons can render valuable assistance to our mutual benefit by writing a separate letter regarding each separate subject. For instance, if an order, a remittance, and a quotation are asked, all in the same letter, the letter will first go to the cashier and be hung up until entry can be made, and oftentimes by the time the letter gets around to the shipping department the order is a day old, and there is always a possible chance that one of the subjects may be overlooked entirely. By writing a separate letter regarding each subject, the correspondence, when sorted, goes direct to the heads of the proper departments and receives prompt attention. Co-operate with us toward this end and receive the best service that it is possible for any house to give.

Order by the "numbers," names and descriptive terms used in this catalogue, to avoid errors.

In ordering extras or repairs, be careful to give numbers on the parts in all cases and if possible state what part of the machine the repair is and name and make of machine.

When ordering Shares, always say whether Chilled or Steel are wanted. If Chilled, state whether they should be the Plain, Solid Share or the Slip Nose Pattern.

Do not return goods without our consent, and when such consent is obtained, mark the returned goods plainly, so we can tell at once whom they are from. Do not fail to send bill of lading and letter of advice.

All orders are accepted upon condition that we have the goods on hand at date of shipment, and we shall not be held liable for damages from non-delivery for any cause whatsoever.

If there is a shortage in the goods received by you, or if they are not as ordered, report same at once, and do not wait until too late for us to trace or remedy. The transportation company's receipt relieves us from liability for non-delivery, but upon due notice we will promptly trace and do all we can to find the missing goods.

All claims for shortage must be made within five days from receipt of goods to insure attention.

Goods in transit are at purchaser's risk. In the absence of shipping instructions we will ship by what we consider the best route.

Our responsibility ceases when we have delivered goods to the transportation companies, and received a receipt in good order. The fault after that is with the transportation companies, and claims for loss or damage should be made on them.

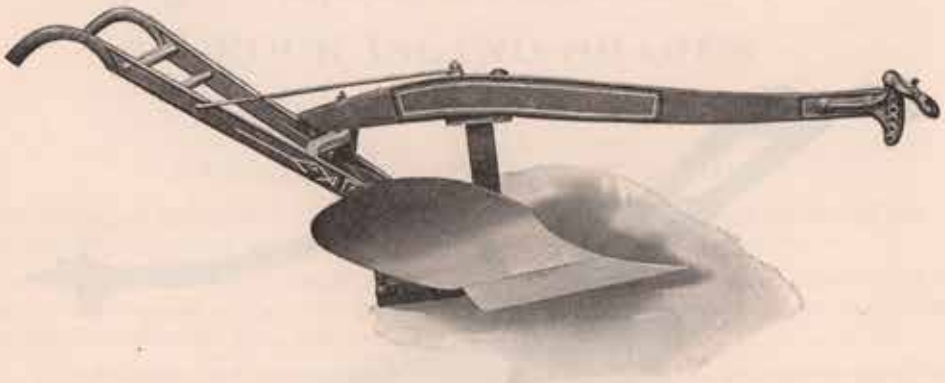
If you have difficulty in adjusting these claims, our traffic department is at your disposal, and we will be glad to assist you in securing settlement of overcharged, damaged, or lost shipments. In cases of this kind it will be necessary that you send us original bill of lading and freight bill with notation on same from your freight agent regarding the shortage or damage, and we will use our best efforts to secure adjustment from the railroad company, crediting your account when we have made collection.

Our revised and complete wholesale and retail price list is yours for the asking.

You cannot be too particular in stating your wants.

All quotations are subject to change without notice.

R·M·WADE & CO.
SINCE 1865
PORTLAND, ORE. SPOKANE, WASH.



ROCK ISLAND PLOWS

T. & S. Series

WOOD BEAM TURF AND STUBBLE

The T. & S. Rock Island Wood Beam Plow has the many exclusive features described on the opposite page, but has a wood beam in place of the steel. On the under side of the beam is a steel strap, which adds greatly to its strength.

Specifications

Hardened soft-center steel moldboard.
Hardened soft-center steel slip share.
Hardened soft-center steel landside.
Steel beam, double-ribbed Bessemer steel, bolted to landside.
Index wood beam with wrought strap full length underneath.
Double shin moldboard, medium landside.
Removable chilled landside heel.
Reinforced points on share.
Right hand only.

T. & S. SERIES, STEEL BEAM

Steel Beam	No. of Horses	Width of Cut	Weight Lbs.	Prices	Take Share No.	Steel Shares	Chilled Shares	Mold-boards	Landside Plates	Landside Frogs
T & S 10....	1	10 in.	84	.....	T & S 10	.....	.....	.....	.....	.....
T & S 12....	2	12 in.	92	.....	X 3	.....	.....	.....	.....	.....
T & S 14....	3	14 in.	110	.....	T & S 14	.....	.....	.....	.....	.....
T & S 16....	3	16 in.	116	.....	T & S 16	.....	.....	.....	.....	.....
T & S 18....	3	18 in.	125	.....	T & S 18	.....	.....	.....	.....	.....

All 14-inch and larger steel beam plows landed for either two or three horses.

T. & S. SERIES, WOOD BEAM

Wood Beam	No. of Horses	Width of Cut	Weight Lbs.	Prices	Take Share No.	Steel Shares	Chilled Shares	Mold-boards	Landside Plates	Landside Frogs
T & S 10....	1	10 in.	84	.....	T & S 10	.....	.....	.....	.....	.....
T & S 12....	2	12 in.	88	.....	X 3	.....	.....	.....	.....	.....
T & S 14....	2.3	14 in.	106	.....	T & S 14	.....	.....	.....	.....	.....
T & S 16....	3	16 in.	110	.....	T & S 16	.....	.....	.....	.....	.....

In ordering extra parts always state number and letter of part and whether for wood or steel beam plow. You cannot be too particular in stating your wants.

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Important Information on

ROCK ISLAND SHARES

INSTRUCTIONS FOR ATTACHING EXTRA SHARES

1. After taking off the original share, loosen up the bolts that go through moldboard and frog. Also the one through moldboard and share brace or strap.

2. Place the extra share in position. If it does not fit readily to its place, drive a drift (a piece of round steel ⅜-inch, tapered at the end) through the landside hole and through the frog. Then, as the holes come opposite, insert the bolts and screw on the nuts.

NOTE.—It is necessary and advisable that a hardened steel plow shall go together on a strain to preserve both close fitting and the bottom suck, hence the need of a drift in putting on extra shares.

Be careful in driving drift, as the steel is hard and liable to break.

For hard and also sticky soils, take off share and landside bar together and have the point and edge of the share well set down, to give bottom "suck;" this will prevent winging up.

In light, mellow and sandy soils a share may be set flat or given a bearing surface along its edge; this will prevent winging down.

HOW TO TEMPER

Tempering, if done in the ordinary forge of the country shop, requires practice for success.

First, have a clean fire of well-coked coal; keep up a steady blast as if taking a welding heat; put the point of the lay in first, allow it to get nearly red hot; gradually move through the fire to the heel, and continue to pass it back and forward through the fire until there is an even heat from point to heel about an inch back from the edge.

When you have the proper heat, immerse the edge in water for an instant. Raise the edge or heel out first, allowing the point to remain a second longer, because it has more heat than the edge.

DO NOT RESHARPEN BEFORE USING

These shares are made of genuine crucible soft-center steel. They are especially sharpened to a KNIFE EDGE and are highly tempered. They do not need re-sharpening before using.

"SET" OF WALKING PLOW SHARES

The proper set of shares for ordinary soils is determined by placing a straight-edge across from heel of landside to heel of share, which straight-edge should have a bearing at heel of share from edge of share one-half inch or more wide. This will prevent winging down.

For use in hard ground the edge at heel of share should be set down so that the straight-edge, when placed across, will touch at extreme edge of share only.

Plows that have worked satisfactorily in soft ground in the spring, when they come to be put in shape for fall plowing, will nearly always have to have the edge of share set down, otherwise they will incline to wing over on landside.

The point of share should always be set down. If set up or worn blunt, the plow will incline to run on its point, more or less, according as the fault is aggravated.

Large-sized plows, especially when run shallow in soft ground, are very sensitive, and should have a wide bearing at heel of share.

When used in hard ground, care should be taken to set the edge of share down in order to make it penetrate.

So important is the right set of share to the proper running of a plow that the blacksmith who has sharpened and set the share is entitled to all the praise for its level running, or for all the blame for its winging or running on the point, and the manufacturer must in all such cases be held blameless.

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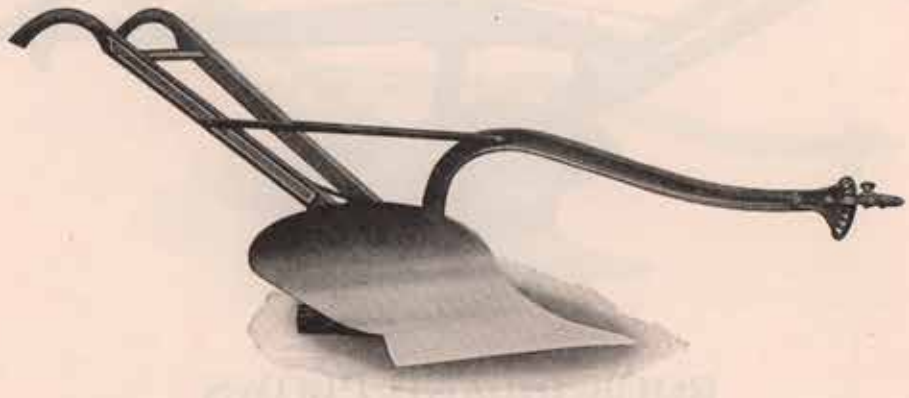


ROCK ISLAND PLOWS

T. & S. Series

STEEL BEAM TURF AND STUBBLE

This plow is designed for doing good work in either sod or stubble. The moldboard has a long, easy turn, making a very light draft plow, and in sod will turn a furrow without breaks or kinks. In stubble the furrow is so completely turned that all trash is entirely covered.

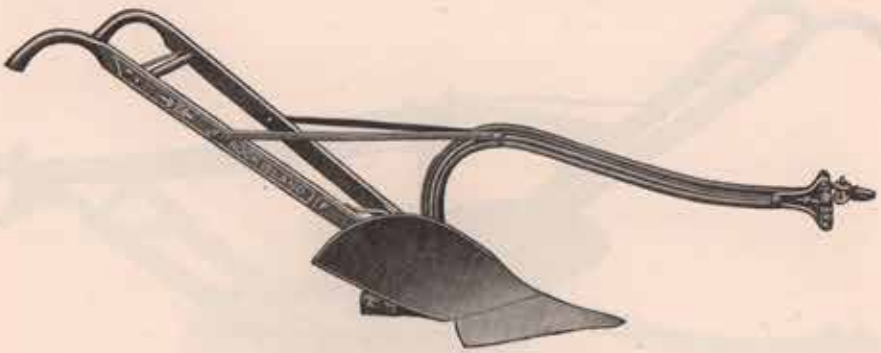
The T. & S. series of plows are made in both wood and steel beam. They are made of the best material, by the most skilled workmen, and their construction will be found perfect for either turf or stubble plowing.

Cross Section of Moldboard Showing Soft-Center Steel and Patch

Rock Island T. & S. Plows are made of soft-center steel, permitting the outer surface to be highly tempered without sacrificing strength. The center layer is very tough and ductile, making a combination steel that is adapted for the hardest kind of work. The shin of the moldboard always receives the most wear, and for this reason, Rock Island soft-center steel plows have a reinforcing patch at this point. The cut at the left brings this feature out very strongly, but it will be better appreciated after giving the plow a few years' use.

The T. & S. Plow is built with a medium landside and fitted with adjustable chilled heel. A great deal of wear naturally comes at the rear of the landside, but the slip heel reduces this to a minimum and can be replaced at a very small cost.

It should be remembered that no one plow will work satisfactorily under all conditions, and if you are undecided as to what kind of a plow you should purchase, write us and be sure to state the kind of soil you wish to handle. We carry plows to meet all possible conditions in the Northwest and will be pleased to give you the benefit of our 55 years of experience in this territory.



ROCK ISLAND PLOWS

I. O. Series

STEEL BEAM CHALLENGE

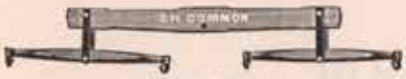
The Challenge I. O. Series Plow is designed for a general purpose plow and is practically the same as the T. & S. Series in appearance and shape of bottom. The moldboard is made of the same soft-center steel, but the share and landside are crucible steel. The handles of the Challenge Series are six inches longer than are ordinarily furnished on walking plows.

This plow is exceptionally well adapted for hard and difficult work. In presenting the view of the underside of the plow we call attention to its simplicity and great strength. The forging of the landside bar into the frog and the bracing of the moldboard to the landside gives great stiffness and strength.

WALKING PLOW

It should be noticed that the entire lower edge of the landside is removable. It is made of the best chilled metal, specially adapted to resist wear, and after years of hard use can be replaced at a trifling cost. The clevis is the same as is used on the T. & S. Series and all steel beam plows 14 inches and larger are landed for two or three horses.

We can recommend this plow wherever a good, substantial tool is wanted at a reasonable price. Extra solid steel share is always furnished regular and no additional charge is made.



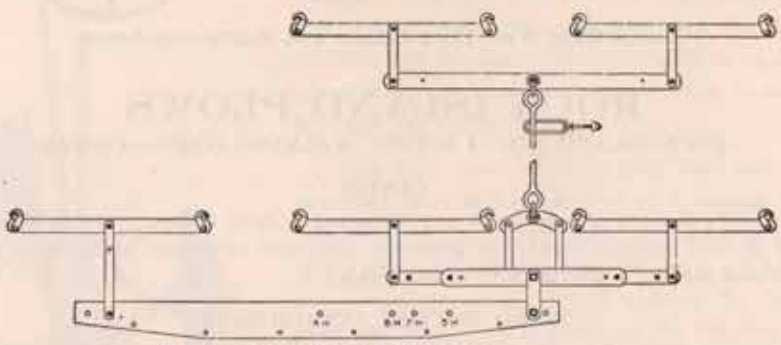
No. 100

No. 101

No. 104

No. 104

NO. 128 4 HORSE ABREAST.



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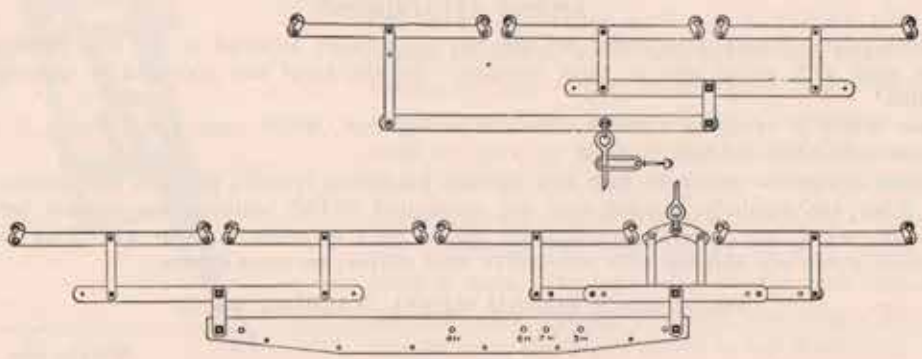
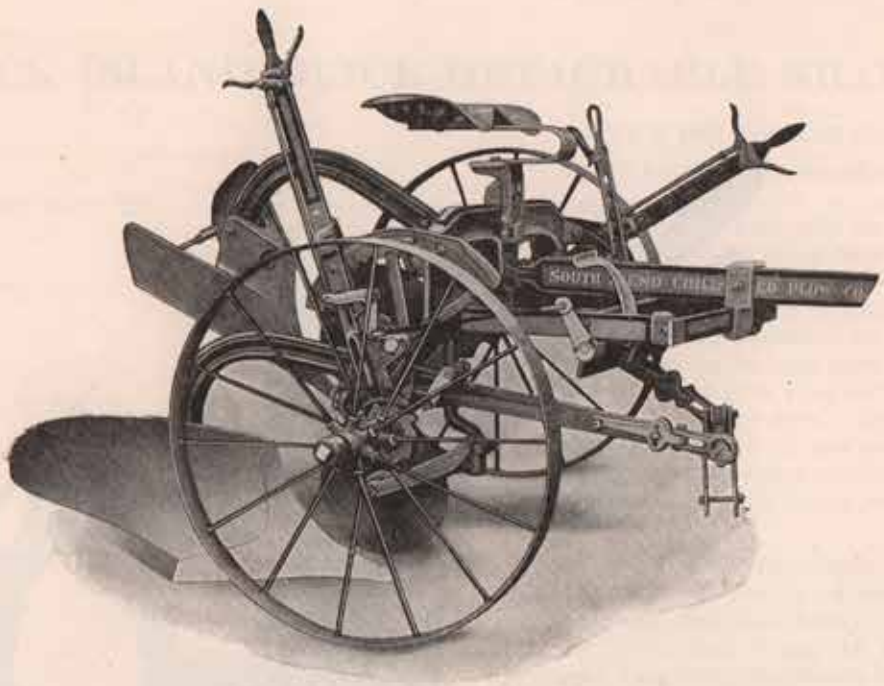


NO. 124 7 HORSE TANDEM.

ROCK ISLAND EVENERS

		Weight, Lbs.	Price
No. 100.	2-Horse Common, wood	20	.....
No. 101.	3-Horse Common, wood	28	.....
No. 104.	2 and 3-Horse Perfect, wood and steel	30	.....
No. 105A.	4-Horse Abreast, steel (not illustrated)	80	.....
No. 128.	4-Horse Abreast, wood	50	.....
No. 126.	5-Horse Tandem, wood	60	.....
No. 124.	7-Horse Tandem, wood	70	.....
No. 130.	8-Horse Tandem, steel (not illustrated)	170	.....



SOUTH BEND TWO-WAY SULKY

The Two-Way Sulky is indispensable to the farmer having hills or irregularly shaped fields, or conditions which make it desirable to throw the ground one way. There is no longer reason for having fields cut up with ridges and dead furrows. Much time is lost in turning corners, for the short sides can be saved by beginning on one side, plowing back and forth, using alternately right and left-hand bottoms, with the added advantage of having all the plow land together for seeding, instead of strung entirely around the field. The horses always turn on the unplowed ground.

The South Bend Two-Way Sulky is a combination of two special plows, mounted on separate and independent steel beams, attached to a substantial frame. Each bottom is controlled by individual levers and lifting devices. When in use one bottom turns the furrow, while the other is carried high to avoid obstructions. At the end of the land the plowing bottom is raised, the turn made, and the other lowered to plowing position.

The lifting is done entirely by the team. Pressing the foot trip or lower hand latch of lever, the plunger engages the wheel ratchet, which revolves with the wheel, until the correct position is reached, when the plunger releases automatically.

The draft is from the point of the beam. The hitch is low and rolls automatically to the right position when either bottom is lowered.

The wheels are high, have broad tires, staggered spokes and removable, dust-proof boxes.

The seat of the South Bend Two-Way may always be level when plowing hillsides. The bottom of the seat standard is similar to a sector. The holes through which the bolt goes that holds the standard upright is slotted, so by simply lifting the seat and placing at the correct angle the driver can be comfortable even on steep hillsides.

The tongue is adjustable by means of a lever convenient to the operator, which enables him to regulate the landing of the plow, the width of furrow, plow an even furrow around curves, or relieve side strain upon the team. The plow is built for either two or three horses, but is fitted regularly for three. When two horses are used, pole is in center; when three are used it is attached to the right side of arch.

Furnished regularly with three-horse Evener, Neckyoke, Rolling Coulters or Jointers.

SOUTH BEND TWO-WAY SULKY

		Weight, Lbs.	Price
No. 212.	12-inch cut, all steel	500	.....
No. 214.	14-inch cut, all steel	515	.....
No. 30.	12-inch cut, all chilled	525	.....
No. 30C.	12-inch cut, steel moldboard, chilled landside and share	525	.....

We can supply the All-Steel Bottoms with alfalfa Shares, which have extra wide cutting edge, at an extra price.

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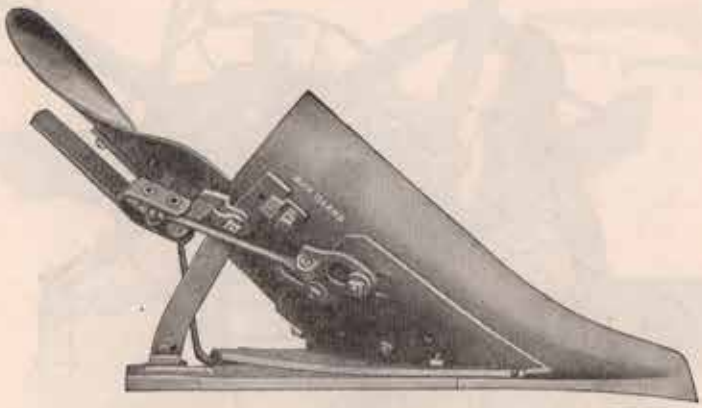


C. T. X. BOTTOMS

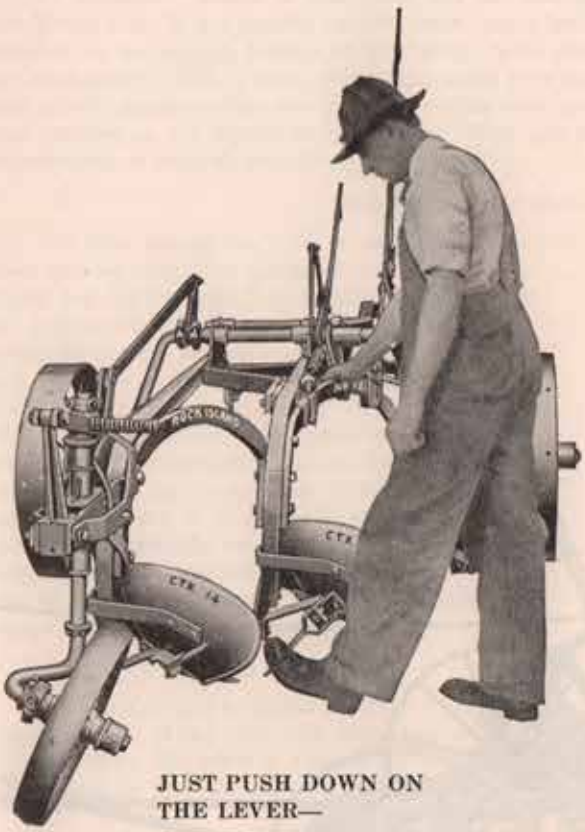
One big reason why Rock Island Tractor Plows have met with such exceptional success is the famous "CTX" Bottom with Quick Detachable Shares. This feature means better plowing, coupled with economy and service.

The brief description here will give you a good idea as to how these famous bottoms are constructed and what you can expect from the "CTX."

On account of the peculiar corkscrew-like twist of the moldboard, "CTX" Bottoms go into a variety of soils, such as stubble, heavy corn ground, mixed or sandy land, gumbo, black loam, tame sod and pastures, and do better work than the ordinary bottom.

The "CTX" turns the furrow slice **clear over** and lays it **flat** on the subsoil. This means that in hot, dry weather the moisture comes up from the subsoil into the top soil and saves your crops from drought, for there are no air spaces in "CTX" plowing to prevent it. The "CTX" also pulverizes the soil to such an extent that at least one harrowing is saved. This bottom is now considered by progressive farmers to be the greatest single feature ever put on a tractor plow. The "CTX" is fully protected by patents and is found only on Rock Island Riding and Tractor Plows.

ROCK ISLAND QUICK DETACHABLE SHARES

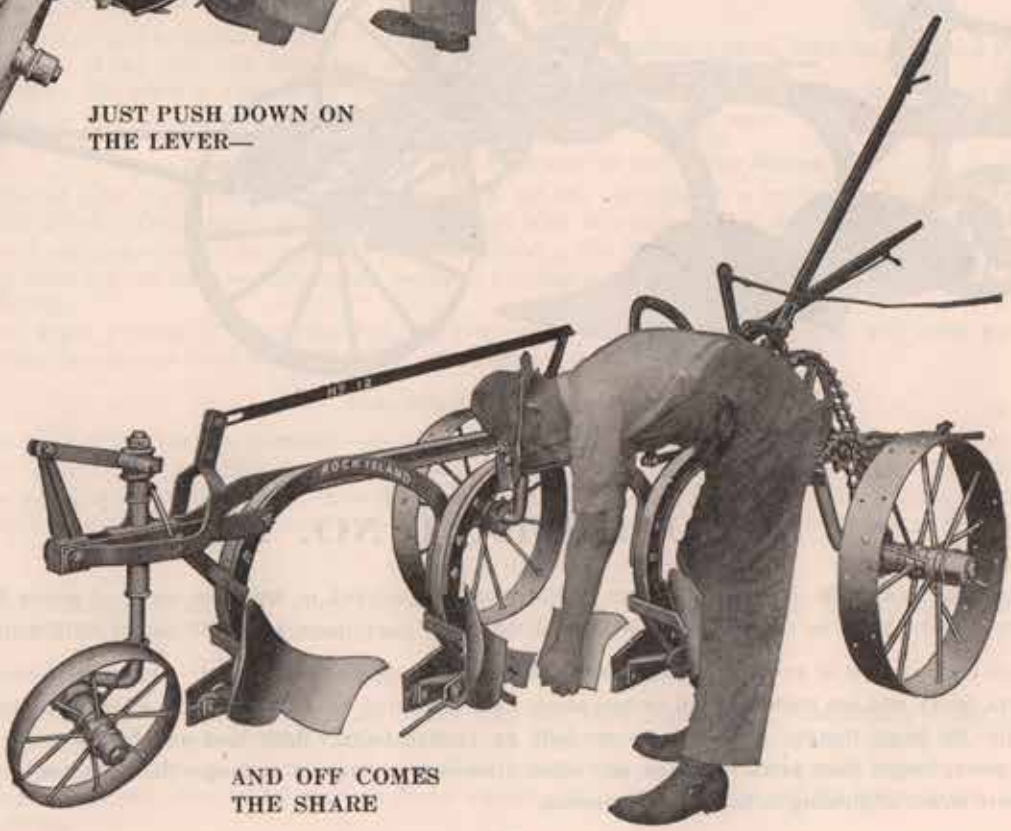


JUST PUSH DOWN ON
THE LEVER—

QUICK DETACHABLE SHARES —ONE LEVER FORCES SHARE OFF

Working hand in hand with the "CTX" Bottom is the Rock Island Quick Detachable Share. As you can readily see in the accompanying illustrations, no wrenches or special tools are needed, not even a hammer. All you have to do is push down on the hand lever, adding more pressure or a quick push when the lever is about four-fifths of the way down. This completely releases the share and the new one can be put on immediately. The entire operation takes only a few sconds' time, and can be easily made by any boy.

Rock Island Quick Detachable Shares mean less labor and less trouble, enabling you to do more plowing than ever before. Rock Island Tractor Plows Nos. 7 and 12 are regularly equipped with Quick Detachable Shares, a feature you will always demand after you have once worked with it.



AND OFF COMES
THE SHARE

12-20 Heider Tractor with No. 19 Plow

TEN YEARS OF ACTUAL FIELD WORK HAS PROVEN THE SUPERIORITY OF THE HEIDER ONE-MAN, ALL-PURPOSE TRACTOR

It is making this the tractor era of farming. On small farms and large farms—north, east, south and west—under all conditions, the Heider is doing all the kinds of work ever thought of for a tractor. It is taking the place of horses and engines on every farm job. And it is doing it all at far lower cost than any other kind of power. Figures show this over and over.

Farm horses eat, on an average, one-fifth of all they produce. And they go right on eating in the winter, or whenever they are idle. The Heider "eats" only when it works. The horses required for even a medium farm eat up the value of a Heider in one year.

On the other hand, it is no uncommon thing for the Heider to pay for itself in the extra work that it does in a year.

The day is fast coming when there will be a tractor on every farm.

The Heider, with its ten years of actual field work, puts a machine of proved efficiency in the hands of the farmer. And the efficient man is certain to make the most money out of farming, just as in every other line.

A ONE-MAN TRACTOR FOR EVERY POWER SERVICE

Here is pulling power for tillage tools and harvesting machinery. Here is power for hauling. And here is belt power for stationary machinery—silo fillers, grain separators, saws, feed cutters, shellers, pumps—in fact, all the machinery used on a farm.

No other farm power will give the value and convenience in service that the Heider Tractor does. If you use a stationary engine, you have to bring the work to it. If you use a portable, you have to use a team to move it. You cannot use a little engine for big work, and do not use the ordinary big engine for little work—it costs too much.

The Heider Tractor goes anywhere you need it on its own power, and is equally efficient, equally economical, on either light or heavy work. It has abundant power for the hardest plowing, threshing, pulling or hauling. But it can be throttled down to use no more fuel than is necessary for the operation of the smaller tools, such as a cream separator or a washing machine.

It is a real all-purpose tractor, and can be used on the average farm every month in the year. The man who owns one needs no other power. This is a new step in economy.

The Heider is not over-rated. It is guaranteed to give you every ounce of power for actual work that its rating promises, and it has, besides, plenty of power in reserve for emergencies.

So far as it is possible by description and illustration, this book explains why the Heider gives more dependable and more positive power than ordinary tractor construction. Why it operates at less fuel expense. Why it is so easy to run and take care of. Why its up-keep is so remarkably low. Why it will give the most years of use. Why, in a word, it is the lowest priced tractor on the market, measured by these standards. The real proof is a Heider at work.

STANDARD CONSTRUCTION

The Heider Tractor is the practical tractor for a farm, because of its standard principles of construction—four-cylinder, four-wheel, light weight, simplicity of design, and easy operation—these are the points that make the Heider stand out as the leader of its class.

Don't overlook the fact that the Heider is the original one-man, all-purpose, light weight tractor, and except for the usual minor changes that are made from time to time, the principle of construction has never been changed. The first Heider Tractor, constructed ten years ago, was a four-wheel, four-cylinder type of machine, and although in later years many concerns have experimented with a big variety of types of tractors, today over 90 per cent of the tractor manufacturers are making the four-wheel, four-cylinder type of machine—the type that is now regarded as standard.

HEIDER FRICTION DRIVE

Over ten years ago this Special Friction Transmission was applied to the Heider Tractor. For more than ten years the Heider Friction Transmission has been used in the hardest field work imaginable and for the heaviest hauling by the thousands of Heider owners.

Under all conditions and in all competitive tests it has proved its superiority beyond all question. The Heider Special Friction Transmission has earned its reputation of being the

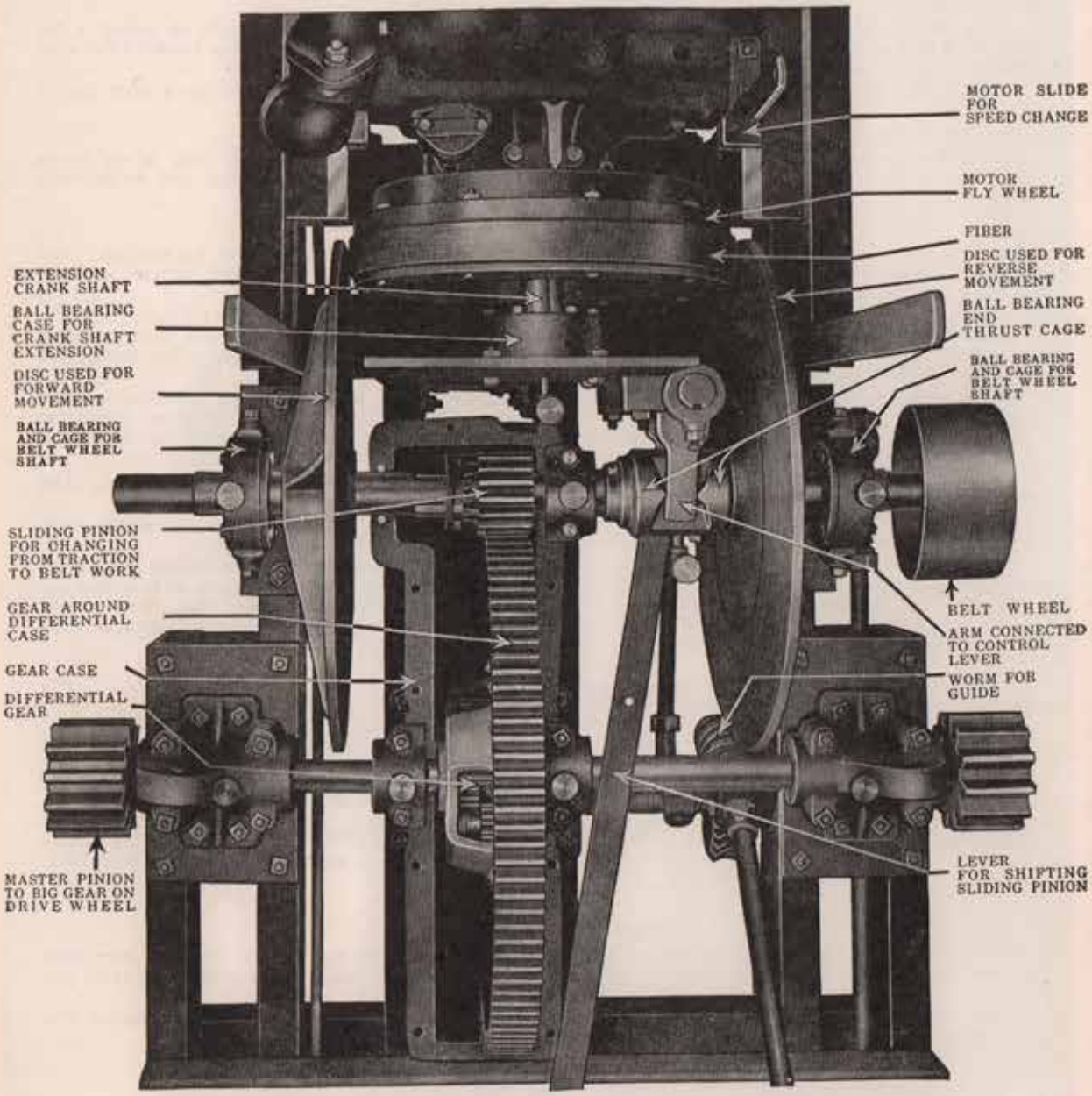
Greatest Feature Ever Put on a Tractor

There is one big point regarding the Heider Friction which you should clearly understand. It is entirely different from the former types of friction transmissions that have been on the market, because on the Heider the fibre is the driving member and not the disc. In starting loads, the large metal disc, standing still, is brought into contact with the revolving fibre. As a result, it is impossible to wear any flat places on the fibre wheel.

With this principle of construction you have the advantage of doing all heavy work on the outside diameter of the metal disc, giving you most leverage when most needed for heavy loads.

HEIDER ALL-PURPOSE, ONE-MAN TRACTOR—Continued

SHOWING FRICTION TRANSMISSION AND DIFFERENTIAL



NOTE—THE FORWARD, REVERSE AND STOPPING MOTION IS ACCOMPLISHED BY THE SLIDING MOVEMENT OF THE BELT WHEEL SHAFT. THE DIFFERENT FORWARD AND REVERSE SPEEDS ARE ACCOMPLISHED BY SLIDING THE MOTOR BACK AND FORTH WHICH IS DONE BY A LEVER IN THE CAB.

HEIDER ALL-PURPOSE, ONE-MAN TRACTOR—Continued

SEVEN SPEEDS FORWARD AND SEVEN REVERSE WITH ONE LEVER

One of the most popular features of the Heider Special Friction Transmission is the unusually large variety of speeds it permits—7 forward and 7 reverse. Think of it, 7 speeds forward and 7 reverse—all with one motor speed—the right speed for every kind of work.

The speed change lever has seven notches, and each notch represents a different speed. Any desired speed can be had while the tractor is pulling a load and it is not even necessary to come to a stop to change speeds. Just pull the lever and secure the desired speed.

Now notice the illustration on the opposite page, you can readily see the contact which drives the Heider forward or reverse. Notice how the fibre is attached to the fly-wheel of the motor, so that power is transmitted from this fibre to either one of the large metal discs on the belt wheel shaft.

When the lever at the right of the steering wheel is shoved forward the left hand disc comes in contact with the fibre wheel and the Heider goes forward. When the lever is pulled back, the right hand disc is brought in contact with the fibre and tractor moves backward. When the lever is in the center neither disc touches the fibre wheel and the tractor stands still. The belt of drive pulley is controlled in exactly the same way. Nothing could be more powerful, more simple or more economical.

ABSOLUTE CONTROL WITH ONE LEVER

With the Heider Friction Transmission no brakes are necessary. If you are driving down a grade you have absolute control of the machine, because you can throw it from high speed into reverse instantly, if necessary, without the slightest injury to any part of the machine.

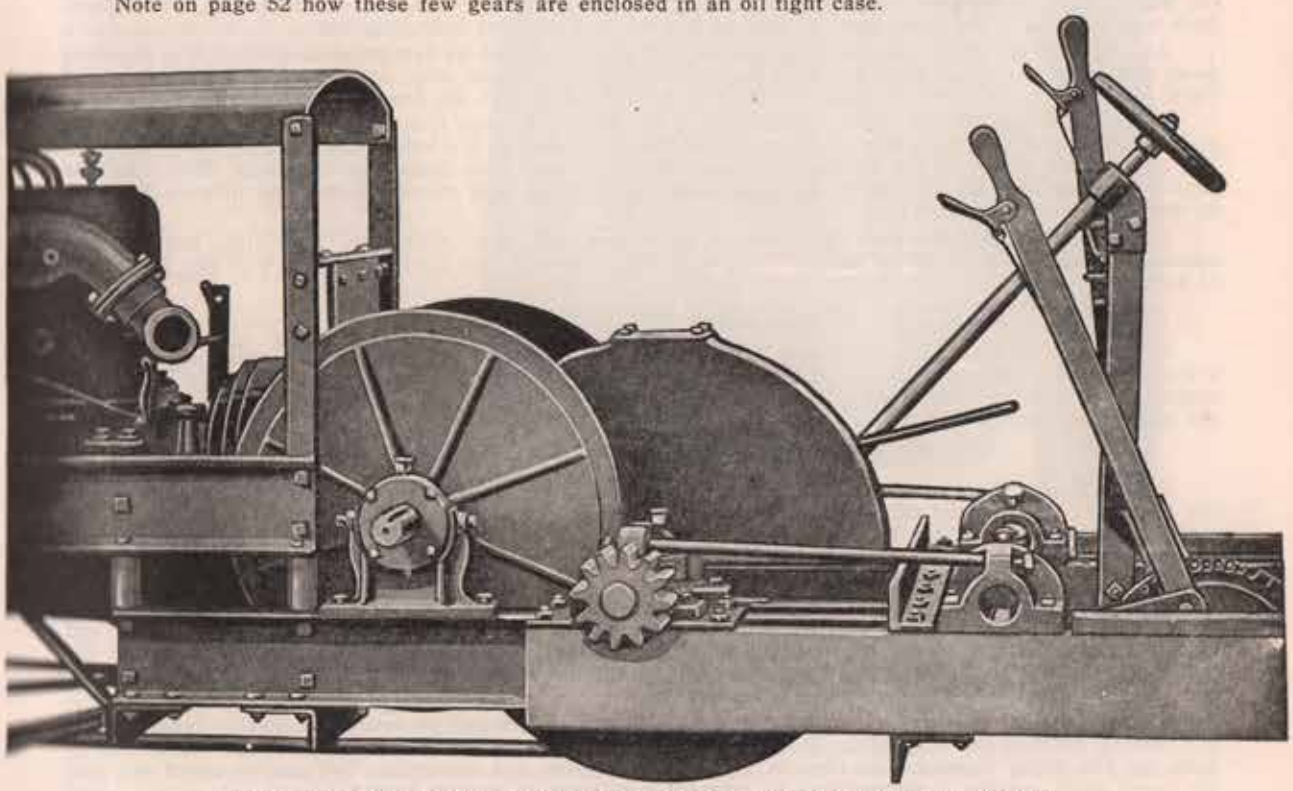
STEADIER POWER MEANS MORE POWER

The friction type of transmission is not only easy to control and very simple, but it delivers a steadier power to the drive wheels. In other words, the power is delivered with the same steady power as if it were driven by electric current. This means that heavier loads can be pulled with less lug equipment, because the footing is not destroyed by the jumping and jerking of the motor.

LESS GEARS—LESS EXPENSE

Another big advantage of the Heider Special Friction Transmission is that it does away with a lot of gears. This can be plainly seen in the illustration on page 52. Less gears means less trouble, easier operation and your repair expense cut to minimum. This feature alone saves Heider owners thousands of dollars every year.

Note on page 52 how these few gears are enclosed in an oil tight case.



The Heider Model "C" stripped down to show how the gears are enclosed

HEIDER ALL-PURPOSE, ONE-MAN TRACTOR—Continued

GEARS ENCLOSED IN OIL TIGHT CASE

Owing to the friction transmission, the Heider has fewer gears than any other tractor, even one-speed machines. If the Heider had no other advantage, this alone would make it superior to other tractor construction.

There is only one reduction from the belt wheel shaft to the differential gear. To get this reduction only two gears, one pinion and one large gear—are required, for the large gear embodies the differential right in it. The smaller gear slides on the belt wheel shaft in and out of mesh with the large gear. One pull of a lever in the cab slides these gears out of mesh and the tractor is ready for belt work instead of draw bar work.

This entire unit in the Heider 12-20 Model "C" Tractor is enclosed in an oil-tight, dust-proof case. Gears running in oil—free from the cutting grind to which exposed gears are subjected. This means full gear efficiency; long life; less expense for replacement. This is Heider construction.

Here is the way one owner summed it up:

"I must say that I like the Heider fine. Of all the tractors I have seen, the Heider has them all beat for simplicity.

"I was a little leary about the friction drive before I bought it, but I have proved to my satisfaction that it is one of the best points about the engine, as it does away with all gears, which wear and tear, rip and break, and take both time and money to replace."

BACK UP TO YOUR LOAD A FRACTION OF AN INCH AT A TIME

You can creep back to the exact spot under perfect control every quarter inch of the way. There is only one lever to operate and it is within easy reach while you are standing on the ground.

This may not seem to be an important point, but try to do it with any other type of tractor. When starting heavy loads the Heider will not "rare up" or raise the front end off the ground. With the Heider friction transmission you have the tractor under absolute control every minute, whether you are moving forward or backward.

NO JERKING—NO EXTRA HELP REQUIRED

When you want to hook onto a wagon, drill, harrow, or any other load, you can bring the drawbar of the tractor right back to the exact spot where you can drop the pin. No need of reversing forward and back again to get to the right spot, no sudden jerking, and no extra help required.

As one user says: "I can turn the tractor over to my boy and he can go out and hitch it to any load alone and handle it easier than he could the team. I am not afraid that he will strip the gears and I know that he can not start the tractor with a jerk that would pull the box off the wagon."

This is just one of the many advantages of the Heider friction transmission. The power is always under control and you can start the heaviest load gently, whether it's behind the drawbar or on the belt. You get the full power of the heavy duty, four-cylinder engine, but melted to a steady flow like the smooth, even pull of an electric motor. You save money in up-keep on the tractor and in wear and tear on the machinery it operates.

The Special Heider Friction Transmission gives you full gear efficiency, long life, more power, steadier power and a one-lever control—all at a lower up-keep cost than is possible with any other type of drive.

BURNS KEROSENE SUCCESSFULLY

On account of a specially designed manifold, the Heider burns low-grade fuels, such as kerosene, without changing the carburetor. And when burning kerosene the Heider burns it all. We have thoroughly tested a large number of different devices for converting oil into gas, and we find this the simplest and most practical of them all.

NO CARBURETOR CHANGE NECESSARY

On the Heider there are two fuel tanks which are connected with a two-way valve so that either fuel can be turned on from the cab. It is not even necessary to make any adjustment on the carburetor. One tank has a compartment for holding water, to be fed with the kerosene when that fuel is used. The feeding of this water is also controlled from the cab. This is a Heider feature that has proved its success in actual use for six years.

The easily accessible position of the carburetor and the oil-tight plate over the valve lifters are a great convenience. This plate prevents dust or dirt getting into these parts. They can be easily and quickly removed, when necessary, to give free access to the valves. The enclosed governor next to the radiator is entirely enclosed up to the gate in the manifold. It is controlled from the cam shaft gear, and is so adjusted that the motor can not be raced.

Beneath the carburetor are two large inspection plates, which can be easily and quickly removed, and the bearing reached and inspected. It is also easy to remove the lower crank case, and when this is done, all the motor bearings are easy to get at. The piston and connecting rod can be taken out past the crank shaft, making it unnecessary to take off a cylinder to remove a piston.

HEIDER ALL-PURPOSE, ONE-MAN TRACTOR—Continued

HEIDER FRAME IS STRONG AND RIGID

The Heider is braced and cross-braced, so it cannot twist or get out of alignment. A rigid, powerful frame is an absolute necessity in a tractor. Without that no tractor can give satisfactory service, because the alignment of all the bearings and mechanism depends upon the frame.

Notice the construction of the front axle and the way it is attached. The frame support is brought down to one unit and rests on a ball in the front axle. The axle is spring-mounted. The brace rods of axle also run to one pivoting point directly in line with the ball in the axle, bringing the whole weight of front end of frame on one point of support.

THREE-POINT SUSPENSION

This frame has a three-point bearing—one point at each rear wheel and the other on the ball in the front axle. This means that in uneven ground the frame cannot twist.

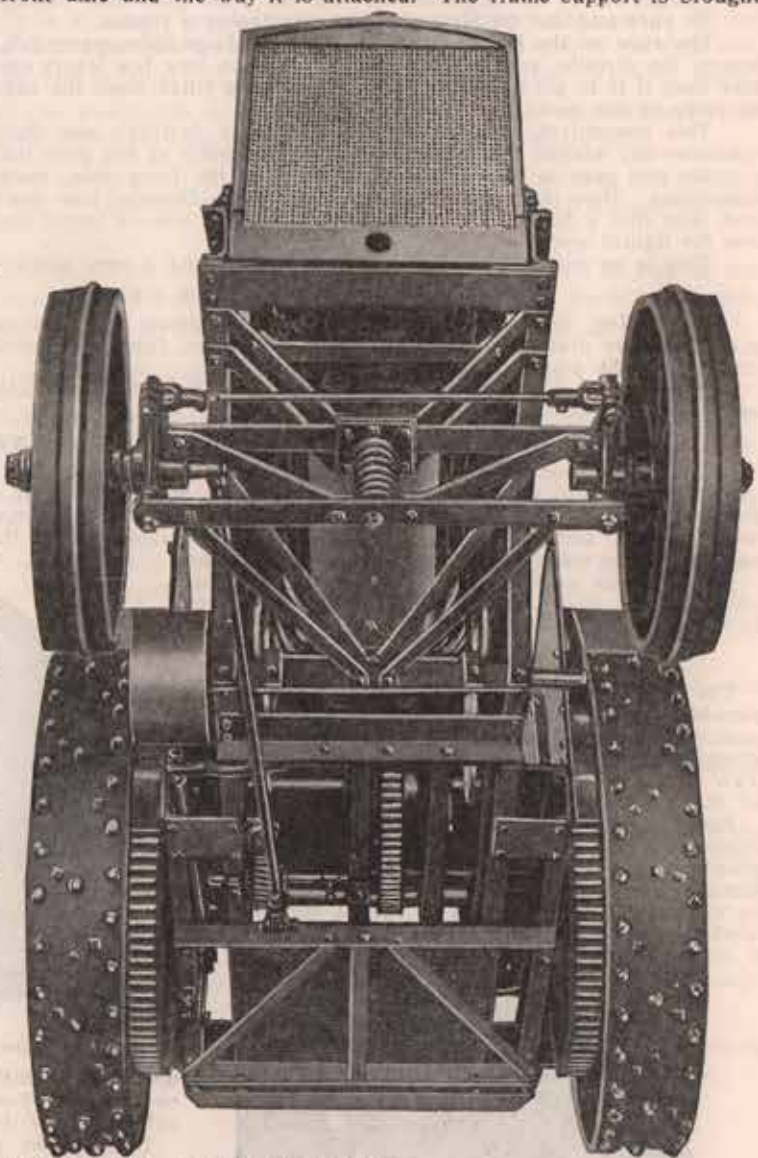
The frame is swung beneath the rear axle, bringing the tractor close to the ground. This feature and the fact that the top is easily removable makes the Heider an ideal machine for orchard cultivation.

The drive wheels are plain and simple in construction, but extremely strong. The large, heavy spur gears and hardened steel drive pinions are oiled from a small supply tank attached on the inside of each fender. These tanks have a valve which can be opened by the operator in the cab whenever these parts require lubrication.

BALL BEARINGS

The principal bearings are all ball bearings, with self-aligning cages—a form of bearing which eliminates any possibility of heating, regardless of how long, how tight or how heavy the belt may be. Further, it greatly increases power efficiency.

Notice how well the belt pulley is protected from breakage. This pulley is 14 inches in diameter and runs from 100 to 800 R. P. M. It is large enough to furnish proper speed for grain separators, ensilage cutters, clover hullers, corn shellers, etc.



FOUR WHEELS—FOUR CYLINDERS
Three-Point Suspension

Power in its simplest, most compact form, describes the Heider. It is the easiest of all tractors to operate, because it has fewer parts than any other tractor made. Any man or boy of average intelligence can run the Heider.

By reason of this simplicity, it also develops the utmost power. Heider power is applied power—applied to the work you do with it. It is not wasted by complicated parts. The Heider ratings on the draw bar pull on belt work are very conservative.

This simple, sturdy Heider construction insures the longest life to the tractor; its capacity for the hardest work; the least up-keep expense; the least trouble; the greatest profit.

The Heider Model "C" 12-20 is recommended for three 14-inch plows under average conditions. Model "D" 9-16 pulls two 14-inch bottoms.

HEIDER ALL-PURPOSE, ONE-MAN TRACTOR—Continued

CONSERVATIVE RATING

Heider tractors are very conservatively rated, as shown by the letters from users, which give you proofs, facts, particulars. Ten years of Heider history answers every question. A demand that doubles the output of our big factory this year testifies to the spreading knowledge of Heider success.

Convenience and appearance are points of interest as well as utility. So far as possible, these points are brought out by our illustrations. But no illustration does justice to the tractor.

Be sure and see the Heider before purchasing a tractor.

The view on the preceding page shows the large clean roomy cab, the convenient location of the control levers, the throttle, and steering wheel. You see how few levers are used, and how handy they are; also how easy it is to get at the fuel tanks. They are filled from the cab. Coupling to any kind of load can be made by one man.

This convenient, handy control is especially desirable now that so many women are operating farm tractors—any woman can handle the Heider as easily as she does the automobile.

On this page is shown the construction of the front axle, radiator, steering equipment and spring mountings. Note the neat, clean, attractive lines. Observe how conveniently the belt pulley is located; and, also that a belt pulley can be placed on each side—a larger one for all standard work and a smaller one for lighter work.

This is an exclusive feature with the Heider, and a very useful one.

NO GUIDE NEEDED

In plowing, the Heider Tractor follows the furrow and does not require a special guide. It gives a straight line draft on the plows, and the operator, from his position in the cab, can handle both the tractor and the plows easily.

It is strictly a one-man tractor and is ready for practically any job without any extra equipment, such as clutches or hitches.

BETTER FEATURES CAN NOT BE BUILT INTO A TRACTOR

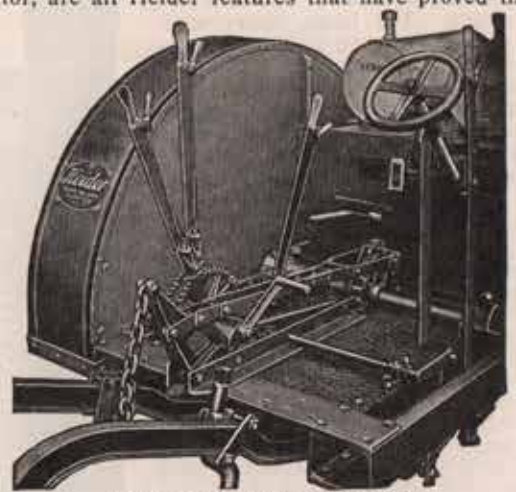
Its rugged steel construction; powerful heavy duty, four-cylinder, long stroke tractor motor all enclosed under hood and protected from dirt, dust and weather; its self-contained oiling system; friction transmission; ball bearings at all principal points; three-point suspension; complete accessibility; extra wide fenders, and substantial top shielding the operator, are all Heider features that have proved their superiority for many years on America's best farms.

In doing belt work always remember that you can move Heider power to the work instead of having to take the work to the power.

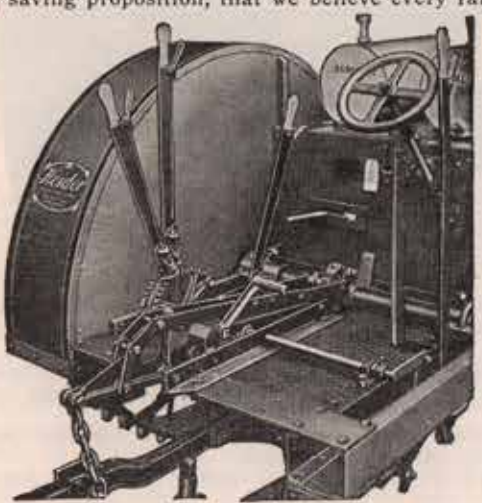
ONE UNIT PLOWING OUTFIT

The convenient sizes and adaptability of these tractors have always made them very popular, and we are now making them more popular than ever by cleverly designed attachments for carrying the Rock Island Two or Three-Bottom Plows from the rear platform of the tractors.

Note the illustrations on this page. Here is the handiest outfit, we believe, that was ever offered for plowing. The tractor, of course, is sold with or without the plows, as you prefer, but this attachment is so exceptionally simple, and is such a big time and work saving proposition, that we believe every farmer operating a smaller sized farm will want it. It can be detached from the tractor or replaced easily and quickly at any time.



Power Lift—raised position



Power Lift—plowing position

These plows are attached to a special sub-frame which is connected with the tractor below the platform. A simply designed and extra strong lift extends out from the tractor platform, to which a chain is attached which supports the plows when they are not in use.

YOUR FOOT CONTROLS THE PLOWS—YOUR HANDS GUIDE THE TRACTOR

One foot pedal controls the clutch which operates the power lift attached to the rear axle of the tractor. Pressing on the pedal throws the clutch on the axle into gear for raising the plows out of the ground. Pressing the same pedal again lowers the plows to

HEIDER ALL-PURPOSE, ONE-MAN TRACTOR—Continued

plowing position. It really requires less effort than to lift the ordinary sulky plow. It has an exceptionally high lift, so that the bottoms, when raised, cannot pick up any trash when turning. This leaves the shares free to enter the ground when clutch is tripped.

"I never knew that plowing could be so easy," says one owner of this popular Heider outfit. "I can plow right up to the fence lines and then back into the corners. There's hardly an inch of the field that we cannot use, and we do not have to lose a minute in getting the plows exactly where we want them."

Isn't this the kind of work that you would like to do on your farm? Think of the hard work you could take out of plowing, and think of the extra work that you could do with really less effort.

Here is a new equipment in tractor farming. It is decidedly a one-man outfit. In fact, you couldn't expect it to be anything else, for all that the operator has to do is drive the tractor and operate the foot pedal.

A proper leveling device allows you to tilt the plows to right or left, and adjust them to plow at any depth that you could get with any wheel plow. You can always fit the plows to the needs of the soil. Tilting them to either side can be done without leaving the operator's seat.

THINK OF THE SHORT WORK YOU COULD MAKE OF PLOWING

Think of having your entire plowing equipment in one unit—all on four wheels—ready to move anywhere and at any time. No trouble nor attention needed to watch the plows in driving down the road or across the fields. The plows are held up, out of the way, yet ready for business the instant you head into the field. Or can be detached entirely and leave the tractor equipped with the regular standard draw bar equipment to handle any kind of work.

There are several distinct advantages of this type of plowing outfit. For instance, your fields can be laid out to plow on the four sides, thereby saving considerable time of turning empty at the headlands and packing the soil. A square corner can be made just as quickly with this outfit as with a horse plow.

This is the tractor that makes the small farmer independent. It enables him to do his work by the wholesale. He no longer needs to suffer from lack of help or equipment to get his field work done on time. When he is ready to plow, he simply jumps onto the tractor, drives out to the field and plows. And he can plow all day long, turning two furrows where he turned one before, and his plowing equipment is ready for him bright and early the next morning to repeat the same performance.

That's the kind of work that cuts farming costs, and that's exactly the kind of work that you want on your farm. You can get it with a Heider tractor. If your farm is not big enough to use the Heider Model "C" 12-20, take the smaller model. Either machine will give the same kind of service, the only difference is in the size and power and plow equipment.

You know that getting your plowing done on time and having your crop harvested on time has a whole lot to do with the profits you make. Time is a big element in farming, and the successful farmer, like the man in almost any other line of business, is the man who makes the most of his time.

A good tractor helps the small farmer become a big farmer. It puts him in a position to farm more land; he gets bigger results from his efforts—makes more money out of his time and investment.

HEIDER ALL-PURPOSE, ONE-MAN TRACTOR—Continued

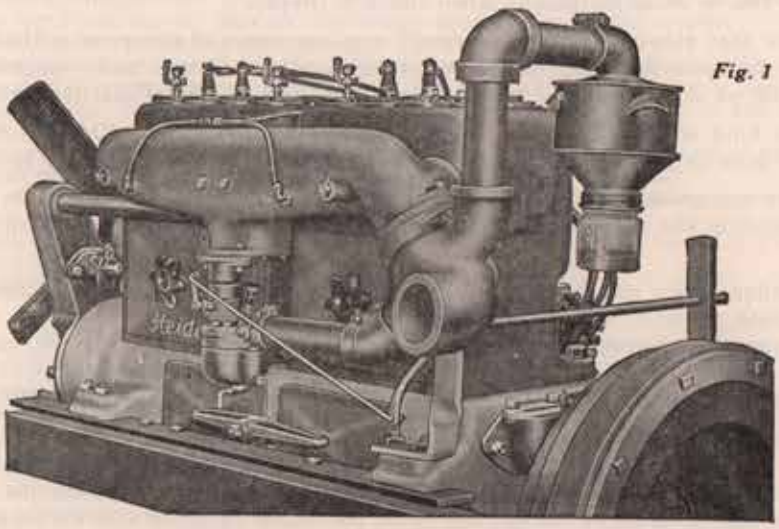


Fig. 1

HEIDER TRACTORS ARE EQUIPPED WITH HEAVY DUTY WAUKESHA MOTORS

Don't overlook the fact that both models of the Heider are equipped with the famous four-cylinder, heavy duty Waukesha motor, which has proven to be the best power plant for tractor service.

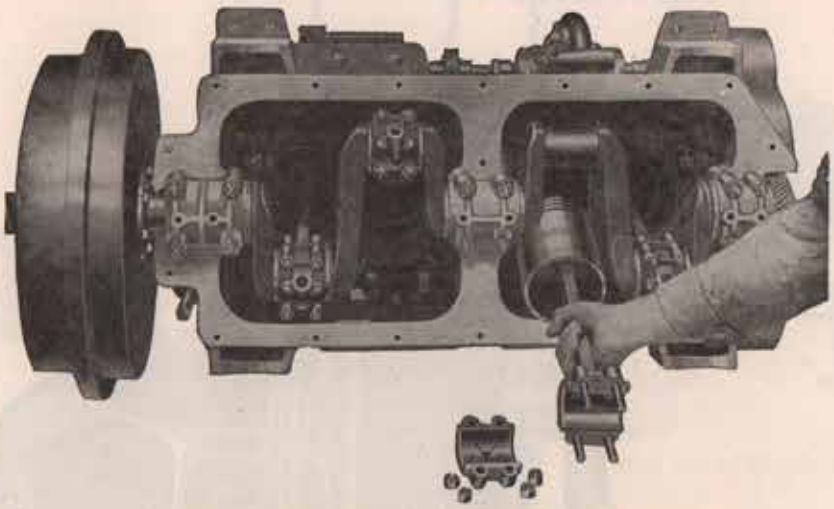
You will note by Figure 1, the extreme simplicity and clean appearance of this motor. Note how accessible the valves are; how easy they can be removed for grinding in case it ever becomes necessary. They are protected with an oil tight cover, which protects the valves from all dirt and dust. Also note the large inspection plates, which can be taken off by simply loosening one nut. Through these plates the connecting rods of the motor can be inspected in a very few moments. Also the oiling system. Figure 1 shows the location of the governor which is built right into the motor at the front end near the fan and is all enclosed. Note the air cleaner at the rear and air heater attached in one unit, attached direct to the manifold. The air is first drawn through the cleaner, then passes through the heater to carburetor. It will be noticed that the air cleaner is under the hood, fully protected from dirt and weather.

Now notice the clean appearance of the combination manifold for burning low grade fuels. This manifold was originally designed for the Heider, and has been used with great success for several years. As a result of this manifold, either kerosene or gasoline can be burned, and you can switch from one to the other at any time without change of carburetor.

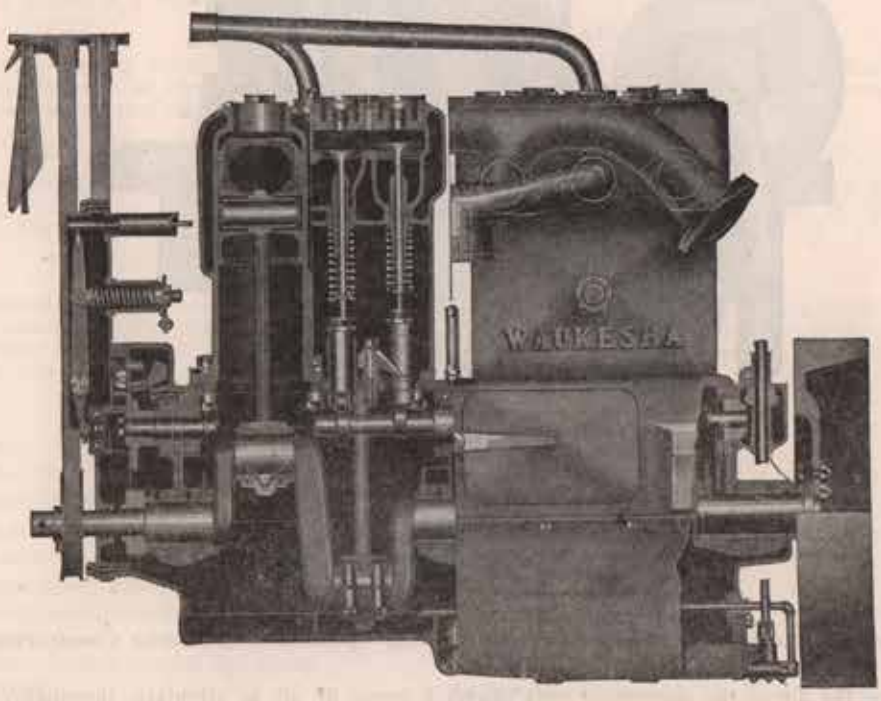
On the opposite side of the motor the water circulating pump and magneto are both driven off one shaft. This shaft is arranged with a coupling on each side of the pump. In case it ever becomes necessary to take off either pump or magneto it can be done in just a few minutes without disturbing the timing gears in any way.

These couplings are also made with a series of holes so that an adjustment can be made on the magneto at any time without opening the timing gear case. Between the two cylinders is a small pipe, which is an oil indicator, showing the amount of lubricating oil in the lower crank case at all times. As long as this indicator shows oil, the motor will be properly lubricated. It does not require additional outside oiling mechanism as the oiling system is all self-contained in the motor, which are more or less complicated or liable to give trouble. There is only one reason why the Heider is equipped with the Waukesha motor, and that is because careful tests have proven it to be a motor that will stand up under the heavy work required of it and deliver its full rating power.

HEIDER ALL-PURPOSE, ONE-MAN TRACTOR—Continued

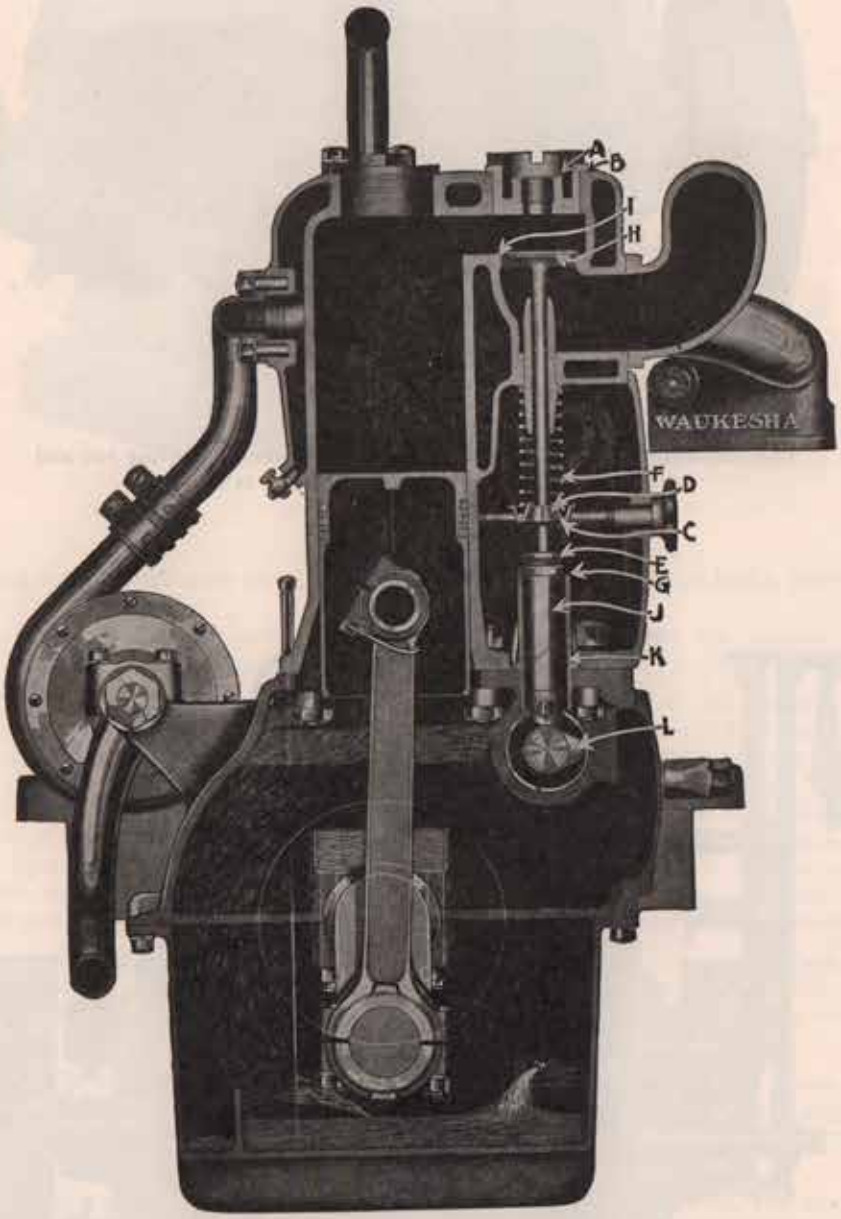


Lower crank case removed, showing main bearings, connecting rod and bearing, and the ease with which piston is removed



Sectional Side View of Waukesha Motor, Showing Operation and Interior Construction

HEIDER ALL-PURPOSE, ONE-MAN TRACTOR—Continued



Sectional End View of Waukesha Motor, Showing Operation and Interior Construction

Note how the dip of the connecting rods causes a spray of oil to circulate, thoroughly oiling every bearing of the crank shaft, the cam shaft, the push rods, piston and piston pin bushings. Note how the oil vapor circulates past the push row and up into the valve case chamber.

HEIDER ALL-PURPOSE ONE-MAN TRACTOR—Contined

The Exceptionally High Lift Raises the No. 19 from 8 to 12 Inches Out of the Ground

HEIDER MODEL "C" 12-20

Two years ago the Rock Island Plow Company first put on the market the No. 9 Two-Bottom Power-Lift Tractor Plow to work especially behind the HEIDER "D" 9-16. This implement was such a great success that innumerable requests have been made for a similar outfit to work behind the HEIDER "C" 12-20.

To meet this demand the Rock Island No. 19 has been perfected. It is made especially for this tractor model, and is directly attached to a steel sub-frame beneath the platform of the cab. The result is a practical, efficient plowing unit that is easier to handle than any other plowing outfit. This feature means more plowing in the course of a day.

HANDLES EASIER THAN A GANG

This plowing unit is under perfect control at all times; in fact, it is handled more easily than a gang or sulky. The plow can be lifted high and clear of the plowed ground or trash, or backed into a fence corner, turning over every available foot of soil.

FOOT PEDAL ABSOLUTELY CONTROLS THE RAISING AND LOWERING

A foot pedal to the left of the operator's seat controls the raising and lowering of the No. 19 at all times. Just press down on this pedal to raise the plow—and step on it again to lower the plow to plowing position. Nothing could be more simple or easier to operate.

HIGH LIFT—PLENTY OF CLEARANCE

This automatic foot-lift also provides for the one great essential to tractor plowing—that is, high lift, which means clearance. The lift on the No. 19 raises the plow from 8 to 12 inches out of the ground, thus giving you ample clearance for transporting from one field to another, for crossing railroad tracks, etc. This high lift also eliminates the possibility of gathering trash when turning at the ends of the furrow.

Model "C" Specifications

Horsepower—12-20.
Draw Bar—12 H. P.
Belt Power—20 H. P.
Fuel—Gasoline, Kerosene or Distillate.
Fuel Capacity—21 gallons.
Water Capacity—7 gallons.
Weight—6000 pounds.
Ignition—Dixie magneto, with starter coupling.
Tractor Speed—1 to 4 miles per hour.
Belt Speed—100 to 800 revolutions per minute.
Carburetor—Kingston improved type.

Motor—4-cylinder, 4-cycle; 4½-in. bore; 6¾-in. stroke. Enclosed valves. Special heavy duty Waukesha tractor motor.

Lubrication—Splash system and pump.
Frame—Steel.
Height—8 feet, including top.
Width—6 feet 2 inches.
Length—12 feet.
Wheel Base—96 inches.

Rear Wheels—Diameter, 57 inches; width, 10 inches.
Front Wheels—Diameter, 30 inches; width, 5 inches.

HEIDER ALL-PURPOSE, ONE-MAN TRACTOR—Continued

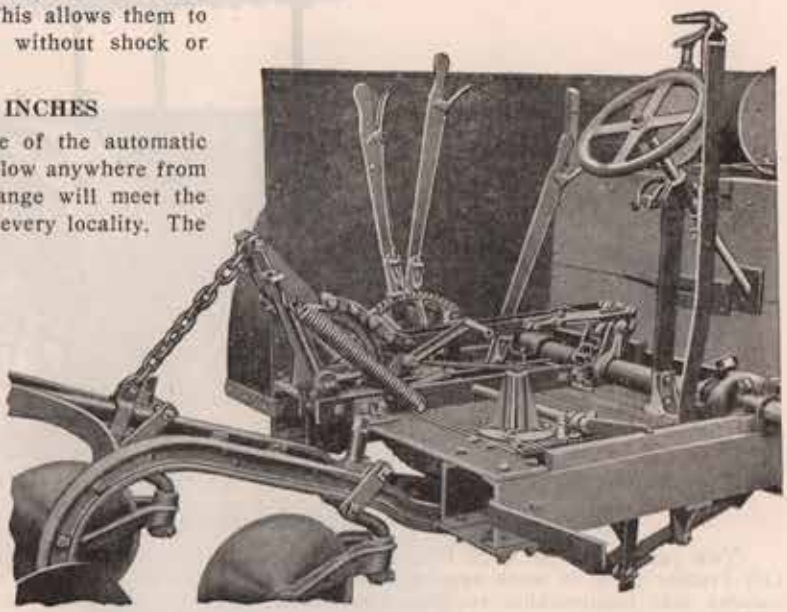
The illustration at the right shows the two large springs on each side of the lifting device which cushion the drop of the plows. This allows them to enter the ground point first, but without shock or damage to the bottoms.

PLOWS FROM 3 TO 9 INCHES

Another mighty valuable feature of the automatic lift on the No. 19 is that you can plow anywhere from 3 to 9 inches deep. This wide range will meet the requirements of power farmers in every locality. The increased depth allowed on the No. 19 is a big point, for you know that greater plowing depth, coupled with the continued use of fertilizer, means greater yields per acre.

STRAIGHT CENTER DRAFT

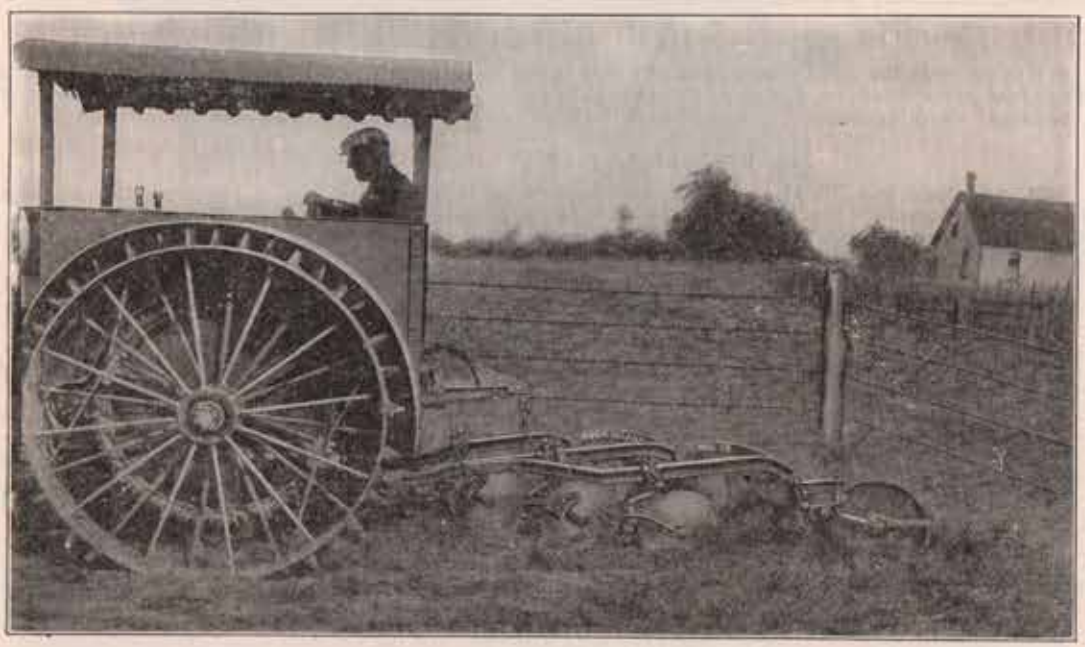
There is always a straight center draft when plowing with the Heider 12-20 and the No. 19 plow—due to the fact that the HEIDER operates with one wheel in furrow; as a result, the center of draft of plow is near the center of tractor at all times.



Strong Lifting Device and Springs to Cushion Drop of Plow

STRONG CONSTRUCTION

To withstand the heavy strain the No. 19 will be put to, it has been built of extra strength material throughout. The depth and leveling levers to the left of the operator are much heavier than are usually found on plows of similar type. The raising device is also well made, carefully inspected, and bolted to the floor of the cab to make sure of permanency and long life.



The No. 19 Backs Up to the Fence and Into the Corners

HEIDER ALL-PURPOSE ONE-MAN TRACTOR—Continued

The Heider, with its 11 years of actual field work, puts a machine of proved ability in the hands of the farmer. And that is the only kind of tractor you can afford to own.

Heider 12-20 and Rock Island No. 19 Power-Lift Plow Turning an Acre an Hour

EASILY DETACHED

The Rock Island No. 19 can be easily and quickly detached from the Heider Model "C" at any time. Simply remove one bolt and unhook the lift chain. Then the tractor, which is equipped with regular draw bar, can be used for pulling disc, drill, spreader, hay tools, wagons, or the ordinary drag type plow, such as the Rock Island No. 7 or 12, described on pages 44 and 48.

PLEASE NOTE

We want to call your attention to the fact that the No. 19 Plow cannot be attached to Heider Model "C" 12-20 Tractors now in the field. This plow needs a special sub-frame, platform and rear axle, which are not on the old models.

TWO OR THREE BOTTOMS

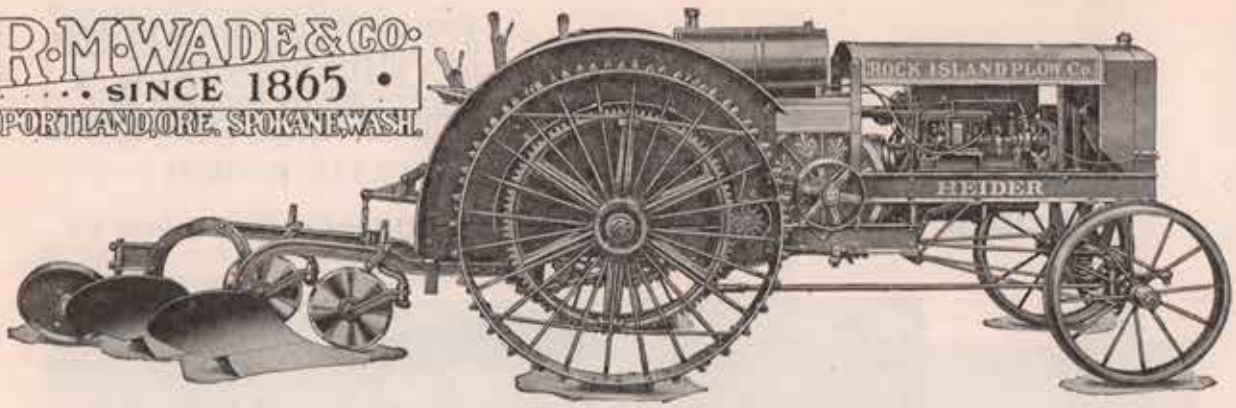
We recommend that in all cases the three-bottom equipment be purchased with the outfit. Then if an unusual condition arises when the use of two bottoms only are required, the third beam can be easily and quickly detached, and put back on again later.

SIXTY-FOUR YEARS' EXPERIENCE

Before being placed on the market the Rock Island No. 19 Tractor Plow has been thoroughly and carefully tested under a great variety of conditions, and you will find that the name Rock Island on this plow has the same meaning that it has on all Rock Island farm tools—namely, quality and satisfaction. All the experience of 64 years of building farm implements is behind this tool, and no tool is offered to the farmer until we are thoroughly satisfied that it will do the work on your farm the way you want it done.

SEE YOUR DEALER

To learn first hand how practical this one-man combination really is, see the Rock Island dealer in your town. He will explain in detail its construction and principles. You will immediately see that it is the plow you need.



HEIDER MODEL "D" 9-16

The Practical Tractor for Small or Medium-Sized Farms—Sold With or Without Plow Attached

HEIDER ALL-PURPOSE ONE-MAN TRACTOR—Continued

Specifications

Horsepower—9-16.
Draw Bar—9 H. P.
Belt—16 H. P.
Fuel—Gasoline or kerosene.
Fuel Capacity—21 gallons.
Water Capacity—7 gallons.
Ignition—Dixie high tension magneto.
Lubrication—Splash system.
Motor—4-cylinder, 4-cycle, 4¼-in. bore; 5¾-in. stroke. Enclosed valves. Special heavy duty Waukesha motor.
Carburetor—Kingston improved type.
Traction Speed—1 to 4 miles per hour.
Pully Speed—100 to 800 revolutions per minute.
Friction—Heider special friction.
Frame—Steel.
Wheel Base—87 inches.
Rear Wheels—Diameter, 54 in.; width, 8 in.
Front Wheels—Diameter, 30 in.; width, 4 in.
Height—5 feet 2 inches.
Width—5 feet 8 inches.
Length—10 feet 8 inches.

Here is the tractor especially designed to make power farming possible for the man with the small or medium-sized farm. It is the Heider construction through and through; an exact duplicate of the famous Model "C" 12-20, except for size.

It has all the same big features. One might say that this was a younger brother of the Heider Model "C." It is the same sturdy, four-wheel machine, built right up to the highest standards in every way. It has the same type of four-cylinder heavy duty Waukesha motor, except that it is smaller in proportion; the same type of carburetor, the same ignition and splash oiling system, and burns the same kind of fuel.

It has abundant power to pull two 14-inch bottom plows 2¼ miles per hour. It will pull your harrows, discs, drills, seeders, binders, hay tools, wagons and similar implements.

It also furnishes belt power to operate the smaller sized grain separators, silo fillers and corn shellers. It will pump water, saw wood, run the cream separator and washing machine.

For these lighter duties it can be throttled down to use no more fuel than necessary for the work. And while doing this kind of work it burns either gasoline or kerosene fuel, where the usual gasoline engine uses nothing but gas. Think of the saving in fuel bills.

One Unit Plowing Outfit

The convenient size has always made this a popular tractor, and we are now making it more popular than ever by a cleverly designed attachment for carrying the Rock Island No. 9 Two-Bottom Plow from the rear platform of the tractor.

Note the illustration on this page. Here is the handiest outfit, we believe, that was ever offered for plowing. The tractor, of course, is sold with or without the plows, as you prefer, but this attachment is so exceptionally simple, and is such a big time and work saving proposition, that we believe every farmer operating a smaller sized farm will want it. It can be detached from the tractor or replaced easily and quickly at any time.

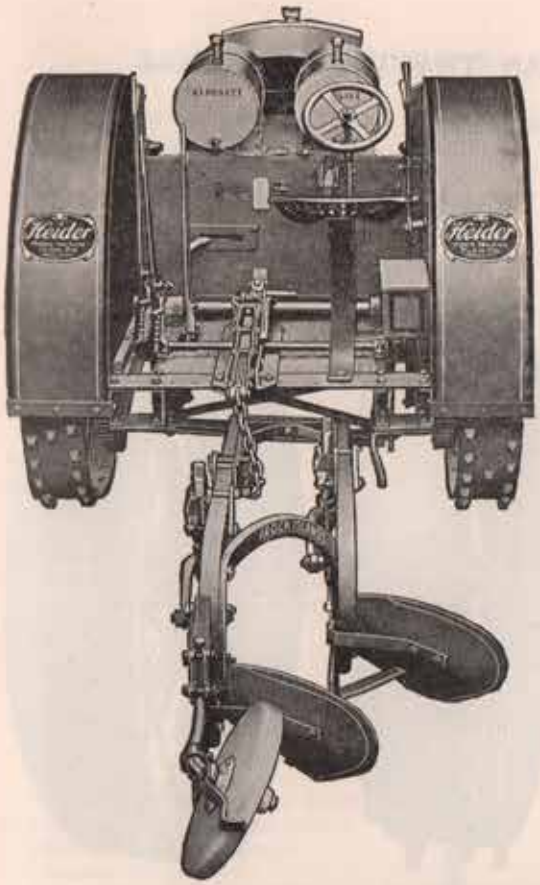
These plows are attached to a special sub-frame which is connected with the tractor below the platform. A simply designed and extra strong lift extends out from the tractor platform, to which a chain is attached which supports the plows when they are not in use.

Your Foot Controls the Plows—Your Hands Guide the Tractor

One foot pedal controls the clutch which operates the power lift attached to the rear axle of the tractor. Pressing on the pedal throws the clutch on the axle into gear for raising the plows out of the ground. Pressing the same pedal again lowers the plows to plowing position. It really requires less effort than to lift the ordinary sulky plow. It has an exceptionally high lift, so that the bottoms, when raised, cannot pick up any trash when turning. This leaves the shares free to enter the ground when clutch is tripped.

Here is a new equipment in tractor farming. It is decidedly a one-man outfit. In fact, you couldn't expect it to be anything else, for all that the operator has to do is drive the tractor and operate the foot pedal.

A proper leveling device allows you to tilt the plows to right or left, and adjust them to plow at any depth that you could get with any wheel plow. You can always fit the plows to the needs of the soil. Tilting them to either side can be done without leaving the operator's seat.



HEIDER ALL-PURPOSE ONE-MAN TRACTOR—Contined

IMPROVED TRACTOR PLOW

The Rock Island No. 9 Two-Bottom Plow is especially made for the Rock Island Heider Model "D" 9-16 Tractor. It is the latest and most improved type of tractor plow. Attached to this tractor, it makes the most practical plowing unit that any man could own.

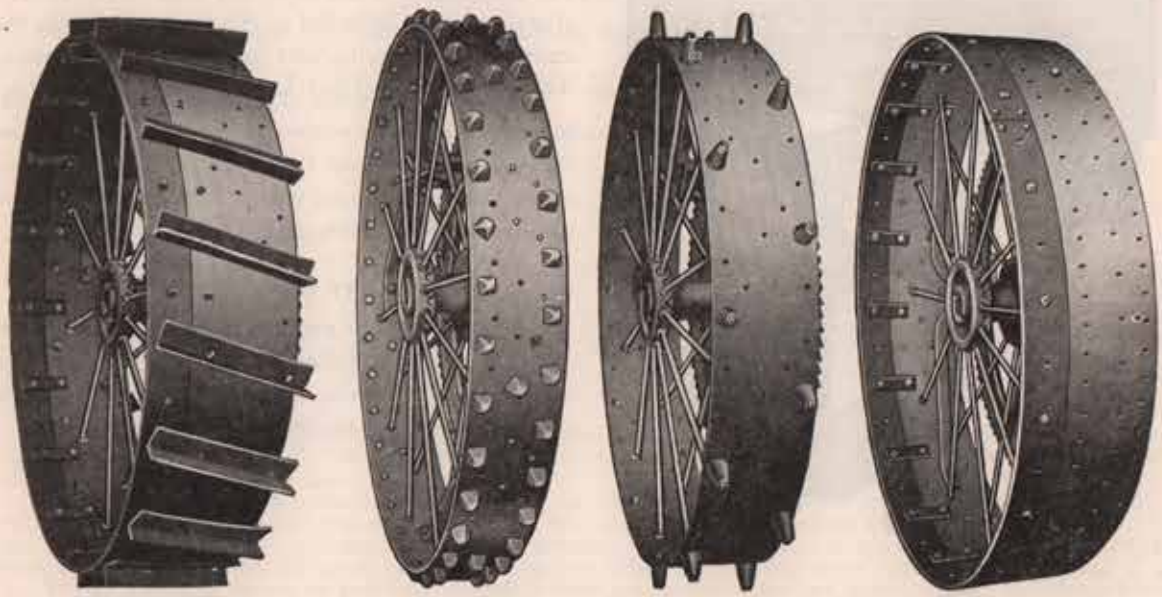
With this outfit, where the plow is so easily raised, you can turn square corners in the field, and you can back up and plow out the fence corners. You can really handle the plows easier than any walking or sulky plow. As a result, all your field is plowed.

STRAIGHT CENTER DRAFT

Whether our No. 9 plow or any other tractor plow is pulled behind a Heider tractor, there is a straight center draft at all times, thus eliminating any chances of side draft on the engine as well as the plow.

Gets Closer to the Fence, Turns Square Corners

HEIDER ALL-PURPOSE ONE-MAN TRACTOR—Continued



WHEEL EQUIPMENT FOR EVERY SOIL

Heider wheels are regularly equipped with small lugs and long cone lugs. The smaller lugs are sufficient for all ordinary work where the footing is firm.

Where small cone lugs are not sufficient the longer cone can be used in combination with the smaller ones, being placed in the extra holes provided.

Where a large amount of work must be done on soft ground, such as discing, harrowing and seeding, or in sandy country, many operators desire the extension rim.

In some localities the soil requires additional traction and to meet this demand angle lugs may be secured as extra equipment. These give the tractor ample footing where the land is in condition to work with traction power.

However, we do not advise the use of either the extension rim or angle lugs unless necessary, as either one consumes more power.

You will find from experience that the Heider does not require such extreme lug equipment as many tractors. This is due in the first place to the proper balancing and proportioning of the tractor. In the second place the four-cylinder motor delivers a steady flow of power to the friction transmission, which eliminates any possibility of vibration to the tire of the wheel and destroying the footing. As the power is delivered with an absolutely steady tension or torque, it will not destroy the footing as it would if the vibration from the engine was delivered directly to the tire through the medium of gears. The same advantage holds good in starting the load with the Heider Friction Transmission, as the load is started without jerking or jumping.

HEIDER ALL-PURPOSE ONE-MAN TRACTOR—Continued

You will find listed elsewhere in this catalog (see index), the following tools which are especially adapted to use with the Heider Tractors:

No. 9 and No. 19 Plows.
No. 7 and 12 Plows.
No. 38 Disc Harrow.
Bonanza Tandem Attachment for Disc Harrows.
Quail and Monarch Spring Tooth Harrows.
Rock Island Drag Harrows.
Peoria Tractor Drills or Regular Peoria Drills with Tractor Hitch and Power Lift.
Wade Pulverizers.
Iron Age Potato Diggers.
Bain Wagons.
Litchfield Manure Spreaders.
Massey-Harris Binders and Mowers.

FOR BELT POWER.

Ann Arbor Hay Baler.
Bowsher Feed Mills.
Smalley Cutters.

Heider Tractors can also be used to advantage with the following:

Road Graders and Drags.
Concrete Mixers.
Clover Hullers and small Threshing Machines.

MANUFACTURER'S GUARANTEE

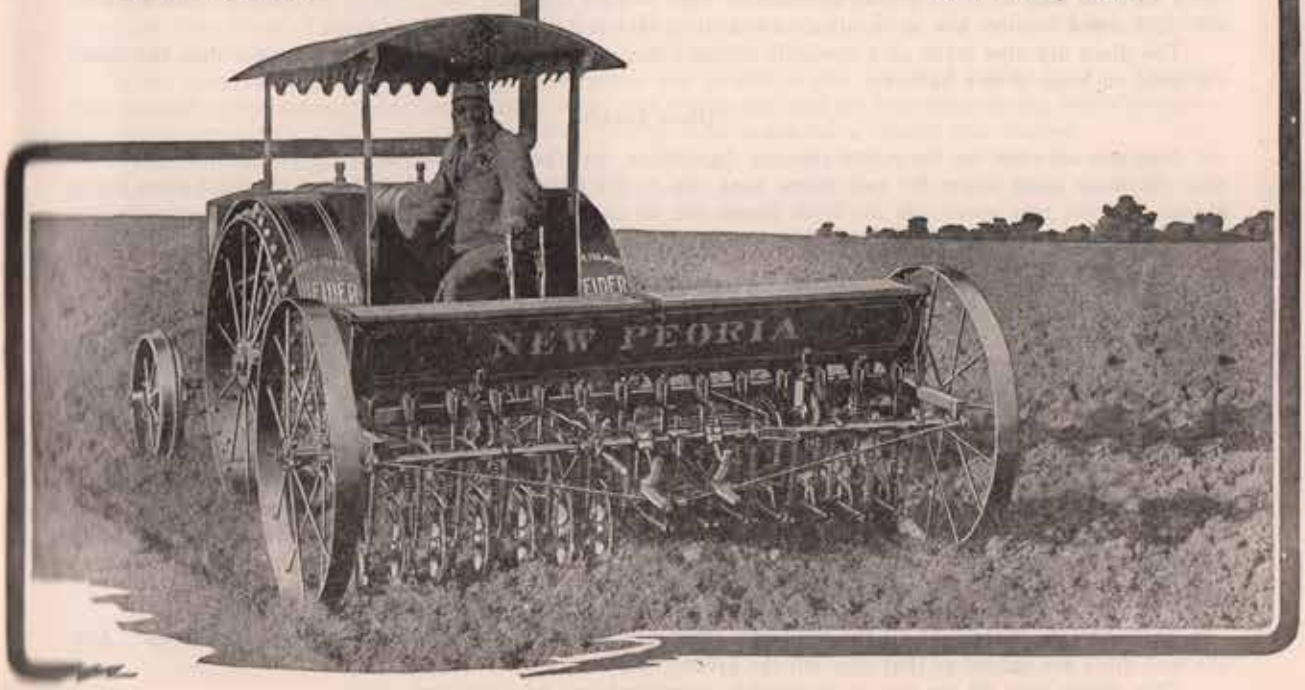
We guarantee HEIDER Tractors to be made of good material and will furnish free of charge for one year any part which breaks through defectiveness when part or parts are returned, shipping charges prepaid.

We guarantee our Tractor can be changed quickly from traction to belt or stationary work by simply disengaging the gear that transmits the power from the disk shaft to the differential gear by a lever within reach of the operator.

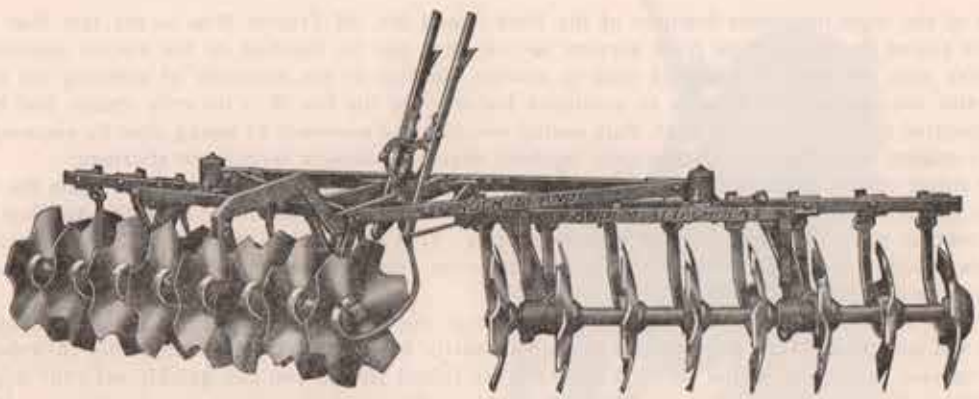
We guarantee our specially designed throttling governor to change speed to any point from 500 to 1,000 revolutions of the motor.

We guarantee this Tractor to develop the full rated H. P. on Draw Bar and Belt, as set out in catalog and within contract when properly operated.

ROCK ISLAND PLOW COMPANY
Rock Island, Illinois.



R·M·WADE & CO.
SINCE 1865
PORTLAND, ORE. SPOKANE, WASH.



ROCK ISLAND TANDEM ATTACHMENT

6, 7 or 8-Foot Cut

DOUBLE DISC YOUR LAND IN HALF THE TIME

With a Rock Island Tandem Attachment land can be double disced in half the time, which means a big saving in labor cost and is of considerable advantage when a late season necessitates a hurried preparation of the ground.

By its use the land is left perfectly level and in an ideal condition for a seed bed. This means an earlier germination of the seed and a stronger and more thrifty crop, which will add to the profit at harvest.

CONSTRUCTION

The Rock Island Tandem Attachment is constructed of the same high-grade materials as used in the construction of the regular Rock Island Disc Harrows.

The frame is constructed of angle and bar steel, and is well braced, making it very strong and rigid.

The Attachment is equipped with two levers, which gives independent adjustment of the gangs, so they may be set for working at different angles.

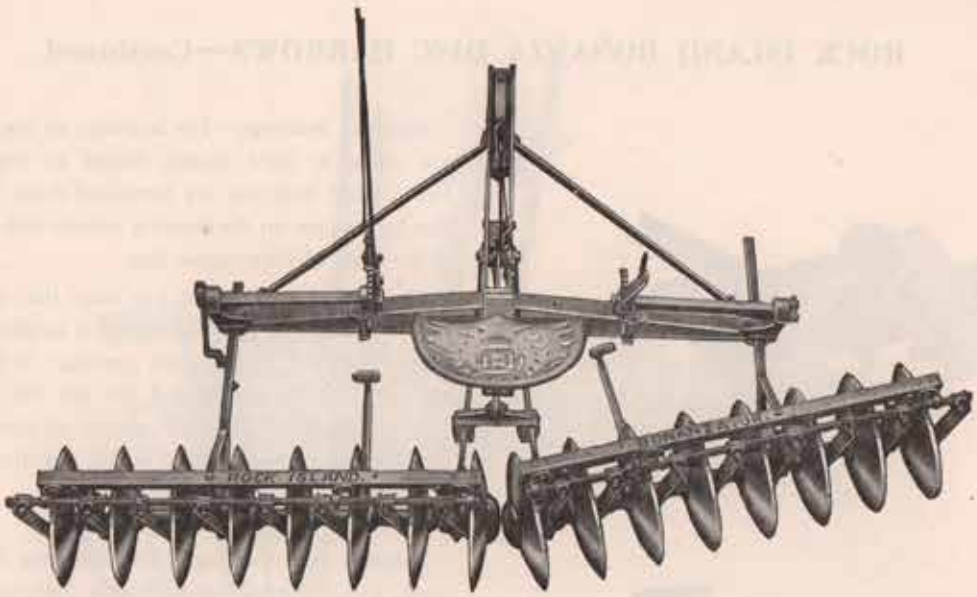
The pivoting point of the frame is directly under the seat, which permits turning in as short a radius as when using a single harrow.

The Tandem Attachment is easily attached to any Rock Island Harrow, with steel stub tongue, at any time. This allows it to be purchased either at the time of buying a harrow or at any time afterwards.

TANDEM ATTACHMENT FOR BONANZA AND DEFIANCE DISC HARROWS WITH SCRAPERS

Solid Discs

Trade Number	Number Discs	Diameter Discs	Width Feet	Shipping Pounds	Price
T 12-16	12	16	6	300	
T 14-16	14	16	7	340	
T 16-16	16	16	8	375	
T 12-18	12	18	6	325	
T 14-18	14	18	7	370	
T 16-18	16	18	8	410	
Shear Cut Discs					
TC 12-16	12	16	6	300	
TC 14-16	14	16	7	340	
TC 16-16	16	16	8	375	

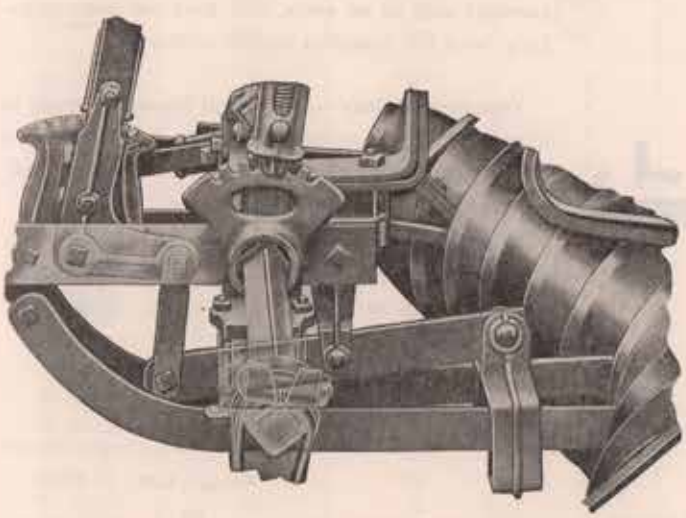


ROCK ISLAND BONANZA DISC HARROWS

All disc harrows look more or less alike, but by a careful study of the Bonanza shown above you will see that it is much different, except in appearance.

It is a well understood fact that in order to prevent excessive draft all side pressure from the boxes or bearings must be eliminated. This is done on single lever harrows by receiving the side pressure of the gangs on revolving bumpers located on the inner end of the disc axles.

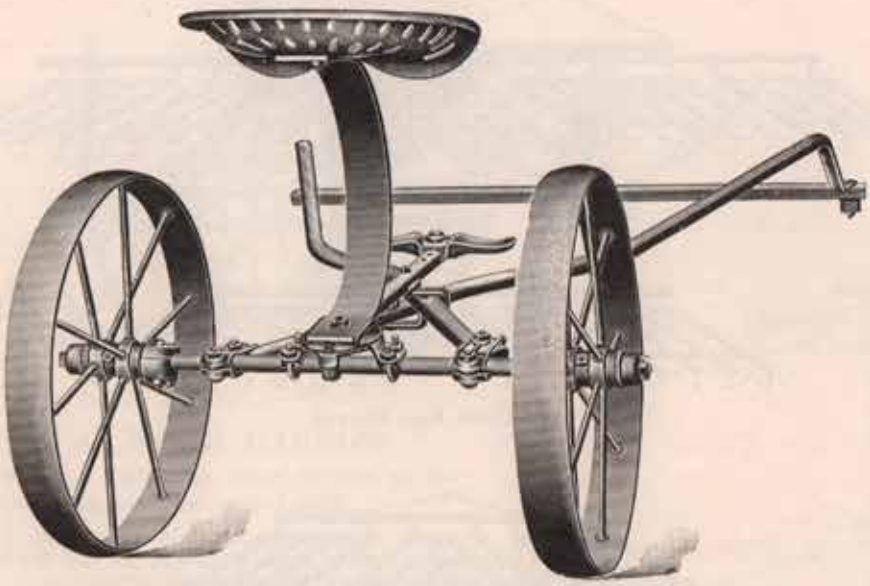
Gangs—As long as both gangs are controlled by one lever these bumpers can be kept in contact, but the Bonanza is the only double lever harrow where this feature is possible. On the Bonanza the outer ends of the gangs are moved forward by the action of the levers, instead of the inner ends backward, as with other double lever harrows. This makes it possible to always have the bumpers in contact at all times, regardless of how the gangs may be angled, thus relieving the bearings of strain and neutralizing the end thrust caused by the gangs crowding toward the center. This feature is patented.



Detail View Showing Action of Pressure Lever

Pressure Lever—The Bonanza Disc is equipped with a third or pressure lever. It is exceedingly simple and strong, while its compound leverage is great.

The lever is out of the way in applying pressure, being pushed forward. You will notice we apply pressure close up to the gangs. As the center of the Bonanza gangs always remain stationary, more leverage is possible than though they angled at the end like other makes of discs. **See next page for further description.**



ROCK ISLAND HARROW RIDING ATTACHMENT

Wheels 24 or 32 inches high, 3-inch concave tire (cut shows the oval tire); dust-proof, removable boxes; wheels 30 inches apart, adjustable to 34 inches; draw bars high carbon, U-bar steel; spring seat. Can be used on either two or three-section harrow; does not interfere with levers. Seat and foot rest adjustable.

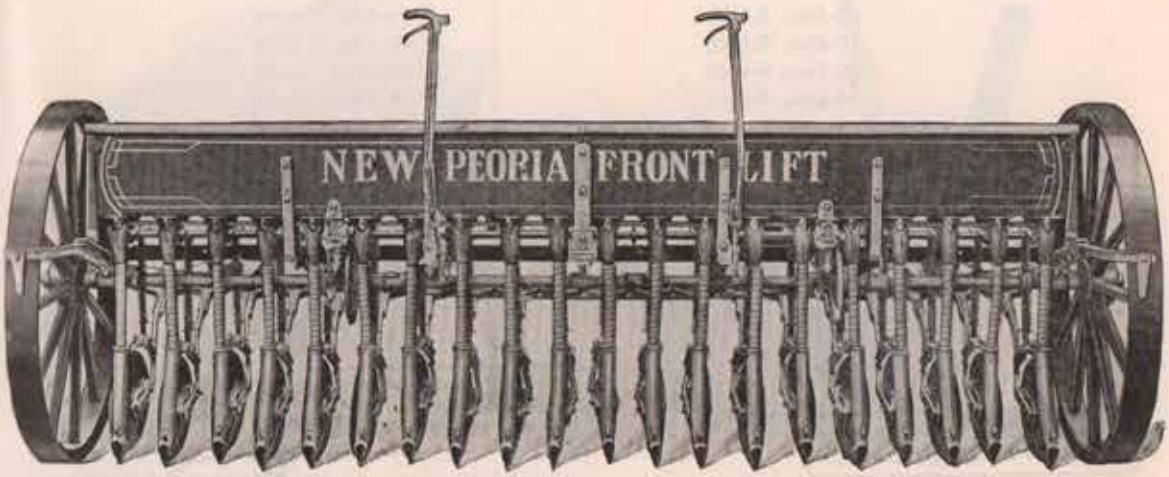
Any man or boy who ever followed a harrow all day long through loose, freshly-plowed land, and had his legs ache so he couldn't sleep at night, will fall in love with the Rock Island Two-Wheel Harrow-Cart at first sight.

The driver always faces the horses on a Rock Island Harrow-Cart, no matter which way the wheels may be angled. The moving back and forth of the axle does not affect the seat. The axle can swing freely when one wheel of the cart strikes an obstruction, or when making a sharp turn, but the axle and wheels are always perfectly controlled by the draw bars in the same manner as the front wheels of a wagon are controlled by the tongue.

The platform for the seat is composed of two circular plates. The lower plate is bolted solidly to the axle. The seat and foot rest are both fastened to the upper plate, which can turn on the lower plate like the fifth wheel to a wagon. An automatic locking device prevents responding to slight vibration of the harrow, while the cart is being drawn straight ahead, but permits the wheels to angle either way while making a turn or when either of the wheels strikes an obstruction, without disturbing the driver at all.

ROCK ISLAND HARROW RIDING ATTACHMENT

	Weight, Lbs.	Price
No. 1. Harrow Riding Attachment, 24-inch wheels	105	.....
No. 2. Harrow Riding Attachment, 32-inch wheels	115	.....



THE NEW PEORIA FRONT-LIFT DRILL

In placing on the market the New Peoria Front-Lift Drill, we do so with the confidence that it is from three to five years ahead of any other drill on the market, and its important features are so strongly protected by patents that dealers may feel sure of many exclusive and strong selling points, and the farmers who purchase them can feel that they have the most scientific, practical and durable drill ever offered a farmer anywhere in the civilized world.

Special attention is called to the drop frame.

We are the originators of the drop-frame idea, and it has proved very popular.

On the New Peoria Front-Lift Drill the front of the frame is dropped without making a bend. The front legs of the box end are built up so the box sets level. This type of construction makes the frame of the New Peoria Front-Lift Drill the strongest frame known, and at the same time it is light in weight.

The ratchets in which the levers work are of steel construction. The draw bars attach directly to the front of the frame, and each draw bar is entirely independent, so that any one of the discs may be quickly and easily removed without interference with others.

The wheel clutches are on the outside and are very easy of access.

On the larger drills a spring lift is provided to aid in lifting the discs. On the smaller sizes this is not necessary, as our construction makes the drill exceptionally easy to operate.

A great deal is claimed by other makers with reference to draft, but we do not think, after they have compared their draft and balance with the New Peoria Front-Lift Drill, that there will be any further claims made by them for light draft, as we have so far outclassed all competition on this feature that the argument is settled so far as we and our customers are concerned.

Examine carefully the illustrations and descriptions on the following pages.

Better still, make it a point to **see the actual machines** at the nearest inspection point, and do it without delay.

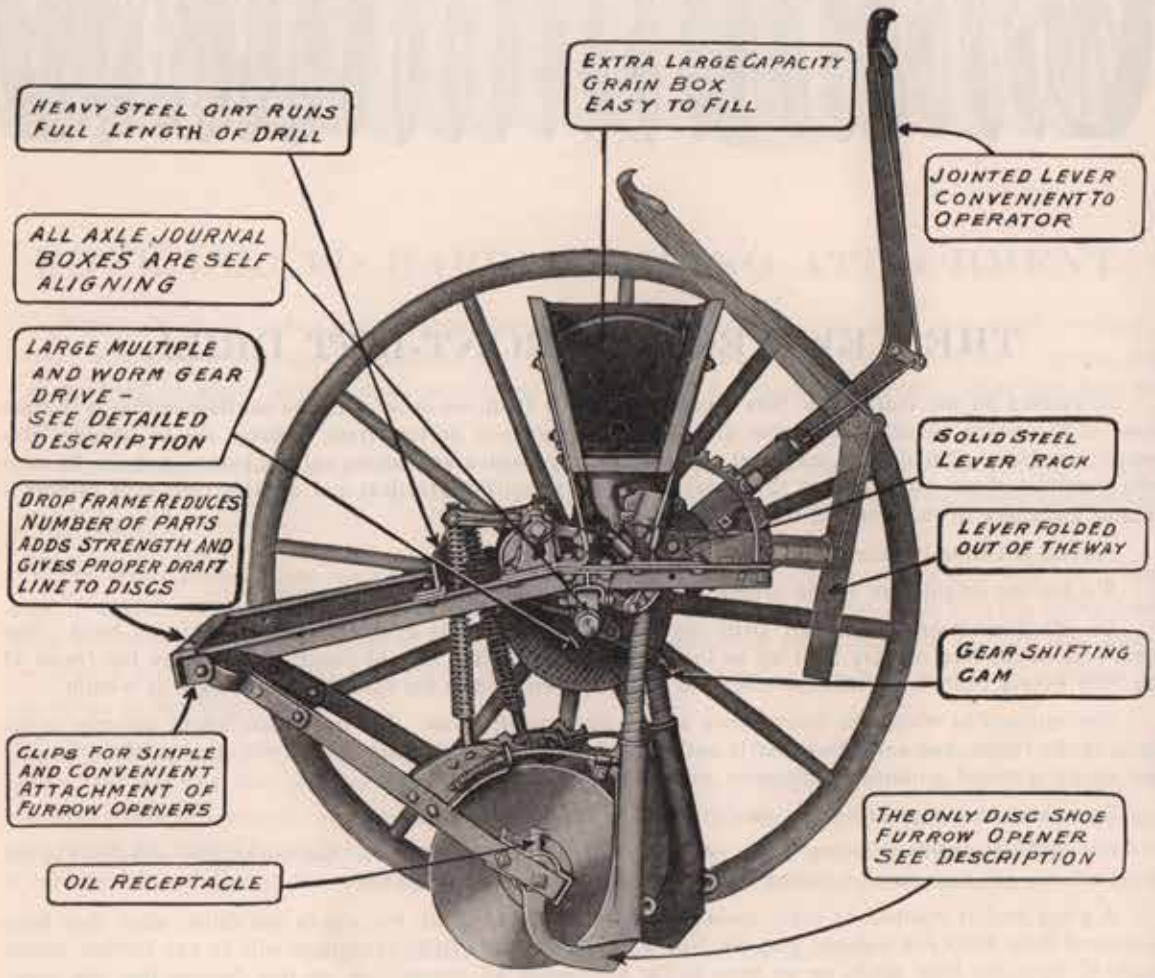
R·M·WADE & CO.
SINCE 1865
PORTLAND, ORE. SPOKANE, WASH.

THE NEW PEORIA FRONT-LIFT DRILL

These drills are built in the following standard sizes, and are interchangeable with disc shoe, open shank, single disc and double disc, shoes and hoes. Other sizes are built on special order.

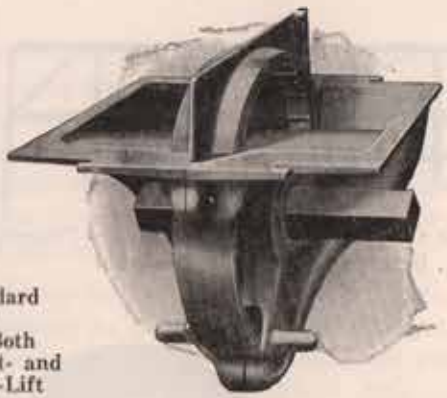
12-disc, 6-inch
16-disc, 6-inch
20-disc, 6-inch
24-disc, 6-inch

10-disc, 7-inch
12-disc, 7-inch
14-disc, 7-inch
18-disc, 7-inch



THE NEW PEORIA FRONT-LIFT DRILL—Continued

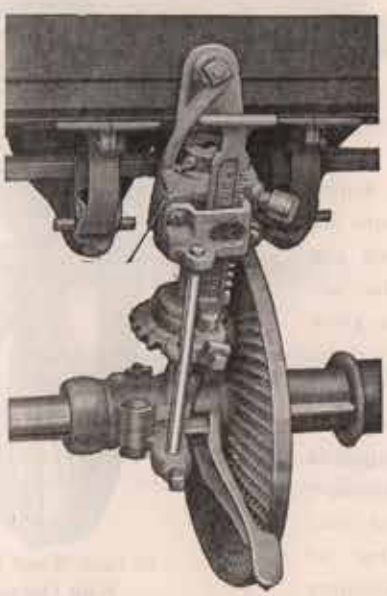
DETAILS



Standard Feed for Both Front- and Rear-Lift Drills

NEW PEORIA DOUBLE-RUN FEED

We use a large feed wheel in our double-run feed, and it extends into the box to assist in agitating the grain; it also permits running the feeds more slowly, giving grain more time to lodge in feed wheel, which insures uniformity and lessens liability of cracking the seed. Sows accurately oats, rice, corn, peas, beans, wheat and flax without bunching seed.



The Wood Break Pin—An Exclusive Feature

DRIVING AND FEED-REGULATING DEVICE

To regulate the quantity of grain which may be sown we use a multiple gear on the drill axle. A sliding pinion mounted on a drive shaft meshes with the different rows of cogs in this multiple gear and, by shifting the indicator, is easily and conveniently set at any of the 13 different changes of speed, so as to cause the feeds to sow any desired quantity of grain, from two pecks to five bushels per acre.

The power is delivered to the feed shaft by means of a worm loosely mounted on a sleeve at the upper end of the driving shaft. This worm is held in operative relation to the sleeve and the drive shaft by means of a wood break pin—an exclusive Peoria feature.

A worm wheel on the feed shaft is rotated by the worm on the drive shaft and turns the feeds, giving the smoothest, strongest and lightest-running drive on any grain drill.

The worm gear driving parts are increased in a dust-proof housing and run in grease, a compression grease cup being provided for replenishing the supply.

R·M·WADE & CO.
SINCE 1865
PORTLAND, ORE. SPOKANE, WASH.

NEW PEORIA FRONT-LIFT DRILLS—Continued

DETAILS

The high reputation of Peoria farming machinery has been builded on **integrity of construction, even to the smallest details.**

Every individual "part" is made with the utmost care, of best materials, by long-experienced, skilled workers, under the strictest expert supervision.

Thus, when you buy a machine bearing the name "New Peoria," you may **rely** upon it to render long and faithful service, when used properly.

The details illustrated and described on this and other pages are typical of **all** New Peoria details. Nothing is slighted. Nothing is too small to merit infinite care in design and production. You may be **sure,** when you invest in a New Peoria machine, that you are getting the best-working machine it is possible to make.

Strongest Constructed Drill Frame Made—Properly Braced to Withstand All Strain

Self-Aligning Axle Box Easy to Oil

Wheel Clutch Placed on Outside of Axle—Easy of Access

45-Inch Steel Wheel With Outside Clutch

Don't Overlook the Best

We furnish wood wheels regularly with Peoria Drills. Steel wheels can be furnished if preferred.

The Wood Wheel is built from well seasoned material, and 3-inch tire is used for small sizes of drills, 4-inch tire for 14-bar and over. The hubs are extra long and double ratcheted and can be used on either end. They are strong and well made and have given the best of satisfaction.

The Steel Wheel is the same size as the wood wheel, has the same long hub and width of tire. Has heavy staggered steel spokes and is built for strength and durability. Both wood and steel wheels are the same price, but we recommend the wood for all ordinary conditions.

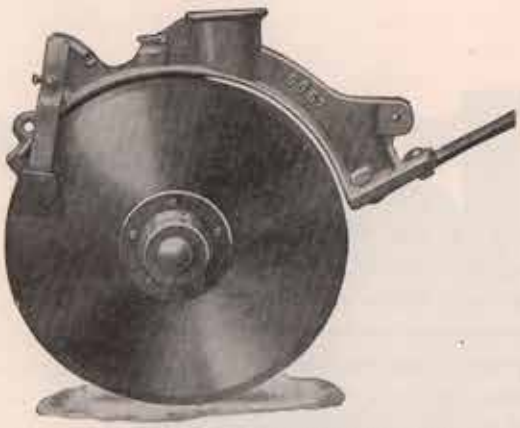
45-Inch Wood Wheel With Outside Clutch

NEW PEORIA DOUBLE DISC

FOR FRONT-LIFT DRILLS

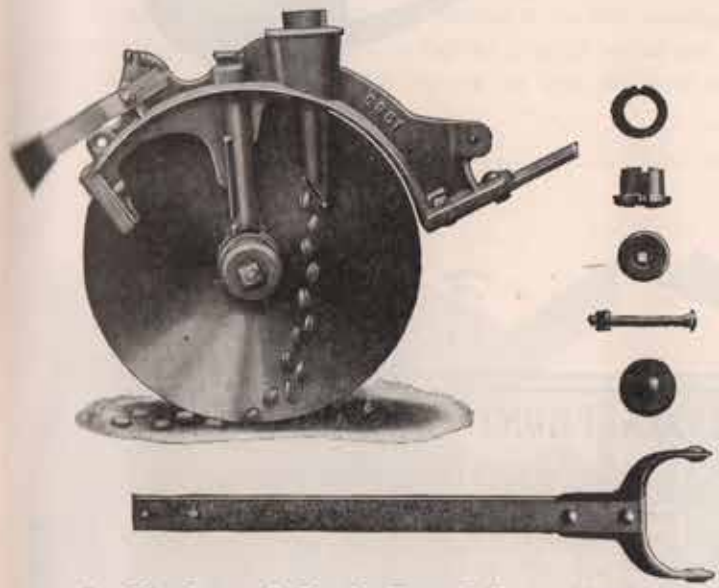
To those who prefer double-disc furrow openers we invite careful comparison of the New Peoria Double Disc with others. The common trouble with double discs has been in the bearings, it being necessary with other makes of double discs to purchase an entirely new shank, or resort to tedious and expensive work in order to replace the bearings.

The Peoria is the only double disc construction which permits the discs to be held tightly together in front, no matter how much the discs are worn in diameter. There are several double discs on the market which will do good work for a while, or until they open up in front; then they pick up the seed bed, seed and all, and give all kinds of trouble.



A Complete Double Disc, Side View

The disc bearings on the Peoria are made dust-proof and consist of chilled iron sleeves fastened to a boot by means of a bolt, and can be replaced by simply removing the nut—and without expense, as we guarantee them against all wear. Steel washers are used between the sleeve and the boot, so that, when the blades begin to open, one or more washers can be removed and the discs brought together, and without changing the angle. This improvement farmers have been demanding.



One Disc Removed, Showing Front Delivery of Seed, Oil Conductor, Inside Scraper and Component Parts

The deposit of the seed is in front of the bearing, so the seed comes in contact only with that part of the disc which is moving downward, insuring even distribution at the bottom of the furrow.

The scrapers are of the right design to clean the discs. The inside scraper will not wear, squeak or bind the discs and cause them to slide, cut the discs or wear the edges off the blades.

Single draw bars, made extra stiff, attach the discs to the frame, which is of the same general construction as is used on our other drills.

The disc blades are made of high-grade steel, perfectly straightened and polished —the edges ground sharp.

NEW PEORIA FRONT-LIFT DRILL—Continued

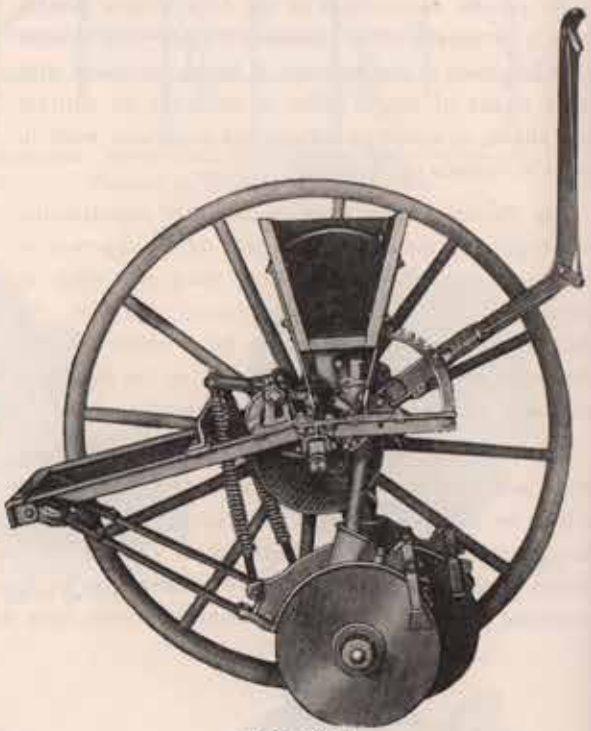
FRONT-DELIVERY DOUBLE DISC DRILL

REMOVABLE AND ADJUSTABLE EVERLASTING BEARINGS

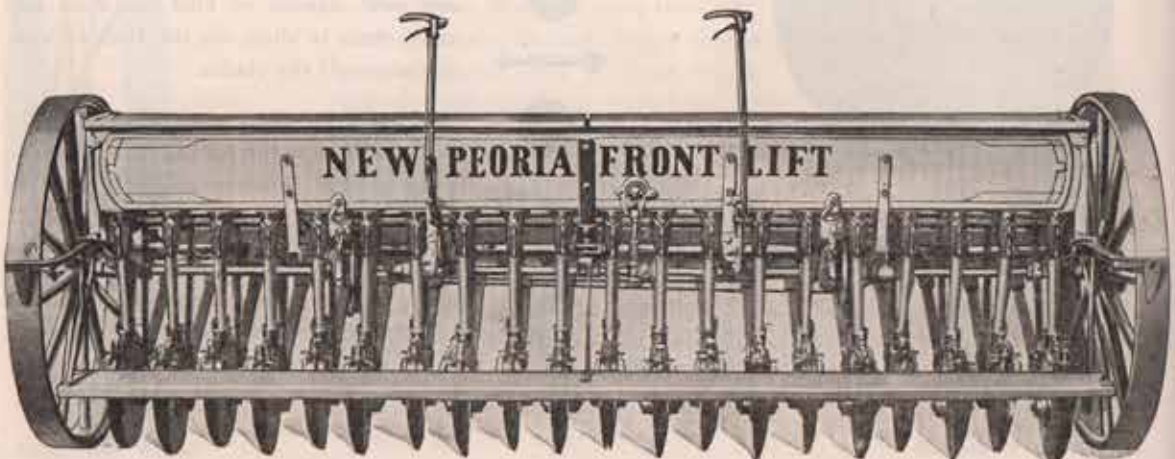
In the New Peoria Double Disc we have overcome all of the objections commonly known to double disc furrow openers, and to farmers who prefer the double disc furrow opener we can recommend the Peoria as positively the best-working and most durable double disc ever placed on the market.

We make double disc drills in all standard sizes, with the same equipment as furnished on our disc shoe drills.

Special attention is called to the drop frame —originated by us.



End View

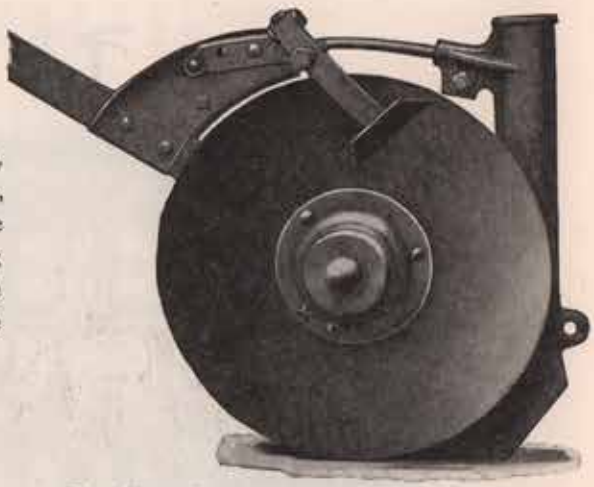


Rear View of 20-Double Disc 6-inch Drill, Front Lift, Showing Footboard

NEW PEORIA SINGLE-DISC SHOE

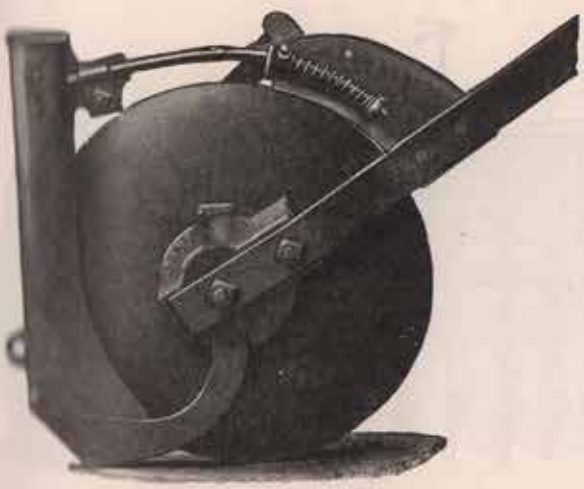
FOR FRONT-LIFT DRILLS

The disc shoe is a combination disc and shoe, embodying the single disc, for opening the furrow, cutting trash and penetrating hard ground, and the shoe, for forming the furrow and properly depositing the grain. The disc simply cuts the way; the shoe follows in the cut made by the disc and forms the furrow.

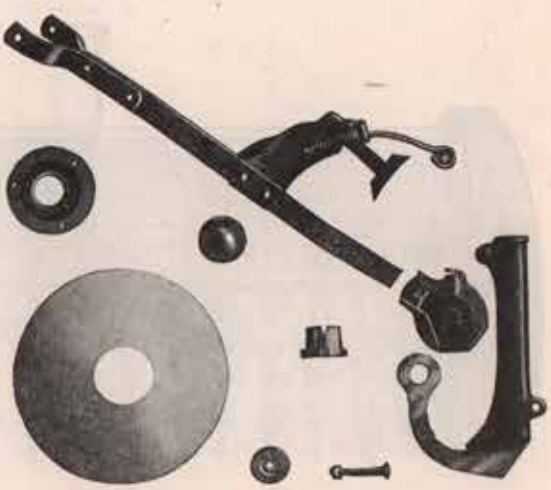


Disc Shoe, Showing Concave Side of Disc

The forward end of the shoe is pivoted to the disc bearing and works independently of the disc. After the disc opens the furrow, the shoe follows directly behind and forms a perfect furrow and deposits the grain on a packed seed bottom, which insures the seed the three essential requirements for small grain—heat, air and moisture.



Disc Shoe, Showing Convex Side of Disc



Showing All the Parts of the Disc Shoe

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PORTLAND, ORE. SPOKANE, WASH.

HITCHES FOR PEORIA DRILLS

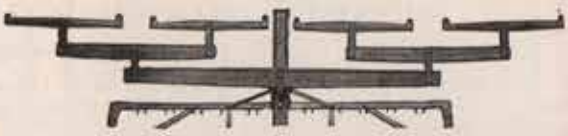
Much depends, in the successful operation of a grain drill, on the hitch to be used. In making Peoria Hitches we have had in mind simplicity in construction and strength.

In assigning the different hitches for the different sized drills, estimate on the horsepower has been made with reference to the ordinary sized farm horse. It is not necessary, nor practical, for the farmer to operate a two-horse drill with a four-horse hitch, nor a four-horse drill with a two-horse hitch.

Drills running from sizes 6 to 11 can be operated with two horses, the intermediate sizes with three or four horses, and the larger sizes, 20 to 24, inclusive, with four to six horses. A good deal depends upon the size of the horses to be used and the condition of the soil.

A little painstaking on the part of the farmer to see that his team is hitched securely, and not too far from the frame of the drill, that his drill frame is level and the neckyoke straps are taut, will produce much better results and lighter draft.

Two-Horse Hitch, Center Pole

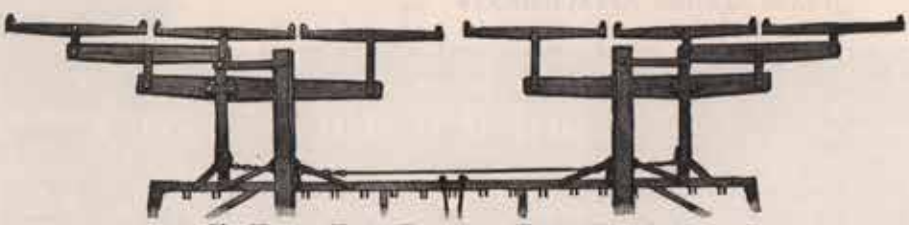


Four-Horse Evener Hitch, Center Pole

Four-Horse Evener Hitch Changed to Three-Horse Hitch, Pole Set to Side of Drill

Three-Horse Chain Equalizer Hitch, Two Poles

Four-Horse Chain Equalizer Hitch, Two Poles



Six-Horse Chain Equalizer Hitch, Two Poles

PEORIA DRILL HITCHES

	Weight, Lbs.	Price
Two-Horse Evener Hitch	20	
Three-Horse Evener Hitch	47	
Three-Horse Chain Equalizer Hitch	49	
Four-Horse Evener Hitch	50	
Four-Horse Chain Equalizer Hitch	40	
Six-Horse Chain Equalizer Hitch	67	

PEORIA ENDGATE SEEDERS

First in the Field

First a Success

First in the Number of Sales

CASTS:

	Ft. Wide
Timothy	30
Clover	45
Oats	45
Alfalfa	45
Rye	60
Barley	65
Wheat	65

Helical Gear Construction

PEORIA DOUBLE FAN SEEDER

Don't Overlook the Best

Will cast oats 45 to 50 feet, costs less than an 11-foot wheel seeder and does four times as much work in the same length of time, and does it better. No space left unseeded by slipping of gear. Will outwear a dozen friction drives. Force feed. Large throat for oats. No choking. Simplest wind shift ever put on an endgate seeder. Will last a lifetime. Note the helical gear construction, which permits double contact of the teeth, and makes breakage impossible.

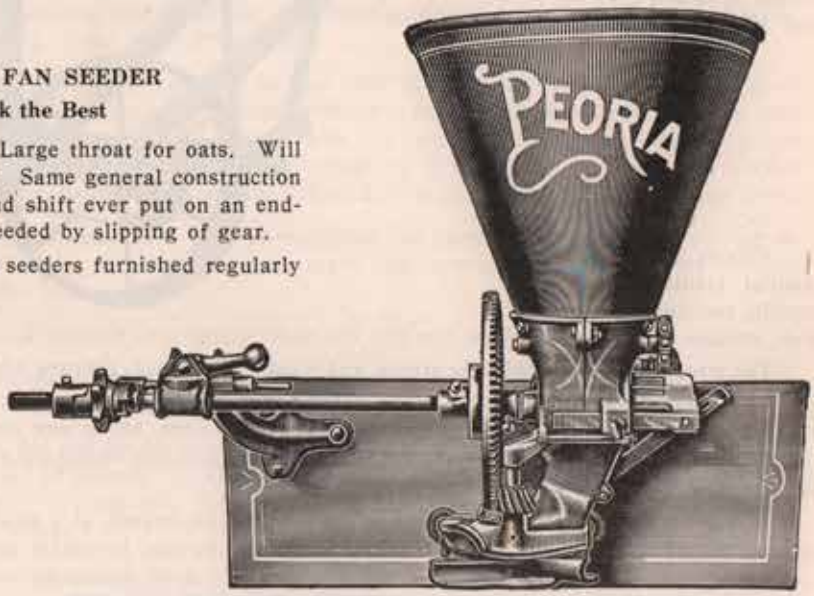
Noiseless Gear Used Exclusively on Peoria Endgate Seeders

PEORIA SINGLE FAN SEEDER

Don't Overlook the Best

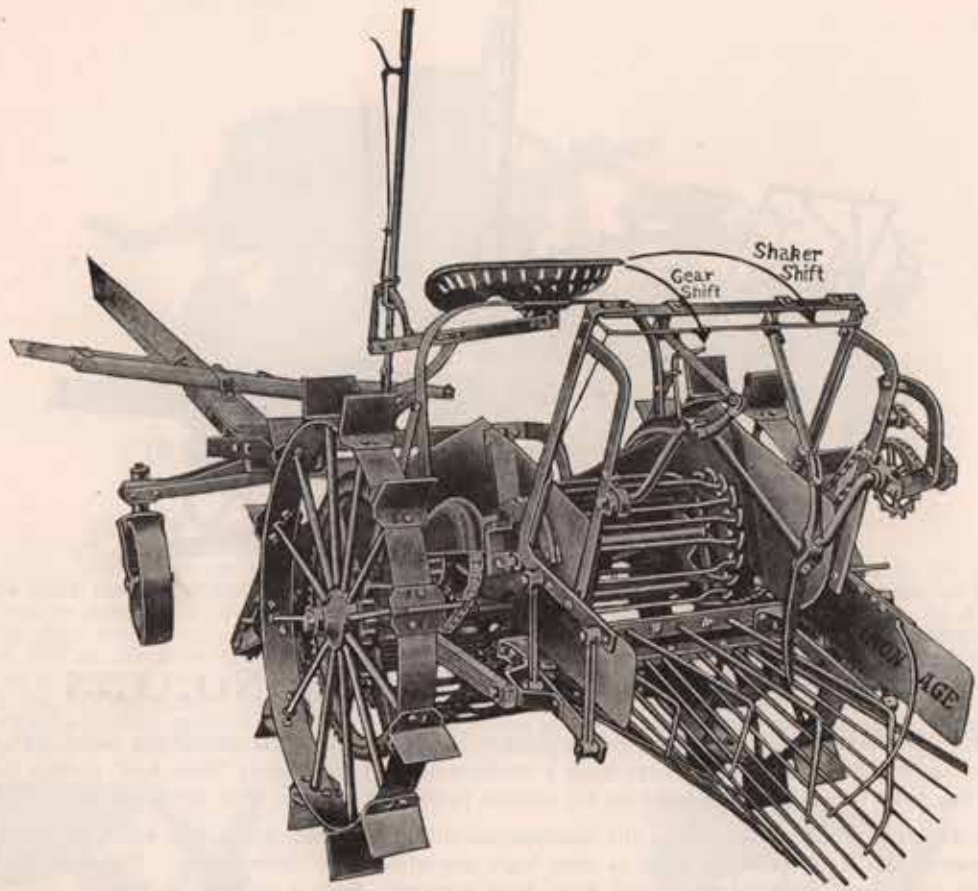
Force feed. No choking. Large throat for oats. Will outwear a dozen friction drives. Same general construction as double seeder. Simplest wind shift ever put on an endgate seeder. No space left unseeded by slipping of gear.

Both single and double fan seeders furnished regularly with grass seed attachments.



PEORIA ENDGATE SEEDERS

	Weight, Lbs.	Price
Peoria Double Fan Endgate Seeder	140	.....
Peoria Single Fan Endgate Seeder	100	.....



IRON AGE POTATO DIGGER NO. 155—Continued

High Wheels. They give more traction power and ride the holes and hollows easily. 32 inches in diameter, 3-inch rim, and large spurs (4½ inches wide) all help to give more traction. Heavy main gears in each wheel transmit power to the machinery.

The wheels have cast and removable hub boxes, which are the only part that can wear and are cheaply replaced. The spurs can be bolted in diagonal position for holding on sidehills.

The shaker has uniform motion. Heavy crop, soil or grassy conditions do not affect it and it does its share for perfect separation. The shaker tines can be shaped to drop the potatoes either in the center or to one side of the row.

Roller bearings on each side of the shaker reduce the friction and wear to a minimum.

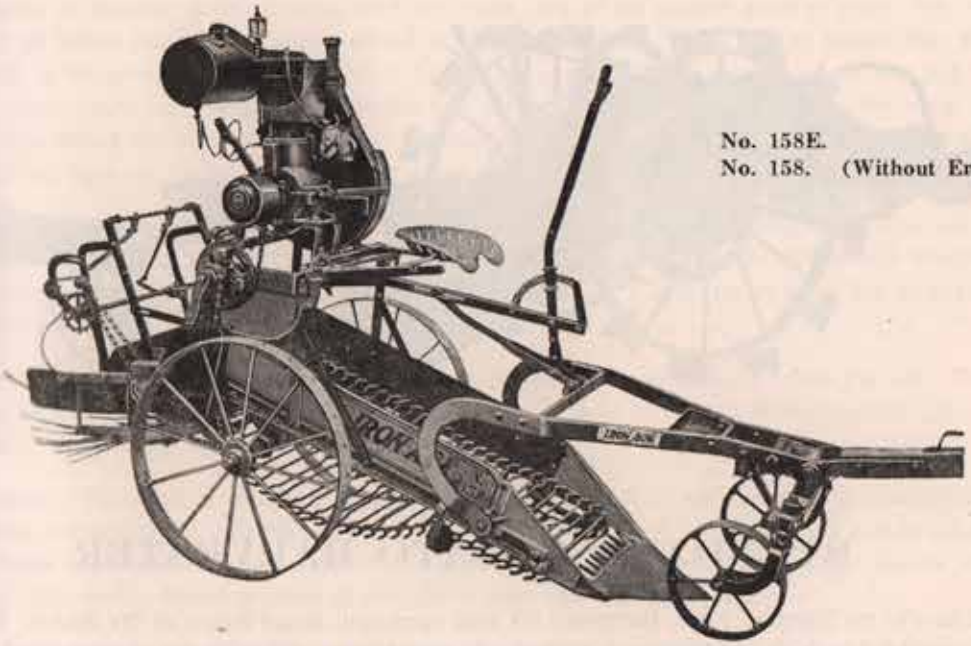
Steel kickers with spring trip help to keep the heavy vines and grass moving and no matter how thick and tangled the bunch, it is soon worked loose by the kickers, which work the same way as on a tedder. They are chain-driven and are easily tightened. A vine separator is furnished as a part of each shaker. When the growth of vines is very heavy it is desirous to have the vines thrown to one side, leaving the potatoes to drop in the middle of the row.

Throws in and out of gear from the seat. One lever shifts the pawls in both wheels. This is a great advantage, as the operator can throw the machine out of gear at the end of each row, saving time in both the turning and the picking up, as the potatoes remain on the elevator.

The No. 155 digger is equipped with an adjustable front truck, which enables the machine to be turned short without danger of upsetting or straining. The truck is pivoted to the pole and each of the wheels swing on castors. This enables the machine to run smoothly over ridges, roots, around a tree or stump or on a sidehill.

This digger can be backed and the plow held to any depth because the pole connections make it impossible to swing to the side. How many machines can be backed?

	Weight, Lbs.	Price
"Iron Age" Potato Digger No. 155, with 4-horse evener.....	1000	.....



No. 158E.
No. 158. (Without Engine)

Two-Horse Evener, Whiffletrees and Neckyoke With Each Machine

IRON AGE ENGINE-DRIVEN POTATO DIGGER

Dig your potatoes the quickest way, the economical way, the modern way, which is the Iron Age Engine Digger Way. Saves time, labor and horses and increases profits.

With the engine, the digger is a two-horse machine. Without an engine there should be four horses for heavy work. This machine saves you a team for other work. Suppose labor is scarce or your teams are needed for other work or the days of good weather are few, or you want to dig quickly to take advantage of certain market conditions—under all these circumstances the engine digger will save you money.

Engine. We use the well-known "New Way" air-cooled engine (4½ horsepower) because it is of the finest quality and workmanship, light, powerful, compact. This saves hauling the water tank required by water-cooled engines; also avoids slopping over, freezing, etc.

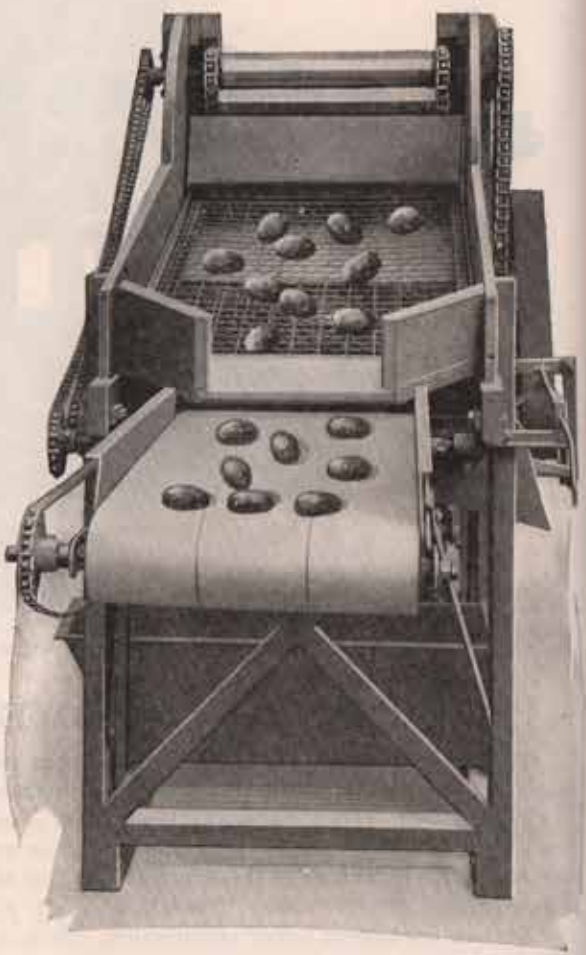
This engine is interchangeable with our Iron Age Traction Sprayer. It is easily detached from digger, and includes sub-base, and can be used for pumping, sawing, etc.

No. 158E is the only digger with automatic clutch throw-out to prevent breakage from stones caught in machine—a common occurrence. The digger is of the same general construction and dimensions as our No. 158 Traction Digger described in detail elsewhere in this catalogue.

After a thorough field test of the engine digger, The Hines & Smith Co., Caribou, Maine, wrote: "Yesterday we dug 3 acres in 4½ hours, kept 14 pickers working and 4 men hauling, digging about 450 barrels in that time."

"CLINTON" POWER POTATO GRADER—Continued

OPERATION



The "Clinton" can be operated with either electric motor or gasoline engine, 1½-horsepower being sufficient.

The potatoes are received into a hopper which is placed 24 inches from the floor—just the right height for emptying sacks or unloading from wagon. The hopper can easily be placed at a higher point if desired. The elevator, which carries the potatoes from the hopper to the shaker screen, is fitted with Louisiana Red Gulf Cypress cleats, which are attached to a malleable sprocket chain. The carriers on the elevator are arranged in such a way that the potatoes are carried to the sorting screen in a continuous flow, which is one reason for the "Clinton's" large capacity.

The "Clinton" Power Grader separates the potatoes into three grades. The No. 1 grade passes over the top screen onto the sorting table, which is equipped with a continuous movable canvas belt. The operator stands at the side of the table, and as the potatoes pass in front of him on the belt he can remove any rotten, frost-bitten, scabby, or otherwise inferior potatoes.

The "Clinton" Power Grader is the only machine on the market that is equipped with a picking belt. Many large buyers are demanding that all No. 1 grade potatoes they purchase pass over a picking belt. The reason for this is obvious—especially in seasons when second growth and scab are prevalent.

A picking table substantially built is attached to the "Clinton" Grader and is equipped with a picking belt, made of two-ply cotton woven canvas, which is driven from both ends with a positive chain drive. The entire outfit can be removed from the grader in five minutes, if desired.

The U. S. Department of Agriculture in its Bulletin No. 753 recommends that potato sizing machines be equipped with sorting belts. This is necessary, the bulletin states, in order to give the operator ample opportunity to remove all defective stock.

The "Clinton" Power Grader measures up to this requirement in every way. It delivers a uniform grade, free from dirt, culls and unmarketable potatoes.

The No. 2 grade potatoes pass through the top screen and over the bottom screen, and are discharged from a chute at the side of the grader. A sack can be placed under the chute.

The No. 3 grade, or small potatoes and dirt, pass through the bottom screen into a steel receptacle provided with handle and tapered end so that they can be easily weighed and emptied into the farmer's wagon or sack. This convenient arrangement prevents the floor from becoming littered with small potatoes and dirt.

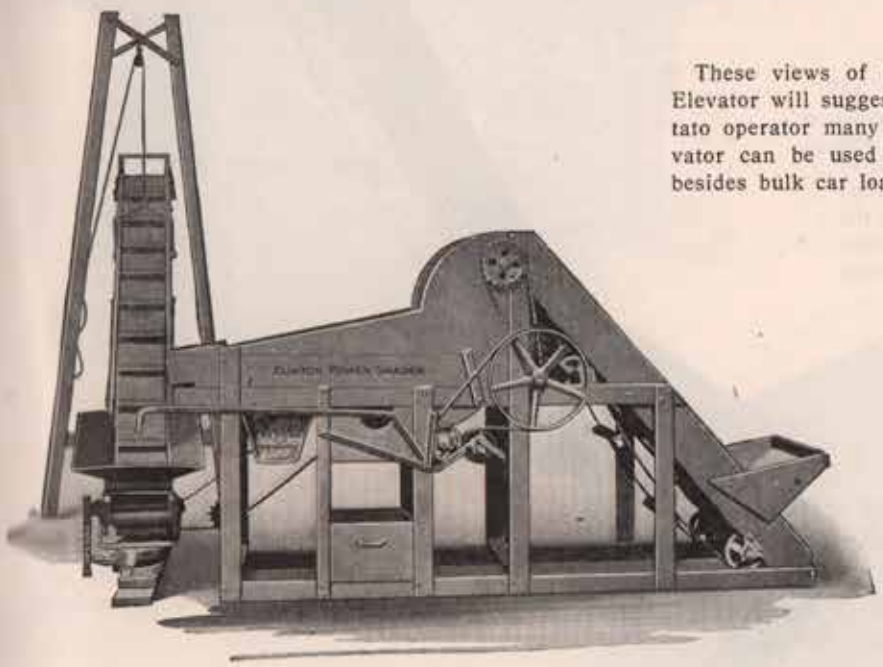
The "Clinton" Power Grader has a capacity of 225 bushels per hour, and requires floor space of only 3½ feet by 13 feet.

Shipping weight, with picking table, 570 pounds.

Shipping weight, without picking table, 510 pounds.

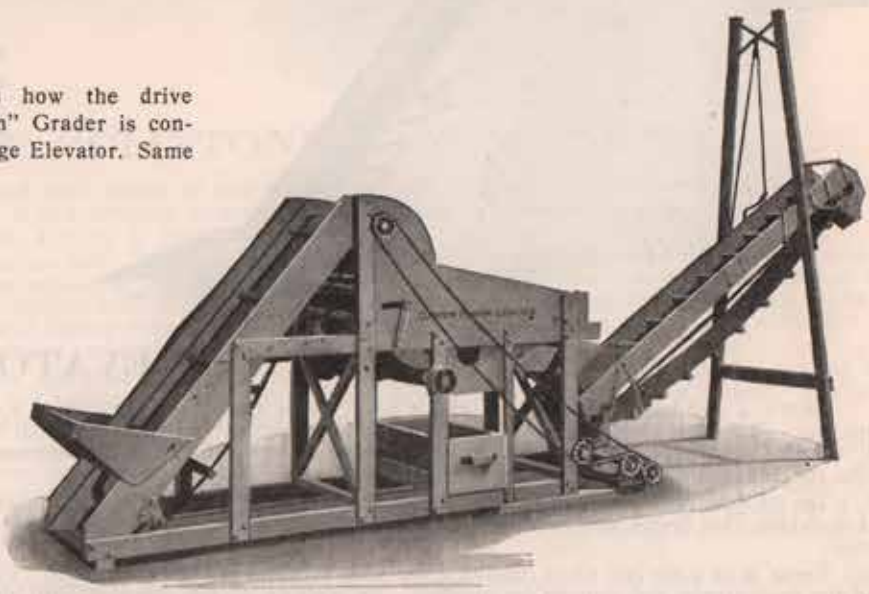
Power required—1-horsepower motor or 1½-horsepower gas engine.

"CLINTON" BULK CAR LOADER OR DISCHARGE ELEVATOR



These views of the "Clinton" Discharge Elevator will suggest to the experienced potato operator many ways in which this elevator can be used to save time and labor besides bulk car loading.

This illustration shows how the drive mechanism of the "Clinton" Grader is connected up with the Discharge Elevator. Same power drives them both.



The "Clinton" Car Loader can be attached to any standard "Clinton" Power Grader. It operates with the same motor or engine as the grader. No additional power is required. The purpose of the elevator is to conduct potatoes directly from the grader into the car. These elevators are used extensively for track loading in localities where no potato warehouse is available.

Many potato men mount the grader and elevator on a low truck large enough to provide space for a gasoline engine. The truck is then moved to the car which he desires to load.

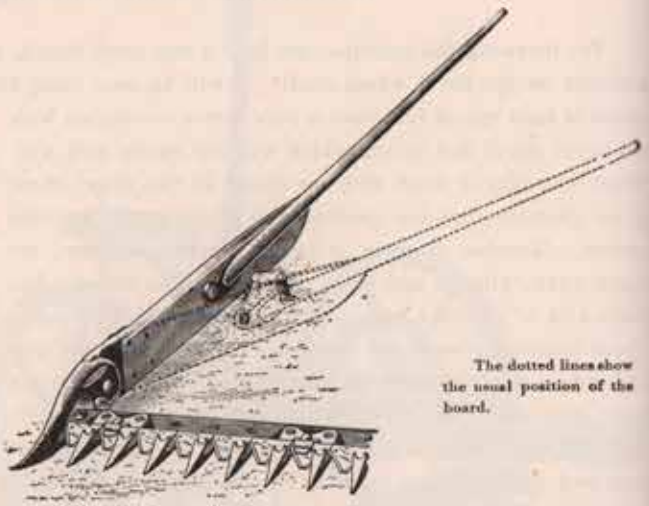
The elevator rests on a swivel base, making it possible to swing the elevator so as to load a car from any angle. By pointing the elevator into one end of the car and gradually working to the center and then to the other end the entire car can be loaded without manual labor.

The elevator is substantially built of wood and is equipped with rubber carriage belt same as used in our Warehouse Conveying Systems. A spout is provided at the discharge end and when lowered to the proper height serves as a very convenient sacker. The standard length of elevator is 10 feet.

The "Clinton" Grader and Discharge Elevator complete weighs 260 pounds.

MASSEY-HARRIS MOWERS—Continued

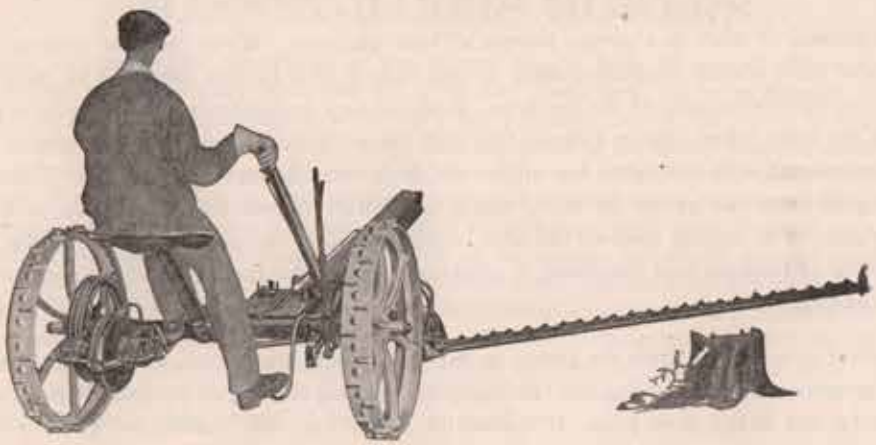
At the outer end of the bar a flexible swath board is used. This board has just enough vibration to always make a wide, clear track, even when working in a heavy crop, and at the same time prevents bunching of the hay. It is controlled by a flat steel spring, which bears against a steel plate on its outer side and is able to meet obstructions of the ordinary kind, such as stones, roots, etc, without much chance of breakage. The spring allows it to yield sufficiently to pass the obstruction and then quickly returns it to its working position. A steel runner protects its lower edge.



The dotted lines show the usual position of the board.

Each of the mowers is provided with a simplified foot-lift of an entirely new design by which the operator can easily raise the longest of the bars. This lift is aided in its operation by a strong coil spring placed at the rear, where it is readily accessible for adjusting and is not affected by the removal of the pole. In fact, the pole can be removed without disturbing any parts or changing any adjustments. It is simply necessary to remove two bolts which pass through the pole and frame. This is a convenience that is much appreciated when storing the machines. It is also of considerable value in that it permits shipping the mowers set up practically complete with the exception of the pole and bar.

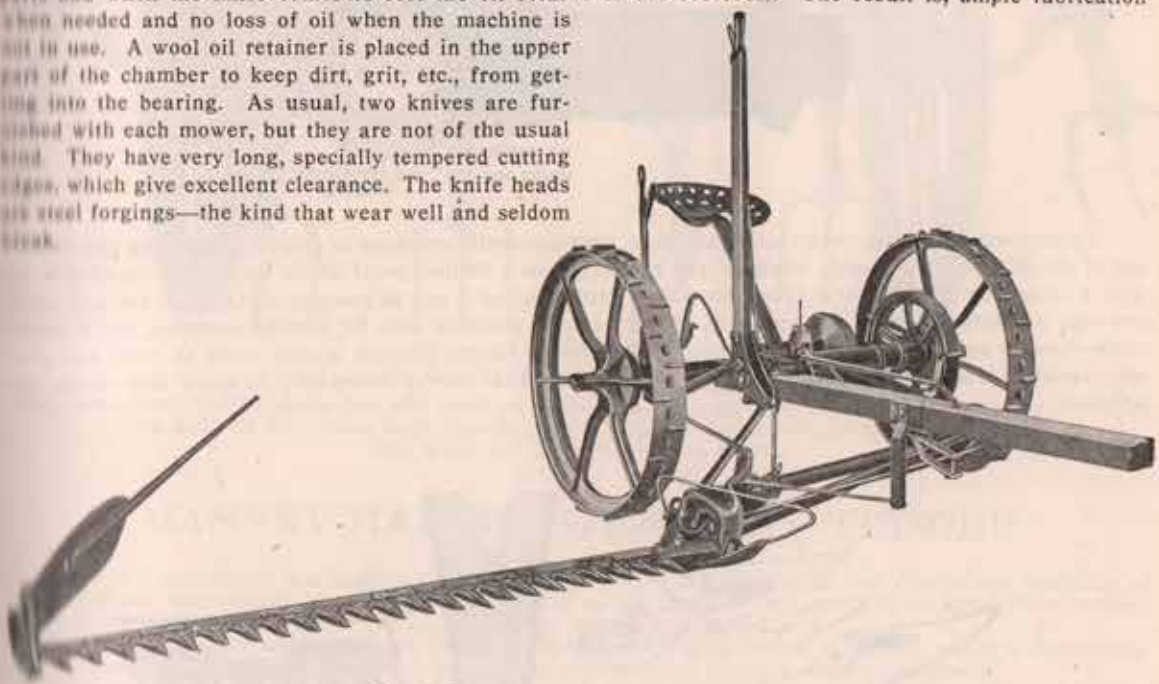
On the No. 20 a vertical lift has been provided whereby the bar can easily be brought upright by operating the raising lever. In the next illustration the bar is shown in the position to which it is raised by moving the hand lever backed to its furthest limit before the raising cam is engaged. When it is desired to raise the bar to a vertical position, the lever is again moved to the forward position and engaged with a notch on the cam. It is then in position for the operator to bring the bar upright.



Few mowers, if any, have as good a cutting apparatus as is found in the Massey-Harris Nos. 20 and 21. In these machines it is as nearly perfect as it is possible to make it. The pitman is of good length and works as nearly in line with the knife as practicable, giving it a direct, sure-cutting stroke. At the lower end forged steel straps which connect to the knife with a socket joint are used, while at the upper end a steel forging on which the pitman box has a screw adjustment is provided. This adjustment of the pitman, like

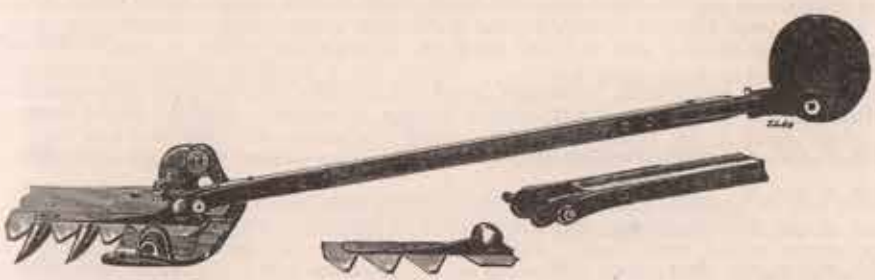
MASSEY-HARRIS MOWERS—Continued

that of the push bars, is oftentimes of value in registering the knives after the machine has been in long use. The pitman box itself is of malleable iron, but is fitted with a brass lining, which furnishes the bearing on the wrist pin. As shown in the illustration, ample provision is made in the box for keeping this important bearing well lubricated. A good oil chamber, which is connected to the bearing by two oil vents, is the means. When the machine is in operation, centrifugal force causes the oil to flow on the bearing parts and when the knife comes to rest the oil returns to the reservoir. The result is, ample lubrication when needed and no loss of oil when the machine is not in use. A wool oil retainer is placed in the upper part of the chamber to keep dirt, grit, etc., from getting into the bearing. As usual, two knives are furnished with each mower, but they are not of the usual kind. They have very long, specially tempered cutting edges, which give excellent clearance. The knife heads are steel forgings—the kind that wear well and seldom break.

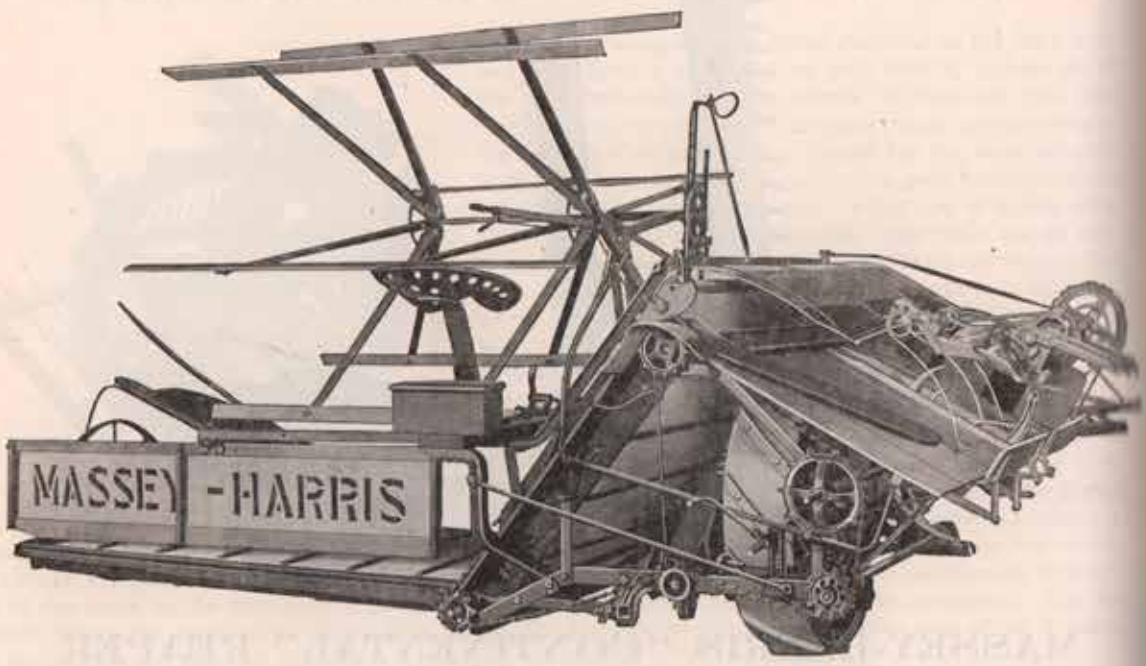


MASSEY-HARRIS NO. 21 MOWER
(Plain Lift)

This mower is a heavier and bigger machine than the No. 20. It is built for large farms and will carry a 5, 6 or 7-foot bar.



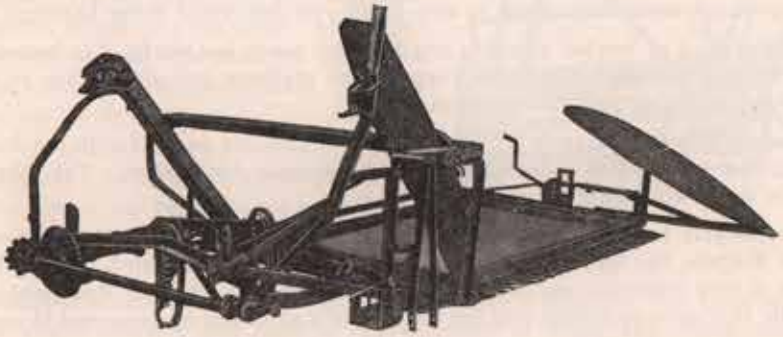
The cutter bar itself is a most excellent piece of construction. Made of special rolled steel, carefully machined and fitted, and assembled with parts, all of which have received the same careful attention, it is a guarantee that Massey-Harris Mowers will cut to satisfy the most skeptical. Malleable guards of ample strength to retain their positions and yet of the correct shape to readily pass through the stubble are used. Both bar and guards are planed or milled to fit one another perfectly. This assures an alignment that it is not otherwise possible to get. Every guard is where it belongs and every knife section makes a perfect shear with the serrated steel plates which are riveted in the guards. Long, adjustable steel wear plates, placed closer together than usual, take the wear of the knife at the rear, while forged steel clips hold it in its work. Both shoes are securely attached and are provided with adjustable sole plates. Such a bar as one that is serviceable and durable—is found on every No. 20 or No. 21 Massey-Harris Mower.



MASSEY-HARRIS BINDERS

MASSEY-HARRIS BINDERS

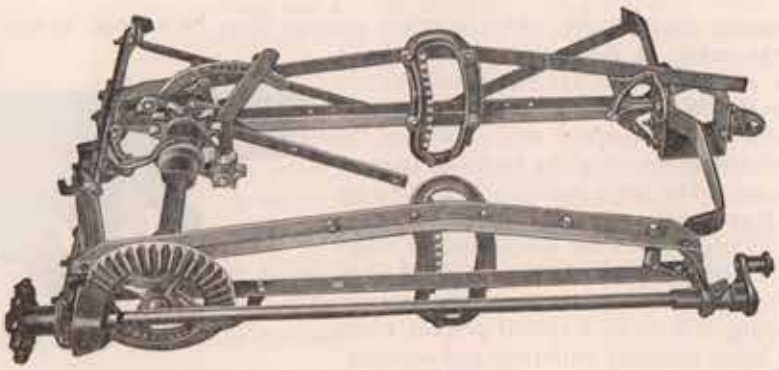
When a grain binder gives such splendid service that its introduction in a locality means many additional sales not only during the first season, but during each succeeding one as well, you may be assured it is a machine of no small merit. The Massey-Harris No. 5 Binder, which is built in only the left-hand



style, is a machine of that kind. Wherever it is sold it rapidly gains in favor, showing conclusively that it is worthy of its cost. In lightness of draft, reliability, convenience and durability it is excelled by none, a fact you will readily appreciate if you once investigate its construction and operation.

No binder has a better main frame, few have as good. High carbon steel is used throughout its construction and at every point subject to strains it is braced and reinforced in a most substantial manner, with the result that all of the working parts are held in proper relation one to another.

MASSEY-HARRIS BINDERS—Continued



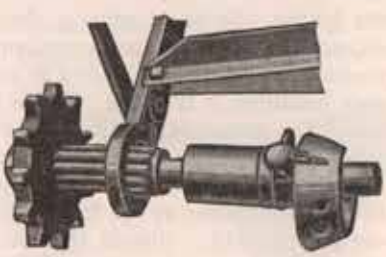
The double steel angle truss guarantees the alignment of the master wheel. It supports the segments at both ends so well that no matter whether the machine is raised to the highest point or lowered to the lowest, the wheel cannot possibly wobble or sag to one side. Each part of the construction has ample strength to support the weight it has to bear and all are put together in the best way possible, making a frame which, in every sense of the word, is built for service.

Additional bracing is given it by a seat board, supported at both ends by steel angles, which ties it securely. The seat spring can be adjusted on this board to balance the machine with operators of different weights. A comfortable seat is provided, all of the levers are within easy reach and the driver at all times has a good view of the work that is being done.

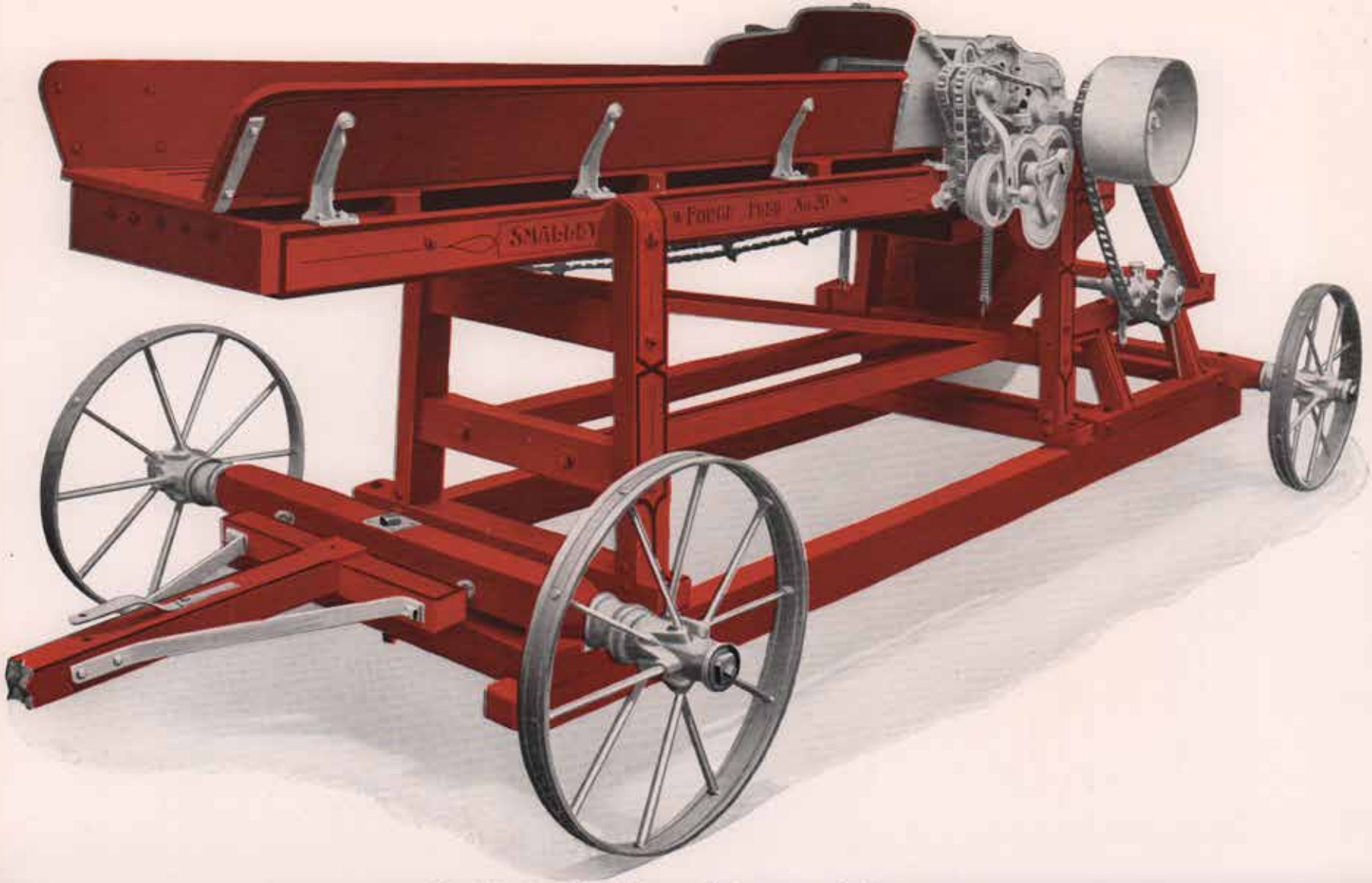
The master wheel is entirely of steel with the exception of the hub. It has a wide steel tire, reinforced by flanged edges and provided with plenty of angle steel calks to assure its traction and prevent it from slipping. A relief spring breaks its jar when the machine is working on hard or rough ground. The power furnished by it is transmitted direct to the bevel wheel shaft by a steel locke belt chain, which is kept at the proper tension by an automatic tightener.

From there the crank shaft is driven by a set of bevel gears, which are provided with a set screw adjustment for regulating their mesh as the machine wears from continued service. Self-aligning and roller bearings, all of which are easily accessible for oiling and are provided with good oil cups or chambers, are freely used. Friction and wear are thus reduced to the minimum, the draft of the machine is lightened accordingly and its life is prolonged.

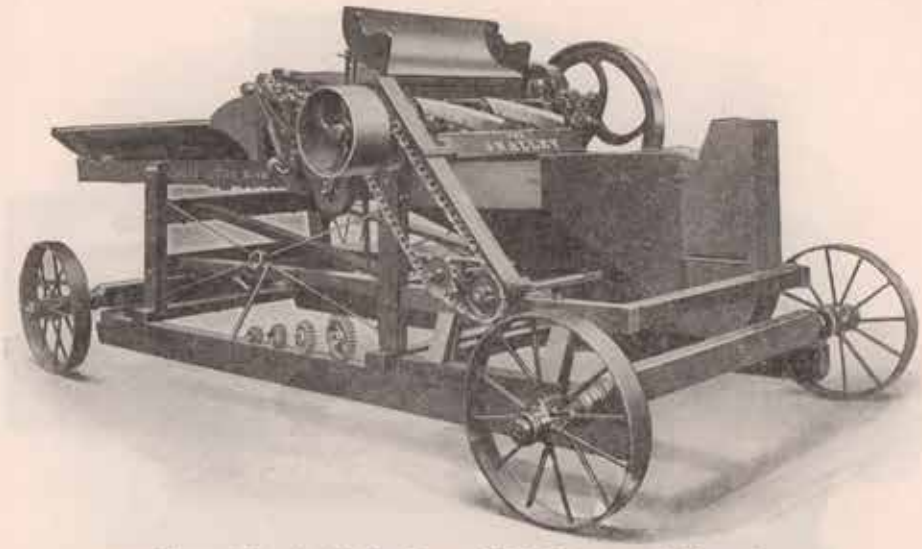
The platform is of good width for handling the different crops and is representative of great strength and rigidity, as will be readily seen if its construction is examined. It is reinforced at the outer side by angle steel ribs, to which it is securely riveted, and at the grain wheel end by a trussed construction—one of the strongest forms possible. It is also substantially reinforced where it connects with the main frame. These various reinforcements are further supplemented by a steel T cutter bar, which prevents sagging and retains the alignment of the guards.



The guards are of malleable iron and are so shaped that they pass through the stubble readily. They are carefully milled to fit the bar to a nicety and, accordingly, fur-



No. 20 Smalley Mounted Cutter and Blower



View of No. 40 Alfalfa Cutter With Blower and Mounting

SMALLEY FORCE FEED ALFALFA CUTTERS

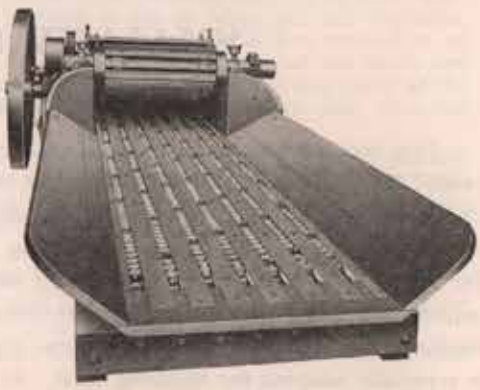
There is, without doubt, more Smalley Alfalfa Cutters operating in the Pacific Northwest than the total, combined, of all other makes. We believe we can make this statement without fear of contradiction. Their weight and strength, great capacity, Grip Hook Chain Feed and the Top Steel Draper all combine to make the powerful Smalley a favorite with big stock growers and feeders, and particularly the men who do custom cutting for profit.

The Top Apron of the alfalfa cutter is made with channel iron slats and provided with a spring arrangement which assists in feeding the mats, preventing them tipping up and bunching in front of the feed rolls. It also packs loose alfalfa so that the feed rolls have greater capacity. They are provided with patented inside bearings to relieve the strain on the apron chains.

Knife Shafts on the Nos. 20 and 26 are 2¼ inches in diameter, and 2½ inches in diameter on the No. 40.

Gears are furnished to cut ¼, ⅜, ½ and ¾ inches, and on special orders to cut ⅛ inch.

Capacity below is based on ⅛-inch cut. It is greatly increased when longer cuts are used.



View Showing Grip Hook Table and Channel Iron Apron on Smalley Alfalfa Cutter

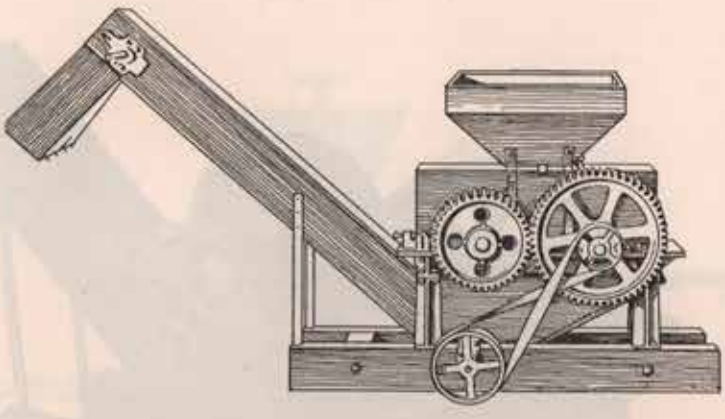
SMALLEY ALFALFA CUTTERS

Size	Capacity in Tons per Hour	Gasoline Engine Power Required	Weight	Price
No. 20 Smalley Alfalfa Cutters, 16-in. pulley	¾ to 1¼	15 to 30	1900	
No. 26 Smalley Alfalfa Cutters, 16-in. pulley	1 to 2	20 to 40	2300	
No. 40 Smalley Alfalfa Cutters, 16-in. pulley	2 to 4	35 to 60	3150	

MOUNTINGS

	Weight, Lbs.	Price
Trucks complete, less hitch, for No. 20, add	500	
Trucks complete, less hitch, for Nos. 26 and 40, add	550	

R·M·WADE & CO.
SINCE 1865
PORTLAND, ORE. SPOKANE, WASH.



View of Grinding Gear and Elevator Drive

NO. 20 WADE'S ROLLING AND GRINDING MILL—Continued

At slight additional cost we furnish Grinding Attachment on Roller Mill, using special gears that permit of take-up as rolls wear and are re-corrugated. For certain use fine ground feed is desirable. This combination with a mill that can roll meets a long-felt demand.

Table of Dimensions and Approximate Capacity

Face of rolls	4 inches
Diameter of rolls	16 inches
Length of bearings	3½ inches
Diameter of shafts	1 7/16 inches
Diameter of drive pulley	12 inches
Width of drive belt required	4 inches
Height of hopper from floor	40½ inches

Mill should run 400 revolutions per minute.

Approximate capacity rolling or grinding wheat, barley or oats, 300 pounds per hour per horsepower, up to one ton per hour.

Shipping weight: Roller Mill, 500 pounds; Grinder Attachment, 100 pounds.

We have but one size, but that one is right.

Sunnyside, Oregon, Feb. 11th, 1916.

R. M. Wade & Company,
Portland, Oregon.

Gentlemen:

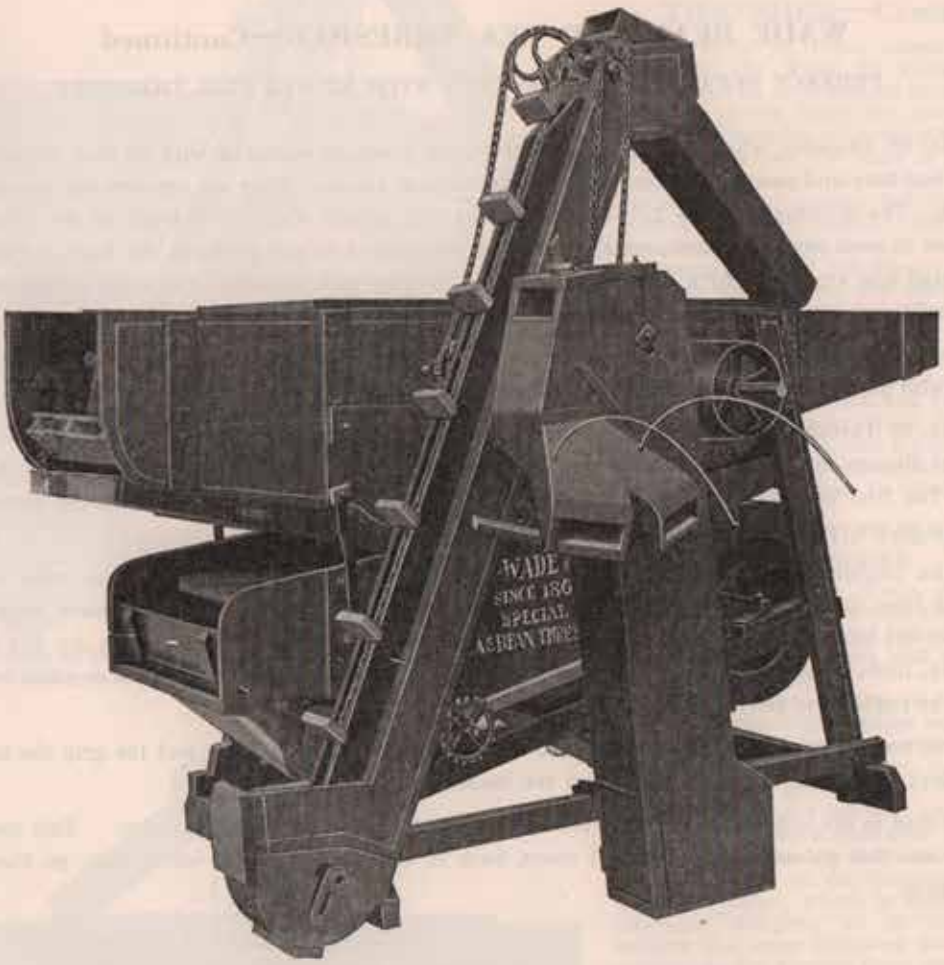
I have used one of your Wade Roller Mills for five months and am very well pleased. It is A No. 1 and I can easily grind one ton per hour. While I have owned five different mills, this is the fastest and most simple of them all.

Yours truly,
FRANK OTT.

NO. 20 ROLLING AND GRINDING MILL

	Weight, Lbs.	Price
No. 20 Wade's Roller Mill	500	.....
For Grinding Attachment, add	100	.....

R·M·WADE & CO.
SINCE 1865
PORTLAND, ORE. SPOKANE, WASH.



WADE BEAN AND PEA THRESHER

WITH A WADE BEAN AND PEA THRESHER EVERY FARMER CAN HANDLE HIS CROP AT A COST OF A FEW CENTS A BUSHEL. IT WILL ENABLE HIM TO MAKE BIG PROFITS FROM THESE CROPS

A Western product, made under Western conditions for the Western farmer. Built of the best materials throughout.

The wood used in the Wade Bean and Pea Thresher is extra select, air-dried No. 1 Western White Pine. All grooved and bolted together—no glued joints in the entire machine. All castings and metal parts have been carefully selected from the proper materials to insure long life and freedom from breakage. The belts furnished are the very best rubber belting. The sieves, cylinders, concaves and all working parts are strongly made and carefully finished. The whole machine is built to give unusual long life and to "stand the gaff."

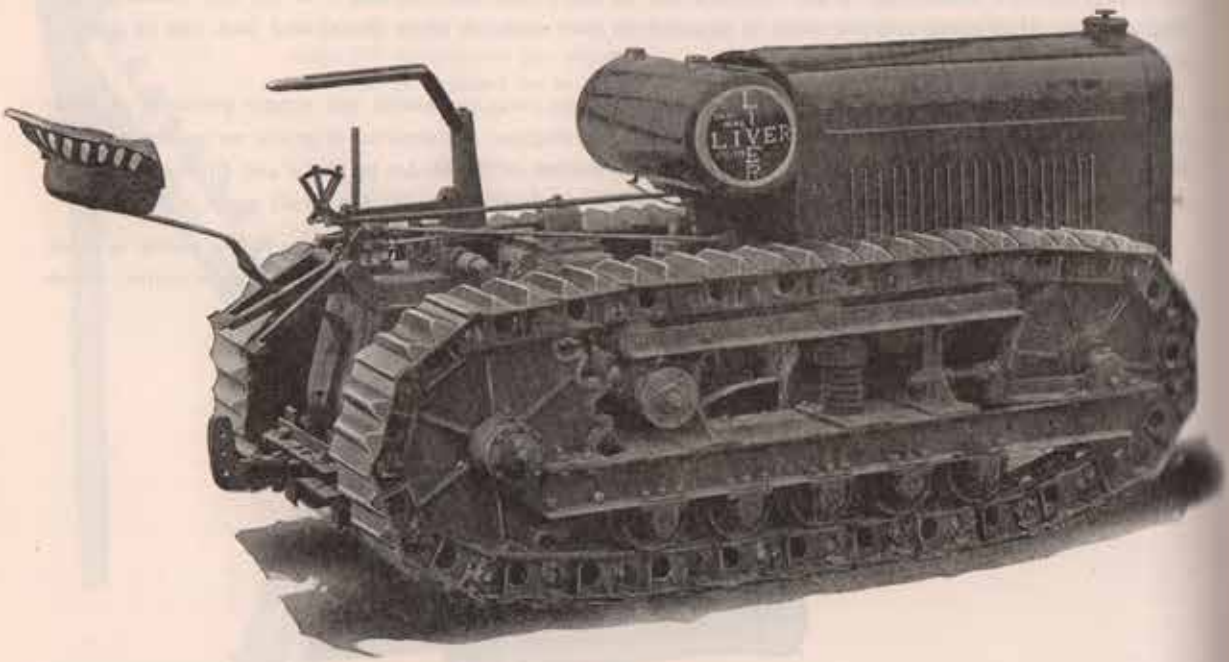
The Wade Bean and Pea Thresher is the result of actual experience in threshing bean and pea crops on farms in the Pacific Northwest. It is designed to meet Western needs and Western conditions by men who understand those needs and conditions thoroughly. It is manufactured right here in the West.

The Wade Bean and Pea Thresher is not a custom machine, but a thresher which you can afford to own and use on your own crop. If you have two or more acres of beans or peas (or both), you will find a Wade Thresher a big money-maker for you.

The Wade is simply and strongly built. With ordinary care it will last for 15 or 20 years.

THE OLIVER TRACTOR

MODEL "A" 15-30



SPECIFICATIONS

Motor Specifications

Beaver 4-cylinder, 4-cycle, valve-in-head, 4½-inch bore, 6-inch stroke. Normal speed, 900 R. P. M.

Fuel for Starting—Gasoline.

Fuel for Running—Gasoline or kerosene.

Weight—1000 pounds.

Open flywheel, four-point suspension.

Crank Shaft Bearings—Bronze, Fahrig lined.

Crank Shaft Bearing—Front, 2⅜x3½ inches.

Crank Shaft Bearing—Center, 2⅜x3½ inches.

Crank Shaft Bearing—Rear, 2⅜x4½ inches.

Connecting Rod Length—12½ inches.

Connecting Rod Bearing—2¼x2¾ inches.

Wrist Pin Diameter—1½ inches.

Piston Length—5 5/16 inches.

Number of Piston Rings—Each piston, four.

Diameter of Valves—2 3/16 inches.

Diameter of Valves in the Clear—2 inches.

Lift of Valves—⅜ inch.

Intake and Exhause Valves—Interchangeable.

Valve Tappets—Roller type.

Entire head, including valves, detachable.

Removable bottom plate on lower crankcase.

Two removable inspection-hole covers in upper crankcase.

Connecting rods and pistons removable without removing crank.

Cooling—by water circulation from centrifugal pump; water spaces extra large, entirely surrounding cylinders, valve chambers and spark plug vents.

Lubrication—Splash to cylinder walls, force feed to crankshaft, connecting rod bearings and gear case; front camshaft bearing by oil pocket, fed from gear case; center and rear camshaft bearings by splash; rocker arms by oil pockets.

Camshaft Diameter—1¼ inches.

Camshaft Bearing—Front, 1¾x3 inches.

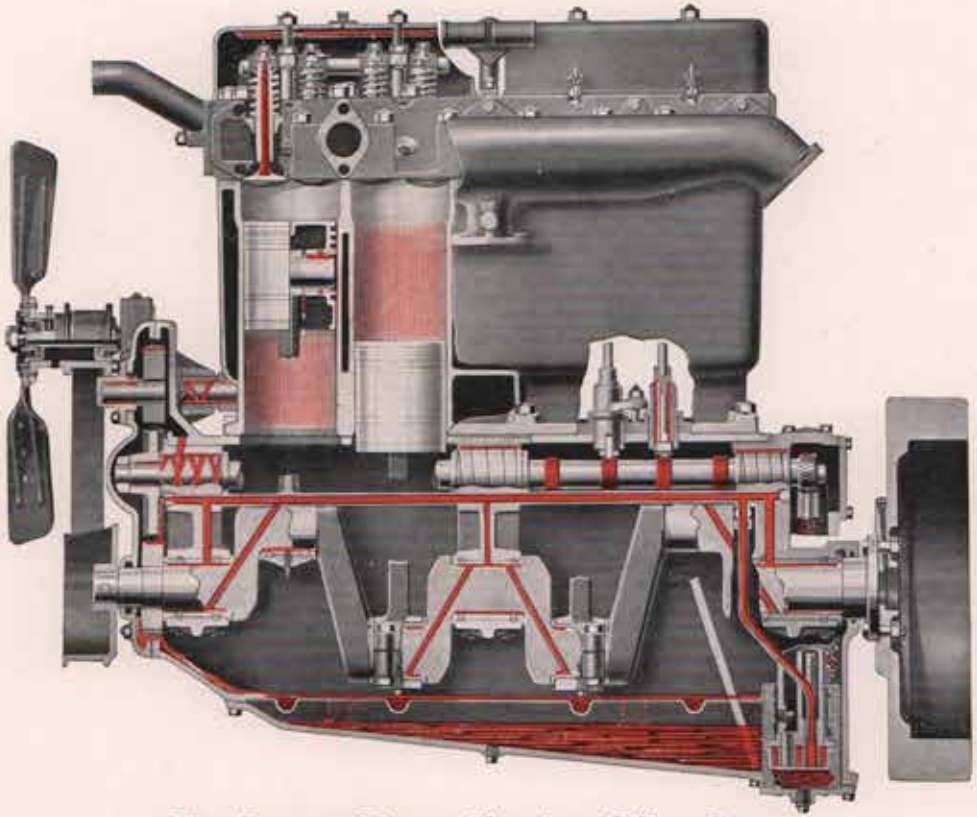
Camshaft Bearing—Center, 2½x3⅛ inches.

Camshaft Bearing—Rear, 2x2 5/16 inches.

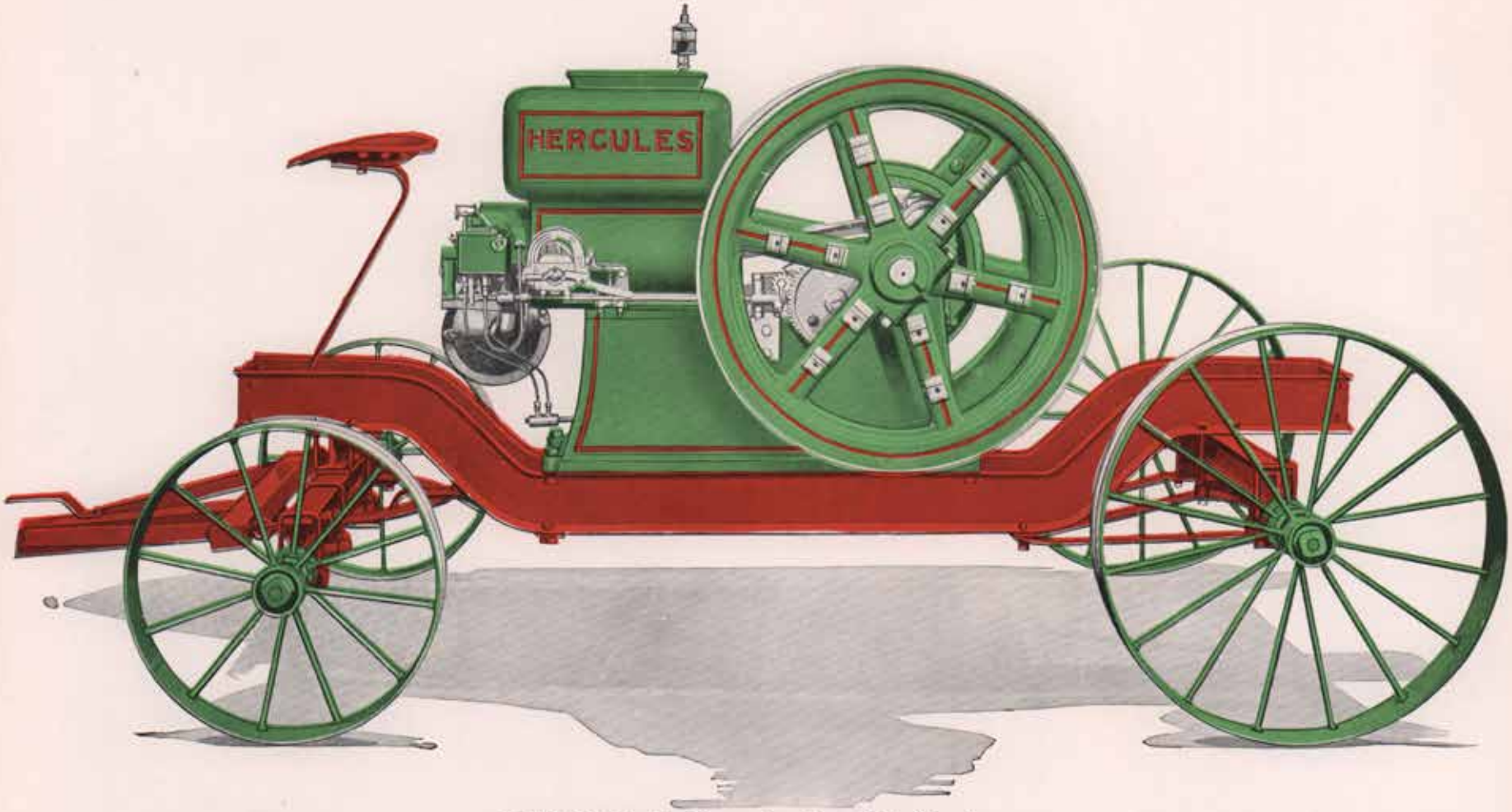
Integral cams, hardened and accuratley ground.

Gears helical cut with large angles, steel against cast iron. 1-inch face, fully enclosed in oil-tight case.

All parts of engine completely enclosed except auxiliaries.



The Beaver Motor, Showing Oiling System



5-7-9-12 H. P. Hercules Portable Engine

HERCULES GAS ENGINES

Through a period of twenty-five years of successful industrial activity the name Hercules has achieved a distinction in its application to gas engines quite as significant as the Sterling mark on silver.

No other engine upon the market, regardless of price, can show as much real service quality; none has so many superior mechanical features, nor does any offer so much actual value as is built into the Hercules line of kerosene and gasoline engines.

From its very inception, the Hercules has held the foremost position in the gas engine field. Since the early days of the industry, the Hercules has been manufactured upon well defined principles developed through an intensive knowledge of gas power engineering. How logically correct these principles have been is best evidenced by the fact that they have contributed to the development of the largest and best equipped gas engine plant in the world today.

The Hercules equipment of fine machinery, fine tools, jigs, fixtures and appliances is not equalled in the gas engine industry. It includes a large battery of automatic labor-saving machines, many of which are capable of turning out from two to ten times the volume of work produced by the ordinary methods—an important factor in making possible the Hercules price and an important factor in making possible the Hercules quality.

The Hercules system of inspection is so exacting that it practically eliminates any chance of an imperfect part being assembled in the engine, so far as can be detected by the most accurate measuring instruments known to engineering science. From the time the raw materials reach the warehouse and foundry until they leave the plant in the finished product, they are under the careful scrutiny of experts trained in accordance with the high standards of the Hercules organization. This inspection extends even to the smallest pieces, including nuts, bolts and screws.

The Hercules has never had embodied in its makeup features whose value was confined to their use as "talking points." The Hercules finds its sale not especially among purchasers whose limit of investment is the Hercules price. It appeals alike to the discriminating buyer who demands a dollar's worth for every dollar of investment, and to the buyer who places dependability and service above all price consideration.

The Hercules is the most sturdy and dependable of all gas engines. It is an engine of enduring service. In economy of operation and maintenance there is none that enjoys a favorable comparison with it. In real and substantial gas engine value the Hercules has no equal.

Every engine illustrated and described in this catalogue is built for service first, economy next and salability all the time. Every feature of design, every piece of material and every detail of construction has been so handled as to place the Hercules Engine at the topmost point of perfection in gas engine building.

You can put the Hercules on your floor in absolute confidence that you have the most perfect gas engine that man or money can make and at a price which will get you a constantly increasing volume of business.

Remember, "All we can give for the money, not all we can get for the goods"—that's the policy which has made Hercules the gas engine of the day.

HERCULES GASOLINE ENGINES

1½, 3, 5, 7, 9 AND 12-HORSEPOWER

The care used in building Hercules Engines—kerosene and gasoline—may best be seen from a careful study of the numerous features illustrated through this catalogue.

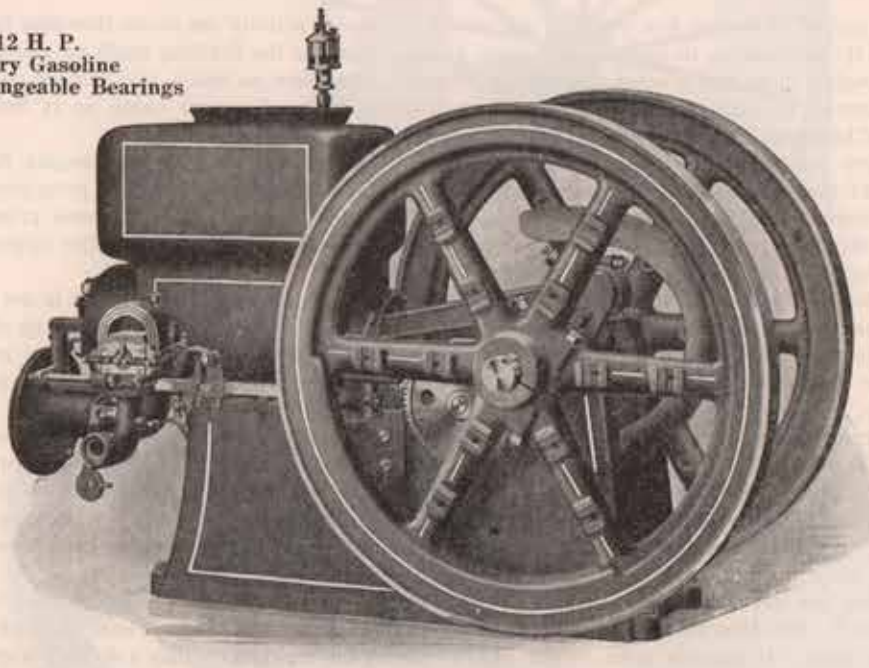
Take, for instance, the engine base, illustrated on page 275. Note the milled groove at the top and the tongue that is milled on the cylinder pad which fits into the base groove. These are both done on special machines absolutely accurate, so that the tongue and groove fit together without any side play. This is a very important feature of the Hercules construction, as it makes it absolutely impossible for any side play of the piston or connecting rod. In addition to this accurately machined joint, the cylinder is held to the base by six heavy cap screws, three on each side.

The main bearings are designed extra wide with large reinforced bearing stands. The bearing radius and sides are accurately machined in relation to the groove in the engine base, so that the crank shaft and connecting rod must be in absolute line with the cylinder bore. This reduces friction to a minimum, and means less wear, more power and longer life. Removable die-cast bearings, made of high-grade babbit metal, are used in the bearing radius as a seat for the crank shaft.

The Hercules governor is of the fly-ball type, with speed regulator, and we consider it much superior to the cheaply constructed fly wheel governors. A steel pinion is used on the crank shaft to drive the governor, the governor pinion itself being made of steel and all other parts that are subject to wear are made of special tempered steel.

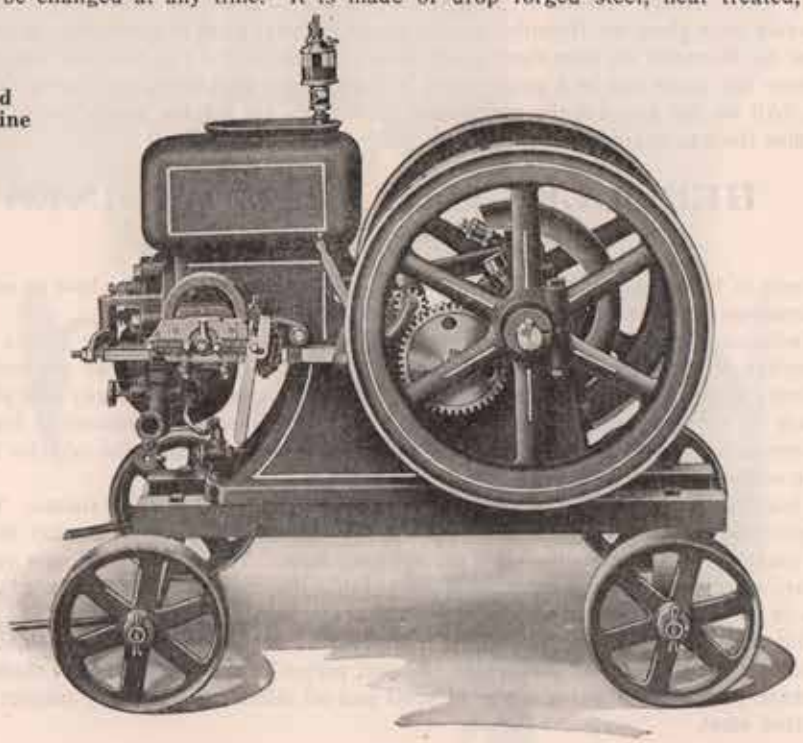
HERCULES GAS ENGINES—Continued

3-5-7-9-12 H. P.
Stationary Gasoline
Interchangeable Bearings



For ignition we use the make-and-break igniter, which, for stationary work, is far superior and more reliable than the jump spark system. The igniter is made of the best materials, springs are special tempered steel. The igniter is operated by a hardened steel igniter trip blade that you see on the trip bracket fastened to the cam rod that runs along the side of the engine. This trip is adjustable so that the position of the spark can be changed at any time. It is made of drop forged steel, heat treated, to insure long

1½ H. P. Hand
Portable Gasoline



HERCULES GAS ENGINES—Continued

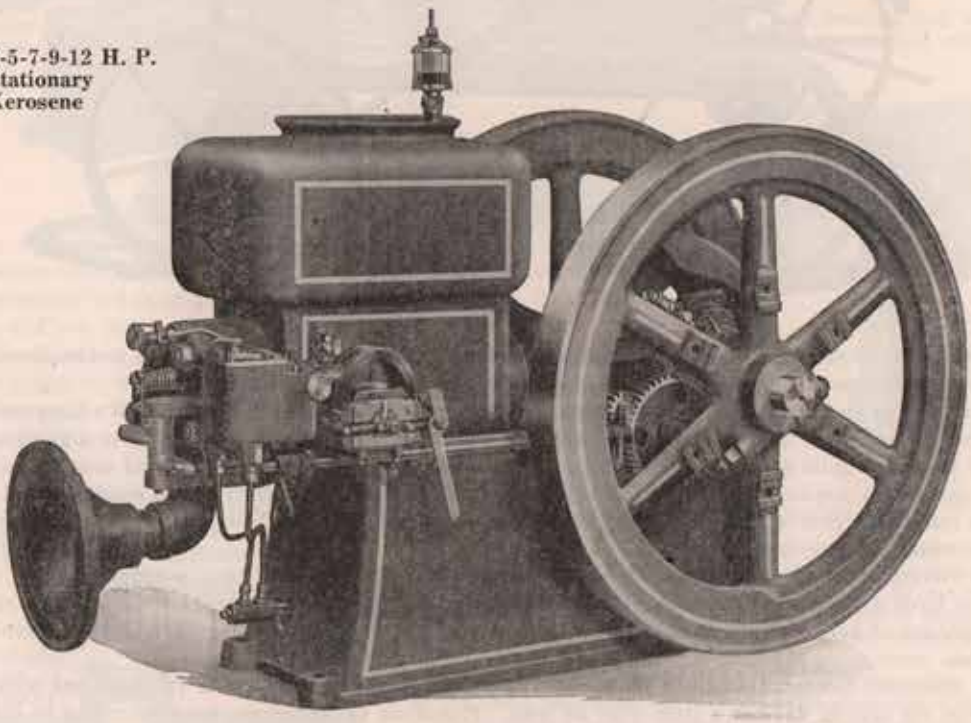
service. All parts are accurately machined with ground joints to prevent loss of compression and are interchangeable. The Hercules igniter is not only the best, but the simplest that it is possible to make.

The piston is cast in our own foundry from a special mixture of grey iron. It is turned, finished and ground to a perfectly smooth surface and machined to exact size within one-thousandth part of an inch. The piston rings, which are one of the most necessary parts of an engine, are each cast separately, which is admitted by all engine builders to be the only way to make a piston ring that will hold its shape and hold the compression. Hercules piston rings are made of the same materials and by the same methods as those used in the highest grade automobile engines.

Our connecting rod is of the I-beam design, drop forged, of ample size to insure plenty of strength. A case-hardened steel pin is fitted in one end of the connecting rod to hold the piston, and we use a special oil cup on top of this end to insure the piston pin inside of the piston being properly oiled. The large end of the connecting rod is machined accurately and die-cast bearings are used where it connects to the crank shaft.

All crank shafts are oversize. The cheeks of the crank-throw are all extra size and of ample strength, which enables us to absolutely guarantee the Hercules drop forged crank shafts against breakage and strain.

3-5-7-9-12 H. P.
Stationary
Kerosene



HERCULES KEROSENE ENGINES

3, 5, 7, 9 AND 12-HORSEPOWER

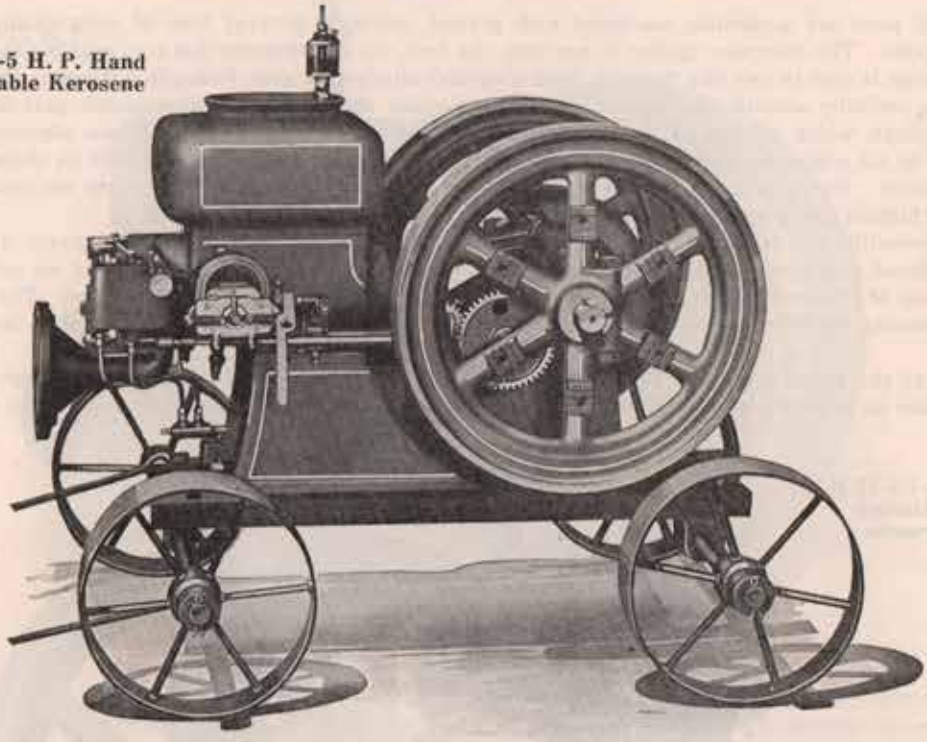
On this page we show an illustration of our popular Hercules Stationary Kerosene Engine, equipped with the Crankless Webster Magneto, which eliminates all need of batteries, coils and switches and makes it possible to start engine without cranking.

The Hercules throttling governed kerosene engine is not a gasoline engine converted to use kerosene by simply using a few special attachments. It was built with the one idea of producing an engine that would really operate successfully under all conditions on common kerosene and other low-grade fuels under full load, one-half load, or no load.

Many experiments have been made for the purpose of determining the possibilities of using low-grade fuels. Nearly all of these experiments have shown they can be used under proper conditions, but these conditions call for specially designed low-grade fuel carburetors and such modifications in the construction

HERCULES KEROSENE ENGINES—Continued

3-5 H. P. Hand Portable Kerosene



of the engine as is necessary to prevent condensation of the fuel before it reaches the combustion chamber. The Hercules Kerosene Engine was especially designed with all these points in mind.

An engine to run successfully on kerosene must be built complete in the factory. We have never found a kerosene carburetor or mixing valve that would give satisfactory results when attached to a gasoline engine, although there are quite a few on the market, many of which we have tested and found unsatisfactory.

To operate an engine successfully on kerosene, it is absolutely necessary that a small amount of water be taken into the engine with the kerosene vapors by the suction stroke. Too much water or too little water produces unsatisfactory results.

The Hercules Kerosene Engine is built complete in our factory. We have a special mixing valve, on which we have applied for patent, that produces desired results by admitting on the suction stroke the proper amount of kerosene vapor and water. This feature is what makes the Hercules Kerosene Engine successful.

The Hercules Kerosene Engines have been tested under all conditions with full load and with no load, having run for several days at a time with no load. Hundreds of them have been operating in the field in hands of customers and proved entirely satisfactory.

The Hercules Kerosene Engine is a guaranteed success.

Hercules Engines have a record of achievement known to no other gas engine on the market.

The phenomenal record of Hercules sales is a record of superior value backed by a quarter century of honorable dealings. Nothing could be more significant of this than the fact that the largest sales come from localities where there are already many Hercules engines in use.

There are many reasons why one working Hercules engine almost invariably causes others to be purchased in the same locality, but the one outstanding feature is its masterful construction, which insures long service; absence of trouble and a minimum cost of fuel and maintenance.

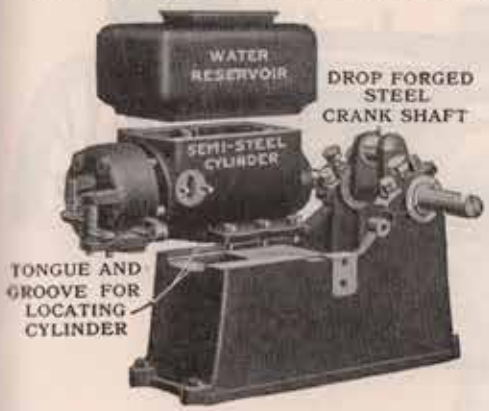
Hercules engines are easy-starting and smooth-running. All machine work is done by specially designed equipment and all parts are duplicated to the thousandth part of an inch. If ever it becomes necessary to replace any part a Hercules owner knows it can be had promptly and that it will fit.

Hercules engines possess many valuable patented features obtainable in no other engine, thus the Hercules dealer is assured that his competitor cannot jeopardize his trade by offering other makes of engines with the same features.

HERCULES ENGINES—Continued

Tongue and Groove Joint

The tongue and groove joint used on the Hercules in attaching the cylinder to the base insures perfect alignment in piston travel, preventing side thrust, undue friction and wear. It means longer life through reduced wear, more efficiency through reduced friction, and fuel economy through perfect compression. The top of base being reinforced gives the Hercules the added strength and rigidity that is absolutely necessary in an engine subject to continuous heavy duty service.



Ball Bearing Governor

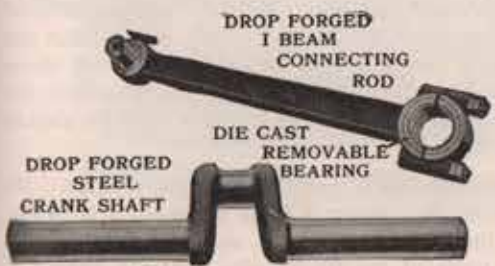
The Hercules governor is of the high-speed fly-ball type, the same as is used on practically all steam engines, and the speed at which it operates insures the closest possible regulation and with less variation than any other type known.

Close regulation means steady, even speed of engine and machine which it operates and also effects a great saving in fuel consumption.

The Hercules governor is ball bearing and all parts subjected to wear are made of hardened steel, adjustable and interchangeable.

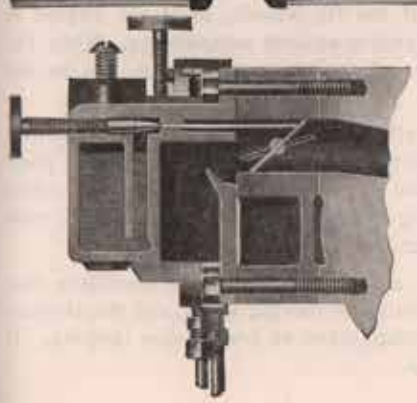
Crank Shaft and Connecting Rod

Every Hercules Engine is equipped with a drop forged crank shaft of high carbon steel, accurately turned and ground to 10 per cent over size. Connecting rod is of the I-beam type, drop forged. Bearings on crank pin end are made of white bronze, die cast, and are adjustable and interchangeable. Accurate machining insures absolutely perfect fit and bearing may be removed or replaced in a few moments by any person who knows the use of an ordinary monkey wrench. No need for an expert—an important thing to consider when you buy your engine.

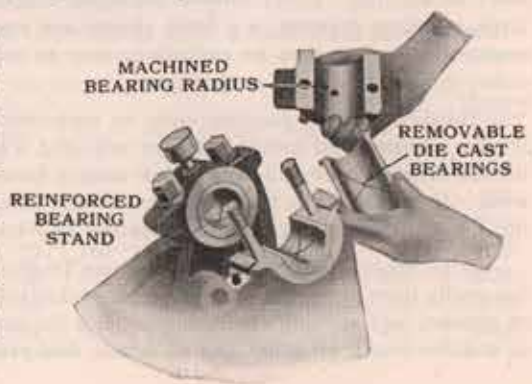


Interchangeable Bearings

The use of die-cast removable bearings makes it possible for the owner to remove the old bearings, when worn, and replace them with new ones. In order to use the die-cast bearings, however, it becomes necessary to machine the entire surface of that part of the main frame which supports the bearings, requiring six machine operations, and while this is the most expensive method it makes possible the use of the very best bearings known to engineering science. A gas engine can be no better than the materials used in its construction, regardless of price.



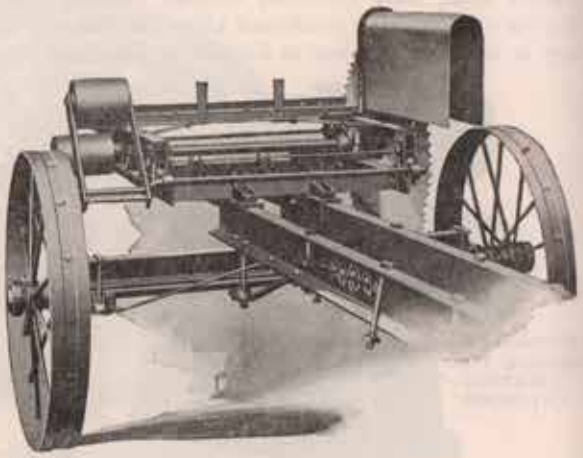
The construction of the Hercules cylinder head and carburetor, aided by the heated fuel passage makes condensation impossible, thus preventing a waste of fuel and reducing the actual consumption to that of gasoline.



HERCULES ENGINES—Continued

5, 7, 9 AND 12-HORSEPOWER PORTABLE—5-HORSEPOWER FULL BASE ONLY KEROSENE TYPE OR GASOLINE TYPE

The complete saw-rigs as shown below, with sliding table, can be attached to any Hercules portable engine truck at any time, all truck frames being properly drilled to permit the attaching of saw-rig in the field, as shown in illustration. Both saw-rigs include belt tightener.

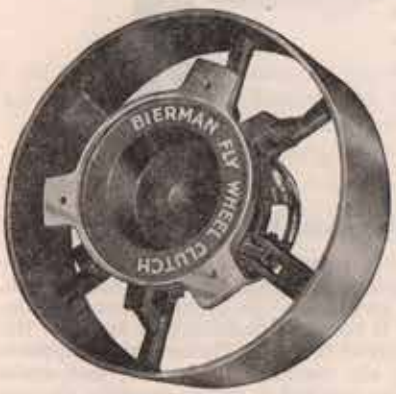


THE CRANKLESS WEBSTER MAGNETO

The ignition problem is a matter of much concern to the buyer of a gas engine.

An engine, once started, is easily kept in operation, or, if it does not work satisfactorily, can be adjusted with but little exertion on the part of the operator. On the other hand, an engine which refuses to start not only causes a loss of time and disarrangement of plans, but requires great physical effort in the attempts to start it.

The ignition equipment has long been a source of trouble and uncertainty on gas engines and has been remedied only by the advent of the oscillating magneto, which not only displaces batteries, switches and wires, but starts the engine from a standstill and operates it in all kinds of weather.



Friction Clutch Pulley

The purchaser, in selecting from among the various types offered, must bear in mind the following requirements for easy starting:

First—A hot spark is absolutely essential. The engine is cold and when turned by hand the compression is very low. The mixture is usually too rich from being primed for starting and much gasoline condenses upon the cold cylinder walls. The mixture present in the cylinder is, therefore, difficult to ignite because it is of incorrect proportions, because it is cold, and because the compression is very low. In the presence of all these disturbing factors, it is of the utmost importance that the spark be of the greatest possible strength when the engine is being started.

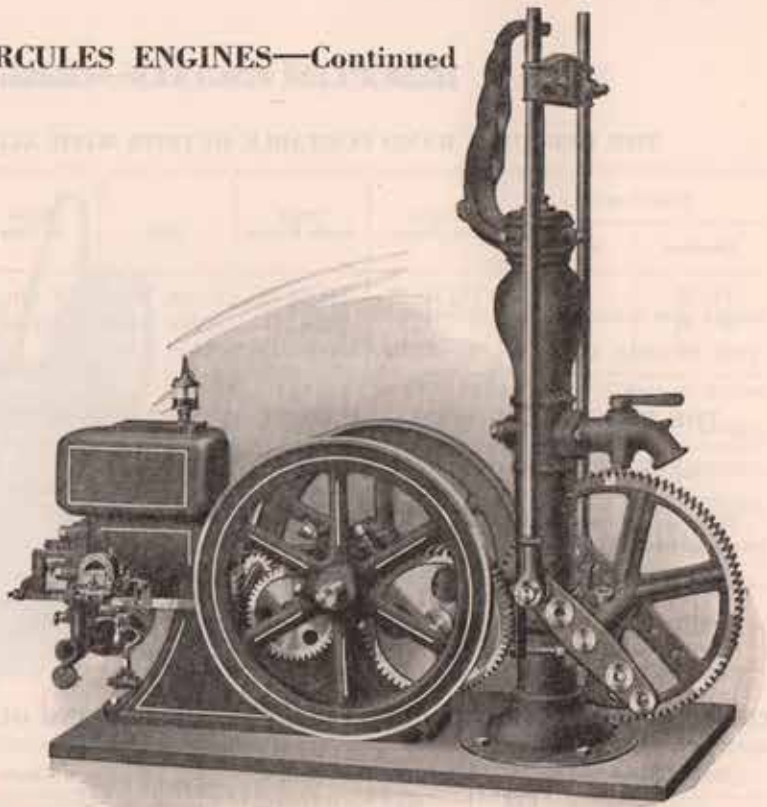
Second—The spark must be perfectly reliable. No matter whether the engine is large or small, it is to the interest of the operator to reduce, as far as possible, the labor of starting. Every missed explosion means two more turns of the fly wheels, or if the engine is large, it means drawing in a fresh charge and once more turning the engine against compression. While the engine is gaining speed no explosions may be missed without danger of fouling and choking, due to the richer mixture being fed at that time.

Third—Safety in starting must be assured. If the engine is small, so that it can be started by rotating the fly wheels, then means must be provided whereby the spark may be retarded to the dead center position or later. There will then be no danger from a kick-back with the possibility of a sprained or broken wrist. If the engine is large, the easiest and safest method of starting is to draw in a charge of gas, rock the fly wheels back against compression and trip the magneto or ignitor.

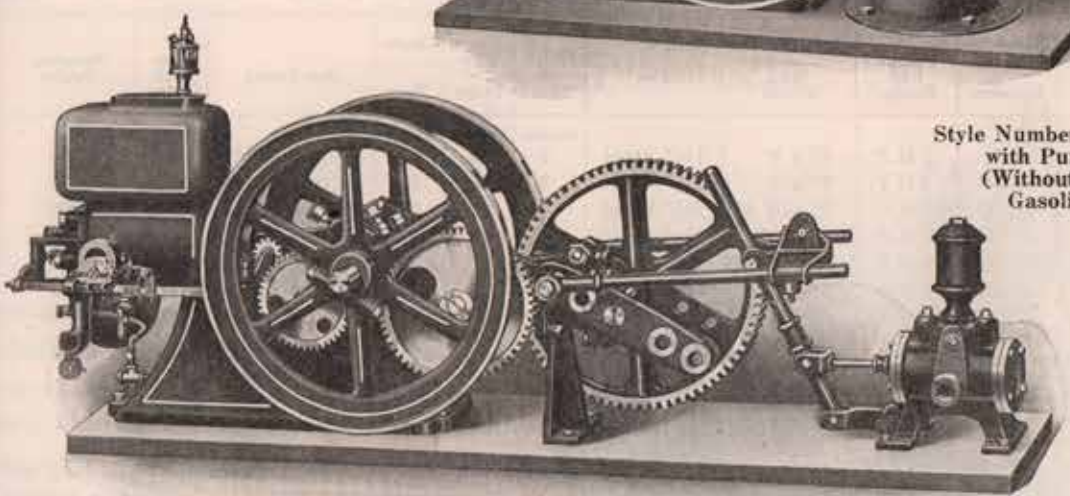
In all these requirements the Webster Tri-Polar Oscillator stands as the only true type oscillator that has really been perfected. It is simple, dependable and durable. Contains no moving wires, and the absence of brushes and rubbing contacts gives it a marked superiority over other types of low-tension ignition. It is weather-proof, oil-proof and as nearly fool-proof as it can be made.

HERCULES ENGINES—Continued

Style Number 1½ F, with Geared Pump Jack (Without Pump) Gasoline Only



Style Number 1½ G, with Pump Jack (Without Pump) Gasoline Only



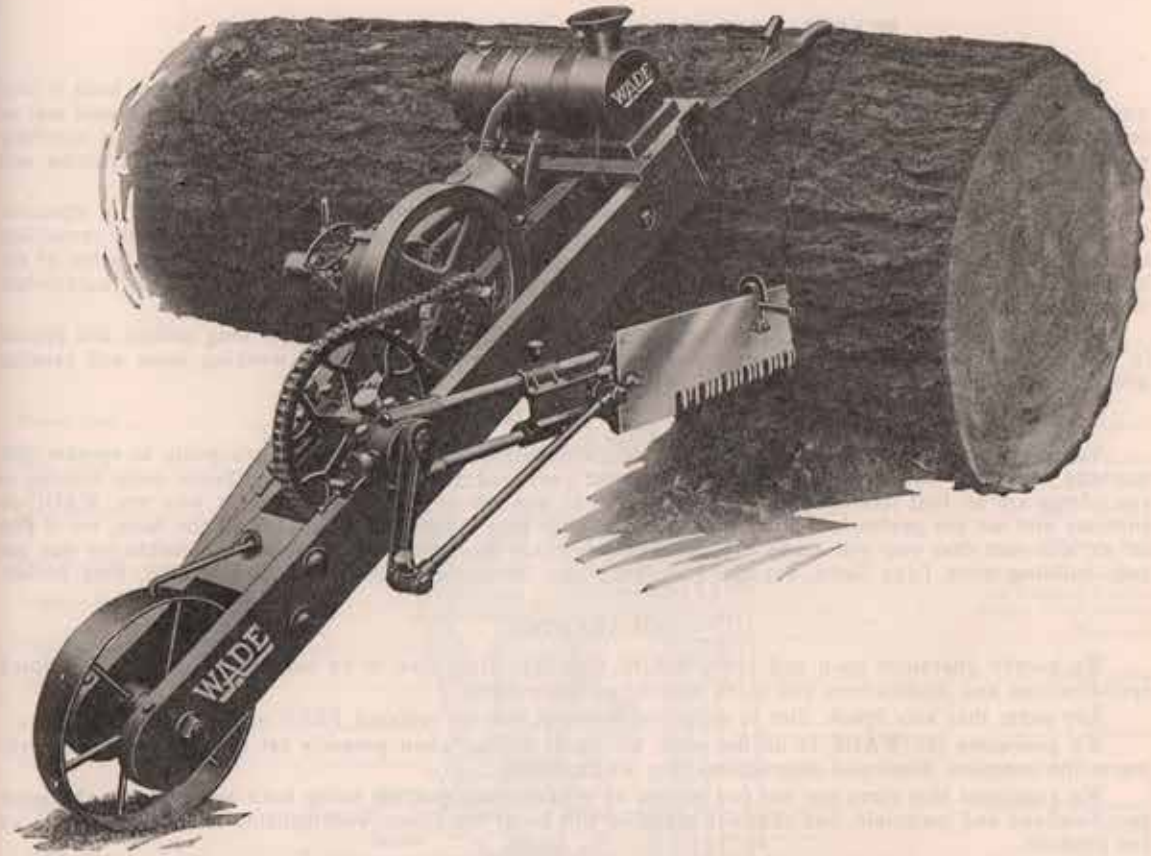
THE HERCULES HOPPER COOLED STATIONARY GASOLINE AND KEROSENE ENGINES

Style Number		Horse Power	Speed R. P. M.	Plain Pulley		Fly Wheel		Floor Space Over All			Diameter of Crank Shaft	Shipping Weight
Gasoline	Kerosene			Diameter	Face	Diameter	Weight	Width	Length	Height		
				Inches	Inches	Inches	Lbs.	Inches	Inches	Inches	Inches	Lbs.
1½A	.....	1½	550	4	4	18	44	27	31	19	1¼	320
3 A	K 3A	3	475	8	4	22	93	26	40	22	1⅝	625
5 A	K 5A	5	425	12	6	28	166	28	47	27	2	912
7 A	K 7A	7	375	16	6	34	228	32	57	32	2¼	1346
9 A	K 9A	9	325	20	8	38	400	36	65	36	2½	1970
12 A	K12A	12	300	24	8	44	530	39	74	41	2¾	2840

The WADE One Man Drag Saw

Backed by
A Reputation
of 55 Years
Fully
Guaranteed

R·M·WADE & CO.
SINCE 1865
PORTLAND, ORE. SPOKANE, WASH.



"WADE" ONE-MAN DRAG SAW

The average man who buys his first Drag Saw is not likely to pay as much attention to the weight of the saw as the man who has had experience. After you have moved a Drag Saw around all day you will begin to realize that weight must be very seriously considered. In the WADE the weight is evenly distributed, making it a perfectly balanced machine and one easy to move as well as being the lightest Portable Power Drag Saw on the market to our knowledge. It is often necessary to lift the entire machine over a log or other obstruction; it must be moved after every cut and often on soft, rocky or uneven ground; and a great deal of your time each day is spent in actually lifting one end or moving the entire machine. The total weight of the WADE is but 295 pounds, and the construction is such and the weight so distributed that the operator lifts but half the weight of the machine. COMPARE this weight with any.

The construction of the WADE is patterned after the well-known wheelbarrow design — a SINGLE wheel on the ground and two easy hold handles on the upper end with the majority of the weight resting on the wheel. The single wheel allows for short turns, tilting the machine from one side to the other to pass obstructions, moving in between stones, stumps or logs. It also makes it possible to work in tight corners or the most uneven ground, assuring a steady machine. This also means that less time is spent in moving and more in sawing. COMPARE the ease of moving the WADE.

BUILT THROUGHOUT TO LAST

The three-point triangle construction of the WADE frame, combined with some little points in bolting that our years in this business has taught us, has resulted in a frame of unusual strength.

All moving and metal parts of the machine are built above the frame or skids so that the machine can be easily slid or moved over logs without danger to any part of the machine.

Long bearings of the best babbitt are used throughout in the motor with bronze or babbitt on the external bearings, depending on the conditions under which the parts operate. We have pioneered this business in a big way and feel that our experience in building thousands of machines that are now operating all over the world has fitted us to build Drag Saws with all the guesswork taken out.

R·M·WADE & CO.
· · · · SINCE 1865 ·
PORTLAND,ORE. SPOKANE,WASH.

WADE ONE-MAN DRAG SAW—Continued

We want to tell you just how each little detail of our machine is built and why we have built it that way, because we know that the quality and workmanship used in our machine will stand the acid test of comparison. We want you to study any or every Drag Saw that you know of and compare it carefully with the WADE, for just as sure as you do this you will recognize the WADE'S superior construction and greater practical value.

The little things in the WADE are carefully watched. Every bolt and nut that is subject to vibration is lock washered. Cap screws that are put in to stay are lock washered and wired to assure their remaining tight under all conditions. Brass drain cocks are provided in both the crank case and water jacket of the motor. All moving parts in the motor are enclosed just as securely as the insides of the finest automobile motor.

The guide rods are long and of ⅞-inch cold rolled steel. They are fitted into long sockets and pinned in the eccentric, assuring the most rigid construction with the least danger of working loose and causing uneven cuts.

YOU BE THE JUDGE

You are most interested in what this machine will do for you. Perhaps you are going to operate this machine yourself. Therefore, you be the Judge and Jury, and decide on the facts. Claims mean nothing to you—facts are all that interest you. We have tried to explain as clearly as possible why the WADE is superior and we are perfectly willing to leave it to your own judgment to consider all the facts, for if you do we are sure that you will make the same decision that most men do, which is responsible for our not only building more Drag Saws, but the best Drag Saw obtainable. COMPARE the WADE, then decide.

GUARANTEE

We hereby guarantee each and every WADE One-Man Drag Saw to be built according to our printed specifications and illustrations and to be exactly as represented .

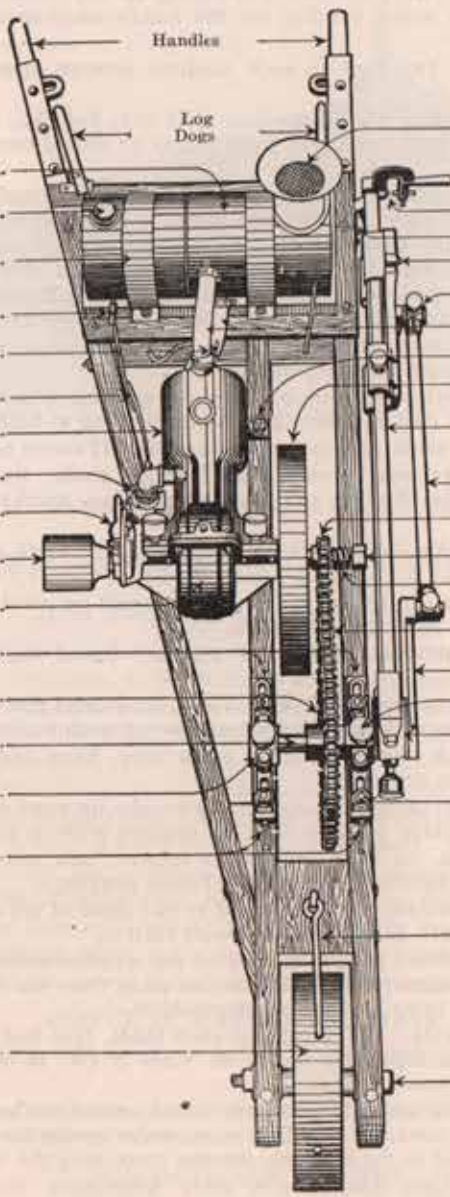
Any parts that may break, due to defective material, will be replaced FREE at our factory.

We guarantee the WADE to do the work we claim herein, when properly set up and oprated according to the complete illustrated instructions that we furnish.

We guarantee that there are not two grades of WADE machines, all being built according to the same specifications and materials, and that our machine will be of the finest workmanship and material that we can produce.

Wade Portable Power Operating Buzz Saw

WADE ONE-MAN DRAG SAW—Continued



R·M·WADE & CO·
SINCE 1865
PORTLAND,ORE. SPOKANE,WASH.

WADE ONE-MAN DRAG SAW—Continued

DETAILED SPECIFICATIONS

Frame—Seasoned clear stock, constructed on the famous triangle three-point-of-contact principle, the strongest known in mechanics. Securely bolted and finished in two coats of weather-resisting green paint. (Construction patented.)

Handles—Malleable socket castings protest the end of the frame from wear and form a comfortable hand hold. Secured to the frame with four bolts and having an eye through which the log dog locks the machine on the log. Ample room under handles for the hands when machine lays flat on the ground. (Construction patented.)

Log Dogs—Drop forged steel. Two dogs on each machine assures steady machine under all sawing conditions.

Single Wheel—Fourteen-inch wheel with three-inch steel tire; hub, 4¾ inches long; axel, 1 inch; construction extra heavy. Allows for easy moving in tight places or soft ground by ONE MAN. (Construction patented.)

Wheel Lock—Half-inch steel latch type lock on steel eye bolted through separating frame block; the most rigid and simple construction, very effective and instantly locked or released. (Patents pending.)

Motor—Full 4-horsepower WADE Valveless Motor; easy starting. Drop forged crank shaft, 3½-inch bearings die cast, easily replaced. Has drain cock in crank case and also in water jacket. All moving parts in motor completely inclosed and dust proof, operating in oil. Excess of power for all wood-cutting conditions. Weight 100 pounds; equipped with cut-out timer. (Patents pending.)

Lubrication—Automatic, no adjustments, no oil glass, no sight feeds. All internal parts of the motor supplied with an oil vapor under nine pounds pressure.

Ignition—High tension; weather-proof multiple battery; genuine Champion auto type priming spark plug. Same spark when motor is cold in starting as when running at high speed. Easy starting.

Control—Single lever; starts, stops and controls all speeds. (Patents pending.)

Transmission—High test motor type hardened steel roller chain; light weight, noiseless; greatest strength and wearing qualities. Less friction and not subject to easy breakage. Proved best on over 50,000 draw saws now in use.

Drive Sprockets—Steel, malleable, double braced, ground to fit. Long and heavy bearings pressed on shaft with extra heavy steel keys.

Jack Shaft—Best Cumberland steel, 1¼-inch. (Same size shaft as used on 20-horsepower automobile transmission.) Extra heavy babbit bearings, adjustable.

Speed—One hundred to two hundred strokes per minute. Speed regulated by single lever control. (Patent pending.)

Eccentric Drive Arm—Malleable arm fitted with 1-inch steel drive pin. Extra large and wide eccentric clears the sawdust rapidly and always keeps greatest number of teeth cutting. Assures speedy, clean work.

Guide Rods—Seven-eighths-inch cold rolled steel, extra long, hung low to make maximum cut with least danger of saw end digging into ground.

Saw Guide—Malleable with two brass adjustable pins to take up wear and steady the blade. Frame is equipped with steel saw rest and guide plate to start cut straight without attention.

Saw Holder—Quick detachable, no bolts or nuts to remove; saw can be removed in 10 seconds or less. Operates on four extra long babbitted bearings. (Patent pending.)

Fuel Tank—Heavy gauge galvanized iron, protected by two coats of red weather-resisting paint. Needle valve shut-off and brass fuel strainer and oil measure—all built in.

Radiator—Heavy gauged galvanized iron, two coats of red weather-resisting paint. Large filler spout, brass strainer, copper overflow; impossible to boil over; set away from the motor to assure maximum cooling through thermo siphon system, same as used on automobiles.

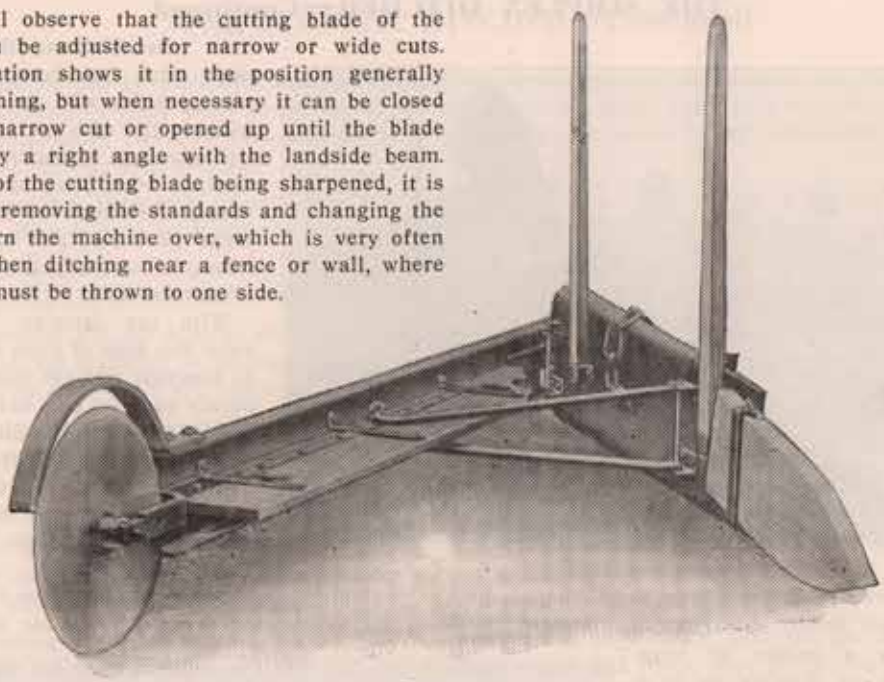
Saw Blade—Extra heavy and wide. Best hardened steel blade, five feet long. (Longer blades on special order.) Special ground—made especially for R. M. Wade & Co., to our specifications, based on our experience as pioneers in the drag saw business.

Safety Clutch—Automatic in its action, freeing the motor should the saw bind and prevents breakage in the machine parts; requires no attention or adjustment; under spring tension at all times, compensating and decreasing the jerk and vibration in the machine, thereby increasing the life of the whole machine.

Power Pulley—For operating light machinery of every description that the powerful 4-horsepower motor will operate. Easily attached or removed.

Weight—Net weight, 295 pounds. Gross shipping weight, 375 pounds.

You will observe that the cutting blade of the Simplex can be adjusted for narrow or wide cuts. This illustration shows it in the position generally used in ditching, but when necessary it can be closed for a very narrow cut or opened up until the blade makes nearly a right angle with the landside beam. Both edges of the cutting blade being sharpened, it is possible, by removing the standards and changing the chain, to turn the machine over, which is very often necessary when ditching near a fence or wall, where all the dirt must be thrown to one side.



(Patented)

Note the Strength and Simplicity of Simplex Construction

THE SIMPLEX DITCHER

JUST THE THING IN IRRIGATION

More than one-third of the United States lies in what is known as the irrigation belt, which can be roughly defined by drawing a line from north to south which will bisect the Dakotas and Nebraska, and include about one-third of Kansas, take in the arm of Oklahoma, and about one-half of Texas. On the west side the belt is marked by a line which divides Oregon and Washington and runs into the Pacific somewhere south of San Francisco.

This section receives less than 20 inches of rainfall annually and must depend on something other than natural precipitation for its crop development. Irrigation is employed in those parts having a water supply, and "dry farming" where there is lack of water for irrigation purposes.

The irrigation farmer does not fear drouths, as a sufficient supply of water in his ditches makes him independent of the "weather man," while rain, when it does come, helps him.

All through this section the Simplex is widely used. With it the big ditches are cut, and then kept open at a big saving over former methods, while either small V-shaped laterals or square-sided, flat-bottomed ditches for distributing the water can be cut quickly with little labor and expense.

USEFUL IN MANY OTHER WAYS

Not only in ditching, terracing and irrigation is the Simplex useful, but it serves a dozen other profitable purposes on any farm.

On any farm where there are ditches the Simplex pays for itself in keeping them cleaned out, and this is particularly true in the irrigation sections.

FOR DRAINAGE DITCHES

According to data secured by the United States Department of Agriculture there is need for better ditching in practically every state in the Union, and the country as a whole has gigantic drainage problems as yet unsolved.

In almost any community there are numerous farms that could be improved and made to produce much larger crops if they were properly drained, and an adequate system of ditches like those shown here would reclaim this waste land and make every acre produce more.

NO. 45 AND NO. 47 PORTER HAY CARRIERS

For Cable Track, Rope or Cable Draft

The No. 45 and No. 47 Carriers are for cable track, otherwise they are similar to the ones shown on the two previous pages. The same good features, such as the patent swivel, large sheaves and roller bearings, make this the easiest working and longest lived carrier that a farmer can purchase.

This style carrier is generally used in stacking hay in the field. In a good many localities hay slings are used in connection with this carrier, and we can furnish sling pulleys for any of our carriers. You will find these illustrated and described on page 309.

It should be remembered that Porter Hay Carriers are made to give years of service. They are made of the best grade of malleable iron and steel and the workmanship is perfect throughout.

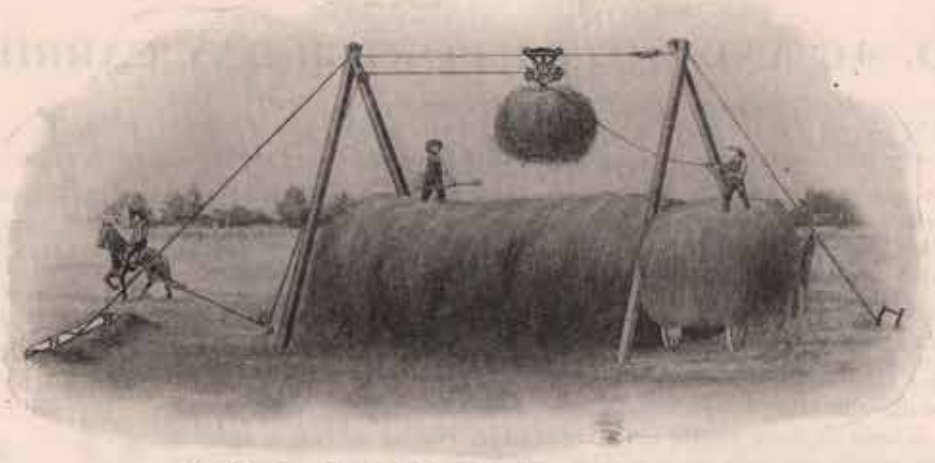
"A" Cable Clamp

"C" Cable Collars

No. 47 Porter Hay Carrier

The "A" Cable Clamp is used for fastening the end of the cable and is very convenient. The "C" Cable Collar is used for holding cable at the top of the poles on stacking outfits. It is customary to use one of these collars on each side of the pole through which the cable passes. They are built in such a way that they are easily attached at any point.

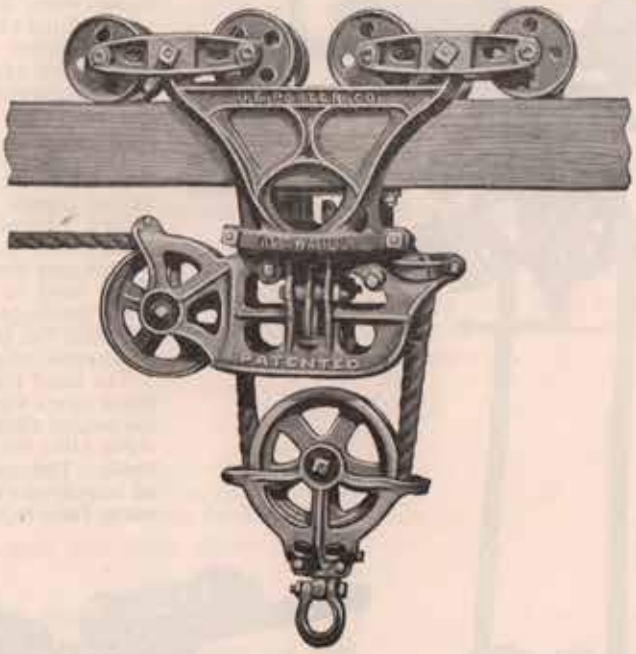
PORTER CABLE CARRIER AT WORK IN THE FIELD



The Hardest Work of the Farm Done by Horsepower

PORTER HAY CARRIERS

	Weight, Lbs.	Price
No. 45. Cable Track Carrier, for rope draft	38	.....
No. 47. Cable Track Carrier, for cable draft	38	.....
"A" Cable Clamps, per dozen	14	.....
"C" Cable Collars, per dozen	14	.....



No. 48 Porter Hay Carrier

PORTER EIGHT-WHEEL LOCOMOTIVE CARRIER

Wood or Steel Track, Rope or Cable Draft

This carrier is adapted for the heaviest kind of work. Made entirely of malleable iron and steel.

This is our latest style Eight-Wheel Hay Carrier and has been designed for extra hard work. In many sections where alfalfa is raised extensively this carrier has become a great favorite. While the above illustration shows the No. 48, which is for wood track and rope draft, we can supply outfits for steel track and cable hoist as well.

You will notice that on all Porter Carriers the shell of the fork pulley does not enclose the upper half. This allows the dogs to grip and hold the sheave itself instead of the frame. When the load of hay is raised and locked in the carrier, it is, of course, swinging more or less. You will notice on the ordinary carrier that the dogs and upper part of shell are subject to great wear, but on the Porter the load swings easily on the axle of the sheave, causing no friction whatever.

Like all of the Porter Carriers shown on previous pages, this type can be equipped with sling pulleys, which are illustrated and described on page 309.

PORTER HAY CARRIERS

		Weight, Lbs.	Price
No. 48.	Wood Track Carrier, for rope draft	48	.....
No. 49.	Wood Track Carrier, for cable draft	48	.....
No. 52.	Steel Track Carrier, for rope draft	48	.....
No. 53.	Steel Track Carrier, for cable draft	48	.....

Litchfield Manure Spreader

LITCHFIELD DOWN-LOW MANURE SPREADER

Steel Circle Front, Used on All Our Down-Low Spreaders

The Litchfield Spreader is a low-down machine when considered from a loading standpoint, as the top rail is only waist high, and the seat tips over out of the way when loading the front end.

It is high-up when considering the clearance underneath the machine. The axles are the same distance from the ground as in the old-fashioned high built machine, making a clearance of about 18 inches.

The Wheels are all steel, with wide tires, and 40 inches high at the rear. Spokes never crystallize and break off like the spokes in other makes of metal wheels.

Both rear wheels are traction wheels, and power for the conveyor and beater is applied equally by each. The front wheels are built in under the machine as far as possible and still give short, quick turning. These wheels are braced to the frame solidly and not to the horses' necks.

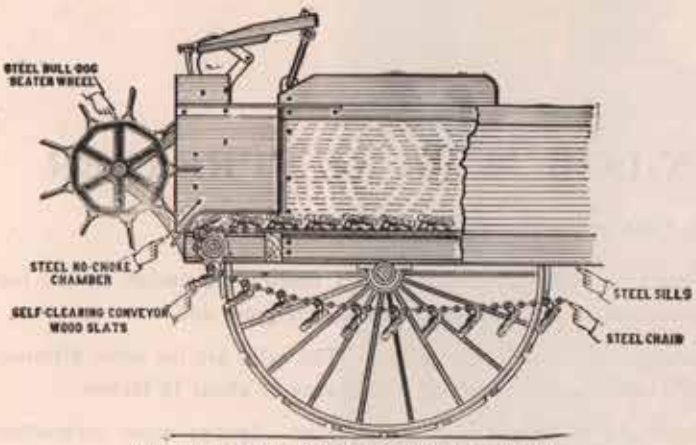
The frame is a heavy piece of high carbon double angle steel, in hairpin shape, and bent upward at the front end, to enable placing the front wheels well back in under the load.

The sides of the box are framed from hardwood with extra heavy hardwood pieces on bottom and top. Many other makes use but a single board made after wagon box construction.

LITCHFIELD DOWN-LOW MANURE SPREADER—Continued

The Litchfield No-Choke Box

The No-Choke Chamber, which forms the rear of our spreader box, permits the manure to spread and expand and free itself as the conveyor moves it on to the beater wheel. This result can only be obtained by an abruptly widened chamber, so that the load has no chance to settle and pack against the sides. In the Litchfield, the beater works against loose and freely-held material, and the work is made much easier and more simple. If the beater wheel must wallow in a densely-packed and solid wall of manure, the power required to operate it will be many times multiplied and the work will be irregular and unsatisfactory.



Showing Self-Cleaning Conveyor Slats

The Open Door Conveyor is found only on the Litchfield Spreader. It is so constructed that it lies nearly flat inside the body of the machine while carrying the load. As it passes back under the body, all the slats hang down edgewise, so the loose material left there can fall freely through to the ground.

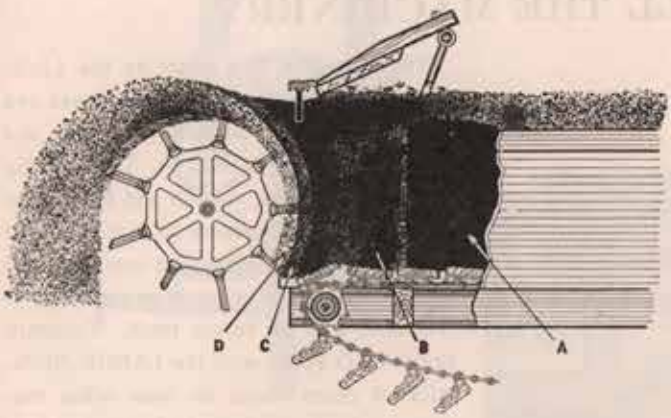
Each slat lies in its position in the body, with the rear edges slightly elevated, forming projections like saw teeth to grip and hold the manure and carry it back with force. This prevents the conveyor from slipping, under the load, even in the worst material.

You can't choke this spreader like you can all other makes which are sold in competition with it.

There is a reason, and every man should know it who is thinking of purchasing a spreader.

For equipment and weight see page 328.

LITCHFIELD DOWN-LOW MANURE SPREADER—Continued



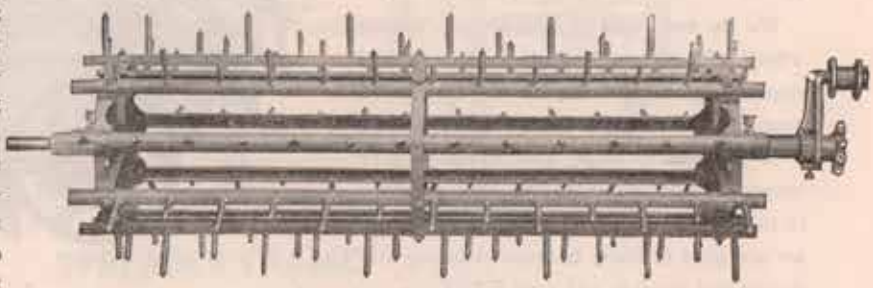
Detail of the No-Choke Box—In the cut at the left, the box is broken away to show how the denseness of the load is reduced by easy stages as it comes in contact with the beater. The dense load "A" automatically expands in the widened part "B." This is loosened at "C" by the long teeth in the beater wheel, and what is left at "D" is removed by the short teeth. This cut also illustrates the action of the Self-Cleaning Endless Conveyor. Note how the sections of the lower conveyor hang edgeways so that all material will fall freely and not accumulate to clog or break the machinery. Also note their position in the body, which forces the load backward and not allowing them to slip.

"Bull Dog" Beater Wheel—The back end of a spreader can become a horse-killer very easily, and for that reason we place great importance on this part of the Litchfield Spreader. The **"Bull Dog,"** in connection with our **No-Choke Body,** does things that no other manure spreader in the world has ever been known to do. It can't be choked; it makes better distribution; it has light draft on the horses, and it is easy on the machine.

This beater wheel gets the same results that would be secured if it were possible to operate two beater wheels in the same space occupied by one. It operates the same as if one wheel were working 1½ inches deeper in the load than the other at all times.

Full Set of Bars Removed

The Bull Dog uses two lengths of teeth. The long teeth work 1½ inches deeper than the short teeth, which follow at equal distance between these two long ones. The short ones follow and take care of what is left by the longer ones, on the same principle as the teeth of a cross-cut saw. Without the short teeth to clear the cut, one would not get along very fast in cutting a log. This prevents clogging against the beater bars, and a look at the Litchfield at work will soon convince you that the load does not come in contact with the beater bars. The bars are high carbon U-bar steel and encircled in the center by a band. The teeth are diamond shape, with the sharp-cutting edge pointed in the direction the wheel revolves.



Complete Beater Wheel

R·M·WADE & CO.
SINCE 1865
PORTLAND, ORE. SPOKANE, WASH.

LITCHFIELD STRAW SPREADER

HOW IT OPERATES

This machine handles the straw on an entirely new and scientific principle. It is the principle of REVOLVING THE LOAD so as to pass the surface of this load constantly against the beater wheel.

To revolve this load in the body of the machine requires the combined action of the regular bottom conveyor on which the load rests, and the action of the perpendicular conveyor at the rear of the machine AGAINST which the load is constantly being pressed. The back of this rack consists of an especially constructed endless conveyor properly guarded and arranged to lift or move the back of the load UPWARD while the bottom conveyor moves it TOWARD THE REAR, thus creating a rolling or rotary action to the entire body of straw in the rack.

The load begins to revolve soon after the feed is put into motion, and it continues to revolve constantly until the last of it has been discharged through the beater wheel.

As the load moves toward the rear of the machine, the regular beater wheel removes a certain proportion of the straw which is loose and free, and the balance passes by in an upward direction. This beater wheel, taking such straw as it can remove freely, discharges it toward the broadcaster wheel further in the rear. The balance of the load continues on upward in its rotary movement. The bottom of the load keeps constantly coming toward the beater wheel.

Thus as the straw rolls around and around in a continuous process, the beater wheel has an opportunity to take freely from the surface what is needed and at the same time avoid the packing and unnecessary friction which will quickly occur if the load stops rotating and begins to pack.

Back of the regular beater wheel the auxiliary or broadcaster wheel gives a widened and additional throw to the straw as it reaches it, and creates an even distribution and does away with bunching, which would otherwise occur. By means of this combination an even blanket of straw is placed on the ground and this process continues uniformly from the BEGINNING to END of the load without assistance or attention.

ENTIRELY AUTOMATIC

The load begins to revolve as soon as it begins to feed, and as this load gradually becomes smaller and smaller, it turns itself over and over, faster and faster, although the SURFACE speed of the load where it comes in contact with the beater wheel remains the same. This produces an even distribution from the beginning until the last of the load has been removed, all absolutely automatic. The operator simply drives the horses.

THE UNDER FEED

The principle of removing the load from the UNDER side and from the rear as it passes by the beater wheel, is known as the UNDER FEED. The BOTTOM of the load is distributed FIRST, and the balance of the load continues to distribute from the bottom as it comes around. The free straw is taken away from the load as it revolves, the same as paper is removed from the under side of a roll as the roll rotates in the proper direction. It should not be difficult for those who are familiar or who are not familiar with the Litchfield Spreader to understand this principle, although it is not found in any other make of machine.

A REAL STRAW SPREADER

BUCKEYE PUMPS

There are over 400,000 Buckeye Pumps in use, and the fact that more Buckeye Force Pumps have been sold than any other one make in the world is evidence of their worth. Here in the Northwest they have been used for over thirty years, and the fact that the Buckeye is so often imitated is certain proof of its high efficiency.

On the following pages will be found pumps adapted to almost every purpose. The cut at the left shows one of our Buckeye double-acting shallow well pumps in position. It should be remembered that the cylinder of a pump must never be over 25 feet from the lowest level of the water in the well. Theoretically, water can be lifted 33 feet, but owing to friction and the fact that a perfect vacuum cannot be secured, 25 feet is considered the limit in the installation of pumps.

But it is a very simple matter to draw water from a well which is over 25 feet deep, for the cylinder can be lowered the necessary distance. As stated above, water can only be lifted, for practical purposes, about 25 feet, but it can be forced to any height desired.

Look the following pages over carefully, and you will find a pump that is exactly fitted to your needs. We have both the set-length patterns, as well as a number of different pump stands, permitting you to make up any kind of an outfit desired.

When desired we will fit up pumps with pipe and sucker rod complete and ready for installation. You should, however, give total depth of well and also depth of water in well at lowest point.

At the right is shown one type of Buckeye Deep Well Pump. The lower cylinder is placed at the bottom of the suction pipe and the water is forced to the top of the well. By the use of our Buckeye tubular well cylinders and powerful working heads, we are in a position to furnish outfits for the deepest wells.

We find that a great many farmers having deep wells desire a pump built in such a way that the lower cylinder can be taken apart, and the valves and plunger removed, without disturbing the pump head or pipe. We have this style of pump and it is unequaled in simplicity and strength.

In setting any pump, be sure that the suction pipe is screwed together tightly. Even a very small leak will greatly destroy the efficiency of the pump and you cannot be too particular in this regard.

If you contemplate installing a pump or water system, we would like to have you write us in full detail. As we have had years of experience in this line of work, we are in a position to recommend the best outfit for your particular needs, thus saving you a great deal of time and responsibility. Tell us just exactly what you want, the depth and amount of water in your well, as well as the elevation and quantity of water you intend to raise.

At the back of this catalogue will be found tables giving valuable information about different kinds of pumps and should be thoroughly understood by any person installing a pumping outfit.

BUCKEYE PUMPS—Continued

Pitcher Spout Pump

CLOSE TOP PITCHER SPOUT PUMPS

Adjustable Lever

Buckeye Pitcher Spout Pumps are made of the best material. It should be noted that they have the closed top, which is held in place with a set screw, permitting the handle to be turned in any direction desired. The Buckeye Pitcher Pump is so generally used that no further description is necessary.

BUCKEYE PITCHER SPOUT PUMPS

	Weight, Lbs.	Price
No. 1. 2½-in. iron cylinder, 1 -in. pipe....	20	.....
No. 2. 3 -in. iron cylinder, 1¼-in. pipe....	22	.....
No. 3. 3½-in. iron cylinder, 1¼-in. pipe....	25	.....
No. 4. 4 -in. iron cylinder, 1½-in. pipe....	29	.....
No. 5. 4½-in. iron cylinder, 2 -in. pipe....	35	.....

BUCKEYE SINGLE AND DOUBLE-ACTING HOUSE FORCE PUMPS

Buckeye House Force Pumps are adapted for cisterns or shallow wells up to 20 feet in depth. They are tapped at the rear for a 1-inch discharge pipe so that water can easily be raised into an elevated tank or used for sprinkling purposes. Number 52 is single-acting and can be furnished with either iron or brass-lined cylinders, and working parts are all brass or galvanized iron.

Number 67 Buckeye House Pump is double-acting, otherwise it is similar to Number 52. The cylinder is brass lined and valves are also made of brass. Both single and double-acting Buckeye House Force Pumps can be equipped with cock spout at a small additional charge, as shown in the illustration of Number 52.

No. 52 Buckeye Force Pump, With Cock Spout

No. 67 Buckeye Force Pump, With Plain Spout

BUCKEYE FORCE PUMPS

	Weight, Lbs.	Price
No. 52 Force Pump, 3-inch iron cylinder, plain spout, 1¼ pipe.....	38	.....
No. 52 Force Pump, 3-inch brass-lined cylinder, plain spout, 1¼-inch.....	38	.....
No. 67 Force Pump, 3-inch brass-lined cylinder, plain spout, 1¼-inch.....	38	.....
For Cock Spout in place of Plain Spout for No. 52 or No. 67, add.....	..	.....
For Cock Spout for No. 52 or No. 67, add.....	5	.....

BUCKEYE PUMPS — Continued

6 to 9-inch Adjustable Stroke

While No. 229 Buckeye Double Acting Force Pump has been constructed especially for use on 2-inch tubular wells, it will be found to be admirably adapted where a good, substantial pump is desired for deep well use. The pump measures 4½ feet from the base to the bottom of the upper cylinder.

We do not furnish this pump with the lower cylinder unless specified. But it is especially designed for use with a deep well cylinder, such as is shown on page 345. The brass upper cylinder is so arranged that by simply loosening two set screws it can be removed and the inside rod and tubular well valves can then be pulled up through the pump head without disturbing either the pump or well pipe. Here is a pump that stands without an equal; adapted for both hand and power; furnished regularly with three-way cock, and has the famous Buckeye ventilated top stand.

This pump has ¼-inch air chamber and discharge pipe. It is listed without lower cylinder, but we can supply any style desired at a moderate price.

No. 229

BUCKEYE HORIZONTAL TANK PUMPS

No. 133

No. 133 Buckeye Pump is built with brass valve seats, rubber-faced valves, and has a 5-inch cylinder with 5-inch stroke. Both sets of valves can be removed for cleaning or repair by simply removing the two caps at the top of the pump.

It is not necessary to disturb either the cylinder head or the plunger, as is the case with other makes of pumps.

It should be noted that the suction inlet is **above** the cylinder, and this keeps the pump always primed ready for instant use. The capacity is about two barrels per minute and both the suction and discharge are two-inch. Nozzle, strainer and hose bands are furnished without extra charge.

BUCKEYE PUMPS

	Weight, Lbs.	Price
No. 229 Double Acting Pump, with brass upper cylinder and three-way cock.....	130	.....
No. 133 Tank Pump, with iron cylinder.....	86	.....

BUCKEYE PUMPS — Continued

Drain Cocks
Prevent Freezing
Internal Gears

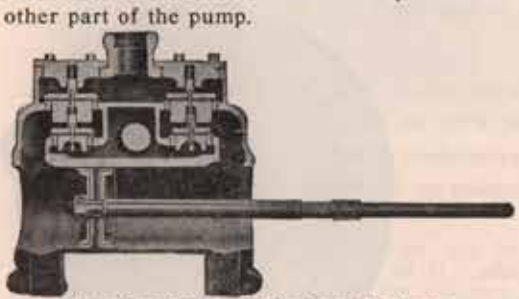
Small Floor Space
Large Air Chambers
Brass Lined Cylinders

No. 105 Buckeye Horizontal Pump

BUCKEYE DOUBLE-ACTING HORIZONTAL POWER PUMPS

The Buckeye Double Acting Horizontal Force Pump as shown above is made in three sizes. It is especially designed for handling large quantities of water from wells not over 25 feet in depth and will force water to any elevation above the pump under 75 feet in height, making a total lift and head not to exceed 100 feet.

The cross head and piston are driven by two side arms, and besides there is a guide for the brass piston rod. This necessitates all of the power being delivered in a straight line, eliminating all side strain. Both sets of valves are above the cylinder of the pump and can easily be removed without disturbing any other part of the pump.



Sectional View of Horizontal Pump

The illustration to the left shows a sectional view of a Buckeye Horizontal Force Pump. Notice the position of the suction inlet, which is above the cylinder. All necessity of priming is done away with, and the pump is always ready for work. This is another reason the Buckeye is a favorite, for it gives the best of fire protection.

The cut also shows how easy it is to remove the valves. Just unscrew the two caps and they can be lifted right out.

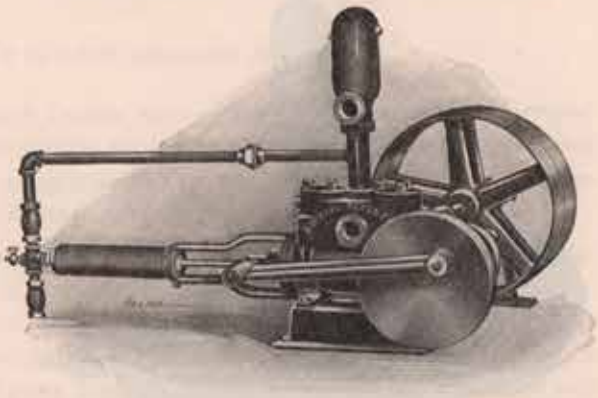
The Buckeye Power Pump is often used in connection with water systems for the home, ranch, school or church and will give years of honest service. No. 103 has ground brass valves and valve seats, while the larger sizes have rubber-faced valves.

BUCKEYE HORIZONTAL PUMPS

Trade Number	Bore, Inches	Stroke, Inches	Gear Ratio	Suction and Discharge, inches	Tight and Loose Pulleys inches	Speed of Pulleys, Revolutions per Minute	Capacity per Revolution of Pump, gallons	Capacity per Hour at 40 Revolutions per Minute, gallons	Horse Power for 100 feet elevation	Height, inches	Floor Space, inches.	Shipping Weight	Net Price with Brass Lined Cylinder
103	2½	4	5½ to 1	1	12x2	245	.167	400	⅓	17½	18x29	80	.....
105	3	4¾	5 to 1	1¼	16x3	200	.306	708	½	23	35x27	215	.....
118	4	5	5 to 1	1½	16x3	200	.544	1296	1	28½	36x29	265	.....
134	5	6	5 to 1	2	16x4	200	1.02	2448	2	36	44x31	354	.....

BUCKEYE PUMPS — Continued

Brass Lined Cylinders



Internal Gears

No. 105 Buckeye Pump With Air Cylinder

BUCKEYE DOUBLE-ACTING HORIZONTAL POWER PUMPS

With Air Cylinder

This is the same style pump as described on the previous page, but has the air cylinder in addition. It is, therefore, particularly adapted for use with pneumatic water systems, making a most compact outfit.

All of our Horizontal Buckeye Power Pumps are brass lined and have solid brass piston rods. The cut to the right shows the internal gears used on all Buckeye pumps of this description. Three teeth of the pinion are in mesh at all times, making a much stronger construction than where the external gear is used. It is also safer than where the teeth are exposed and is superior in every respect.

Below will be found specifications of the different sizes which we carry in stock. If you are interested in a water system, write us, giving full particulars as to just what you desire, and our pump department will be pleased to furnish you much valuable information to meet your own individual needs.

The air pump cylinder is made from a solid brass tube. It is direct connected with the piston of the pump, and a more compact outfit cannot be found. The air pump is provided with a pet cock and the pump is entirely complete and ready to install with the addition of necessary pipe.

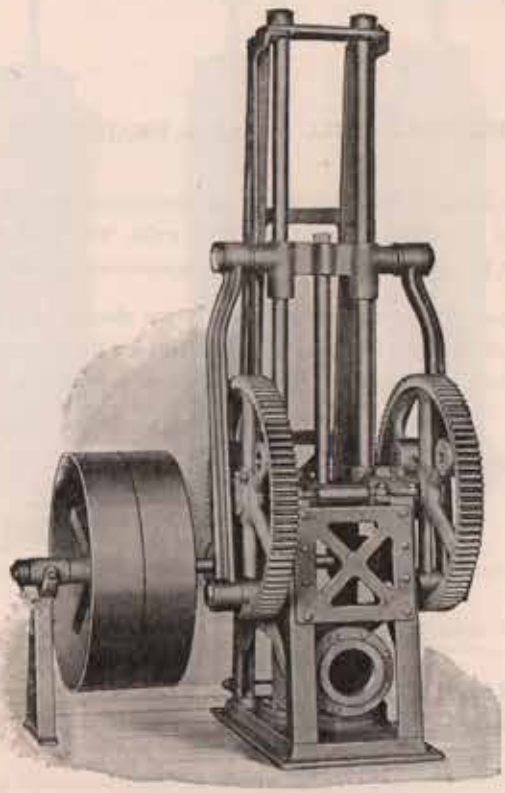
Showing Internal Gear

BUCKEYE HORIZONTAL PUMPS

Trade Number	Bore, inches	Stroke, inches	Gear Ratio	Suction and Discharge, inches	Tight and Loose Pulleys inches	Speed of Pulleys, Revolutions per Minute	Capacity per Revolution of Pump, gallons	Capacity per Hour at 40 Revolutions per Minute, gallons	Horse Power for 100 feet elevation	Height, inches	Floor Space, inches.	Shipping Weight	Net Price with Brass Lined Cylinder
103	2½	4	5½ to 1	1	12x2	220	.17	375	⅓	18	18x29	85	.....
105	3	4¾	5 to 1	1¼	16x3	200	.306	708	½	23	35x27	215	.....
118	4	5	5 to 1	1½	16x3	200	.544	1296	1	28½	36x29	265	.....

BUCKEYE PUMPS — Continued

BUCKEYE POWER WORKING HEADS



No. 141 Power Working Head

Notice how the base of the head is hinged. This makes it easy to get at the well pipe, and by using our special deep well cylinders, the rod and valves can be entirely removed without disturbing the working head, excepting to hinge it backward, which can be done in a minute's time.

The Buckeye Power Working Head, as shown to the left, is designed for work on deep wells. We carry this head in three different sizes, as listed at the bottom of the page. In addition to lifting the water from the well, they are capable of forcing it into an elevated tank at any ordinary height above the pump. For this latter kind of work, however, the air chamber should be used, as shown in the illustration, which can be furnished at a slight additional charge.

Special attention is called to the construction of the gears. They are very heavily built of the best material and are so arranged that the upward lift is in a straight line with the piston, relieving the pump of all side strain.

Showing Head Tilted Back

BUCKEYE POWER WORKING HEADS

Trade Number	Adjustable Stroke, inches	Maximum Well Cylinder, inches. Total Elevation, Feet.	Ratio of Gear	Tight and Loose Pulleys, inches	Speed of Pulleys, Revolutions per Minute	Horse Power for Cyl. and Elev. Given in Third Column	Approx. Capacity per Hour for Size Cyl. and Elev. Mentioned, gallons	Height, inches	Floor Space, inches	Shipping Weight, lbs.	Size Box and Pin for Octagon Wood Rod	Net Price less Air Chamber	Net Price with Air Chamber
139	5, 7½, 10	3–150	6 to 1	20x4	210	1	540	50	20x31	360	⅞"x10 thread	.....	.....
141	8, 10, 12	5–150	6 to 1	20x4	180	2	1800	59	26x39	600	⅞"x10 thread	.....	.....
143	12, 16, 20	8–100	6 to 1	30x6	120	3	4800	82	39x47	1190	1⅛"x 8 thread	.....	.....

R·M·WADE & CO·INC·

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