

GRAIN DRILLS

AND CIDER MILLS



P. P. Mast & Co.

SPRINGFIELD,
OHIO.

PHILADELPHIA, PA.
PEORIA, ILL.

ST. PAUL, MINN.

SAN FRANCISCO, CAL.

WHITE HOUSE, N. J.

BUCKEYE LOW DOWN DRILLS.



THE ONLY LOW DOWN HOE DRILL IN THE WORLD.

Frame carried on **FOUR WHEELS**, relieving horses' necks of ALL weight, and making draft lighter than that of any other drill. Furnished with Press Wheel Attachment, if desired.

MANUFACTURED BY

P. P. MAST & CO., SPRINGFIELD, OHIO

ALSO MANUFACTURERS OF

The Buckeye Broad-Cast Seeders,

The Buckeye Sunbeam Cultivators,

The Easy Buckeye Cultivators,

Buckeye Spring Tooth Cultivators,

Hay Rakes, Cider Mills, Etc., Etc.

BRANCH HOUSES:

P. P. MAST & CO., Northwest corner 13th and Willow Streets	- -	Philadelphia, Pa.
P. P. MAST & CO., 31 Market Street	- -	San Francisco, Cal.
P. P. MAST & CO., 108 and 110 North Washington Street	- -	Peoria, Ills.
P. P. MAST & CO., corner 14th and Nicholas Streets	- -	Omaha, Neb.
P. P. MAST & CO.,	- -	Kansas City, Mo.
MAST, BUFORD & BURWELL CO.,	- -	St. Paul, Minn.

THE NEW BUCKEYE

LOW DOWN GRAIN DRILL.

Our patrons will find herein illustrated and described a radical and highly important change, as well as valuable improvement, in the construction of the Buckeye Drill. This change is the result of long and careful study and practical tests and we now present it to your notice, not as an experiment, but as a thoroughly practical, carefully tested and most valuable improvement to the already fully established virtues of our drill.

The **BUCKEYE LOW DOWN DRILL** is constructed with a view of lightening the draft, relieving the horses' necks of all weight and making the Drill run steadier, thus rendering it easier to handle. The above features have all been secured in the present construction of the Low Down Drill.

The **FRAME IS SUPPORTED**, both in front and rear, by wheels, making it practically a four wheel drill, and in addition to this a limber tongue is used which takes all weight off the horses' necks. This last named feature in itself is an improvement the value of which cannot be over-estimated, as every farmer knows that the work of operating a two-wheeled grain drill is as hard on the team as any work to be performed on a farm. The Drill being mounted as above described, runs easier and steadier than the old two-wheel drill.

We use **RATCHET DRIVE WHEELS** and both wheels are drivers.

The **CONTINUOUS STEEL AXLE** running clear through the frame, with sprocket wheel near the center for driving the feed, insures an even distribution of the seed. The Drills will sow in turning either to the right or left.

We claim our **NEW LEVER DEVICE** to be the best, most complete and convenient arrangement for raising the hoes and applying pressure to the same that has ever been invented, as both operations are accomplished by pulling the lever **backward**, which any farmer will understand to be far easier than pushing it forward. Only one lever is used to do this work.

This Drill also has a very convenient lever for **SHIFTING THE HOES** from a straight line to a zigzag or the reverse, which operation can be easily performed while the Drill is in motion.

In conclusion, we wish to say that the **BUCKEYE LOW DOWN DRILL** eclipses and is "clear out of sight" of any grain drill ever put on the market. It stands alone as the **ONLY** representative of the **LOW DOWN HOE** feature in the construction of Grain Drills and the immense demand it has already created is the best testimony that this Drill is a perfect success and thoroughly practical in every respect.



BUCKEYE LOW DOWN HOE GRAIN DRILL.

BUCKEYE POSITIVE FORCE FEED.

One of the main features which have given the Buckeye Drills such prestige throughout all grain and grass growing areas is its seeding devices. A good feed is *one of the essentials* of a successful drill; in fact, it is the most essential thing about a drill. The Buckeye has always been singularly fortunate in this respect, and the eminent satisfaction farmers have uniformly had in operating our machines is due, in large part, to our feeding devices, which are simple, effective and reliable.



No. 1.

BUCKEYE POSITIVE FORCE FEED.

The cut, No. 1, (above) shows the Buckeye Positive Force Feed, with which all Buckeye Drills are provided. A glance at it will show the simplicity of its construction. It is not a *complicated piece of mechanism*, as is the ordinary feeding device, to be found on the general run of drills. It does not easily get out of order and we rarely hear of any trouble whatever with its operation. With a little attention now and then, on the part of the operator, it can be depended upon for a life time's successful service. It has been tried and approved, and among drill feeds ranks as the "old reliable."

It can be depended upon, under all circumstances, to distribute the grain with absolute uniformity and regularity, and in connection with our new Center Driving device, insures an even flow of the grain, and renders bunching or irregularity of sowing impossible.

The Cup is attached to the bottom of the hopper, and the Fluted Feed, which telescopes into the former, is penetrated by the feed shaft. The Fluted Feed must, therefore, turn with the feed shaft, and as it turns, the grain drops down through the orifice in the Cup and is carried around and discharged, in an even, steady flow, into the spout to which the rubber tube is attached. The Fluted Feed fills up the entire space in the Cup, so that it is not possible for any grain to escape in any other way than by the *regular discharge*. It is a perfect Force Feed, because the Fluted Feed Wheel, which carries the seed, must revolve with the feed shaft; therefore, the distributors must always operate with the same force.

REGULATING THE QUANTITY.

The method of regulating the quantity to be sown per acre is such as to insure perfect accuracy, and the Buckeye will sow with the same certainty and accuracy, whether the team is going fast or slow, or whether going up hill or down hill, or whether passing over rough, hilly and uneven ground, or smooth and level land. This is accomplished principally by our

CUT-OFF.

This cut-off is attached to the cut-off rod, which is operated by the lever on the dial plate, as shown by illustration No. 2. Moving the dial finger, or index lever, shifts the cut-off rod either to the right or left, as the case may be. The cut-off forces the Fluted Feed to the left and cuts off the flow of grain by diminishing the discharge space.

The illustration of the Force Feed No. 1 shows the Fluted Feed forced to the left so far as to leave only a very small discharge opening for the grain, say for very clean wheat. When this *discharge opening* is to be enlarged for sowing large grain, such as oats, a reverse movement of the cut-off rod, accomplished by reversing the dial finger, forces the Fluted Feed back through the Cup. The Fluted Feed does not itself move, but the shaft (the feed shaft), to which it is firmly attached, does, being forced in one direction by the cut-off pressing against the Fluted Feed and in the other by the fork on the cut-off rod, which prongs over the feed shaft, pressing against the other side of the Fluted Feed. The whole arrangement is *very simple and very effective*. The driver has but to look on the dial plate and set the finger at the quantity he wants sown and go ahead.



No. 2.

BUCKEYE FEED REGULATOR.

These cut-offs or gauges are all attached to the same rod (the cut-off rod), so that the space in all the Cups is increased or diminished precisely the same, hence there *can be no variation* in the quantity of grain or grass seed sown by the different feeders. The quantity can be varied just as little or just as much as may be desired.

THE NEW BUCKEYE

LOW DOWN

COMBINED GRAIN AND FERTILIZER DRILL.

The Buckeye Low Down Combined Grain and Fertilizer Drill, as shown in the illustration on page 6, is furnished with the same grain and fertilizer feed that we have used in our combined Drill for the past seven years, and which, from the time the first machine appeared in the market, has met with unbounded success, as all practical farmers saw at a glance that it supplied a want long left unsatisfied, a want which hitherto all attempts to meet had been unavailing. This demand was for a drill which would sow all kinds of fertilizer successfully and with satisfaction to the operator.

After careful consideration of the matter, together with many experiments and practical tests, we at last "struck the nail on the head" by producing our present Glass Fertilizer Feed, which has not only fully met the wants of our patrons, but has far exceeded our expectations in the vast popularity to which it has attained, and we now still further increase its practicability by furnishing it with all the superiorities of the Low Down feature, as explained on the second page of this catalogue.

This Drill, combining as it does, two such commendable features as our Force Feed Grain Feed and our Glass Fertilizer Feed, could not do otherwise than go to the front with a rush, and it now stands without either peer or equal amongst the fertilizer drills of to-day.

GLASS FERTILIZER FEEDER.

The employment of glass in connection with the construction of a fertilizer feeding apparatus was a most happy conception, and the wonder is that it was not thought of long before we began to experiment with it.

One of the great difficulties connected with the successful operation of a fertilizer drill, and one, too, for which there apparently was

no remedy, was the *corroding, rusting and clogging up of the feeders*. All farmers, who operated drills, understood how impossible it was to prevent that. The feeders would rust in spite of everything that could be done, and then clogging up and choking followed inevitably, the fertilizer being first worked into a sticky paste, which packed and then obstructed or stopped the feeding.

The Buckeye Glass Feeder does away with this difficulty entirely, and with its use the tendency of the fertilizer to clog up and choke or pack is *effectually stopped*.

It is a glass feeder and, unlike metal, which almost all other drills are obliged to use, it is not affected by *moisture or acids of any kind*.



No. 1.



No. 2.



No. 3.

The three illustrations, herewith printed, show the character, shape, position occupied, etc., of the Buckeye Fertilizer Glass Feeder. It consists of



BUCKEYE LOW DOWN COMBINED GRAIN AND FERTILIZER DRILL.

A GLASS DISC OR FEEDER,

as shown in cut No. 1, which rests on a bevel gear in a metal frame, called "the spider," as shown in cut No. 2, the same being attached to the under side of the bottom of the fertilizer hopper. This bevel gear is operated by a bevel wheel on the fertilizer shaft and, rotating horizontally, *carries the glass disc around with it.* The whole device is shown in cut No. 3, where it is seen projecting through an opening in the rear of the hopper, as provided for the purpose. It is furnished with a scraper, as shown, and a lever, working on an index plate on the rear of the hopper, within easy reach of the driver, which operates the cut-off, whereby the quantity is regulated.

THE FERTILIZER SHAFT

is of cold rolled iron and the bevel cog wheel that operates the feeder is driven by it. The device that drives the Fertilizer shaft is located near the center of the machine, and the lever for throwing the Fertilizer feeders in and out of gear is within convenient reach of the operator, so that in an instant, without stopping the team, he can stop the sowing of Fertilizer or resume it again.

The Fertilizer and Grain Hoppers are combined into a *double hopper*, as shown by the cut. While the front one is feeding out the grain, the rear one, the fertilizer box or apartment, is feeding out the fertilizer. Both grain and fertilizer pass down through the hoes and are deposited together in the ground. The fertilizer is always brought into view *before entering the hoes*, and the operator can see just how the work is being done.

By our arrangement and location of feeder the fertilizer will only pass out of the hopper as it is carried out by the movement of the *ground wheels*. When they stop the flow of fertilizer or grain must necessarily cease. This is not true of those drills which have the opening in the bottom of the hopper and directly under the fertilizer. For if the fertilizer be dry and fine, as is often the case, it will run through like sand with but little or no agitation, hence it cannot be *distributed regularly*.

The agitator is worked by a Cam on the left end of the fertilizer shafts, and its numerous points *playing over the bottom* and around the glass discs keep the fertilizer thoroughly loosened and shaken up.

The fertilizer hopper is lined both on sides and bottom with galvanized iron.

THE GRASS SEED SOWER

is located in front of the grain hopper, but if the operator desires to sow the grass seed in rear of the hoes he can readily accomplish it by simply putting on the incline board, upon which the grass seed falls and is carried and dropped in the rear of the hoes.

In all other essential respects the Buckeye Combined Drill and Fertilizer is the same as our Plain Drill, as described in the previous pages (from 2 to 4), having the same *gear*, the same *Clutch Wheel* (by the use of which both ground wheels become drivers), the same *grain and grass seed feeding devices*, the same *cut-offs and quantity regulators*, the same *hoe shifting device*, the same *lifting bar and apparatus* (by which all the gearing is disconnected from the driving axle simultaneously), the same *land surveyor*, the same *drag bars, hoes, etc.*

The sowing of fertilizers has become such an important matter with the farmers of the older states that it is a source of profound satisfaction to us to be able, as we are, to furnish them a machine which will do this work thoroughly well. The Buckeye Combined Drill and Fertilizer sows all kinds of grain and all kinds of fertilizers in connection therewith, and any farmer can buy it with the full assurance that it will give him full satisfaction and cause him, practically, no trouble, whatever.

We say to our farmer friends, therefore, what is the advantage to you of buying some other make of machine which at best is only experimental and with which you will have to take your chances, sharing in that respect the responsibilities of the manufacturer, when you can get the Buckeye, which has passed the experimental stage and which is a pronounced and undisputed success, at about the same price? Think of this, farmers, and we believe you will conclude to buy only the Buckeye.

"THE LATEST."

BUCKEYE LOW DOWN SHOE AND PRESS GRAIN DRILL.

In many sections of the country there has been a growing demand for a Shoe or Runner Drill, also a Combined Shoe and Press Drill, and quite a number of different kinds of drills of this class have been invented and placed on the market, all of which have proved to have more or less objectionable features, the most prominent troubles being *heavy draft, too much weight on the horses' necks, imperfect control of the shoes and press wheels, etc.*

We have been experimenting for several years with the view of perfecting a drill that would overcome all of these difficulties, and are pleased to say we have succeeded in doing so, and we now respectfully call the attention of the farmers and dealers to our *New Buckeye Low Down Shoe Press Drill*, with Limber Tongue, as being by far the best Shoe Press Drill on the market, and having more desirable features than any other.

The two illustrations printed on pages 10 and 11 give very good views of the new Buckeye Shoe Drill, both as a Grain Drill and as a Combined Grain and Fertilizer Drill, and the reader should examine them carefully before reading the description, as it will greatly aid him in understanding the same.

The cut on page 13 shows the Combined Shoe and Press Wheel Drill, with three horses attached, and the one on page 12, the Shoe Press Drill, with chain or ring covers having two horses. These large machines are calculated for either 2, 3 or 4 horses.

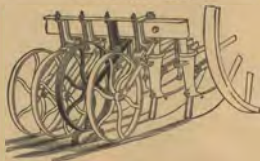
By referring to the several cuts you will notice that the main driving wheels are placed near the front end of the frame, and support it in such shape that we are able to use a Limber Tongue, thereby removing all weight of the machine from the horses'

necks, and they simply have to carry the weight of one end of the Tongue only. This is a feature not contained in any other machine.

We use Ratchet Drive Wheels and both wheels are drivers, a continuous steel axle running clear through the frame, with gear near the center for driving the grain feed, which insures an even distribution of the seed. They will sow in turning either to the right or left.

On the Shoe Drill with chain coverers, as shown by cuts on pages 10, 11 and 12, it will be seen that the rear end of the frame is carried by two castor wheels, one being placed at each rear corner. These castor wheels are arranged in such a manner that any *desired amount of weight* can be put upon the shoes. These wheels carry the surplus weight of the machine.

PRESS WHEELS.



Our Press Wheels are attached to the rear rail of the drill frame, immediately behind the shoes, as shown by cut on page 13, and the connections between these wheels and the shoes are such that in hard or heavy ground, where it is necessary to have additional pressure on the shoes and less on the wheels, the pressure can be transferred from the

wheels to the shoes; while in soft or loose ground *where the situation is just the reverse*, the pressure can be taken off of the shoes and put on the wheels for packing the loose soil over the seed. This is done by means of the same levers that raise and lower the shoes, these levers being within easy reach of the driver from the seat, so that he has complete control of the machine without leaving the seat. These Press Wheels act independently of each other, and are thus enabled to accommodate themselves to the inequalities of the ground. The small cut on page 8 shows how they operate when an obstruction is encountered. The elevated wheel rises up to cross over the same, while the others remain undisturbed in their normal position.

In using the Press Wheels, the drill is so arranged that the principal weight of both the machine and operator can be placed on the Press Wheels, or if so desired, a portion of this weight can be put on the Shoes by means of the levers.

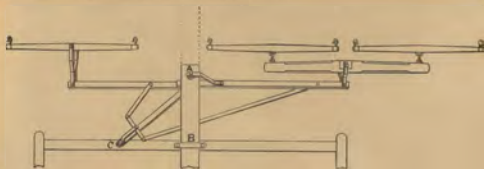
All of our Shoe Drills are furnished with the *Chain Covers*, but the *Press Wheels* are

an extra attachment, which is not furnished unless specially ordered. Under some circumstances it may not be desirable to use the Press Wheels, but if a complete Drill with Chain Covers and Press Wheels is ordered, it will be so equipped that it can be used in either shape, as desired.

The 12 and 14 Shoe Drills are furnished with an excellent three horse hitch, and the 16 and 20 Shoe Drills are arranged for hitching four horses, and the 24 Shoe for six.

The cut on this page shows our Three-Horse Hitch, which is so arranged that the single horse on the left of the tongue only pulls his proportionate share (one-third) of the load.

The general construction of the Buckeye Low Down Shoe Drill is such (being supported both in front and rear by wheels) that we are enabled to make it much lighter and neater in appearance than any other Shoe Drill, and with the advantages of the *Limber Tongue* we claim it to be the easiest drill on the team that has ever been placed on the market.



DIRECTIONS FOR PUTTING THE THREE-HORSE HITCH ON THE SHOE DRILL.

1. Bore hole in tongue, forward of front rail, at letter "A," exactly twelve and one-half inches from front side of rail at letter "B," to center of hole at letter "A." Be sure and bore the hole as true as you can.

2. Bolt the double-tree on underneath tongue, with the long piece next to tongue, then the short piece, and the brace last.

3. See that the hole in the brace at letter "C" is right over the middle of the front rail, then bore and fasten.

4. Bolt on the double-tree and single-tree and you are ready for work.

In putting the Three-Horse Hitch on the Hoe Drill use the above directions, except the brace, as you will see that it is bent to go *under* the front cross rail, instead of *on top*. Use the washer between the hammer strap and tongue, so that the strap will clear the plates on the side of tongue.



BUCKEYE LOW DOWN SHOE GRAIN DRILL.



BUCKEYE LOW DOWN COMBINED GRAIN AND FERTILIZER SHOE DRILL.



NEW BUCKEYE LOW DOWN SHOE DRILL WITH CHAIN COVERERS.



NEW BUCKEYE LOW DOWN SHOE AND PRESS WHEEL DRILL.



NEW BUCKEYE SPRING HOE.

The majority of farmers prefer the regular Pin Hoe Drill as shown in the various cuts in this catalogue illustrating our machines. Some, however, want a Spring Hoe, and to those we supply our drills furnished with the Buckeye Spring Hoe, as exhibited above.

As shown, the drag bars pivot in the rear of the hoes, which experience has shown to be the best arrangement. The Buckeye

Spring Hoe works admirably, and has given the trade entire satisfaction. When an obstacle is encountered the hoe folds under; when it is passed the spring relaxes and draws it again to its proper position. The gum tubes are not broken, while no time is lost, and for this reason some farmers think it a little more convenient plan than that presented by the break pin.

REASONS WHY THE LOW DOWN BUCKEYE IS THE BEST.

BECAUSE—It is mounted on four wheels and runs steady on all kinds of ground.

BECAUSE—It is low down, making it easier to put seed in the hoppers.

BECAUSE—It has a limber tongue, taking all weight and strain off the horses' necks.

BECAUSE—Each drill is arranged to be used either with SPRING PRESSURE on the hoes, or without, as desired, the change being easily and quickly made.

BECAUSE—Only one lever is used to apply pressure to the hoes for raising them and both operations are performed by pulling the lever backward. This is a very ingenious device.

BECAUSE—It is lighter draft, better finished, stronger, neater looking, easier to operate, and has a better shifting lever than any Drill on the market.

THE BUCKEYE ONE-HORSE DRILL.

FOR DRILLING AMONG STANDING CORN.



This Drill is manufactured with five hoes, with steel points and with our new FORCE FEED, same as we use on the Two-horse Buckeye Drill; BREAK PINS in the Hoes and is so arranged that it can be expanded or contracted to suit the space between the rows of corn and can be changed whilst the Drill is in operation. We also manufacture a One-horse Drill with three hoes.



THE BUCKEYE HAND TRUCK.

The Buckeye Hand Truck is undoubtedly the best proportioned and constructed as well as handiest Truck ever put on the market. It is made with a box 3 feet 10 inches long, 21 inches wide, 15 inches deep, inside measure. The box flares at the ends making it two inches longer at the top than at the bottom. The wheels are 32 inches in diameter, which are placed well under the box so that they carry nearly all of the load. The wheels being high it is easily handled in soft ground, and in pushing it over obstructions.

SENIOR

LATEST IMPROVED BUCKEYE

CIDER MILL AND PRESS.



THE LATEST IMPROVED BUCKEYE CIDER MILLS are made in two sizes, namely SENIOR and JUNIOR, the former of which is shown in the above cut and has a capacity of from four to six barrels of cider per day.

These Mills are constructed with three fluted grinding rollers and two curbs or tubs. The grinding rollers run at different rates of speed, thereby both scraping and crushing the apple, leaving it in the best possible form for the press.

THE JUNIOR is constructed on the same principle as the SENIOR but has only half the capacity and is much smaller.

