THE IMPROVED

HOOSIER

GRAIN DRILL

MANUFACTURED BY

HOOSIER DRILL CO.

RICHMOND, IND.

FOR SALE BY

H. L. STULTZ,

DUNCANSVILLE, PA.

INTRODUCTORY.

THE highest standard of excellence that can possibly be attained by the use of the best material, and the employment of the best class of workmen, is kept constantly in view, in the manufacture of the implements represented in this pamphlet.

No details are neglected that can in the least contribute to their merit, and their rare excellence has made for them a world-wide reputation. They are not only superior in construction, but their greatest superiority is in their design, in which simplicity and the most thorough efficiency are combined. They have all been thoroughly tested by actual and continued use in the field for years, and can therefore be purchased with full assurance that they will give satisfaction in the highest degree, and that no time and money will be lost by failure to do the work at a critical time, and that they are in reality the cheapest that can be obtained, if not the lowest in price. It is not expected they will be purchased by those who are disposed to buy what they can get for the least money, regardless of quality, as they have not been constructed with a view to meeting the requirements of that kind of purchasers. The heavy and rapidly increasing demand for them, both foreign and domestic, bears testimony of their excellence, and requires a constant increase of capacity, and stimulates us to greater efforts to more fully merit the continued and increased favors that are bestowed on us.

Our facilities are unsurpassed, and we shall continue to improve them from year to year, and can always be relied on for goods of rare excellence in our line. Our line of Seeding Machinery is not only the finest in quality there is in existence, but is the most complete, and embraces many styles and kinds.

The great and growing popularity of our Seeding Machines, is due in a great measure to the undoubted superiority of our adjustable force feed, and special attention is therefore invited to a description of it to be found further on.

They also have many other excellent features peculiar to themselves, and will fully meet the requirements of and please the most exacting.

THE HOOSIER GRAIN DRILL.

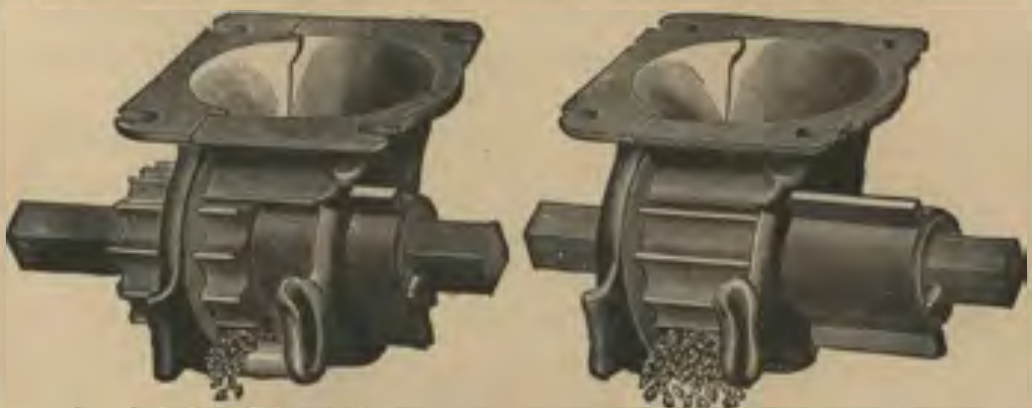
The acknowledged superiority of its Feed, and the excellence of material used in its construction, in connection with honesty of purpose and great care on our part, have established a reputation for the Hoosier Drill that is world-wide. It stands unrivalled in all the really good and practical features that go to make up **the best,** and it can be relied on to do its work accurately, expeditiously and well. While it is neat and trim in form, it is at the same time strong and durable. Its every part bears unmistakable evidence of experience, judgment, care, and superior workmanship. It shows no signs of the hap-hazard and careless work of cheap, inexperienced and unskilled workmen, and its unequaled construction and finish are rendered more prominent by direct comparison with other drills. The great advantages and superiority of our adjustable Force Feed, which is described further on, were recognized from its first introduction, and gave the Hoosier a boom that sent it with one grand stride directly to the highest point in public favor, a position it is eminently worthy of, and in which it is firmly established by its unequaled merits.

It is quite easy to make broad, sweeping claims of superiority on paper, and it is freely indulged in by manufacturers of inferior drills. We have observed that the most inferior ones are "blowed" the loudest, and that the greatest stress is placed on various traps that are employed on them to attract the attention of the farmer, and draw it away from the many defects in their feeds and other vital parts. Each succeeding year furnishes additional and stronger evidence that the superiority claimed by us actually exists in our implements, and not on paper alone, and of the fact that the extravagant claims indulged in by the makers of "shoddy" drills are hollow and false. The natural result is a rapidly increasing demand for the Hoosier Drill, and a corresponding decrease in demand for others that fail to come up to the point of merit claimed for them. This also explains why it is that we are obliged to keep up a constant increase in capacity to keep it equal to the demand, while others have to expend their energy in endeavoring to keep the demand up to the capacity. Rival manufacturers are forced to acknowledge the superiority of the Hoosier, and to admit that it is the leading and standard Grain Drill of the world. It had **combined** opposition to contend with, but fairly and triumphantly won its way to high favor on the basis of **true merit.**

ADJUSTABLE FORCE FEED.

OUR ADJUSTABLE FORCE FEED

Is without question the best grain feed in existence, and the unexampled popularity of the Hoosier Drill is due, in a great measure, to the well-known and acknowledged superiority of its feed over all others. The feed is the most vital part of a seeding machine, and one that has a poor feed cannot do good work nor give satisfaction in the highest degree, no matter how good it may be in other respects; hence the feed should receive the most careful attention in the selection of a grain drill, and it should be remembered that the one with the best feed should be chosen even when other things are equal. Special attention is therefore invited to the following description, which, in connection with the accompanying cuts, will convey a clear understanding of the construction and efficiency of our feed.



Sowing Small Quantity. **Sowing Large Quantity.**

Underneath the hopper, within the feed cups, which are attached to the bottom of the hopper, is a series of fluted feed-rolls. In the left-hand side of each cup is a rosette, or scalloped ring, which revolves with the feed-roll. The scallops of this ring fit into the flutes, or grooves, of the roll. The feed-rolls are all fastened to a square rod, called the feed-rod, which is moved lengthwise with a small lever. When the lever stands at the farthest point to the right, the entire surface of all the feed-rolls is within their respective cups, and the feed is then set at its greatest capacity. The movement of the lever to the left causes a corresponding portion of the feed-rolls to pass through the rosette or scalloped rings, and that portion of them passed through is removed from contact with the grain, so that there will be less quantity of grain forced out. In right-hand side of each feed cup, and attached to the feed-rod, in close connection with the feed-rolls, is a hub or follower, which is provided with two flanges, one along the top and the other along the side, to cut off and prevent the flow of seed from that portion of the cup not occupied by the feed-roll, when the feed is set to sow less than its full capacity. Attached to the rear of the hopper is an Indicator Plate, or Graduated Scale, on which are distinctly marked the different quantities of each kind of grain that our feed will sow. The Indicator is connected directly with the feed-rod, and is affected by any movement of the rod or lever, by which it is regulated. The Indicator has four points, one each for wheat, oats, barley, and flax seed, and these points pass over the In-

dicator Plate and show the quantity the machine is sowing. The lever for changing quantity is provided with a thumb-nut, with which it can be securely fastened when the Indicator shows the desired quantity. The least movement of the lever moves the feed-rod, and that in turn moves the feed-rolls, followers, and indicator points, which are all attached to it. All that has to be done to change quantity, is to loosen the thumb-nut, move the lever to the right or left until Indicator point shows the desired quantity, then tighten the thumb-nut again.

In simplicity, accuracy, durability, ease of management, range of quantity, and in everything essential to the thorough efficiency of a seeding device, our feed stands without a rival. It is a Positive **force** feed in reality and construction, not merely so in name. It will distribute all kinds of grain and grass seed in any desired quantity, and

NO CHANGE OF GEAR WHEELS

Is required to vary quantity, and at the same time is so simple that a mere child need not err in changing quantity. It is **not necessary to change a peck at a time,** but the quantity can be varied a pint or less, if desired.

To increase quantity, we simply bring more of the surface of the feed-rolls into contact with the grain, while the size of the cups remain unchanged, hence the

FORCE OF OUR FEED IS NOT LOST OR DIMINISHED WHEN SET TO SOW LARGE QUANTITY.

It will be seen, by reference to the cuts, that the cups have large, capacious throats, and that the followers are smaller in diameter than the fluted feed rolls, so that the grain has free access to the ends of the flutes as well as from the top, hence our feed

WILL NOT CLOG,

and is more efficient than any other on oats and does not require an Agitator.

Our Feed Cups all sow same quantity because the feed-rolls are all substantially attached to the same shaft, so that one can not be moved without moving them all an equal distance simultaneously, consequently the change is uniform in all the cups. With our feed it is not necessary to put the Drill in motion, or turn the drive wheel to empty the cups, when a change from a large to a small quantity is desired.

The liability of one or more cups sowing more or less than the others, is very great when set screws are used in connection with the feed, as they are liable to get loose and let the parts slip and cause uneven sowing, which is liable not to be discovered until the plants come up, when it is too late to stop the damage to that crop. There are Drills now on the market that have one set screw for each cup, and some that have more than that. Our feed has

NO SET SCREWS

To render it trappy and unreliable. We hazard no contradiction in saying that our Improved Force Feed is the best in existence, and its merits, in connection with the many other good qualities of the Hoosier Drill, make a combination of excellence rarely seen in one implement.

FORCE FEED GRASS SEEDER.

Our Grass Seeder has a positive **force feed,** that is constructed and regulated on the same principle as the grain feed. The grass seed hopper is attached to the front of the main hopper, and by means of a reversible delivery board placed under the discharge openings of the cups, the seed can be distributed with equal regularity in front or rear of hoes, as may be desired, without changing position of seed box.

When the hoes are raised the seeder is out of gear, and there will be no flow of seed until the hoes are let down again and the Drill put in motion; so there will be no waste of seed when turning at the ends.

Many good farmers say that our Improved Grass Seeder alone makes the Hoosier Drill worth $25.00 more than any other in the market.

OUR IMPROVED DOUBLE HOE SHIFTER.

This Shifter moves half the hoes forward, and the other half the same distance in the opposite direction; hence its name, Double Shifter.

When only half the hoes are shifted the entire distance of the zigzag, the equilibrium or balance of the Drill is disturbed, which is objectionable. The tubes of the hoes thus shifted so far, are thrown into a cramped position — in which fact is found another objection to that system. Both of these objections are avoided with our Improved Shifter, owing to the fact that it moves half the hoes the same distance forward that it does the other half backward; hence the balance remains undisturbed, and the distance moved is not enough to cramp the tubes.

It is the opinion of many good judges that our Improved Shifter increases the value of our Drill to farmers at least five dollars, and we believe they are correct. At same time, we put it on our Drills without extra charge.

RECEIVERS.

The receivers, to which the rubber tubes are fastened, are attached to the cups in such a way that they hang loosely, and can therefore adapt themselves to any position of the hoes into which they may be thrown by unevenness of the ground, or when being changed from line to zigzag. This arrangement also admits of the tubes being detached at pleasure, so they can be taken off and put into the hopper, where they will be better protected when the Drill is not in use.

NICELY BALANCED.

The hopper is placed so as to balance weight that would otherwise rest on the necks of the team. This, in connection with the double-tree being attached beneath the tongue, so that the pull is inclined upward, makes the weight very light on the horses, which is a point that cannot be too highly regarded.

WELL SUPPORTED.

We use a wrought iron axle which extends from hub to hub, and which is turned nicely at each end to fit bored hubs. This thoroughly braces and supports the Drill, and prevents it from sagging in the middle. Drills not supported in this way, after one season's use the wheels lean in at the top and spread out at the bottom, and throw the parts of the feeding apparatus out of line, causing them to bind, wear rapidly, break, and the Drill to run heavily, making it very hard on the team.

THE FRAME IS PUT TOGETHER WITH DRAW BOLTS.

The joints of drill frames put together with mortise, tenon, and wooden pins cannot be tightened up when they draw open, as they will after being exposed to the weather a while. The consequence is, the rain gets in and soon rots the joints, and the drill becomes rickety. To prevent this we use draw bolts, so that the joints can be kept tightened up with a wrench, by which the drill can be made to last from five to ten years longer.

DURABILITY.

By exercising great care in the selection of our material, we are enabled to add durability in the highest degree to the numerous other excellent features of

our machines. We carry a large stock of lumber, and purchase it in time to insure its being thoroughly seasoned before it is needed. We could use green lumber, painted over nicely, as some do, and make a cheap grade of goods that would look nice; but they would be lacking in durability. We could make a machine of this kind that we could afford to sell cheaper and still make a larger profit, but we prefer to make standard goods, and sustain the splendid reputation we have built up, by turning out none but good honest machines, as we are in the business to stay. The Hoosier Drill will last, and do good work for from fifteen to twenty years, according to the care taken of it, or from five to ten years longer than any other one in the market, making it in reality the cheapest, although others are offered for less money. Simplicity, accuracy, convenience, and durability will be found nicely combined in the Hoosier, rendering it the most desirable Drill in the world.

A HINT TO THE WISE

Is said to be sufficient, and we will therefore mention the fact that the extremely low prices at which goods in our line are now selling, are putting the "staying qualities" of manufacturers to the severest test, and only the fittest can be expected to survive. This will suggest the importance of buying implements manufactured by establishments that can, without doubt, be relied on to remain in the business, and supply repairs that will be needed from time to time, and without which the best of implements soon become useless. The life of an implement for which repairs cannot be obtained is so short that it is dear at any price. We have ample capital, and the most excellent facilities of all kinds, and are in the best possible condition to meet the emergency, hence purchasers of our goods can confidently rely on getting repairs for them, and can rest assured that no risk is taken in their purchase.

FINISH.

We have the enviable reputation of producing the finest finished and most attractive goods of their kind in the market. We employ the best painters and decorators, use the best material, and spare no pains in the finish. We employ special artists to put a nice hand-painted landscape view on the hopper of every two-horse Drill that we build, which makes a beautiful finish, and adds much to the appearance of the machine.

WARRANTY.

We warrant our Drills to be made of good material, to sow wheat, oats, rye, barley, flax, clover, and timothy, regularly and evenly, in any desired quantity, and to cover well, when properly used, with a fair trial under ordinarily favorable circumstances.

If for any reason one of our Drills fails to perform as warranted, the person having ordered it must give the Agent from whom he received it actual notice. Then if the difficulty is not remedied with proper dispatch, the Drill may be returned to the Agent who sold it, and the purchase money or note refunded to the purchaser.

But if the Drill is used from day to day, or at intervals, or set aside without giving the Agent due notice, it shall be conclusive evidence that the Drill is accepted, and the Warranty therefore at an end.

The Agent who receives due notice will go, free of charge, and make the Drill perform as warranted. If, on examination, the difficulty is found not to be in the Drill, then the expense of the trip shall be borne by the party making the complaint, his acceptance of the Drill be complete, and the Warranty at an end.

In this connection we desire to say that we want all purchasers of our Drills to give the Agent a written order specifying in full just what the bargain is, and to demand of him one of our printed warranties, the printed blanks for which we will furnish on application, in case we do not send them along with other printing. This will prevent misunderstandings and disputes in regard to price, terms, etc., while our warranty will protect the purchaser.

HOES.

A Hoe that we abandoned because it failed to give general satisfaction, is now being used and specially recommended by some of our imitators. It is flat on the sides, has a point very much curved, and the heels extend down nearly as low as the underside of the point, thus forming side wings back of the point. It does well enough in loose sandy soil, but is not good for any other kind.

We can furnish this pattern, and when wanted specify No. 236 hoes in the order.

Our No. F 10 pattern is the best hoe we ever used, and gives universal satisfaction, and will do good work where others fail.

OUR NEW IMPROVED SPRING HOE.

The above cuts represent our Improved Spring Hoe, which has been thoroughly tested, with the most flattering results. The one to the left illustrates its position when passing through the ground unobstructed, and the other the position it assumes when an obstacle is encountered. The construction of this Hoe is such that there is no draft whatever on the spring when passing through unobstructed ground. It is held firmly and rigidly in position by means of a lock, until it comes in contact with an obstruction. The sudden and severe jerk it receives when brought in contact with an obstruction, unlocks it, and causes it to assume the position shown in the cut. When it gives back, a very powerful steel wire spring of the very best quality is compressed. Just as soon as the Hoe passes the obstruction, the powerful action of the spring forces it back into proper position again and locks it. Then all pressure is removed from the spring, and it has nothing more to do until another obstacle is encountered. The lower projection, to which the main drag bars are attached, is provided with a notched slot, by means of which the pitch of the Hoe can be changed to meet the requirements of various kinds of soil. By removing the spring and inserting a wooden pin in hole provided for the purpose, this Hoe can be converted into a pin hoe, when desirable.

Our experience with this Hoe is of the most satisfactory nature, and warrants us in unhesitatingly recommending it to be the very best. It is very much superior to rubber spring hoes, and for that reason it is rapidly superseding them. Where the land is not clear of roots, rocks, and other obstructions, good spring hoes are almost indispensable on grain drills. Their use, however, is not confined entirely to rough land, as they can be used with great advantage in clear ground, saving as they do much valuable time that is otherwise lost in replacing pins that wear out and break. Our Spring Hoe is well worth to any farmer the additional price charged for it. We furnish Spring Hoes only when specially ordered.

THE HOOSIER GRAIN DRILL

WITH REAR LIFT.

This Drill is furnished with solid grass seeder, or without grass seeder, in following sizes, viz: 8 hoe 8 inch, 9 hoe 7 inch, 10, 11, and 12 hoe 6 inch.

Those without grass seeder are arranged for the attachment of detachable grass seeders, which we furnish when wanted.

Will always be shipped with grass seeder when not specially ordered without.

It is also furnished with either break-pin or spring hoes, as may be desired, and will always be shipped with break-pin hoes when spring hoes are not specially ordered.

No extra charge is made for our Double Hoe Shifter, described further on, and which we put on all our Drills.

For cut and description of our Front Lift Hoe Pressure Drill, refer to page 13, and of our Fertilizer Drill, to page 10.

In this connection we wish to put farmers on their guard against being induced to give their orders for plain drills because they are arranged to receive detachable fertilizer attachments, should they wish to commence the use of fertilizers at any time in the future.

The experience of those who have tried fertilizer distributors in the form of detachable attachments is of the most unfavorable nature. They are practically worthless, and besides a drill that is properly balanced without the attachment will not be so when attachment is put on, and a drill of this kind, as a fertilizer, will prove to be a source of expense and annoyance, and consequently of loss as long as it is depended on.

COMMERCIAL FERTILIZERS.

Wonderful results have attended the application of good commercial fertilizers, and, as a natural consequence, the demand for them and good fertilizer drills that will sow them successfully, is heavy, and rapidly increasing. By their use, worn-out lands that were unproductive and valueless, have been reclaimed and made productive in a high degree, and very valuable, and a handsome profit realized on the investment. They increase the yield of all kinds of crops, and can be used with much profit on nearly all kinds of soil, and by all farmers, and we earnestly commend the subject to those who have not investigated it, and do not already know from practical experience that largely increased profits follow their use. Farmers should not be satisfied with a crop of ten or fifteen bushels of wheat per acre, when they can just as well have at least twenty-five or thirty. It is to the interest of every farmer to increase the yield of his crops, and that can be done by the proper use of good reliable brands of concentrated commercial fertilizers. Farmers who have good crops are the ones most benefited by high prices. It costs but little more to raise a good crop than a poor one. The interest on money value of the land, the taxes, expenses of putting in and cutting, are about the same. It is estimated that the first fifteen bushels of wheat cost five times as much as the second fifteen bushels; hence, a poor crop is a very expensive one. Farmers who have poor or medium lands, cannot afford to not use concentrated fertilizers. The area of wheat raising without manure is contracting, and with a liberal use of good fertilizers, any region in the world can be successfully competed with.

Good commercial fertilizers are plant food in the most concentrated and available form, and the farmer who does not use them is losing money, and is not living up to his opportunities. Much land that is considered too rich to need fertilizing, is rich **only** in organic matter, and does not produce good crops of grain because there is an excess of organic matter which causes an overgrowth of straw and root. Such lands are destitute of phosphate of lime, and to insure a good, healthy crop, the phosphatic elements must be supplied, which can be done by the application of superphosphates at the rate of 200 to 300 pounds per acre.

We have been informed by manufacturers of fertilizers, that, owing to the general complaint of farmers that they could not get drills that would successfully distribute the best and richest fertilizers in concentrated form, they were compelled to adulterate them largely with sand so they could be sown with drills. It seems to us that sand at the price of fertilizers is rather expensive, and a drill that will not sow fertilizers in a pure and concentrated state, is certainly **very** dear at any price, and that the one that will sow them is cheap at any price within the bounds of reason, and the only one to buy. The Hoosier will sow them in a manner leaving nothing to be desired, and would be cheaper at double the price asked for it, than any other drill in existence at half the price it can be obtained for, and some of them are offered **very** low. This is the reason why the Hoosier is so popular and so rapidly superseding all others.

We firmly believe that it is to the interest of the majority of farmers to purchase fertilizer drills, as there are very few farms on which fertilizers cannot be used with much profit and satisfaction. The Hoosier is so arranged that the fertilizer part need not be run when not sowing fertilizer, and will, therefore, sow grain alone where fertilizers are not needed.

Special and careful attention is invited to the following description of the Hoosier Fertilizer Drill:

THE HOOSIER FERTILIZER DRILL.

MADE IN FOUR SIZES—8 Hoe 8 Inch, 9, 10, and 11 Hoe 7 Inch.

NOT MADE WITHOUT GRASS SEEDER.

Furnished with either Break Pin or Spring Hoes, and with either Rear Lift or with Front Lift and Hoe Pressure.

The test of time and use continues to furnish additional and stronger evidence in support of our claims of merit and superiority for our Fertilizer Drill, and has further demonstrated that they exist in the implement, and not merely on paper in advertising matter. In consequence of its now well established supremacy it is meeting with great favor, and the demand for it is increasing at a rate that is astonishing to us, and we are now convinced that at first we underestimated its superiority over others. It will distribute evenly **all** kinds of fertilizers, no matter whether light or heavy, dry or damp, pasty or sticky—and gives entire satisfaction **everywhere,** which cannot be truthfully said of any other fertilizer drill now made. It has been put to many of the most severe tests in the field, and came out of them all with its reputation not only fully sustained, but greatly strengthened. Our additional experience with this machine has enabled us to make improvements in its construction that make it better than ever, and we are therefore warranted in repeating, with emphasis, that we are not only willing, but anxious, to put it in the field with any other fertilizer drill in existence, and let the farmer take his choice, if merit is to be the deciding point as to which one to purchase. It should be remembered that many fertilizer drills do fair work under favorable circumstances, with simple dry fertilizers, but will not distribute evenly or successfully phosphates and other

commercial fertilizers, that are very difficult to sow, and the most valuable. Orders should therefore not be placed without the most careful investigation, as a drill that will sow **all** kinds of fertilizers is without question the kind to buy. A critical comparison with other drills will convince any one of the superiority of the Hoosier, and for that reason is desired by us.

Beware of fertilizer distributors in shape of detachable attachments. They are not practical, and the purchase of a fertilizer drill of that kind will prove a source of regret as long as the drill lasts. A drill that is properly balanced when fertilizer attachment is on, will be thrown badly out of balance when the attachment is taken off, and *vice versa*; and besides they are "traupy" and undesirable.

CONSTRUCTION.

The hopper of this machine is made double, and is mounted on a frame like that of our plain drill, but made heavier. The front half of the hopper is for grain, and is furnished with our Improved Adjustable Feed, same as is used on our plain drills. The rear half is for fertilizers, and is furnished with our Improved Fertilizer **Force** Feed. The

Fig. 1.

Fig. 2.

Fig. 3.

object of placing the fertilizer portion in the rear is to bring the discharge openings in plain view of the operator when walking behind the drill, and for convenience in filling, fertilizers not being so nice to handle as grain. The lids of both grain and fertilizer parts open forward and form tight joints with the partition and front side of hopper, so the fertilizer, as well as the grain, can be put in from the rear of the drill. The convenience and advantage of this arrangement makes it worthy, we think, of special mention.

Our Fertilizer Feed consists of a series of nicely-fitted circular plates—one for each hoe—arranged to revolve horizontally in bottom of hopper, as shown by Fig. 1. These plates and their connections form a tight bottom in the hopper, and, as the plates revolve, the fertilizer resting on them is carried to the discharge openings in rear of hopper, each of which is provided with an oblique cut-off that causes it to be discharged into receivers, as shown in Fig. 2. Through the receivers it passes to the tops of the rubber tubes, as shown in Fig. 3, where it unites with the grain and passes with it into the ground. The discharge openings are kept clear of lumps and other obstructions, and the Fertilizer from arching or bridging over, by an agitator provided for that purpose. The size of the discharge openings is varied, and the quantity increased or diminished, by means of gates that can be raised or lowered simultaneously exactly the same distance, with a lever.

From the construction, it can readily be seen that our Fertilizer Feed is simple, reliable and accurate, and that in it is embodied the **true** principle for distribution of fertilizers. We have seen and tested a great many fertilizer feeds, and are familiar with the leading ones now in use, and can conscientiously assert that ours is the best and most reliable one we ever saw.

ADVANTAGES.

Among the many advantages of our Fertilizer Feed the following are prominent and important:

There can be no discharge and waste of dry fertilizers, when drill is stopped, because the plates and their connections form a tight bottom on which the fertilizer rests, and there can be no flow until the plates are put in motion to carry it out. This flow and waste cannot be avoided when the discharge openings are in the bottom of the hopper, without closing them when the drill is stopped, which makes double trouble, as they then have to be opened and adjusted again in starting.

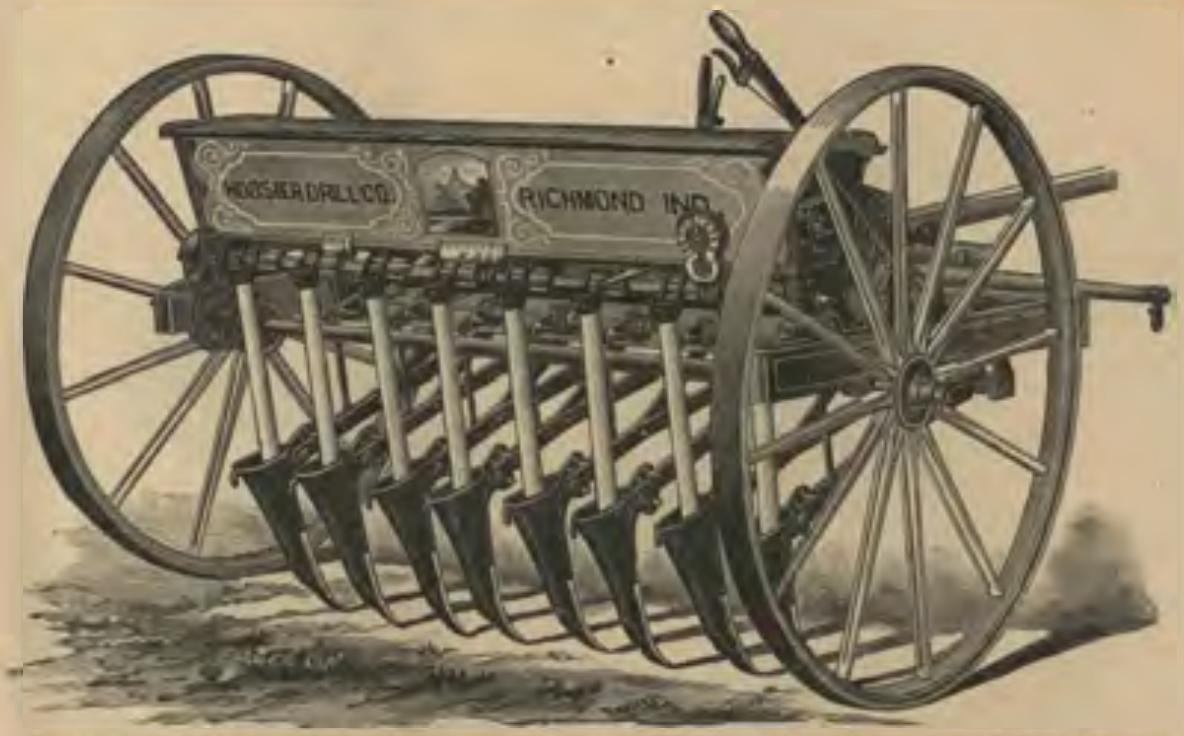
Again, our Feed sows in proportion to the speed of the team. If the team moves faster, the plates are driven faster, and carry out **more** fertilizer, instead of spreading **same** amount thinner on the ground, as must of necessity be the case when the quantity discharged depends solely on the size of the discharge openings, which cannot be affected in the least by the speed of the team. If the quantity discharged depends entirely on the size of the discharge openings, the fertilizer will be sown thicker when going up hill and the team moving slowly than it will be on the other side, where the team will naturally move faster, as the same amount of fertilizer will of necessity be spread thinner if the ground is gone over more rapidly. This can not occur with our Feed, because the plates move slowly and sow less fertilizer when the team moves slowly up hill; and when the team moves faster down hill, the plates are driven faster and sow more fertilizer. This is a strong point in favor of the Hoosier, and should not be overlooked, especially by those who live in hilly sections.

It will also distribute evenly and equally well, light, heavy, dry, damp, wet and pasty fertilizers, it being a **force** feed, and will successfully sow such fertilizers as other feeds cannot sow.

Another great advantage it has is found in the arrangement for throwing the fertilizer feed in and out of gear while the drill is in motion, which can be done independently of the grain and grass seed feeds. By this means fertilizer that would be wasted on strips of rich ground, where it is not needed, can be saved. It should be remembered that the Hoosier Fertilizer Drill will sow grain, grass seed, and fertilizer, all at the same time, or any of them independently of the others. Its clutch for throwing in and out of gear is provided with a ratchet, which prevents breakage when the drill is backed; and the clutch stud is now made malleable, and the feed rod of Fertilizer Feed is made of steel to prevent twisting. These will be recognized at once as important improvements and advantages.

CONCLUSION.

The Hoosier Fertilizer Drill is superior in design and construction; there is no question about that, as it has demonstrated that fact beyond all doubt by superior work in the field. It possesses **many valuable** points not found in any other. It will meet the requirements of and please the most exacting. No risk is taken in its purchase, as it has passed the experimental stage, and now stands unrivaled. Remember that it sows evenly and equally well **all** kinds of fertilizers.



The Hoosier Front Lift Hoe Pressure Drill.

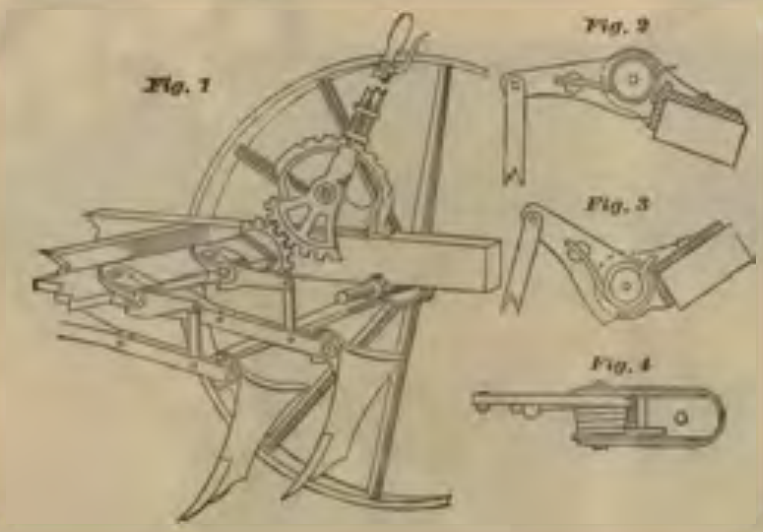
MADE IN TWO SIZES, viz: 8 Hoe 8 Inch and 9 Hoe 7 Inch.

Not Made without Grass Seeder.

FURNISHED WITH EITHER BREAK PIN OR SPRING HOES.

This is a most excellent drill, has been thoroughly tested by extensive and continued use, gives satisfaction in the highest degree, is very popular, and the demand for it is increasing rapidly.

The following outline cut shows in detail its hoe pressure and lifting device, which is unquestionably the best in existence. By means of the lever and notched arch, shown in Fig. 1, different degrees of pressure can be applied; just enough to hold the hoes steadily to their work, or enough to force them into ground as hard as a wagon road. The lever can be placed at a point that will not apply any pressure for forcing the hoes into the ground when not needed, but will place the springs in a position to act as cushions, and when thus arranged they prevent the jumping up and down common to drill hoes, and cause them to run steadily, and thus render important service, when not needed to force the hoes into the ground, by insuring greater uniformity in depth of planting, the advantage and importance of which is well known to experienced wheat raisers. Seed that is planted either too deep or too shallow cannot produce the best results, and if the hoes are allowed to jump up and down they put some of the seed in too deep and some too shallow.



The forward motion of the lever applies pressure, and it can be held in the position that applies the desired degree of pressure by means of a spring catch that engages with notches in the arch, as shown in Fig. 1. The same lever also serves for raising the hoes, which is done by pulling on it from the rear of drill. The lift bar being located in front of hopper constitutes it a front lift, the advantage of which is that the bar is not in the way of cleaning the hoes from rear of the drill. Fig. 2 shows the position the bar, spring, and other parts assume when raising the hoes, and Fig. 3 the reverse, or when applying pressure. It will be noticed that the spring is idle in Fig. 2, it having nothing to do in raising the hoes.

Fig. 4 is a top view of one of the castings on lift and pressure bar and of the spring, the number of which corresponds with number of hoes, there being one for each hoe.

The front lift and pressure as applied to our fertilizer drill is same in principle, but differs a little in construction.

THE LITTLE HOOSIER.

This is a five-hoe Drill, for drilling wheat, rye, oats, and barley between the rows of standing corn. It is adjustable in width, and can therefore be expanded or contracted to suit the various widths of corn rows. It has but one hopper, and is furnished with an Adjustable Force Feed, same as we use on our Two-Horse Drills, hence no changes of gear wheels are required to change quantity. It should be remembered that the Feed is the most vital part of a seeding machine, and should therefore receive the most careful attention. One with a poor and defective feed can not do the best work nor give the best results, no matter how good it may be in other respects. For this reason the one with the best feed should be selected, even when equality exists in other respects. It is generally conceded, even by rival manufacturers when they can be induced to admit the truth, that our Feed is the best in existence.

Its hoes have steel points, and are provided with break pins. It is driven by a malleable chain, which makes a gearing that is at once simple, durable, thoroughly efficient, and one that is not interfered with in the least by spreading and contracting the side wings. It is far superior to cog gearing, as the spreading and contracting of the wings cause cogs to bind, run hard, jump and break; and cog gearing on one-horse drills has proven very annoying and unsatisfactory for these reasons.

In place of the single gauge wheel on rear end of middle piece of frame, we now put on two gauge wheels, one on the end of each side wing, as shown in cut, which is considered quite an improvement.

Another improvement can be found in the cast hopper heads and hinges, which add much to both the durability and appearance of the machine. They encase and thoroughly protect the ends of the sides, bottom, and lid, and make a nice finish. The heads slope away from the corn, so that the front corners can not catch on the corn.

Many farmers prefer to seed corn ground early with one-horse drills, than to delay until corn can be cut up, as they claim that at least one-fourth more grain can be grown by so doing.

Extended experience in the manufacture of One-Horse Drills, in connection with the most favorable opportunities for observation and obtaining information, have enabled us to avoid in the Little Hoosier the many objectionable features common to such machines, and to add good ones not found in any other. It is short, compact, substantially made, of light draft, and easy to handle. In general style, design, thoroughness of construction, finish—in all its details, including handsome painting and ornamenting, it is unrivaled. Its general excellence of construction, coupled with its intrinsic merit as a seed sower, render it by far the most desirable One-Horse Drill in the market, and the most economical to buy and use.

THE HOOSIER THREE-HOE DRILL.

This machine has same feed and gearing as our five-hoe drill, to which it is equal in point of merit. It is preferred by some because it is lighter for the horse and easier to handle. With this machine the operator has only one row to watch, and can run closer, follow the crooks better, and reduce the width of spaces occupied by the corn rows, and thereby get more wheat.

It has cast hopper heads and lid hinges, same as our five-hoe. The handle next to the corn is provided with a cast hand-shield, as shown in cut. The hitch post is attached to side of frame, which allows the horse to walk in middle of the space.

It is a very superior implement, and can be relied on to do its work expeditiously and well.

THE HOOSIER CORN DRILL.

By many carefully conducted scientific experiments and the practical experience of many thousands of the most enlightened and progressive agriculturists who are using our Corn Drills, it has been demonstrated beyond all dispute that an increased yield and an improved quality are the **natural** results of separate distribution of seed in corn planting, and that it is just as essential to growing large crops of corn, as in growing large cabbages, or fine, thrifty trees.

The object and design of the Hoosier Corn Drill is to enable farmers to avail themselves of the above named advantages that follow separate distribution of seed as natural consequences. It is a model of mechanical proportions, and does its work in a manner leaving nothing to be desired. It drops, with great regularity, **one** grain in a place, and does the covering in a thorough and effective manner. It can be adjusted to deposit the grains either 8, 12, 16, or 20 inches apart, to suit the requirements of various soils. The increased yield is estimated at from 10 to 20 bushels per acre by those who are using them. Send for special circular.

HOOSIER DRILL CO.,

RICHMOND, IND.

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