

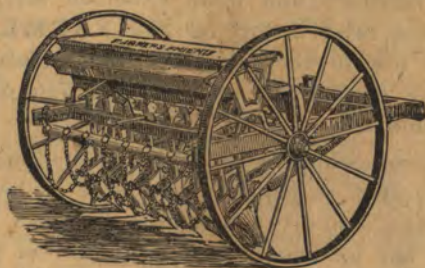
The "CONE GEARING" DRILL.

1876

THE

1876

FARMERS FRIEND



GRAIN DRILL,

WITH ALL OF

B. KUHN'S LATEST PATENTS.

MANUFACTURED BY THE

Farmers Friend Mf'g Co.

No. 20 Wayne Street,

DAYTON, OHIO.

FOR SALE BY

A. H. GREGG

DEALER IN

AGRICULTURAL IMPLEMENTS

ITHACA, NEW YORK.

Simplest, Most Reliable, and Best.

To Farmers and all Interested in Grain Drills.

No formal introduction is necessary to many thousands of those whose confidence and patronage we have enjoyed, and which we have endeavored to merit; but this circular will come, to the hands of some whose attention has not yet been called to the Drill, and besides, in its present perfected state the machine is adapted to a wider range of territory and more extended sale, so it may be desirable to give a brief history of the **FARMERS FRIEND DRILL**, which has in the last few years created such a great revolution in the mechanism and construction of this class of agricultural machines.

The *Cone Gearing*, which is its principal distinguishing feature, and has made the Drill so popular as to give it the name of "THE CONE GEARING DRILL," in distinction from all others, originated with B. KUHNS, who has for more than a quarter of a century been favorably known as a manufacturer of Grain Drills, many thousands of which (the old slide Drill) had been made prior to 1860, when he retired from the business.

The change of quantity in the slide Drills, though not very accurately done, was effected very simply. And when force-feed Drills were first brought out with their loose gear wheels, it occurred to Mr. Kuhns, who was not accustomed to such complex arrangements, that a Drill could be made combining the advantages of a "force feed," and a simple device to change the quantity. The conception of an idea followed, that after long study and experiment resulted in the CONE GEARING, that stands to-day the first and only well-tried arrangement for changing the quantity without loose gear wheels, having been used seven successive seasons.

A Grain Drill with any gearing, no matter how perfect, unless combined with a good feed, would be comparatively worthless. Realizing this fact, Mr. Kuhns invented a **double force feed**, when the machine was ready for manufacture. This invention is the only one justly entitled to be called a "*double force feed*," and is described on page 8. A zigzag arrangement for shifting the hoes simultaneously, was not added until 1873; a year later a patent rear-shifter was put on part, and in 1875 on all manufactured. This is described on page 4.

The first few years only a limited number were manufactured, but

their sale most convincingly proved that the invention had great merit, and all that was needed was its introduction to give it great popularity. To give the Drill as extended a sale as its points of excellence demanded, in the fall of 1871 the present company was organized, with B. Kuhns, its originator and the leading spirit in its improvement, as president. Associated with him were men of long experience in manufacturing and mercantile life, and the FARMERS FRIEND was thus put upon a basis by which its sale could be successfully extended. Although this has been done in the face of the bitterest opposition, its popularity has been without a parallel in the history of Grain Drills, its sale extending to nearly every state and territory where small grains are cultivated, and even to Europe, where it must be acknowledged as the leading Drill of the day. Such a wide sale must necessitate an immense manufacturing capacity, and we have during past years been unable to meet the demand, but have made extensive improvements, and now have a capacity equal to the combined sale of the other principal Drills, and will endeavor to fill all orders promptly.

The principal features of the FARMERS FRIEND, and the late improvements, are noticed prominently in other parts of this circular, and any one wishing to purchase or sell a first-class, simple, and honest Grain Drill is invited to a careful perusal of these pages.

Respectfully,

Farmers Friend Manufacturing Co.

VICTORIOUS IN A FIELD TRIAL.

At the only field trial held in 1875, in which all the leading Drills were invited to participate, the Farmers Friend was awarded the highest honors. The trial was held under the auspices of the Wayne Co., Ohio, Agricultural Society, previous to their fair, so the grain would be up and show how it was sown. It was directed by the superintendent of the department of agriculture, on his own farm, and who was prejudiced toward another drill. Each machine was to sow the same quantity on an acre of ground previously measured. During the fair the committee was to examine each acre sown without knowing which Drill did it. The machines were then examined and the merits of the Drills and work done by each were passed upon, and the awards unanimously made to the FARMERS FRIEND.

The land measure on the Drill indicated one acre, when the ground allotted was completed, and the grain was just sown out of the hopper, which tested its accuracy of measurement and seeding, and were considered by the committee in making the award.

Specialties Claimed for the Farmers Friend.

1. It will sow all kinds of grain and grass seed, and uses no loose gear wheels to change the quantity, which can be done while drilling without stopping the team.

2. It is the only Drill without loose gear wheels in which a change in quantity can be made and the desired amount be exactly sown.

3. It is the only Drill whose feed-wheel forces the grain from two directions, or with a double action, which produces the only genuine **double force feed**.

4. It is the only Force Feed Drill without loose gear wheels that will sow Wheat, Rye, Barley, Oats, &c., without widening the mouth of the feed-cup, and that will sow a large or small quantity equally well.

5. The quantity can be changed in a moment from *greater to less*, as well as from less to greater, when grain is in the hopper, and under all circumstances, *whether the Drill is stationary or in motion*, which can not be done with other Drills having no loose gear wheels.

OUR PATENT REAR SHIFTER.

This is an arrangement with which the hoes can be shifted from behind the Drill without going behind the horses or loosening a bolt or pin. One half the drag bars are attached to the frame and one half to a movable bar. To the latter is attached an iron bar that passes to the rear of the Drill, where it fastens on a cross piece in the frame by a stationary pin that goes through a hole in the bar. All that is necessary to shift the hoes is to raise this bar out of the pin and push it forward until the pin comes in another hole in the bar and fastens itself. The movable bar in being shifted slides on two

castings, one at each end, and when in double rank drops in cavities in these castings, which support each end, and the rear shifting bar holds it in the center, which gives it three points of support and makes it as solid and durable as can be. The best recommendation it can have is that thousands of them are in use, and not one complaint has been made. It is very simple and can be shifted instantly.

The great advantage of having a rear shifter on a Drill, is, to move the hoes forward, to let grass or weeds that may have accumulated before them, pass out when it is not necessary to keep the Drill in double rank

Do You Want to Buy a Drill ?

On the opposite page we present what we claim over every other Grain Drill in existence, and on the following pages will be found full explanation of the devices by which these results are obtained and upon which the claims are based. We ask you to read it all carefully, and if possible to examine any Drill to test the truth of our assertions.

These claims alone justly entitle the FARMERS FRIEND to the popularity it has attained, and recommend it to any one wishing to purchase a Drill, but they are not all. Many excellent points of a good Drill we possess in common with others, for we do not decry the merits of any. But the question that presents itself to the mind of every purchaser is, Which combines the most desirable and important features? Each machine will advertise some special feature, but of what magnitude is it? the same result is obtained by others in a different way equally as well. The five points claimed and proven by us are vital. They pertain not to some minor and unimportant part, but to the most essential features, and without which any Drill would be worthless.

Before buying consult your own interest and examine the FARMERS FRIEND.

THE CONE GEARING.

This improvement, a cut of which is shown on the opposite page, has met with greater favor from the purchaser and its introduction been a more marked success than any other improvement ever made in a Grain Drill. It has now been in successful use for eight years, and its distinctive features remain as when first built, but the manner of applying it has been much improved. Different wheels have been added to make half peck changes, and the convenience of using greatly increased. We now assert, without fear of successful contradiction, that it not only is the original invention to change the quantity in a Force Feed Drill without loose gear wheels, but is the only one in which the change can be made with accuracy, that it is not only the simplest, but is the only one that can be relied upon for durability, that can not get out of order, and that will always change according to the directions under any circumstances, without loosening a thumbscrew bolt or pin, or varying the discharge opening. The truth and advantages of these facts are obvious. Any Drill that seeks to change the quantity without changing the speed of the feeding device must necessarily change the position of a vital part, which can not be done without some arrangement from its very construction liable to get out of repair, thus disarranging the entire feeding mechanism, and rendering it comparatively worthless for the very purpose intended.

Can the enlarging of an aperture through which the grain is discharged be relied upon for accurate and satisfactory seeding? No greater speed is imparted while more grain must come through, and as it does not all come in contact with the moving surface, there is more or less lost motion, so twice the width of the aperture will not sow twice the amount of grain, while it is very improbable that each distributor, having been gauged separately, will sow the same amount or that a change to any certain quantity can be made, which fact alone demonstrate its inaccuracy and unreliability, besides with grain in the hopper the aperture can not be closed, unless the Drill is in motion.

Can the enlargement of the carrying surface of a feed wheel be relied upon? In a degree this is subject to the objections urged above, and in common with all devices for this purpose, except the Cone Gearing, their liability to get out of order should attract the careful consideration of the purchaser, as a good Drill will last many years. The least change in any of the feed-cups, which are adjusted separately by skilled workmen at the factory, will perceptibly change its sowing; the least play of the "setting" device, or indicator, will very materially change the quantity, and if it is barely possible for the manufacturers of such Drills, with all the appliances of modern skill at their command, to regulate them with any degree of accuracy, can the farmer rely upon them to do satisfactory seeding year after year?

The Farmers Friend Still Ahead !

THE QUANTITY CHANGED BY THE

CONE GEARING

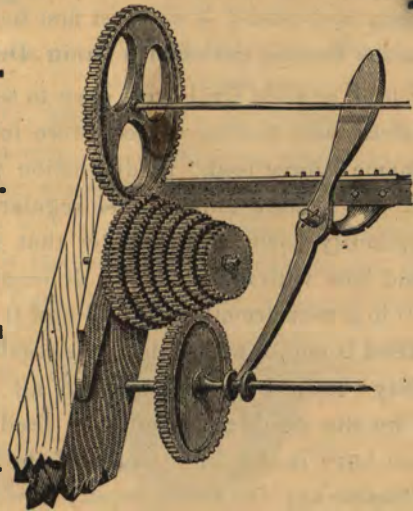
Without Loosening a Single Part or Changing a Wheel.

SIMPLE.

ACCURATE.

CONVENIENT.

RELIABLE.



NO

GUESS WORK

IN THE

CHANGE

The Best.

From the above cut it will be seen that cog-wheels are used to change the quantity, but they are bolted in a cone, and the changes controlled by a lever. The change is made by pressing on a lever to which the cone is attached, which raises it out of gear, and moving the wheel on the shaft right or left into any of the wheels of the cone. The rear end of the shifting lever moves over a notched plate where figures indicate what each wheel will sow.

With cog-wheels there can be no inaccuracy in the change, and every time a certain wheel is used it must sow the same quantity. The change is based on mechanical principles. The feed-wheels are fastened upon a shaft connected with the gearing. One revolution of a gear wheel must sow a certain quantity, and each succeeding revolution the same quantity. Every change to a larger or smaller wheel must make the shaft revolve faster or slower, and make corresponding change in the quantity. This accuracy can be obtained with any Drill where cog wheels are used to make the changes, but the *Farmers Friend* is the only one with which the change can be effected without taking off one and replacing a different size. They are all in our *Cone Gearing*, and you change the quantity to adapt it to the varying strength of soil without stopping or changing any wheels.

DOUBLE FORCE FEED.

What constitutes a "double force feed" Grain Drill? From the term it is evident something is referred to that is superior to a force feed, and to properly understand it we must first inquire why either term is applied to the feeding device of a Grain Drill.

The old rotary feed, or slide Drills were open to serious objections, and to overcome them new feeding devices were invented to which were given the name "force feed," in distinction from the others. The object sought was a more uniform and regular seeding, greater accuracy in the quantity sown, a distributor that would not choke up, and that would sow with equal facility different kinds of grain. These results were in a measure attained, and now it must follow that a **double force feed** is one in which the same results are more completely and perfectly obtained—one in which all kinds of grain are forced out by the double action of a feed wheel or distributor. This we have in the fullest sense of the word, and below are cuts that will enable any one to see exactly how it works.

DOUBLE FORCE



FEED WHEEL.

It will be seen from this cut that a double force feed wheel is a cylindrical casting having on its surface eight zigzag ribs, each alternate one running in the opposite direction. The wheel is slightly concave, and as it revolves the grain is forced out from both sides of the cup, or from two directions toward the center of the wheel and the discharge opening. This peculiar construction renders it impossible to choke or clog up, and a straw, whitecap, or other obstruction that will choke up other Drills must go through this, as the position of whatever is in the feed cup is changed eight times in one revolution of the feed wheel, and constantly forced toward the discharge opening.



Delivery of the Grain.

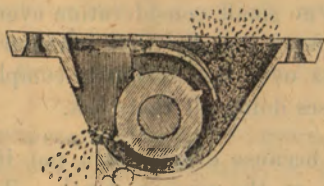
From these cuts it will be seen the flow of seed must be continuous, and bunching or skipping an impossibility. Before one side of the wheel has fully discharged the grain, the other is coming up with



Delivery, with Grain Passing to the Wheel.

an equal quantity, and the ribs are arranged so one side of the wheel may be carrying out a whitecap while the other will be sowing, thus securing a regular flow of seed. On the bottom of the cup, on each side, will be seen projections; the swinging cup to which the rubber tube is fastened hooks over these, and fastens itself so it will not come off from the motion or jarring of the Drill.

This cut is designed to show the grain as it passes around under the discharge opening, delivery of the grain alone upon the



Sectional view of Wheel and Cup.

signed to show the flow from the hopper distributor to the discharge opening, to show that the grain depends upon the revolutions of the

feed wheel, and that it will sow all quantities equally well, as the opening is not enlarged, but the wheel made to run faster or slower. From the cuts and description here given it will readily be seen that the delivery of the grain does not depend on the action of a feeding device in one direction, and that our claim to a double force feed is just, and we warrant it perfect.

IT IS THE BEST.

WEST LIBERTY, OHIO.

Farmers Friend Manufacturing Company:

GENTS—I am proud to inform you that the Farmers Friend Grain Drill has proven superior to the new feeds lately introduced, and I believe is looked upon now as the leading Drill. D. D. YODER.

Examine Carefully the 4th and 5th Pages.

The Advantages of Drilling Grain.

Of these it is hardly necessary to speak, especially to any one conversant with both drilling and broad-casting and the results obtained, but there are some sections where the primitive and imperfect system of broad-cast sowing still prevails, and many more where Drills are used to such a limited extent that the benefits arising from their use are not generally known. To such we have three reasons to present that are not derived from theory, but practical experiment

WHY IT IS BETTER TO PLANT GRAIN WITH A DRILL.

1st. *Time and labor are saved.* With the ground prepared for seeding the farmer can drill in two acres while he could sow and harrow one, which is no small consideration even in one years' seeding. The seeding is done equally well, whether the wind blows or not, as far as he gets over the field it is completed, and it is done much easier, the horses doing all the work.

2d. *Seed is saved,* because every grain put in the hopper is deposited in the earth at the proper depth. The precise quantity desired can be sown, none is broken or wasted, and it never has to be sown twice, which is sometimes the case in broad-cast seeding when a storm or some other contingency prevents the seed sown from being harrowed in at the proper time.

3d. *The yield is larger,* because the Drill hoes pulverize the ground as much as one operation of the harrow, while it at the same time deposits the grain in the bottom of a furrow where enough fine soil falls over to cover the seed, and leaves a drain into which the water carries the wash of the soil, which is the richest portion, nourishing the roots of the grain. Frosts that throw out and kill broad-cast grain, protect what is drilled by filling the furrows from the ridges on either side, and when spring comes it grows vigorously, its roots being well fed in rich soil. A *good Drill* plants the seed evenly and regularly, which is an impossibility with the hand and harrow; the stalks come up in good shape; light and air freely circulates through them; and experience has demonstrated that on an average the yield is one fifth greater than when sown broad-cast.

The Farmers Friend with Fertilizer or Guano Attachment.

This is something of great importance in localities where any fertilizers are used. In many sections it is impossible to secure a rotation of crops without their use, and experience has proven that under certain conditions of soil plentiful crops can be obtained by using them, when without, the yield would hardly pay cost of cultivation. To meet this want the Farmers Friend is now made as a combined machine, when such is desired, and will sow in connection with all kinds of grain, any fertilizers, as guano, super phosphates, bone dust, lime, ashes, plaster, &c., depositing it in the ground with the seed and obtaining the fullest possible benefits from their use.

The quantity is regulated, as in all others, by varying the opening through which it is fed. By an ingenious arrangement this opening is closed when the hoes are raised, and opened when they are lowered. It can be closed any time, and the fertilizer thrown out of gear, so the guano or phosphates can be sown only where needed. Any of the openings can be closed and the fertilizers sown through such tubes as are desired, thus adapting it to use for the planting of corn and beans.

The whole arrangement is simple, and grain, fertilizers and grass seed can be sown together, or separately, or either one as may be desired.

OUR BROADCAST ATTACHMENT.

This consists of corrugated pans that are put under the feed cup in place of the rubber tubes, and scatter the grain evenly in front of hoes which cultivate it in.

They are put on in a moment, add but little to the cost of the Drill, and it is sometimes very desirable to use them.

DRILLING vs. BROADCASTING.

SHANNONDALE, CLARION CO., PA.

Farmers Friend Manufacturing Co.

GENT.—The drill I bought of your agent here,—Levi Reinsel,—has been used two years with the best of satisfaction. To test the advantage of using a drill, I took a ten-acre field, sowed one half an acre broadcast, and drilled the balance. The difference in the growth was very apparent, and I would not give the increased yield of what I drilled, for the price of the machine. I also drilled some oats, it was heavier, and stood up better than the broadcast.

JONATHAN COLEMAN.

Points to be Considered in Buying a Drill.

A purchaser of any machine wants to buy the best, and in this day of competition, when so many Drills as well as other machines are being crowded in the market, all claiming to be the best, it behooves every one to thoroughly post himself before purchasing. The feeding device, with the manner and efficiency of regulating it, are the essential features, and the superiority of the FARMERS FRIEND in this has been clearly shown. It only remains now to make a brief summary of the merits of the Drill, and leave it to the intelligent consideration of farmers to whom we must look for patronage.

REMEMBER—No loose gear wheels are used to change the quantity; that it is done anywhere, without stopping the team if desired; that the **Cone Gearing** is the only device to do that accurately; that grain in the cup never prevents a change to less quantity being made; and that it will remain as good as when bought as long as the Drill lasts.

REMEMBER, That the feed is the only genuine “double force;” that it will sow all kinds of grain; that it can not be choked or clogged up; that every feed-wheel will sow alike, and when a certain quantity is wanted it will sow it every time.

 Remember no other Drill can Claim all these Advantages. 

The quantity is changed by making the *grain distributor revolve faster or slower*, which insures perfect accuracy in the changes, and are made at the *option of the operator as he drives along*.

This enables more or less seed to be put on an acre according to the strength of the soil, without losing any time.

As the feeding device remains in one position it can *never get out of order*.

The **wheels** are upon a shaft running the whole length of the Drill, so it runs very light and they can never get out of line.

The **Cross Seeder** is very light; is set on the rear of the hopper, and can be *taken off any time*. It can also be arranged to use either in front or behind.

Buy no Drill without a Land Measure. It enables the operator to see if he is sowing the desired amount, as it constantly registers the ground passed over, and throws out of gear when the Drill is not sowing. By setting the pointer or indicator on the measure when he drives into the field, he can tell when he has finished just how many acres he has sown. *This is a very important feature, and any Drill without a Land Measure is correspondingly defective.*

With the **Patent Rear Shifter** the hoes can be made zigzag and *vice versa* **TWENTY-FIVE TIMES A MINUTE**, which shows how readily it can be done.

The **Swinging Tubes**, or grain funnels are of rubber, attached to the Drill without bolts or springs, and can be taken off in a moment after drilling, which ought always to be done.

It has as good a **fertilizing attachment** as is made.

It also has a **broad-cast attachment**.

When the hoes are raised everything is out of gear, and the Drill is arranged so the seed stops flowing before the hoes leave the ground, so no seed is scattered or left uncovered.

It sows Grain, Grass Seed, and Fertilizers at the same time or each separately.

It is made and finished second to none.

 Remember the **FARMERS FRIEND** combines all these advantages and is warranted all it is represented

TESTIMONIALS.

We have not given room to as many of these as usual, preferring to use our space for something of more information to the reader. Many flattering ones have been received, but most farmers buy machine upon their own judgment, and not the opinions of others. These letters are as satisfactory and cheering to us as they are merited by the Drill, and it gives us great pleasure in its manufacture and sale to know that our patrons are pleased. All are assured that the **FARMERS FRIEND** shall be kept in the ascendency, and full satisfaction guarantied to every one.

The Farmers Friend to Sow Oats.

There is no reason why Drills should not be as generally used for sowing oats and other spring grains as for wheat. Excepting the protection from frosts afforded fall drilled grain, all the advantages of using a Drill apply equally to any grain, and the purchaser of one should be sure it will sow anything he may ever want it to before purchasing.

Wheat is the most easily distributed of all the grains, and many Drills will sow it with some degree of satisfaction that will almost wholly fail in the seeding of the lighter and bulkier grains which form a large part of the spring seeding.

The feed-wheel of the FARMERS FRIEND is so peculiarly constructed that it acts with as great precision upon these as the heavier grains, and will force out the lightest oats that would bridge over the distributor or feeding device of other Drills that depend upon friction or agitation of the grain for its delivery. Read the following testimonials of parties who have used it to Sow OATS.

BEAVER, BEAVER COUNTY, PA., May 31, 1875.

Farmers Friend Manufacturing Company:

GENTS—The Drill came to hand all right. It worked very well indeed—I may say splendid,—and I think I ought to know what a Drill should do as I have used one for 13 years. I have waited until my oats came up, and will now tell you just what I did with it. I used it in putting in 21 acres. It sowed the quantity exactly as indicated in directions. (I put in two bushels to the acre.) *It did not vary one pint, and I would like to buy and sell by its measurement.* Some of my neighbors came to see it work, and were well pleased with it, indeed they could not help but be. Five men offered to take a half interest in it, notwithstanding the Buckeye is or was the favorite here, mine being the only one of your make in this neighborhood. I will recommend it all I can. Yours truly,

A. WATTERSON, JR.

NEW GALILEE, PA., May 31, 1875.

Farmers Friend Manufacturing Company:

GENTS—My experience with your Drill was, that it sow oats as near perfection as any Drill can. I cleaned my seed through a fanning-mill,—which should always be done where they are threshed with a separator,—to take out broken weeds, &c., that might clog and not run evenly. Yours,

JAMES PATTERSON.

Buy this Drill in the Spring and Test it in Sowing all your Crops.

RETAIL PRICE LIST

DELIVERED ON BOARD CARS AT

DAYTON, OHIO.

Drill with 8 Hoes, 8 inches apart, with Grass Seeder.....	\$ 80 00
" 8 " 9 " " "	83 00
" 9 " 7 " " "	85 00
" 9 " 8 " " "	88 00
" 10 " 6 " " "	90 00
" 10 " 7 " " "	90 00
" 11 " 6 " " "	95 00
" 12 " 6 " " "	100 00
" Fertilizer, extra.	25 00
" Broad-cast Attachment, extra.	5 00
" Patent Rear Shifter "	3 00

TERMS.—All Drills payable October 1, 1876, or one half October 1, 1876; and one half January 1, 1877, with interest from October 1.

SPECIAL NOTICE.

The Fertilizer Drill is a combined machine, and not an attachment that can be put on a plain Drill.

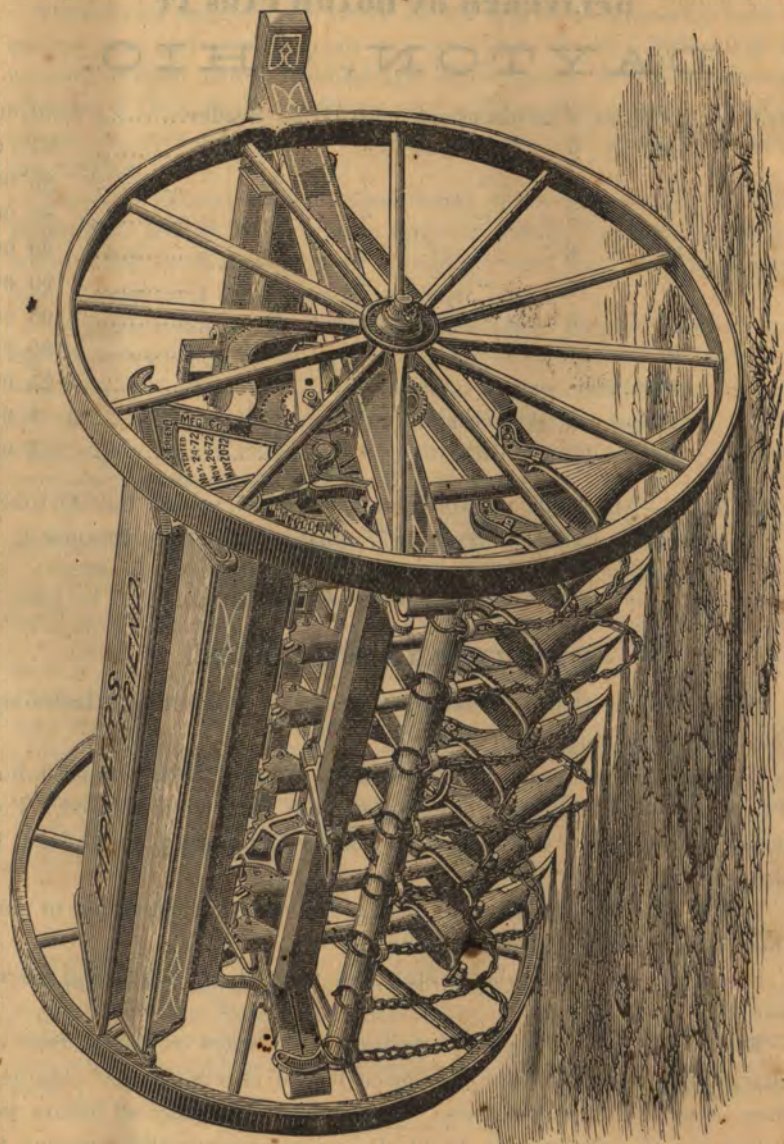
Our regular sizes are 8 hoe 8 inch, 9 hoe 7 inch, and 10 hoe 6 inch, and such will always be sent unless otherwise ordered. For trashey or clay soils the hoes should be farther apart than where it is clean and mellow.

It will sow corn, peas, and beans, but persons wanting to sow these must specify it in the order.

In ordering be particular to state size wanted, and when and where to ship.

Breakages from defective castings are always replaced free of charge, but not otherwise. A price list of extras can be obtained from us or any of our agents. Cash must accompany all orders for extras, as the charges on C. O. D. collections usually amount to nearly as much as their value.

B. KUHN'S
LATEST IMPROVED GRAIN DRILL,



"The Farmers Friend."