

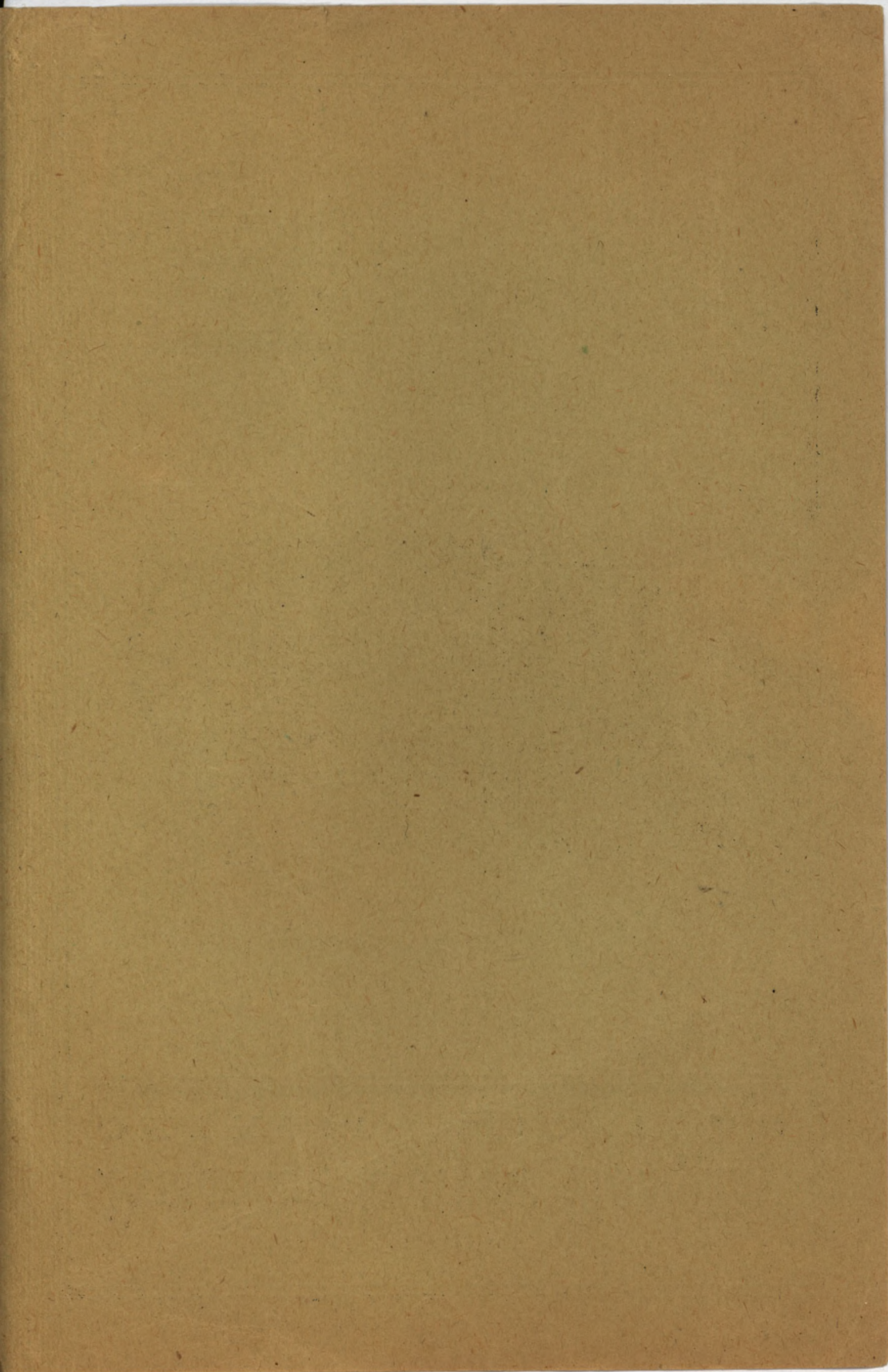
American Harrow Company

DETROIT

MICHIGAN



WE HAVE NO
AGENTS, BUT
SELL TO YOU
DIRECT



American Harrow Co.

DETROIT, MICHIGAN

We sell the entire product of this large factory
direct to farmers by mail



American Manure Spreaders
Detroit Tongueless Disc Harrows
Northwest Harrows and Seeders
New American Cultivators

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The Northwest Grain Fields

In the great Northwest—the grain field of the nation—our famous NORTHWEST HARROW AND SEEDER gives the best of satisfaction.

Very naturally so, because the machine is especially adapted to the country, for three reasons:

1st. It's just the kind of machine for working new ground. It is made very heavy, and is therefore plenty strong enough to stand the hard knocks, and the teeth are shaped so that, while they will dig and thoroughly pulverize the hardest ground, still they will not drag the sods out of the furrows, or catch and hang to solid obstructions, roots or stones.

2nd. It is the best machine for preparing a Seed Bed, for it works the soil evenly, to a uniform depth, and leaves it fine, mellow and level.

3rd. It will not only prepare the soil, but sow the seed, if you get the Seeder Attachment. And the complete machine, Harrow, Seeder and all, adapted for a large variety of work, will cost you less than a Drill, which you can use for only one purpose, and only a few days in the year.

We Sell Direct

We sell the NORTHWEST SPRING TOOTH HARROW, with or without Seeder Attachment, direct from our factory to you, at a price that saves you a good per cent of your money.

This is our third season of selling all our machines on this direct plan, and we want to tell you what a pleasure it is to do business this way.

The Ideal Way

It's certainly the ideal business method. You see we are bound to have none but perfectly satisfied customers, for we agree to take back every machine that is not perfectly satisfactory.

Every Customer Satisfied

And you can, we believe, realize to a certain extent, what a genuine pleasure it is to look over our lists of customers, and realize, as we do, that every single customer is not only satisfied with his purchase, and glad he has the machine, but that he is very friendly to us, and sure to do us all the good he can by recommending our machines to his neighbors.

You get more for your money

And, besides all this, we heartily believe in this method of doing business. It's not only pleasanter, but it saves time, and you get more information and therefore better service, and more for your money, by dealing direct with the maker.

From Factory to Farm

We want to tell you more about this plan later on, although it's as simple as "A B C," but right here we want to explain to you briefly just how our NORTHWEST SPRING TOOTH HARROW AND SEEDER is made and how it works.

And we also want to give you the opinions of some of the best agriculturists of the country on the "Shallow vs. Deep Sowing of Wheat," and what they think of Level Cultivation.

Why a Spring Tooth is better than a Shovel

We want to tell you how it is that the action of a Spring Tooth in the soil produces different results, and better results, than a shovel.

All this must be profitable and interesting to you, even if you should not be in the market just now for one of our machines.

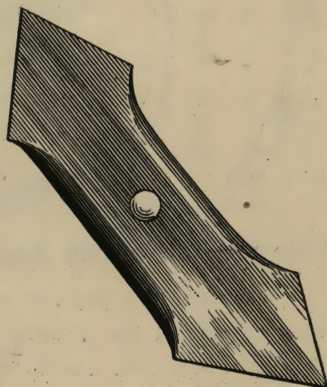
Step by Step—as we build it

We'll take up each separate feature one by one, and then show you just how it works when all the parts are assembled in one complete machine.

Our Famous Patent Reversible Point

This is what does the digging—the real "busines end" of the machine. Looks as though it would dig up hard ground, don't it?

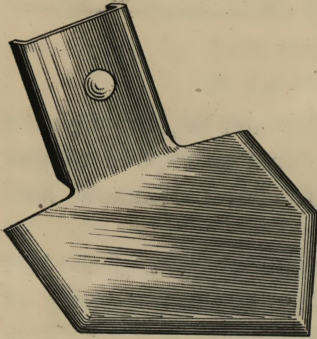
Well, it will. Its shaped just right, has the right kind of a point to dig, and its edges are beveled so it sheds the dirt right. And you will notice that it is reversible—there are two ends for you to wear out. This is our Patent Reversible Point, of which we have sold hundreds of thousands. It fits all standard width ($1\frac{3}{4}$ ") Spring Teeth, and because of the flanges, one bolt holds it securely in position.



Double End Point

How to get rid of Weeds and Thistles

This is the American Thistle Point. It's made especially for killing thistles or weeds of any kind. You attach it to the Spring Tooth in the place of the Reversible Point, and it runs under the surface of the ground in just the right position to shear off the weeds and turn them root-end up to die.



Thistle Cutter—6 in. wide

We sell thousands of these every year, as well as the Reversible Point, for use on other Spring Tooth Harrows.

We furnish one complete set (15) of each of these Points with every NORTH-WEST HARROW, so you really get three wearing points for each tooth.

The Spring Teeth are practically indestructible

It's a great advantage to use separate points on the teeth. It prevents the temper from being drawn out of the tooth by the friction of work in the soil, and it is very easily and cheaply replaced.



Teeth and Points.

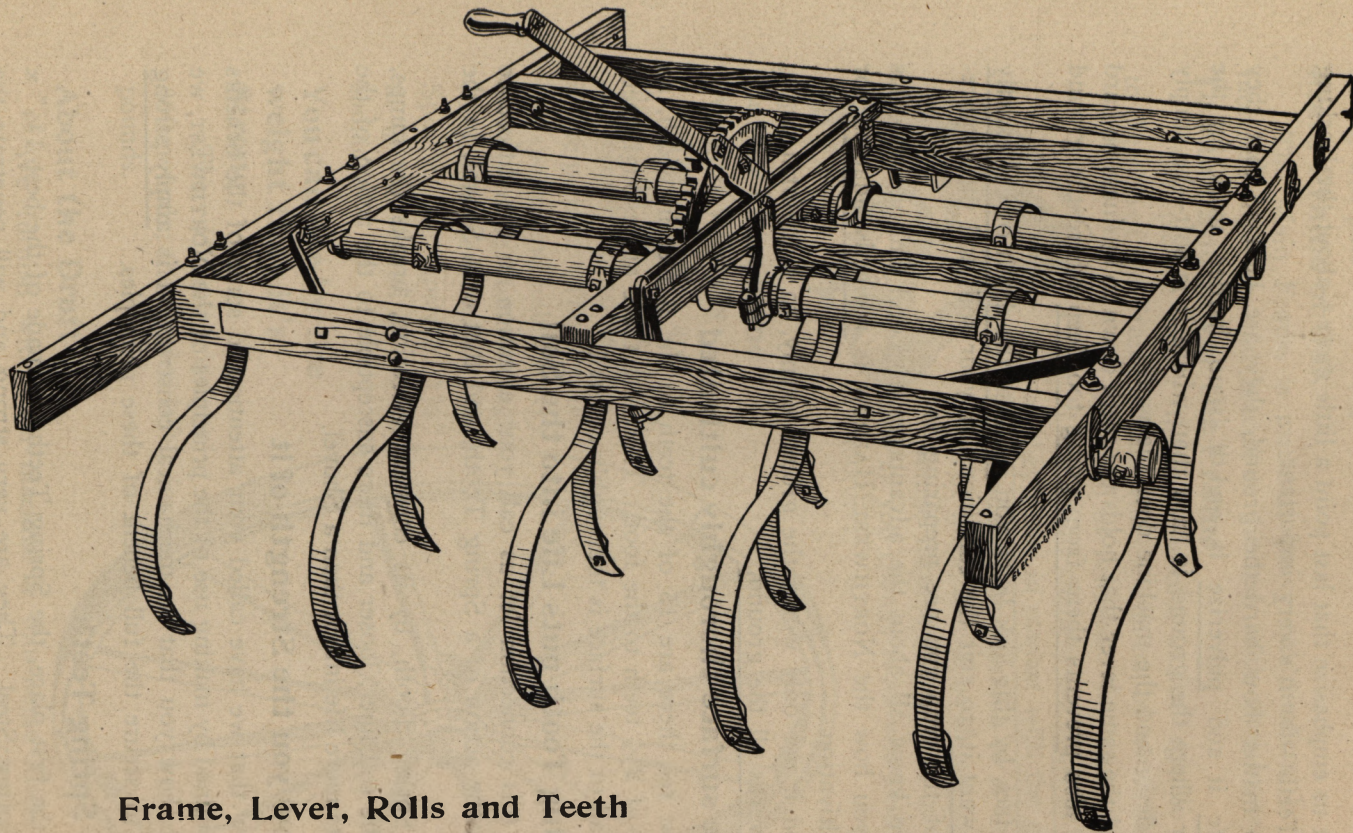
The teeth will last a good many years, and by getting new points occasionally you always have your machine in excellent condition,—it will cut, dig and pulverize like new.

These cuts show the Spring Teeth, with the two kinds of points attached. The teeth are made of the best spring steel, strong enough to dig the hardest ground, yet they are very flexible, and because of their peculiar shape will pass over a large obstruction without catching on it.

The Main Frame Assembled

On the next page is a picture of the Main Frame, to show you how the Teeth are attached to the Rolls, and how the Lever governs the position of the Teeth.

You see how the Lever is connected with each one of the Rolls, and how the movement of the Lever turns the Rolls, and as they are turned they swing the Teeth upward or downward, placing them and holding them in just the position desired by the operator.



Frame, Lever, Rolls and Teeth

Notice the connections between the Lock Lever and the Rolls. The Teeth are Locked and held securely wherever you set the Lever. See how solidly the Frame is built, and how strongly it is Braced.

More about the Lock Lever

Let us emphasize that last point a little more—about the Locking of the Teeth—for it's very important.

No matter how hard the ground, they are held so that they penetrate it and pulverize it, and it is no harder work for the operator where the ground is hard than where it is soft—he simply sets the lever and the machine does the work.

And the same lever that holds the teeth down to business on hard ground, also prevents them from going too deep where the ground is soft.

In fact, by this lock lever you regulate the depth of cut exactly as you want it, to suit the conditions of your soil, and the requirements of the crop you are preparing for.

You know all about the advantages of Level Cultivation—this shows you how the NORTHWEST HARROW is perfectly adapted for level cultivation.

And it not only works the ground evenly, to a uniform depth, but it works all the ground.

All the surface thoroughly cultivated

You see there are 15 of the teeth to the 6 feet in width, an average of $2\frac{1}{2}$ teeth to the foot. Therefore there are enough teeth so that all of the surface is thoroughly covered.

A Spring Tooth puts Life into the Soil

In this connection let us call your attention to the difference between the action of a Spring Tooth, and that of a Shovel, in the soil.

A Spring Tooth, by its constant vibration, breaks the lumps, leaves the soil finer, looser and more susceptible to the action of the air—puts more life into it than a Shovel.

To show you the Strength of it

Now that we have called your attention to some of the benefits to be obtained by making use of the principles of the NORTHWEST, we want to show you that its mechanical construction is amply strong enough to secure the full benefit of these principles.

Heavy Spring Teeth

In the first place, the Spring Teeth are made of the best $1\frac{3}{4}$ " x $5/16$ " Spring Steel. They are very strong and will penetrate the

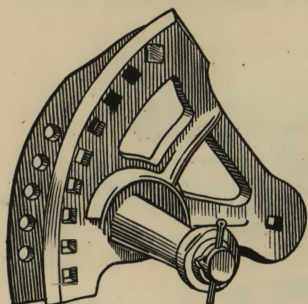
hardest ground, yet they are very elastic, and because of their peculiar shape, will pass over a large obstruction without catching on it.

Main Frame of Oak

The Main Frame is made of heavy oak timbers, bolted, not mortised together, and braced at the rear with steel braces.

To raise and lower the Frame

This picture shows the adjustments in the spindle attached to the side of the Frame for the wheel to run on, by which the Frame is raised or lowered. Changing the height of the Frame changes the angle of the teeth as they come in contact with the ground—which adapts the machine to a very wide range of work, as will be shown further on. Of course these changes need to be made only as you change from one kind of work to another.

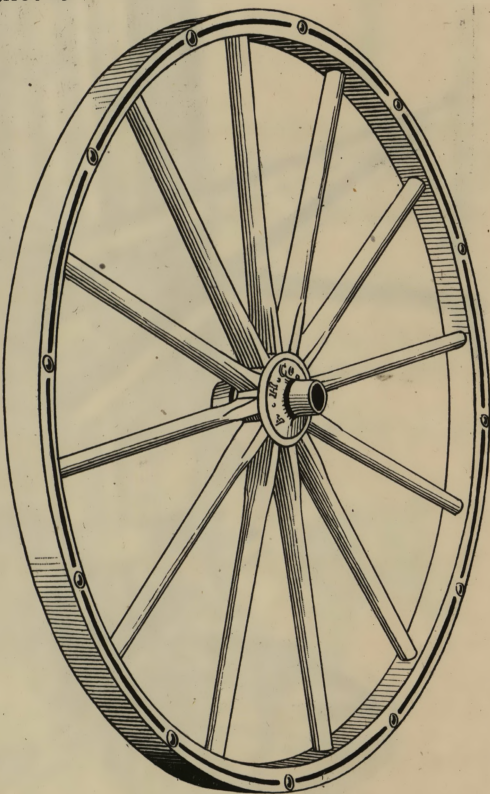


Better than some Wagon Wheels

The wheels are 48" high, with 2½" tires, which are securely bolted as shown in the picture. The tire, felloe, spokes and hub are very heavy, made stout enough for the hardest strain. The Spindles are tapering, 1¼" at the point and 2" at the shoulder.

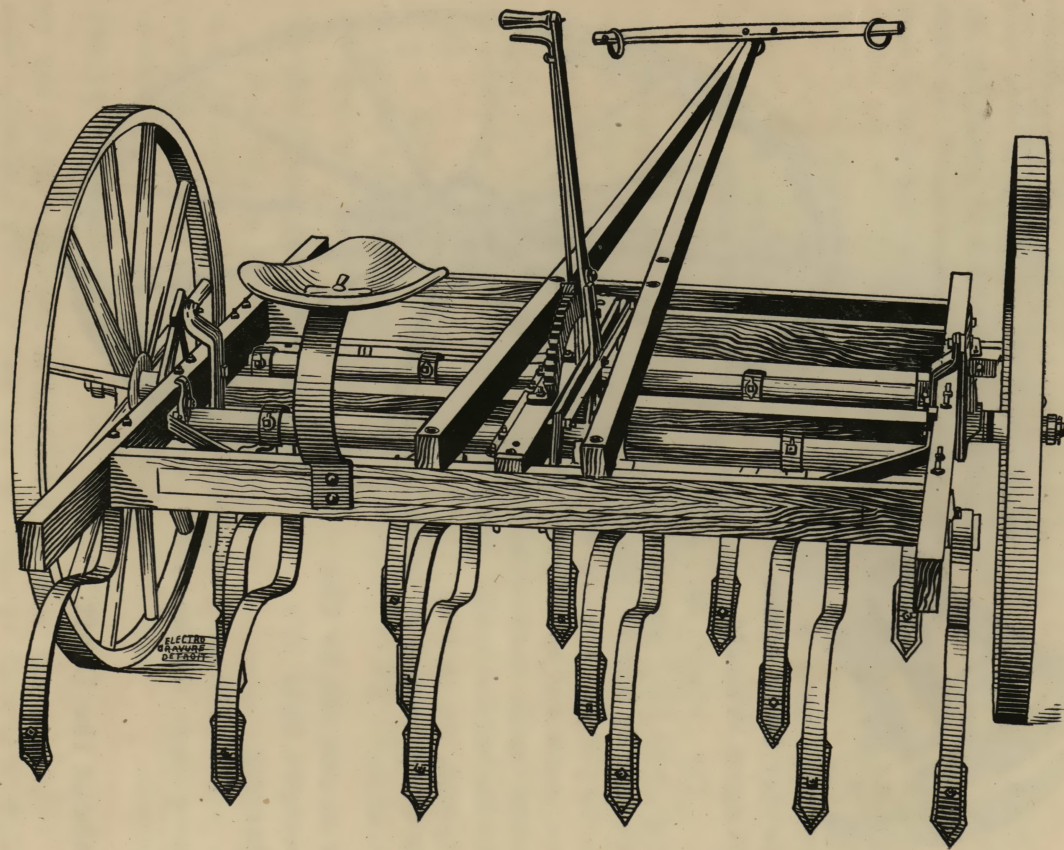
You can see by the weight that it's Strong

The Harrow weighs 600 pounds; the Seeder 100 pounds.



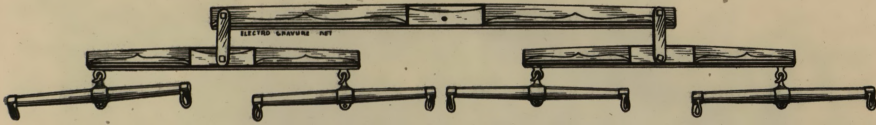
About the Draft

We furnish with each machine a four-horse hitch, and the machine is made to stand the wear and tear of a four-horse team. Of course, it isn't always necessary to use four horses—you can set



Here's a picture of the
NORTHWEST HARROW all
complete, ready to hitch
your team to. It's well
made, strong and durable
—a machine you will al-
ways be proud to own.

the lever so that two horses will handle it easily, only you have to go over the ground more times than you would if you had more power and gave it a chance to dig deeper.



One 4-horse, or two 2-horse Hitches,

This is the Seeder Box

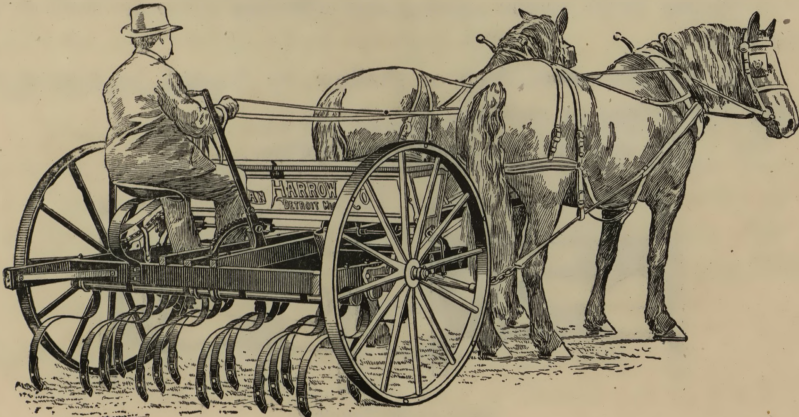


The Broadcast Seeder Attachment will be furnished to those who wish it, for a very small addition to the cost of the Harrow. It can be attached to or removed from the Harrow in a very few minutes time. It has positive force feed, can be set to sow any desired quantity, and is thoroughly reliable in every way.

The Seeder is not only adapted for sowing oats, wheat, rye, barley and flax, but also corn, peas, etc.

In considering the merits of shallow, broadcast sowing of grain, we ask you to read Prof. Kedzie's and Prof. Tracy's statements in the article in the back of the book.

After you have your seed-bed prepared, two horses are all you need to do the seeding.



Northwest Harrow and Seeder.

How the "Northwest" is adapted to your needs

Here are a few suggestions of ways in which you could use the NORTHWEST HARROW AND SEEDER with excellent results.

1st. For fitting newly-plowed sod ground. Drop the frame down to the lower hole in the Side Adjustment, the first time over. In this position it will loosen the soil, and level it, without tearing the sods out. Then raise the frame to center hole and bring the lever back farther, setting it to dig as deep as the conditions require.

2nd. For hard fallow or fall plowing. Raise the frame to upper hole in Side Adjustment and bring lever back until teeth dig vigorously. This will break up and pulverize the crust. For finishing lower frame to center hole, and you will have a deep, mellow seed-bed.

3rd. For stumpy, rooty or stony ground. Drop the frame down to nearly the last hole. This puts the teeth in a sloping position, so they will readily slip over a solid obstruction, at the same time, being held securely by the lock lever, they penetrate the soil to a good depth and prepare a first-class seed bed in less time than can be done with any other implement under similar conditions.

For all of this work the NORTHWEST HARROW is peculiarly adapted, not only because it accomplishes so much in so little time (being six feet wide and capable of penetrating so deeply) but also because the action of the teeth is such that weeds and all foul growth are brought to the surface of the ground, where they are killed by the sun, and turned into fertilizer by natural decay.

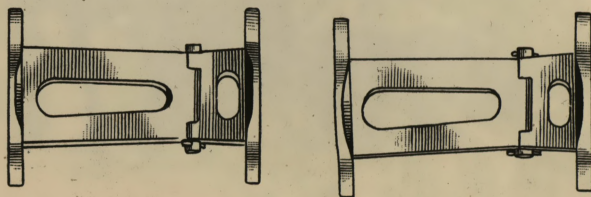
4th. For Broadcast Seeding.

The SEEDER has Force Feed—sure, accurate, and positive.

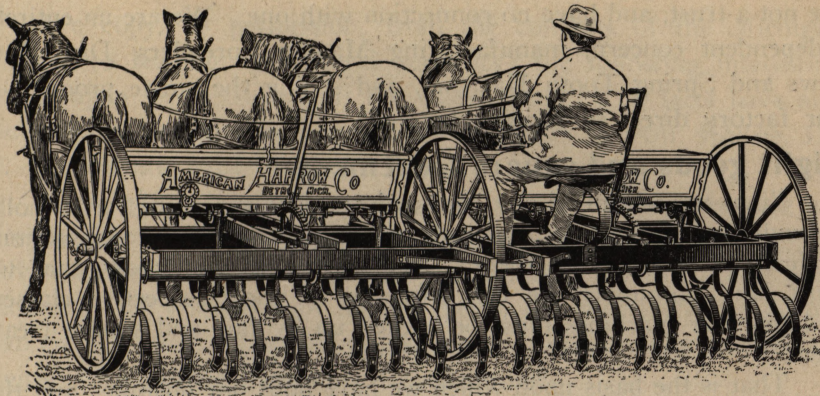
You can set it for any quantity desired by the small lever on the rear side. It sows the seed broadcast, depositing the seed in front of the Spring Teeth so the sowing and covering are both done at the same time.

And you can cover deep or shallow, as desired, by setting the Spring Teeth deep or shallow.

5th. You can put two machines together.



These are the Couplers.



Two Northwestern Harrows and Seeders—covering a space twelve feet wide.

Many of our customers on large places buy two Harrows and two Seeders. These can be coupled together—(we furnish the couplers and necessary braces free of charge)—and one man with four horses can do a large amount of seeding in a day, as it will sow and cover twelve feet wide each time across the field.

We have submitted the evidence

Now, as a practical farmer and judge of farm machinery, you must surely recognize that the principles of the NORTHWEST HARROW AND SEEDER are right, and that the results which we claim it will produce would be of immense benefit to you.

We know so well that it does possess all these merits, and are so sure that it will please you that we are perfectly willing to send the machine to you on trial, with the understanding that you can return it and get your money back if you are not perfectly satisfied.

You don't run any risk when you order from us

That's a safe way for you to buy a machine of any kind—and that's the way we sell all of our machines.

Our References

Probably you would like to know something about our standing; to know that we are able to make good all our promises. Just ask your banker how we are rated in Dun's and Bradstreet's; or ask him to inquire of any bank in Detroit as to our standing. Or you write to the publishers of any farm paper; they can tell you how we stand and how we treat our customers.

Established twenty-five years

We've been in business right here in Detroit for 25 years. We

are not a trust, and have no connection with one. We are an entirely independent concern, manufacturing Manure Spreaders, Disc Harrows and Spring Tooth Harrows, and selling the entire product of our factory direct to farmers by mail.

Right goods and square treatment

Since we sell all of our goods direct to farmers, and are wholly dependent upon them for our trade, we must make all our transactions perfectly satisfactory to them. That means, as you know, that we must have absolutely the best machines in their respective classes, and that our machines must be backed up by fair and square treatment.

That is the basis upon which we have built our business, and the steady growth of it proves that our machines are right and that our methods are right.

We'll be glad to satisfy you on all these points, and on this basis we ask you to favor us with your order.

Thanking you in advance, we are,

Very truly yours,
AMERICAN HARROW COMPANY.

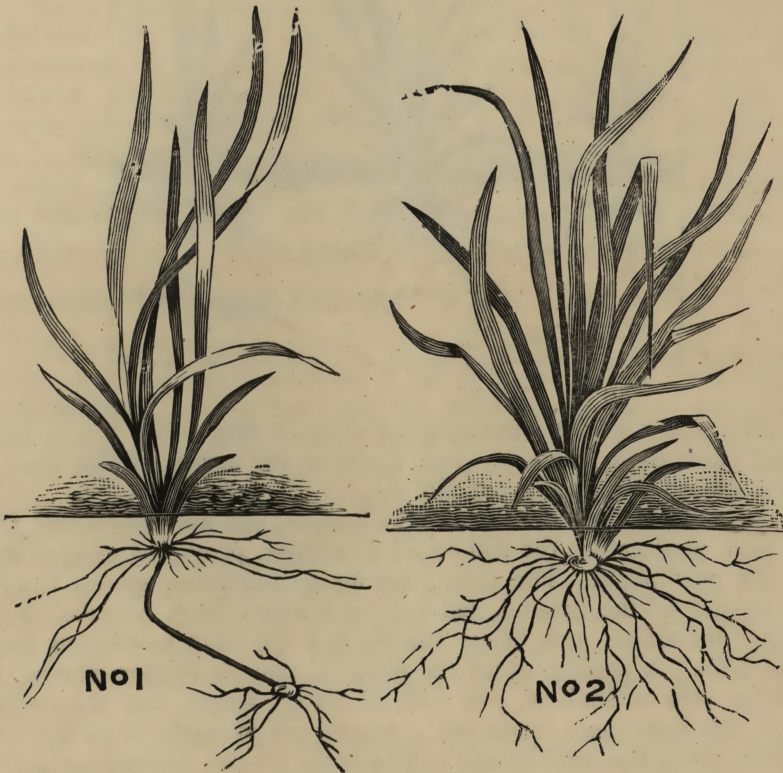


One corner of our office.

Shallow vs. Deep Sowing of Wheat

We copy, by permission, from the columns of the Michigan Farmer (a leading agricultural authority) the following interesting article upon "The Growth of the wheat plant." The facts have also the endorsement of such eminent agriculturists as Prof. Kedzie, Dr. V. M. Metcalf, Prof. Will W. Tracy, and others.

This information will be of service to such farmers as have not already discovered, by experience, the facts set forth; and we feel fully warranted in stating that, after a number of years' actual tests, backed by the testimony of many experts, the NORTHWEST HARROW AND SEEDER, with its perfect adjustments, completely fills the requirements of the practical and experienced farmer.



"Two wheat plants are here exhibited for the purpose of showing the advantages of shallow over deep planting. These two plants, No. 1 and No. 2, are of equal age; they grew in ground of equal fertility, and all the circumstances connected with their planting and growth were similar, except that No. 1 was sown deep and No. 2 shallow.

The result is that No. 1, or the deep plant, has two sets of roots, connected by a long, thin stem, which is likely to be broken by the heaving of the ground in freezing weather, thus causing the plant to lose more than half of its roots; while No. 2, or the shallow plant, has both sets of roots together, or so near together that the danger of their becoming separated by the frost is very slight. It can readily be seen that the shallow plant, No. 2, has a larger stalk, more leaves, and stronger roots, and is, in every respect, a much better plant.

An examination of the next picture will illustrate the wheat plant in its early stages of growth.



No. 1 is a young wheat plant drilled in deep. No. 2 is a young wheat plant sown shallow. No. 3 shows the action of the frost on wheat drilled deep, as in cut No. 1.

The wheat plant has two sets of roots; the first starts out from the seed, penetrating the soil in all directions, providing nourishment for the new plant. The plant, during germination, grows towards the surface of the ground, sending up a single stem or tube, and at about one-half an inch below the surface the stem swells out into a small bulb. A peculiarity of the plant is, that no matter whether the seed be deep or shallow, this bulb is always found near the surface. From this bulb there starts out a second set of roots, drawing nourishment from the surface soil. The roots of this second set are not fully developed in the fall of the year, but the plant lives chiefly upon the lower set during the winter, and in the meantime the second set are pushing out and getting into condition for nourishing the plant in the spring, and during the formation of the seed.

This habit of the wheat plant is important, as explaining a fact that is not generally understood. Farmers, for instance, frequently

complain that their wheat looked thrifty in the fall, and sometimes in the early spring, and then began to die in the drill rows, until they could go along the rows and gather the dead grain by handfuls. The explanation is that, where wheat is sown deep, as in Fig. 1, the first set of roots is formed in the fall, deep in the soil, while the second set is immature until late in the spring. The ground during the winter or early spring freezes on the surface, and the frozen earth clasps the wheat plant near the surface of the ground, and, expanding upwards, breaks the connecting tube that unites the upper part of the plant with the lower roots, as in Fig. 3. The consequence is, that the plant, now with a large top and great evaporating surface, is cut off from its supply of food (the germ); the upper set of roots being as yet imperfectly formed, are unable to sustain the drain of the luxuriant top, and the plant starves to death.

When grain is sown broadcast near the surface with an adjustable implement, any desired depth may be obtained, according to the requirements of the soil. This is best known to the farmer who is a chemist, not only in theory but by practical experience. Both sets of roots are near together, as in Fig. 2, forming a mat near the surface, so that when the ground freezes and thaws, both sets of roots are lifted and settled together like a timothy sod, and the connecting tube between the upper and lower sets of roots is not broken, and the plant starts off in the spring with two full sets of roots."

From the Michigan Farmer

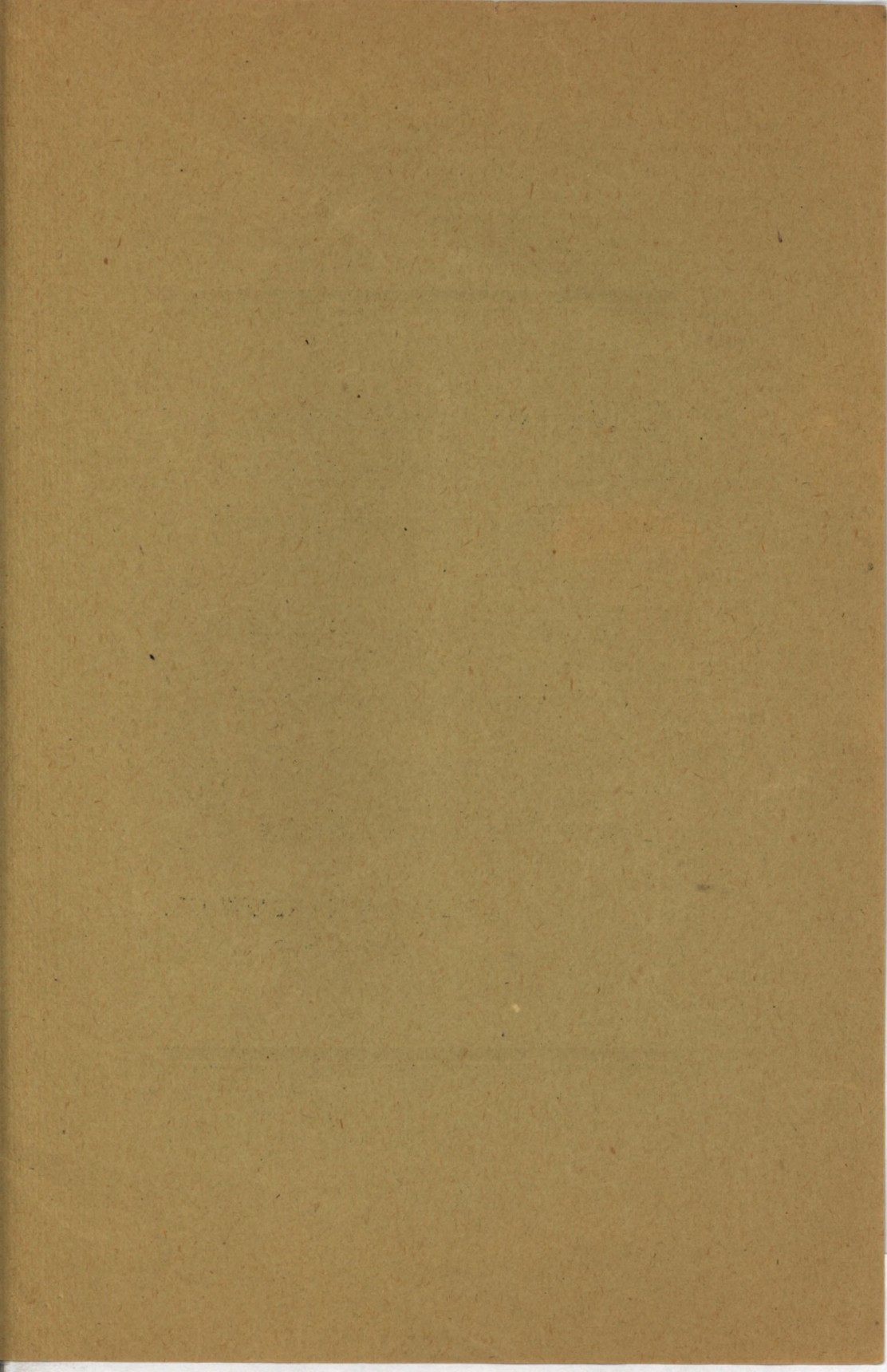
Since the foregoing article, which appeared in the Farmer, was written, we had the pleasure of a call from Dr. V. M. Metcalfe, of Hopkinsville, Ky., who has made the chemistry of soils a study, and, in the course of the conversation, the soils best adapted to wheat growing, the best methods of preparing the soil, fertilizers, mode of sowing, etc., were discussed. He had a large number of specimens of the soils of various Southern states, and exhibited analyses of them to show wherein some excelled others for growing wheat, and what was lacking in others. He regards the soil near Lexington, Ky., as the finest he had analyzed for producing wheat, and which furnishes the "blue grass" pastures for which that State is famous. Yet 75 per cent. of that soil, when its component parts are separated, is found to be silica, or pure sand.

The doctor had with him, in his collection, a fac-simile of a grain of wheat, about a foot in length, and made up in proportion. This was so arranged as to show the coverings which nature has prepared for the preservation of the grain, the layer of gluten immediately under them, and the starchy articles which make up the body of the grain. At one end is the germ, perfectly protected, and at the other is a tuft of hair-like roots. The germ remains unchanged until brought into contact with moisture, and the office of this tuft, which is a

spongy substance, is to absorb moisture and bring it into contact with the gluten in the grain, thus starting fermentation. The doctor said seed grain was frequently spoiled by having the tuft broken off. When the fermentation is set up it starts the germ, and its growth is stimulated by the fermentation of the gluten and starch, upon which it feeds, until the plant has reached the surface of the ground, from which time over 90 per cent. of its growth comes from the atmosphere. And here is where the question of Deep vs. Shallow Sowing comes in. If the seed is sown too deeply the supply of nutriment is exhausted before the plant reaches the surface, and there is a halt, the plant throwing out new roots, and finally struggling up to the light and air. This has caused loss of time, and left too long a distance between the main root and the plant, which the first frost is liable to snap in two. When this happens the plant turns yellow and sometimes dies; but frequently it recovers and matures, although the resulting crop is always a light one. It would thus appear that the depth of sowing is a prime factor in determining the success or failure of a wheat crop.

We hope the foregoing has been of interest, and will be of value to you. As we said at the beginning, and as you can see for yourself, the NORTHWEST HARROW AND SEEDER is peculiarly adapted for the broad grain fields of the West and Northwest, and for any new country. We are so confident that it will please you that we offer to send it to you on trial with the understanding that you can return it if not perfectly satisfied. Will you accept our offer?

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Detroit, Mich.
