# J. E. Fargo,

## Grain Drill.

No. 110,447. Patented Dec. 27. 1870.

Figure 1.

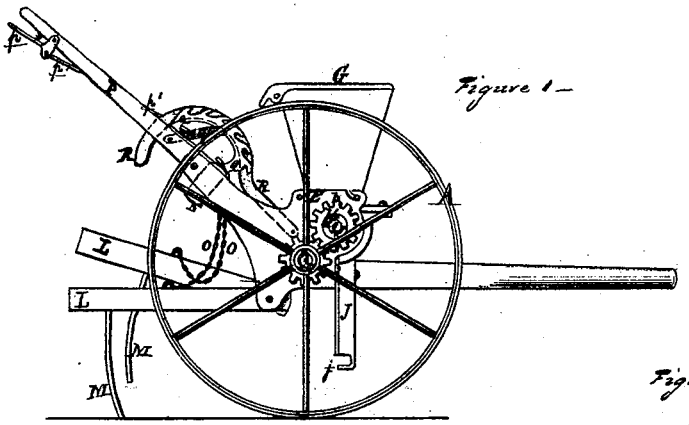


Figure 2.

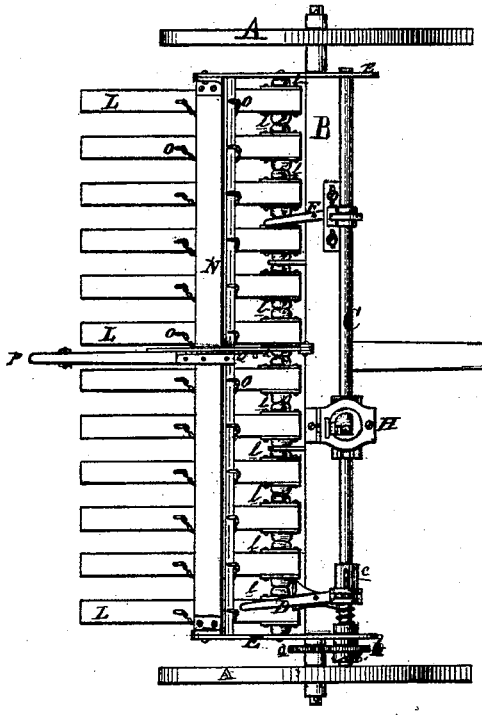


Figure 3.

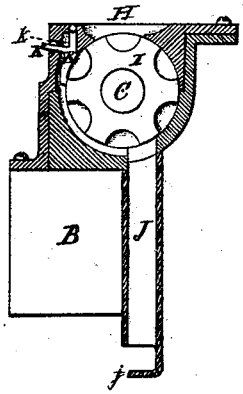
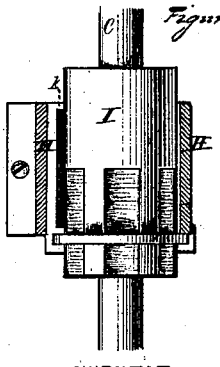


Figure 4.



ATTEST:
James Thierry
John Richlandt

INVENTOR:
J. E. Fargo
per Atty
Thos. S. Sprague

# UNITED STATES PATENT OFFICE.

JOSEPH E. FARGO, OF LAKE MILLS, WISCONSIN.

## IMPROVEMENT IN COMBINED BROADCAST-SEEDERS AND CULTIVATORS.

Specification forming part of Letters Patent No. **110,447**, dated December 27, 1870; antedated December 10, 1870.

*To whom it may concern:*

Be it known that I, JOSEPH E. FARGO, of Lake Mills, in the county of Jefferson and State of Wisconsin, have invented a new and useful Improvement in Combined Broadcast-Seeder and Cultivator; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawing, and to the letters of reference marked thereon, and being a part of this specification, in which—

Figure 1 is an elevation of my improved machine. Fig. 2 is a plan of the same with the hopper removed. Fig. 3 is a vertical section of the feed-box, and Fig. 4 is a horizontal section of the same.

Like letters indicate like parts in each figure.

The nature of this invention relates to an improved construction of combined broadcast seed-sowers and cultivators; and consists in the peculiar arrangement of recessed cylinders rotating in feed-boxes surmounting the axle, for automatically delivering a regulated amount of seed to the spouts, which have distributing-plates at their lower ends, whence it falls to the ground, and is covered by the cultivator-teeth attached to bars pivoted to a shaft in rear of the axle; the feed mechanism is operated by gearing from the traction-wheels; in the peculiar method of hanging the drag-bars, and the arrangement of the mechanism for raising and lowering the same; also, the peculiar construction of the washers between the drag-bars.

In the drawing, A represents traction-wheels, and B a proper axle, mounted in and between them. One of the wheels has secured to its hub a spur-gear, *a*, which meshes with and rotates the pinion *b*, which has a half-clutch, *b'*, on its outer face, and rotates loosely on the sleeve *c*, which forms an extension or prolongation of the feed-shaft C, with which it engages and transmits its motion by a pin through the shaft, projecting into slots in the sleeve. On the outer end of the sleeve a pin is thrown in or out of gear with the half-clutch *b'* by the lateral movement of the sleeve, which is effected by a shifter, D, Fig. 2. The clutch *b'* is so constructed that when thrown in gear with the pin on the end of the sleeve, the latter, together with the shaft C, will not be rotated in the retrograde movement of the machine, a spring being coiled around the sleeve, between its journal and shifter-collar, which allows it sufficient end-play for the purpose.

The shaft C and its sleeve rotate in bearings in the frame-standards E, erected at each end of the axle. The shaft C has also a lateral movement in its bearings, which is effected by a shifter, F, pivoted at any convenient point on the axle, and whose operation is clearly shown in Fig. 2.

G is the hopper, directly over the shaft C, and is so pivoted and secured to the frame-standards E that it may readily be tilted forward, or removed entirely when desired. The hopper is provided with openings in its bottom, through which the grain or seed passes into the feed-boxes H, but one of which is shown.

I is a cylinder, recessed with several grooves or corrugations, extending from one end to about midway of its length. This cylinder is secured to the feed-shaft C, and rotates within the feed-box H, its plain end serving as a journal.

The grain or seed dropping into the feed-box from the hopper in the rotation of the cylinder, the grooves fill with seed, which they carry down until they reach an opening in the bottom of the feed-box, when the seed passes down and out of the spout J, when it falls on a distributing-plate, *j*, which is formed by turning back horizontally the elongated lip of the spout. From the plate *j* the seed falls broadcast on the ground.

In order that the seed may not run out at the side of the feed-box through the recesses in the cylinder, a washer fitting into said recesses is slipped over the cylinder and rotates with it, being held against the face of the feed-box by clamps or other proper means.

In the back part of the feed-box is hung a vibrating guard, K, which is pressed forward toward the cylinder by means of a rubber or other spring, *k*. The face of the guard conforming to the outline of the cylinder forms the back of the feed-box. The purpose I have in the use of the vibrating guard is, that in case the seed or grain should be caught in the rotation of the cylinder by the sharp corner of one of its recesses, it will not be crushed against

the throat of the back of the feed-box, were it stationary; but the spring *k* will allow the guard to recede a little and permit the seed to pass down.

To increase or diminish the discharge of seed, the shaft C is moved laterally by the shifter F, so as to bring more or less of the recessed portion of the cylinder within the feed-box.

L are drag-bars, journaled on a bar secured to the frame-standard in the rear of the axle, each bar having a cultivator-tooth, M, attached underneath. The teeth are attached to the series of bars in a zigzag row.

The bars are separated from each other by hemispherical washers *l*, cast on a plate, which is screwed or otherwise secured to the side of the bar. This form of washer gives a longer bearing to the bar and lessens the tendency of the tooth to twist in its furrow.

N is a rock-shaft, pivoted or journaled eccentrically in the anterior part of the frame-standard, and has secured to it a series of chains, O, one of which is secured to each of the drag-bars below.

P is a lever, secured to the rock-shaft within reach of the driver, who sits on the hopper, and by which he rotates said shaft to raise or lower the shovels or cultivator-teeth.

Q is a notched quadrant, secured to the lever and rock-shaft, which is held in any desired position by the dog R, pivoted to the axle, which has a stud projecting from one side, which engages with one of the notches in the quadrant.

To release the dog from the quadrant, a bell-crank lever, *p*, is pivoted to the gripe of the lever P, and by means of a wire, *p'*, connecting it with a tripper, *q*, under the dog, the latter is raised out of the notch.

As the operation of this machine is so clearly shown in the drawing and by the foregoing description, a further explanation is deemed unnecessary.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The feed-shaft C and sleeve *c*, shifter D, clutch *b'*, pinion *b*, and gear *a*, arranged and operating as and for the purpose set forth.

2. The partially fluted or recessed cylinders I, secured to the shaft C and rotating in the feed-box H, vibrating guard K, spring *k*, spout J, plate *j*, and shifter F, substantially as described, and operating for the purposes herein set forth.

3. The rock-shaft N, eccentrically journaled in the frame-standards E, and operated by means of the lever P, notched quadrant Q, dog R, bell-crank lever *p*, wire *p'*, and tripper *q*, for raising the drag-bars L by means of the chains O, substantially as described.

4. The hemispherical washers *l*, in connection with the drag-bars L, when constructed and arranged as described and shown, and as and for the purpose set forth.

JOSEPH E. FARGO.

Witnesses:

H. S. SPRAGUE,

SAM. R. BARTLETT.