

No. 824,762.

J. H. ULLRICK.
FORCE FEED SEEDER.
APPLICATION FILED JULY 28, 1905.

PATENTED JULY 3, 1906.

2 SHEETS—SHEET 1.

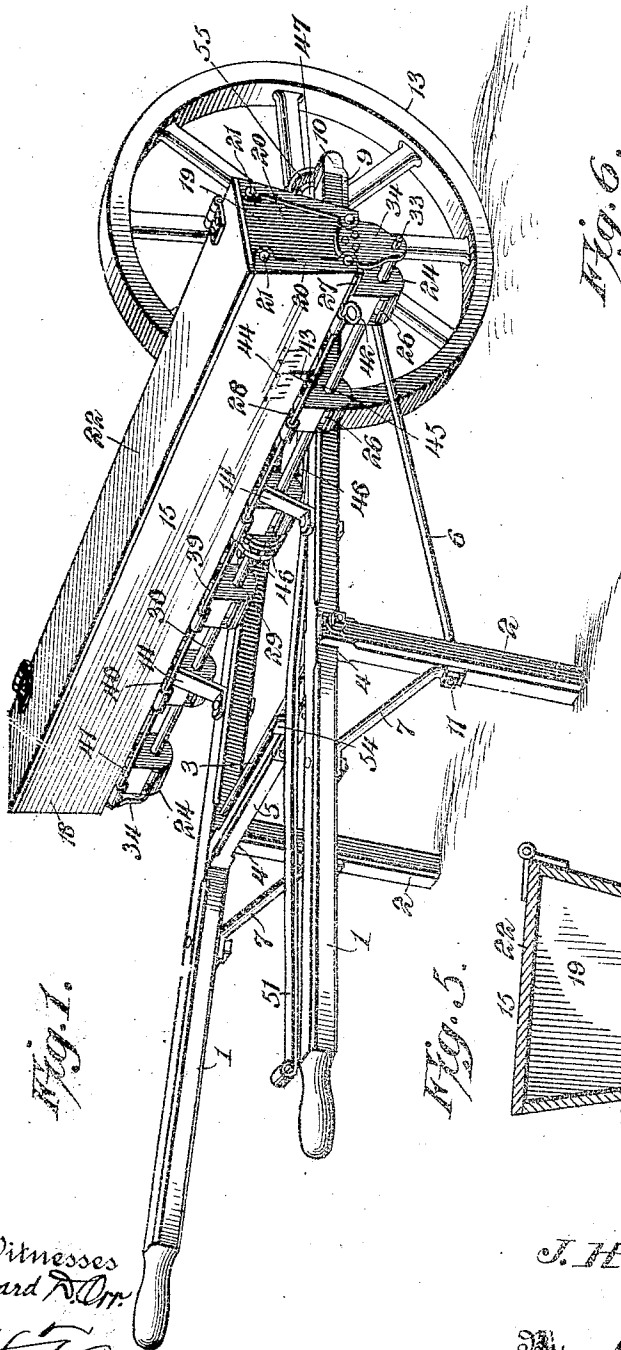


Fig. 1.

Fig. 6.

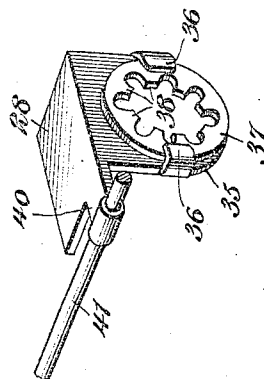
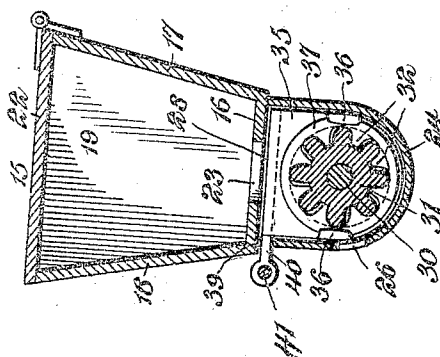


Fig. 5.



Witnesses
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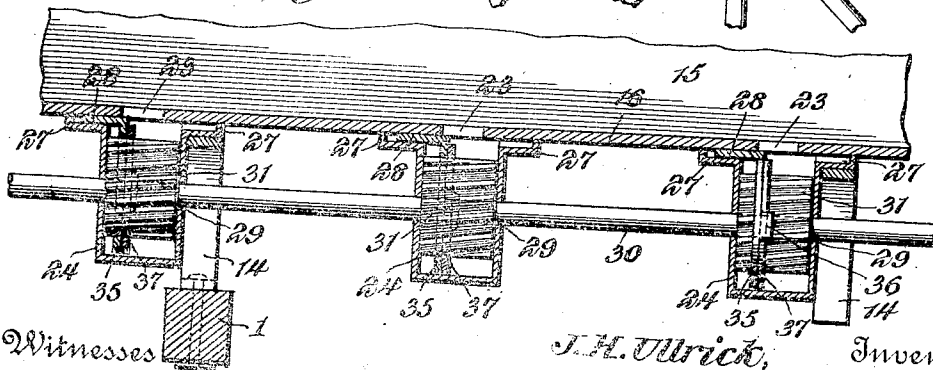
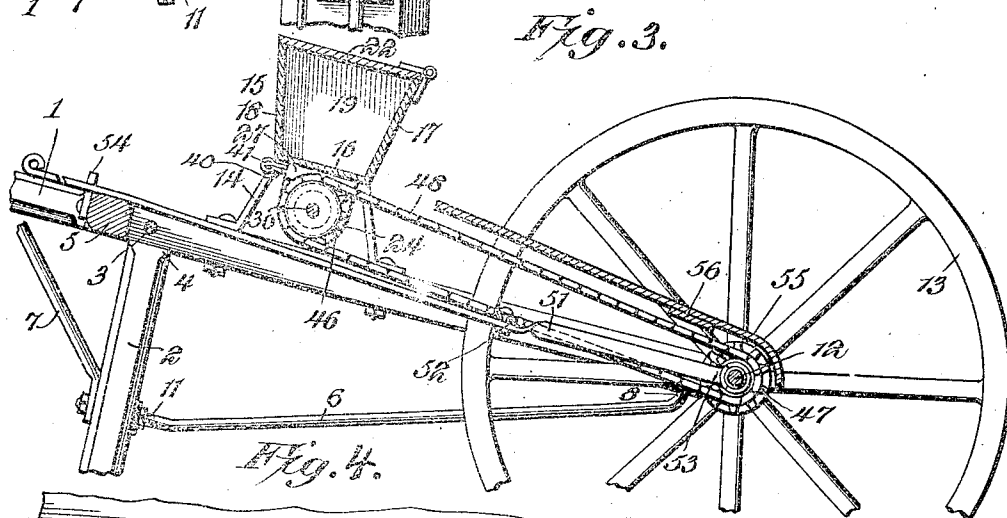
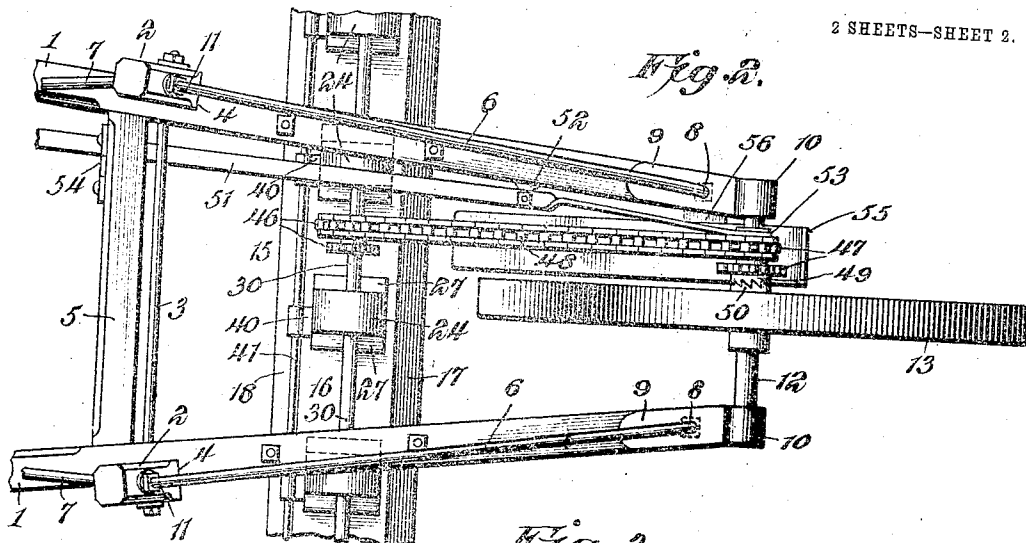
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PATENTED JULY 3, 1906.

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FORCE FEED SEEDER.
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2 SHEETS—SHEET 2.



Witnesses

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UNITED STATES PATENT OFFICE.

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FORCE-FEED SEEDER.

No. 824,762.

Specification of Letters Patent.

Patented July 3, 1906.

Application filed July 26, 1905. Serial No. 271,341.

To all whom it may concern:

Be it known that I, JACOB HENRY ULLRICK, a citizen of the United States, residing at Nashville, in the county of Davidson and State of Tennessee, have invented a new and useful Force-Feed Seeder, of which the following is a specification.

The invention relates to a force-feed seeder.

The object of the present invention is to improve the construction of seeders and to provide a simple and comparatively inexpensive one designed for sowing all kinds of seed—such as grass, clover, grain, and the like—and capable of insuring a steady uniform uninterrupted flow of seed, and adapted to be readily adjusted for varying the speed of the feed mechanism and for regulating the quantity of the discharge, whereby the seeder is adapted to be advantageously employed for sowing any kind of seed under any circumstances.

A further object of the invention is to provide a broadcast seeder of this character adapted to be readily operated by one person and capable of enabling the feeding mechanism to be readily thrown into and out of operation while turning it at the end of a row and while moving it from place to place.

The invention also has for its object to provide a seeder which when set or adjusted will sow exactly the same amount per acre and discharge the same amount upon the ground traversed, no matter whether the seed be large or small or the operator walks slow or fast or the weather be windy or not.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion, size, and minor details of construction within the scope of the claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a perspective view of a broadcast seeder constructed in accordance with this invention. Fig. 2 is an inverted plan view of the seeder. Fig. 3 is a vertical longitudinal sectional view of the same. Fig. 4 is a vertical sectional view taken longitudinally of the seed-hopper. Fig. 5 is a vertical sectional view taken trans-

versely of the seed-hopper, and Fig. 6 is a detail perspective view of the adjustable cut-off for controlling the flow of the seed.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 1 designate side bars of a wheelbarrow-frame, which is provided at points intermediate of the ends of the side bars with legs 2, secured at their upper ends to the side bars by means of a transverse rod 3, having its ends threaded for the reception of nuts; but any other suitable means may be employed for securing the ends of the rod to the legs. The upper ends 4 of the legs are recessed to receive the side bars 1, which are also connected between their ends by a transverse bar 5, located in rear of and adjacent to the transverse rod 3. The legs are supported by front and rear inclined braces 6 and 7. The front braces extend from the front ends of the side bars to the legs, and the rear braces extend upward from the rear faces of the legs to the side bars. The front terminals 8 of the braces 6, which consist of rods; are bent upwardly at an angle and are passed through the side bars and through rearwardly-extending plates or arms 9 of bearings 10 and are provided with nuts. The rear ends 11 of the braces 6 pierce the legs and the lower ends of the rear braces 7 and are provided with nuts.

The bearings 10 extend upwardly from the front ends of the plates or arms and fit against the front ends of the side bars and are provided at their inner faces with bearing recesses or sockets for the reception of the ends of an axle 12, upon which is mounted a wheel 13, adapted to run on the ground and support the front of the frame similar to the wheel of an ordinary wheelbarrow.

Mounted upon the side bars at points between the legs and the wheel are approximately inverted-U-shaped brackets 14, supporting a transversely-disposed seed-hopper 15, which may be of any desired size and which extends laterally from opposite sides of the wheelbarrow-frame, as clearly illustrated in Fig. 1 of the drawings. The seed-hopper, which may be constructed of any suitable material, comprises a bottom 16, front and rear walls 17 and 18, and end walls 19, which are secured by suitable fastening devices to flanges 20 of the front and rear walls. The flanges 20 of the front and rear walls are bent at an angle and fit against the outer faces of the end walls and are provided

with suitable enlargements or ears, through which pass the fastening devices 21. The seed-hopper tapers from top to bottom and is provided with a hinged lid or cover 22. 5 The bottom of the hopper is provided at intervals with openings 23, which communicate with a series of depending casings 24, having rounded bottoms and provided at their rear sides with discharge-openings 26. 10 The sides of the casing are extended and bent at their upper edges to form substantially L-shaped flanges 27, and the spaces inclosed by the flanges provide guides for cut-offs 28. The sides of the casings are provided with alined bearing-openings 29 for a shaft 30, which has keyed or otherwise secured to it a series of feed-rolls 31, consisting of laterally-enlarged cogs, having spirally-arranged ribs or teeth forming intervening 20 spiral seed-receiving grooves 32. The space between the feed-rolls and the casing is sufficient to prevent the seed from being broken. The ends 33 of the shaft 30 are reduced and are arranged in bearing-openings of hanger-plates 34, which are secured to and depend from the ends of the seed-hopper, as clearly shown in Fig. 1 of the drawings.

The seed drop from the hopper upon the feed-rolls and are carried by the same to the discharge-openings 26 and are expelled or discharged therefrom in a continuous uniform uninterrupted stream, one groove beginning its discharge as the preceding groove completes its discharge.

Each cut-off is provided with a depending portion or collar 35, having a circular opening to receive the feed-roll and provided with inwardly-extending approximately L-shaped lugs 36, which loosely embrace a rotary device consisting of a rosette or disk 37 and having a central opening and provided thereat with inwardly-extending tapering projections 38, adapted to slide in the grooves of the feed-roll for varying the length of the effective portion of the same. The disk 37, which rotates with the feed-roll, is carried by the cut-off, and as the cut-off moves inward to reduce the size of the stream of seed discharged from the hopper the disk moves inward and correspondingly reduces the length of the exposed portions of the grooves of the feed-roll.

The casings are provided at the top with rear slots 39, through which extend arms 40 of the cut-offs, and the said arms 40 are provided with eyes for the reception of an operating-rod 41, to which the slides are suitably secured. The operating-rod is provided at one end with a handle 42, and it has a suitable indicator 43, designed to operate in conjunction with a scale 44 of the rear wall of the hopper. The indicator and the scale will designate the size of the discharge-opening of the bottom of the hopper and will enable the 65 operator to tell at a glance the position of the

cut-off. Any suitable means may be employed for securing the operating-rod in its adjustment, and the indicator, which is mounted on the rod, is provided with an eye for the reception of the same and is adjust- 70 ably secured to the rod by means of a set-screw 45.

The shaft 30 carries a plurality of sprocket-gears 46 of different diameters, and a plurality of sprocket-gears 47 are mounted on the 75 axle 12. These sprocket-gears receive a sprocket-chain 48 of the ordinary construction, the chain being adapted to be transferred from one set of sprocket-gears to the other for changing the speed of the feed 80 mechanism. Any number of sprocket-gears may be employed, and by controlling the speed of the feed mechanism and the quantity of seed discharged from the hopper to the feed mechanism the seeder may be 85 readily arranged for sowing any kind of seed under any circumstances. When the machine is adjusted, it will sow exactly the same amount over the ground traversed, and the uniform discharge of the seed will not be affected by the size of the same or by the wind or by the speed of the machine. A slow movement of the machine will produce a correspondingly slow discharge, and a rapid movement of the machine will sow the seed 95 rapidly. The gears of the shaft are keyed or otherwise secured to the same, and those of the axle slide thereon and are provided with a clutch-face 49, which is adapted to interlock with a corresponding clutch-face 50 of 100 the axle, whereby when the latter is rotated motion will be communicated to the feed mechanism. Any suitable means may be provided for engaging the clutch-face of the slidable sprocket-gearing, and as illustrated 105 in the accompanying drawings the clutch-face 50 may be conveniently formed at one end of the hub of the wheel.

The slidable gearing is operated by a shifting-lever 51, fulcrumed between its ends 110 on a bracket or plate 52 and having its front end 53 forked or otherwise constructed for engaging a groove of the slidable sprocket-gearing. The bracket or plate 52 is secured to and extends from one of the side bars of the wheelbarrow-frame, and the other end of the shifting-lever is extended to a point within easy reach of the operator. The rear ends of the side bars are shaped into handles and the shifting-lever is adapted to be operated 120 by the thumb of the operator without releasing his grip on the side bars. The movable clutch face or section is thrown out of engagement with the other clutch face or section while turning the seeder at the end of a row 125 or when it is desired to move the seeder from one place to another. The shifting-lever is held against accidental movement by means of a stop 54, consisting of a lug projecting from a plate preferably secured to the cross- 130

bar 5. The shifting-lever is sufficiently resilient to enable it to be sprung over the lug for engaging either of the side edges thereof.

A guard 55 is arranged over the sprocket-gearing for preventing the same from becoming clogged by dirt carried upward by the wheel 13. The guard consists of a strip of metal and is provided with a laterally-extending arm 56, which is secured to one of the side bars 1 by means of the front upwardly-extending end of the adjacent brace-rod 6. The arm 56 is L-shaped, and its inner portion extends upward to space the guard from the sprocket-gearing. The front end of the guard is curved downward and extends in advance of the sprocket-gearing.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a seeder of the class described, the combination of a hopper provided with a seed-opening, a grooved feed-roll, a cut-off located at the seed-opening, and a rotary device mounted directly on the cut-off and provided with an opening receiving and conforming to the configuration of the feed-roll, said rotary device being carried by the cut-off to vary the length of the exposed portion of the feed-roll.

2. In a seeder of the class described, the combination of a hopper, a feed-roll, a cut-off provided with a depending supporting portion, a vertically-disposed rotary device having an opening receiving the feed-roll, said rotary device being mounted on the supporting portion of the cut-off and carried by the latter to vary the length of the exposed portion of the feed-roll.

3. In a seeder of the class described, the combination of a hopper having a seed-opening, a casing, a grooved feed-roll, a horizontal cut-off located at the seed-opening and provided with a depending collar encircling the feed-roll, and a rotary device having an opening to receive the feed-roll and mounted on and carried by the collar of the cut-off to vary the length of the exposed portion of the feed-roll.

4. In a seeder of the class described, the combination of a hopper having a seed-opening, a grooved feed-roll, a cut-off located at the seed-opening and having a depending collar encircling the feed-roll, a rotary device mounted on the collar and having an opening receiving and conforming to the configuration of the feed-roll, and an operating-rod con-

nected to the cut-off for operating the same and for adjusting the rotary device to vary the length of the exposed portion of the feed-roll.

5. In a seeder of the class described, the combination of a hopper, a grooved feed-roll held against slidable movement, a rotary device consisting of a disk having an opening to receive the feed-roll and provided with projecting portions extending into the groove of the same, and a cut-off having opposite lugs loosely embracing the disk.

6. In a seeder of the class described, the combination of a hopper having a seed-opening, a feed-roll, a cut-off located at the seed-opening, operating mechanism connected to the cut-off, and means mounted directly on and carried by the cut-off for varying the length of the exposed portion of the feed-roll.

7. In a seeder of the class described, the combination of a hopper provided at the bottom with seed-openings, casings depending from the bottom of the hopper and having discharge-openings and provided with slots, grooved feed-rolls operating within the casings, a shaft connecting the feed-rolls, cut-offs for controlling the seed-openings of the hopper, said cut-offs being extended through the slots of the casing and having means mounted directly upon the cut-offs for varying the length of the exposed portions of the rolls, operating mechanism located exteriorly of the casings connected with the extended portions of the cut-offs, and means for rotating the said shaft.

8. In a seeder of the class described, the combination of a hopper provided at the bottom with seed-openings, casings depending from the hopper and having laterally-extending portions forming horizontal guides, feed-rolls operating within the casings, a shaft connecting the feed-rolls, cut-offs having horizontal portions to operate in the guides and provided with depending vertical portions located within the said casings, means mounted directly on the vertical portions of the cut-offs for exposing more or less of the feed-rolls, means for operating the cut-offs, and gearing for rotating the said shaft.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JACOB HENRY ULLRICK.

Witnesses:

E. CALVERT,

THOS. E. HUGHES.