

C. E. PATRIC & J. S. BOGLE.
Grain-Drill.

No. 168,918.

Patented Oct. 19, 1875.

Fig. 1.

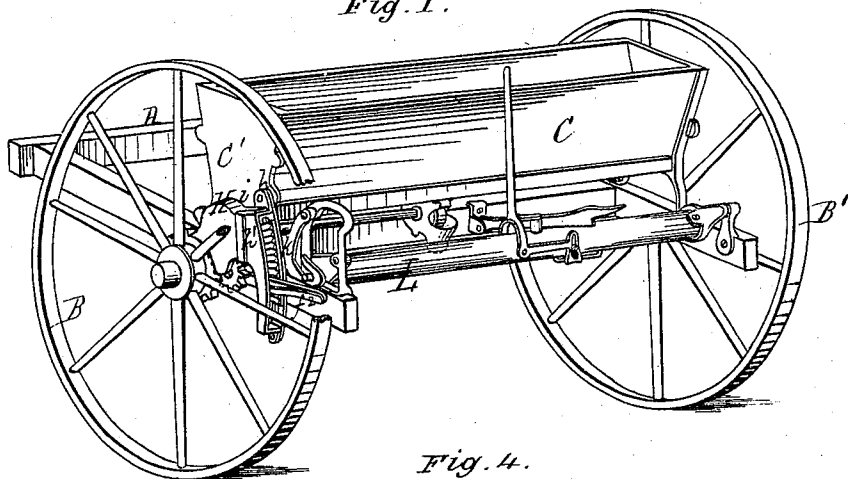


Fig. 4.

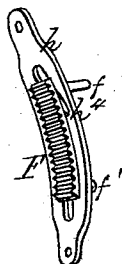


Fig. 5.

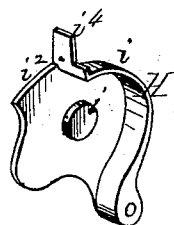


Fig. 2.

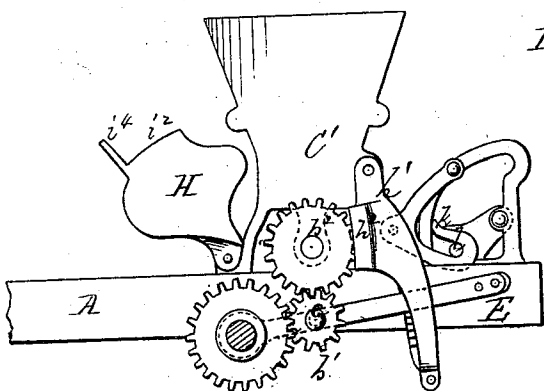


Fig. 6.

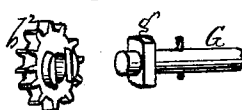
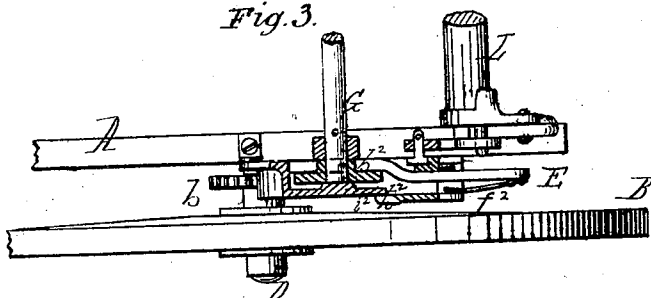


Fig. 3.



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UNITED STATES PATENT OFFICE.

CHARLES E. PATRIC AND JAMES S. BOGLE, OF SPRINGFIELD, OHIO.

IMPROVEMENT IN GRAIN-DRILLS.

Specification forming part of Letters Patent No. **168,918**, dated October 19, 1875; application filed May 18, 1875.

To all whom it may concern:

Be it known that we, CHARLES E. PATRIC and JAMES S. BOGLE, of Springfield, county of Clark and State of Ohio, have invented certain new and useful Improvements in Grain-Drills, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, making part of this specification, in which—

Figure 1 is a perspective view of so much of a grain-drill as is necessary to show our invention. Fig. 2 is a side elevation of the same with the drive-wheel removed. Fig. 3 is a plan view, partly in section. Fig. 4 is a perspective view of the rack-bar and its guiding-plate. Fig. 5 is a perspective view of the pivoted gear-cover, and Fig. 6 shows the manner of keying the removable pinions to the distributor-wheel shaft.

Similar letters of reference denote corresponding parts wherever used.

The invention relates to a novel means for holding in place upon their shaft the removable pinions, through which motion is imparted to the distributor-wheel shaft, and through the removal and changing of which the feed of the distributor-wheels is regulated, as desired, whereby the operation of changing the pinions is greatly facilitated, while at the same time the gearing is effectually protected from dirt and other obstructing matter. It further relates to the construction of the gear casing or cover, the same being made partly fixed and partly pivoted in the manner and for a purpose that will be explained; and the invention further relates to the construction of the retaining-rack, forming one of the shipping devices and connecting the shipping-lever with the lifting-roller, as hereinafter described.

In the drawing, A represents a rectangular main frame, B B' the main driving and carrying wheel, C the grain-box, and D the main drive-wheel axle, all of usual or any preferred construction and arrangement. The axle D is by preference made in the form of a stationary stub-axle set in a recess in the under side of the main frame, and rigidly secured by boxes or otherwise. To the inner end of the hub of wheel B is rigidly secured a spur-wheel, *b*, through the relation of which motion is im-

parted to a pinion, *b'*, mounted loosely on a pin or stud at *e*, formed upon or attached to a lever, E, pivoted on the axle D, and moving on said axle as a center. The lever E, near its outer swinging end, is provided on its inner face with one or more teeth, which engage with teeth formed on a rack-bar, F, for holding said swinging end of the lever E at any desired point of adjustment, as hereinafter explained. The pinion *b'* engages with and imparts motion to a pinion, *b''*, keyed to the distributor-wheel shaft G as follows: The hub on the inner face of the pinion is cut away diametrically, leaving the inner adjacent faces of the remaining crescent-shaped portions of the hub parallel with each other, and the shaft G is provided with a fixed collar, *g*, matching the socket thus formed in the hub, as shown in Fig. 6, and insuring the rotation of the shaft with the pinion, while at the same time permitting the ready removal of one pinion and the putting on of another of different size. The end plate C' of the hopper is provided with a pendent bearing for the distributor-wheel shaft, (shown in dotted lines, Fig. 2,) and at its rear edge has secured to it the upper ends of plates *h* *h'*, formed in the arc of a circle, of which the main drive-wheel axle is the center, the former *h* being made flat and secured to the hopper end and to the frame-bar, and the latter, *h'*, being made angular, as shown in Figs. 1, 2, and 3, and secured to the plate *h* at its upper and lower ends, the two forming a guide for the lever E and rack-bar F, and the latter, *h'*, forming, also, the fixed part of the casing or cover for protecting the gearing. To the forward foot of the end plate C' is pivoted a cover, H, provided on its upper edge with a horizontal flange, *i*, which overhangs and protects the gear *b''*, the vertical portion or side of said cover extending down at the sides of the pinions *b'* *b''*, and protecting the same, and a boss, *i'*, formed on the inner vertical side of said cover, rests against the pinion *b''*, and serves to hold it in place on its shaft. A similar boss may be employed on the part of the cover overhanging the pinion *b'*, for holding said pinion on its shaft, if desired. The plate *h'* is provided on its forward face with a lip or flange, *h''*, which overhangs the rear edge *i''* of the cover-plate

H when in place, preventing lateral displacement of the latter, and a spur, i^4 , on the cover-plate H, rests upon the angular shoulder of plate h^1 , determining the position of the cover when in place, while at the same time forming a handle for conveniently raising the cover on its pivot when it is desired to release and remove the pinion b^2 . The curved plate h is provided with a longitudinal slot formed in the arc of a circle concentric with the plate, with its upper end expanded obliquely, as shown at h^4 , Fig. 4, and pins f, f' , formed on the inner side of the rack-bar F, pass through said slot for guiding the movements of the rack-bar. The pin f is connected with a lug or ear on a pendent cam-hook, k , which is vibrated by a pin, l , on the lifting-roller L, the arrangement being similar to that described in Letters Patent granted to C. E. Patric, December 29, 1868, No. 85,472.

In said Letters Patent, in lieu of the ratchet-bar F a bar or plate was shown notched or recessed at regular intervals, designed to permit the adjustment of the shipping-lever relatively thereto to conform to certain different sizes of pinions to be employed on the distributor-shaft, the notches being so spaced on the bar as to cause the adjustment of the lever relatively to the bar to exactly accommodate such different sizes of pinions as were determined upon beforehand, and, consequently, no other sizes of pinions could be used. In addition to this, the hopper end and the notched bar, being made separate from the axle on which the shipping-lever has its fulcrum, the relation of fulcrum or axle to the distributor-wheel shaft was liable to be varied slightly in setting up the machine, and a variation of a sixteenth of an inch, more or less, one way or the other, caused the lever, in order to engage with the notched bar, either to make the gears b^1 and b^2 to mesh too deeply, and thereby to cut into each other and to work heavily, or else they failed to properly engage and were liable to be broken or made uncertain in their

operation. This difficulty we have remedied by providing the bar F with a series of small ratchet-teeth radiating from the lever-center, and adapting the teeth on the lever E to engage therewith at any point at which it may be adjusted; consequently any sized pinion, b^2 , may be placed on the distributor-shaft and the lever E raised until the transmitting-pinion meshes properly therewith, when the lever will be held at such point of adjustment by the teeth thereon being forced into engagement with the ratchet bar or plate F by a spring, f^2 .

By this construction any size of pinion b^2 may be employed for changing the feed, limited only by the extent of throw of the lever E; consequently a much greater number of variations in the feed is attained, while at the same time the operation of changing the pinions for varying the feed is greatly facilitated.

Having now described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a seeding-machine, the pivoted cover-plate H, in combination with the removable pinion b^2 on the distributor-wheel shaft, for protecting said pinion and holding it in place on its shaft, substantially as described.

2. The divided cover H h^1 , partly fixed and partly pivoted and movable, for protecting the gearing and permitting the removal of the pinion on the distributor-wheel shaft, as described.

3. The ratchet-bar F, constructed as described, in combination with the shipping-lever E, for permitting the change of pinions and for holding said lever E at any desired point of adjustment, as described.

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