B. KUHNS, C. SCHOLZ & D. Y. KUHNS.

SEED-DRILL AND FERTILIZER.

No. 191,443. Patented May 29, 1877.

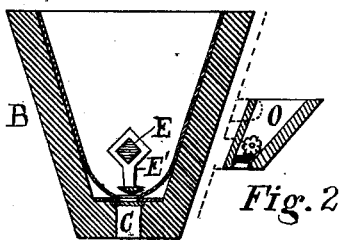


Fig. 2

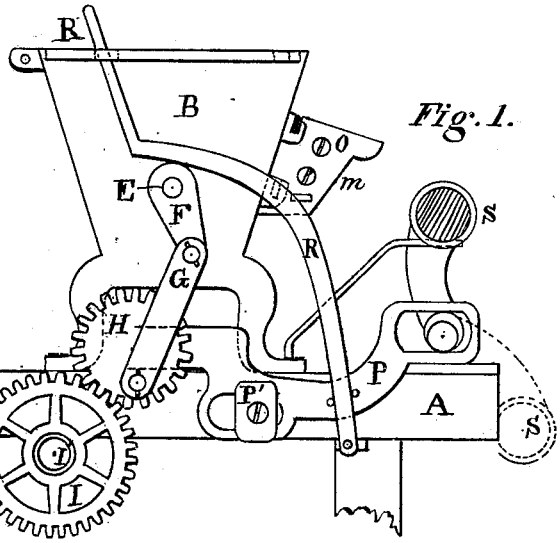


Fig. 1.

Fig. 4.

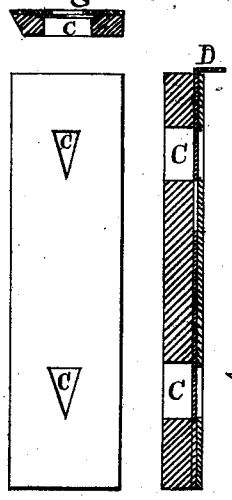


Fig. 5.

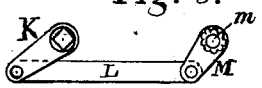


Fig. 3.

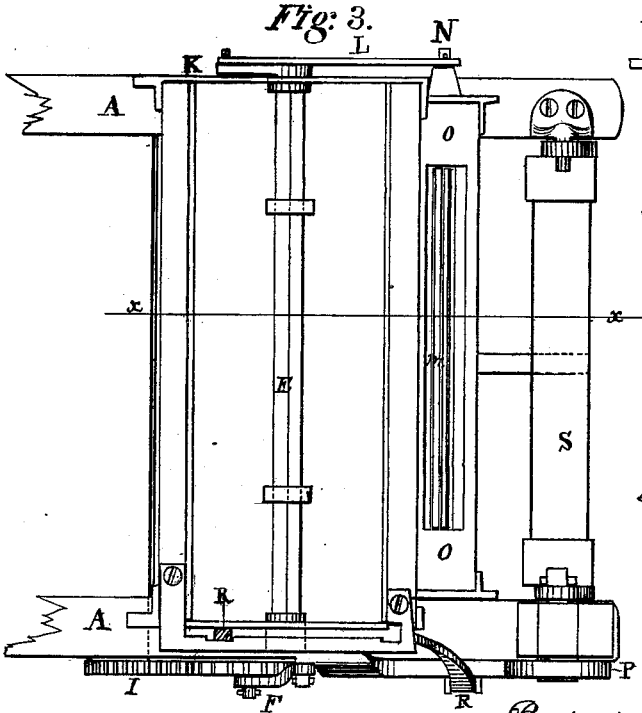
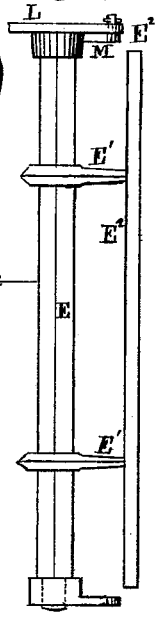


Fig. 6.



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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN SEED-DRILL AND FERTILIZER.

Specification forming part of Letters Patent No. **191,443**, dated May 29, 1877; application filed December 12, 1876.

To all whom it may concern:

Be it known that we, BENJAMIN KUHNS, CHARLES SCHOLZ, and DANIEL Y. KUHNS, of Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Seed-Drills and Fertilizers; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification—

Figure 1 being a side elevation of our improved device, with a portion of the frame-work broken away, but showing the reservoirs for the fertilizing material and for grass-seed, with that portion of the frame-work which supports them, the main driving-gear, and the pinion which gives motion to the distributers within the reservoirs, and the mechanism for throwing the gears into and out of mesh. Fig. 2 is a sectional elevation on line X X of Fig. 3, showing the discharge-opening in the bottom of the reservoir, and the feed-roller in the grass-seed compartment. Fig. 3 is a plan view, showing the parts in position for operation, the means of connecting the distributer and the feed-roller together, and one of the appliances for throwing the gearing into and out of mesh. Fig. 4 shows a plan view and section of the devices to be placed in the bottom of the reservoirs for regulating the amount of material to be distributed. Fig. 5 is an elevation, showing the manner of connecting the distributers; and Fig. 6 is an elevation of the distributers for the fertilizer, its shaft, and crank.

Corresponding letters denote like parts in all of the figures.

This invention relates to that class of machines which may be attached to grain-drills, or which may be used separately for distributing fertilizers and for sowing grass-seed; and it consists in the construction, combination, and arrangement of some of the parts of which it is composed, as will be more fully explained hereinafter.

In constructing machines of this character we place upon a suitable frame-work, A, a receptacle, B, for containing the fertilizing material, which is of sufficient length to extend from one side of the frame of the grain-drill, or of the frame upon which it rests, to the other. The ends of this reservoir we prefer to make of metal, and the bottom and sides of wood covered with galvanized iron, or some other kind of sheet-metal, its lower surface being concave, as shown in Fig. 2, in order that the lower surface of the distributer may at all times be at the same distance from its surface, and so carry forward to the aperture C in its bottom an equal amount of material at each vibration. The bottom of this reservoir is provided with a series of openings, one of which is shown in Fig. 2, and with a slide, D, whereby the amount of material to be distributed can be regulated. For agitating the material in the reservoir for the fertilizer, there is a shaft, E, passed lengthwise through the same, upon which there are to be placed a suitable number of arms, E^1, upon the outer ends of which is placed a bar, E^2, of metal or of wood, triangular in form by preference, the beveled surfaces being upon its under side, so as to cause it to present a comparatively steep surface to the openings through which the material passes. For giving an oscillating movement to the distributer E E^1 E^2, a crank or arm, F, is attached to one of the outer ends of the shaft E, which arm is connected to a link, G, which extends therefrom to and is connected with a crank-pin in a pinion, H, which communicates motion to said link. The pinion above referred to meshes into a wheel, I. Motion is imparted to parts above referred to by means of the wheel I, mounted upon a shaft, I′, which extends across the machine in such a manner as to allow the wheel I to be driven by a gear-wheel upon the axle of the machine, or so as to serve for such axle by having the carrying-wheels placed thereon.

From the above, and from an inspection of the drawing, it will be seen that as the machine is being moved so as to cause a rotation of the shaft I′ and its wheel I, the pinion H will be caused to rotate, in doing which it will impart

motion to the link G, in such a manner as to cause a vibrating movement to the distributer in reservoir B, in doing which the bar E^2 will be made to pass over the outlets C C, and thus insure the passage of the material through them.

The movement imparted to the shaft E is communicated through a crank, K, upon that end thereof which is opposite to the one carrying the crank or arm F, and from this by means of a connecting-rod, L, and a crank, M, to the shaft N, which passes through the receptacle O, in which the grass-seed is placed. This receptacle is provided with wedge-shaped apertures in its bottom, which are controlled by a slide, substantially of the form described as being placed in the receptacle for the fertilizer, the apertures being of the form shown in Fig. 4, and of such dimensions that the fine seed which passes through them may be regulated as to quantity with great precision.

That portion of the shaft N which is within the receptacle is fluted upon its surface, or has a fluted cylinder placed upon it, in order that the seeds may be carried to the discharge-apertures without being broken, the oscillating movement of the shaft being sufficient to allow some of the cavities to be filled at each movement thereof.

In machines of this character it is important that provision be made for stopping the feeding or distributing mechanism when the machine is being moved from place to place, and when turning corners in the field; and in order that this may be readily accomplished, there is attached to the frame of the same a lever, P, which is made to move horizontally upon and around its pivotal point P′. This lever is to be of the form shown in Fig. 1, or of any other that will cause its inner end to come into the proper position for carrying the shaft of the pinion H. At its pivotal point this lever is provided with a slot, which admits of there being a horizontal movement imparted to it, which in this case is effected by means of a lever, R, the lower end of which is attached to the frame A, its upper end working in a slot formed in the end of receptacle B, or by a bar of metal attached thereto, as shown in Fig. 1. The outer portion of this slot is provided with recesses, into which the lever falls when it is in position to hold the pinion H either in or out of gear with the wheel I, the movement being effected by carrying the upper end of the lever R either forward or backward, which has the effect to move the lever P backward or forward, as it is connected thereto, and thus change the position of the wheel, as above described.

This arrangement of mechanism is designed for use when the operator is riding upon the machine, the upper end of the lever R being in a convenient position for that purpose; but, as it is also important that the machine may be thrown into and out of gear when the operator is walking behind it, provision is made for effecting the changes at such times, the means consisting of a shaft, S, which is placed in bearings upon the frame, and in such a position that a cam placed upon one of its outer ends may work in a slot formed in the outer end of lever P, and thus cause said lever to partially rotate around its pivotal point, by which means its inner end will be raised or lowered at will, and so the gear will be made to mesh or not, as desired.

To facilitate the turning of the shaft S, that portion of it which is between the sides of the frame is made crank-shaped, so that by raising or lowering this portion the desired result is produced.

It is apparent that the receptacle for the grass-seed may be placed upon a receptacle for grain without affecting the combination of the parts, and hence we do not limit such combination to a reservoir for fertilizers and grass-seed.

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

1. In a machine for distributing grain and fertilizers, the lever P, having in it a slot or equivalent means for allowing of the changing of its pivotal point, and arranged to have a horizontal movement imparted to it throughout all of its parts, and a movement through the arc of a circle at its ends, substantially in the manner and for the purpose set forth.

2. The combination of the driving-wheel I, pinion H, lever P, and lever R, the parts being arranged to operate substantially as and for the purpose specified.

3. The combination of the driving-wheel I, pinion H, the lever P, having both a horizontal and partially rotary movement, and the crank-shaft S, having an eccentric in its arm, substantially as and for the purpose set forth.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

BENJAMIN KUHNS.
CHARLES SCHOLZ.
DANIEL Y. KUHNS.

Witnesses:
WARREN MUNGER, Jr.,
B. B. WILKINSON.