2 Sheets--Sheet 1.

L. H. CONVERSE.

Improvement in Corn-Planters.

No. 129,320. Patented July 16, 1872.

Fig. 1.

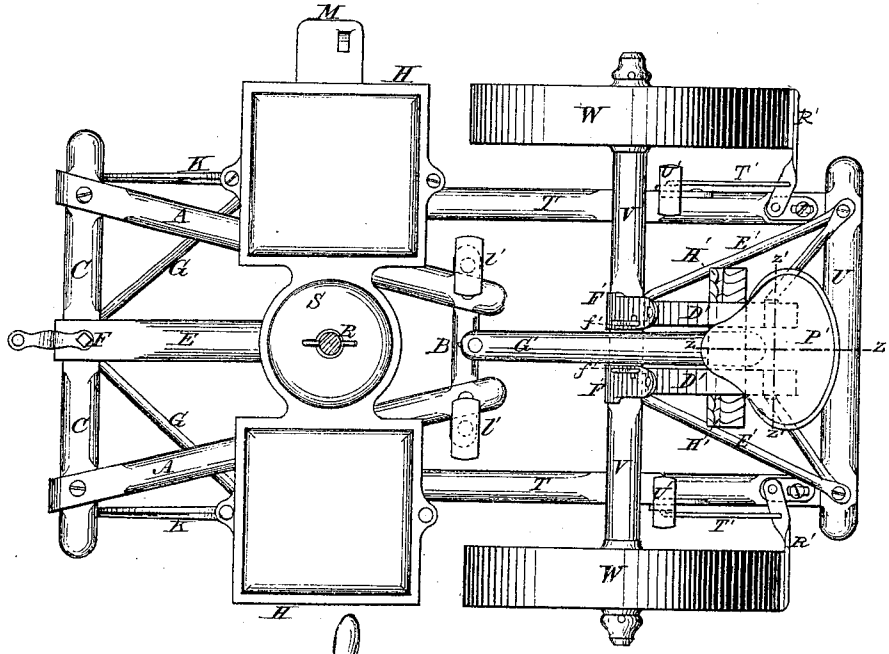
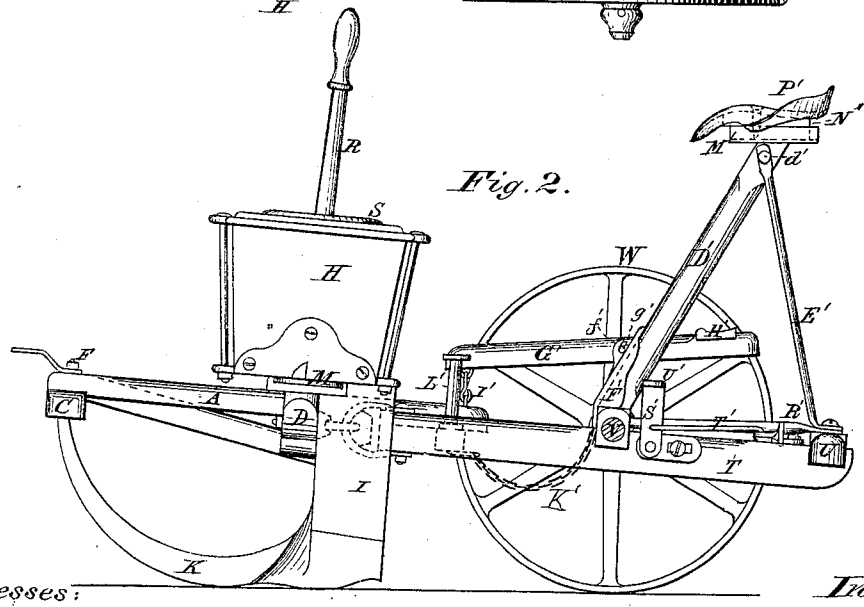


Fig. 2.



Witnesses:

T. L. Brecht.

John R. Young

Inventor:

L. H. Converse, by Prindle and Co., his attys.

2 Sheets--Sheet 2.

L. H. CONVERSE.

Improvement in Corn-Planters.

No. 129,320. Patented July 16, 1372.

Fig. 3.

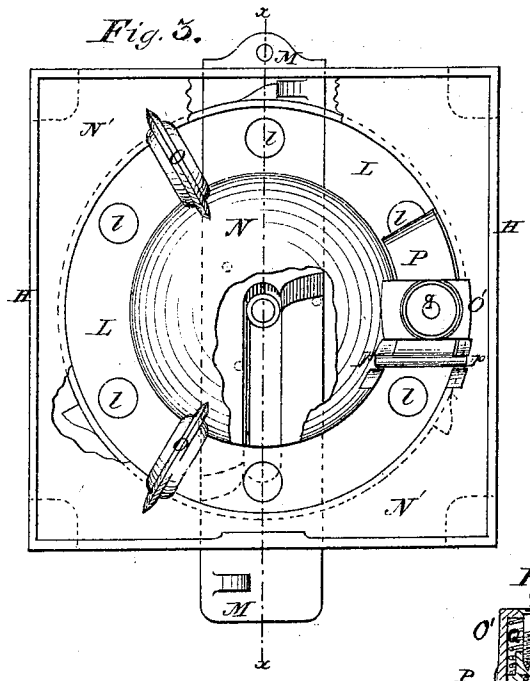


Fig. 4.

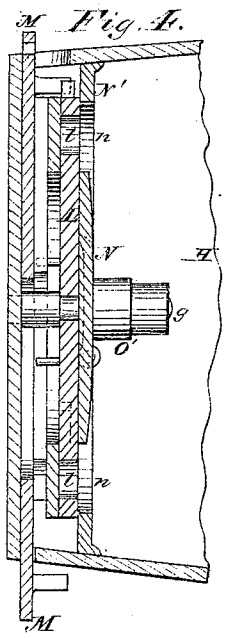


Fig. 5.

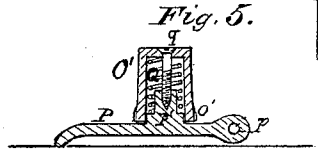


Fig. 6.

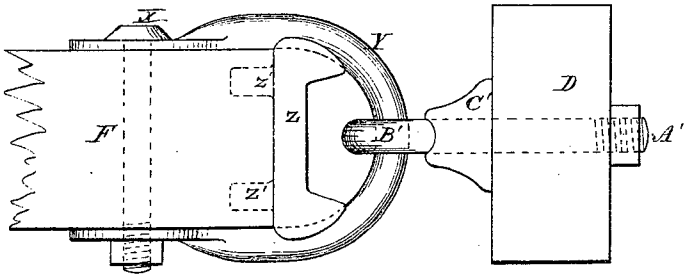


Fig. 8.

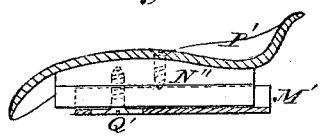


Fig. 9.

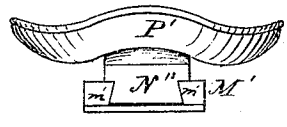
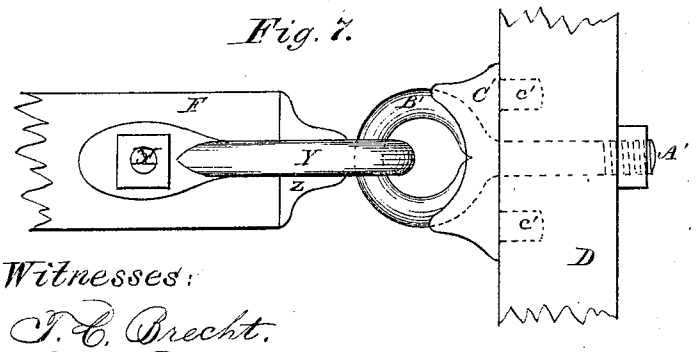


Fig. 7.



Witnesses:

T. C. Brecht.

John R. Young

Inventor:

L. H. Converse, by

Prindle and Co.,

his Attys.

UNITED STATES PATENT OFFICE.

LEWIS H. CONVERSE, OF SPRINGFIELD, ILLINOIS.

IMPROVEMENT IN CORN-PLANTERS.

Specification forming part of Letters Patent No. 129,320, dated July 16, 1872.

To all whom it may concern:

Be it known that I, LEWIS H. CONVERSE, of Springfield, in the county of Sangamon and in the State of Illinois, have invented certain new and useful Improvements in Corn-Planters; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a plan view of the upper side of my device. Fig. 2 is a side elevation of the same with the nearest wheel removed. Fig. 3 is an enlarged plan view of one of the seed-boxes with its dropping mechanism. Fig. 4 is a central section of the same on the line *x x* of Fig. 3. Fig. 5 is a vertical central section of the cut-off on the line *x' x'* of Fig. 3. Fig. 6 is an enlarged view of one side of the coupling used for connecting the sections of the frame. Fig. 7 is a plan view of the upper side of the same. Fig. 8 is a vertical section of the driver's seat on the line *z z* of Fig. 1; and Fig. 9 is a cross-section of the same on the line *z' z'* of Fig. 1.

Letters of like name and kind refer to like parts in each of the figures.

My invention is an improvement in corn-planters designed for use with horse or other power; and it consists, principally, in the peculiar construction of the cut-off, substantially as and for the purpose hereinafter specified; it consists, further, in the coupling used for connecting the dropper and wheel-frames, substantially as and for the purpose hereinafter shown; it consists, further, in the peculiar construction and attachment of the driver's seat, substantially as and for the purpose hereinafter set forth; it consists, further, in the means employed for enabling the driver to increase the depth of the runners within the ground, substantially as is hereinafter shown and described; it consists, further, in the construction of the dropper-frame, substantially as and for the purpose hereinafter specified; it consists, finally, in the means employed for raising the runners clear from the ground, substantially as and for the purpose hereinafter set forth.

In the annexed drawing, A and A represent two bars or hounds, connected together at one end by means of a short cross-bar, B, and from thence extending outward and apart, as shown in Fig. 1, with their outer ends attached to and connected together by means of a second cross-bar, C. A third bar, D, extends across, and is secured upon the hounds A slightly in rear of their longitudinal center, while from the longitudinal center of said bar D extends forward the pole E, which is connected to or with the front cross-bar C by means of a king-bolt, F. Two metal brace-rods, G, secured to or upon the lower end of the king-bolt, and from thence extending rearward and apart, with their rear ends attached to the cross-bar D, serve to strengthen said parts and to insure their relative positions. Resting upon and secured to the bar D, near its ends, are two hoppers, H, to the lower side of each of which is attached a seed-spout or chute, I, having connected to its lower end a runner, K, which from thence extends forward and upward in a curve and has its forward end attached to the cross-bar C, said parts being of usual construction and combination. Within the hoppers H are provided two droppers, L, which, with their slides M, being fully described in Letters Patent No. 119,325, of September 26, 1871, require no further mention. Above each dropper is placed a covering-plate, which consists of a central disk, N, connected by means of three arched bridges, O, with an outer rectangular plate, N', between which plates is left an annular space, *n*, that corresponds in position with the openings *l* of the dropper, and has a width somewhat greater than the diameter of said openings. The bridges O are placed at equidistant points around and across the space *n*, while that bridge O' which comes immediately above the discharge-opening *h*, through which grain passes into the chute I, is provided with a hollow cylindrical boss, open at its lower end and inclosed at its upper end. Resting upon the dropper L, immediately beneath the boss O', is a cut-off, P, having a width and shape that corresponds to the like features of the annular space *n*, which cut-off has one of its ends pivoted to or upon the covering-plates N and N', by means of a short cross-bar, *p*, that passes through the end of said cut-off and rests within suitable bearings formed within the upper sides of said covering-plates. As seen in Fig. 5, the forward or free end of the cut-off P curves slightly down-

ward, and is rounded where it rests upon the dropper, so as to offer no obstacle to the free movement of the same, and also to prevent the packing or wedging of corn within the openings, as would be the case were the bearing end of said cut-off square. A stud, p', extending vertically upward from the cut-off into the hollow boss O', receives and sustains a spiral spring, Q, which spring, pressing against the upper or closed end of said boss and against the upper side of said cut-off, holds the latter with sufficient firmness upon or against the dropper. A bolt, q, passing loosely through the cut-off stud and the closed end of the boss, prevents the separation of said parts when the covering-plate is removed from the hopper, without interfering with their free movements when in place. As thus constructed and arranged the bridges O perform the double office of filling the seed-openings within the dropper and of partially cutting off the supply of seed to the same, and also prevent the contents of the hopper from being carried bodily in the direction of the rotation of the dropper; while the cut-off not only performs its office by removing all superfluous grain from the openings, but in the event of the wedging of said grain, so as to offer more than usual resistance to said cut-off, the rounded forward end of the latter will rise so as to permit the dropper to pass beneath, when said grain will usually be discharged. If, however, the grain does not fall from the dropper, the rear end of the cut-off will rise sufficiently to permit of its passage, after which said end will return to position and be ready for operation as before. The inner ends of the slides M are connected, and they are unitedly operated by means of a lever, R, which extends vertically downward through the dropper seat S, and has its lower end connected loosely to or with said slides. Immediately in rear of the dropper-frame above described is a second frame, consisting of two longitudinal bars, T, connected at their rear ends by means of a cross-bar, U, and at their longitudinal centers by means of an axle, V, upon the outer ends of which are journaled two traction or ground wheels, W. The frame thus constructed is connected to or with the dropper-frame by means of the following-described coupling: Secured to or upon the forward end of each bar T, by means of a bolt, X, is a clevis, Y, of the form shown in Fig. 6, within the bent end of which, and upon the immediate end of said bar, is placed a piece of cast metal, Z, that corresponds therewith in size and shape, and is provided with two studs, Z', which extend rearward into corresponding openings within said bars. From its upper and lower ends the block Z extends forward for a short distance upon the curve of the clevis, and has formed within its contiguous portions semicircular grooves, which embrace the inner sides of said clevis and insure the relative position of said parts. Passing horizontally through the bar D is a bolt, A', upon the forward end of which is provided a screw-thread and nut, while upon the rear end of said bolt is formed a circular eye, B'. Immediately beneath the eye B' is placed a rectangular block of metal, C', having upon or within its outer face a socket, which receives and contains the inner half of said eye, and an opening through which the bolt passes, while upon the rear side of said block are two studs, c', which project horizontally forward, and are contained within corresponding openings formed within the bar D. As thus constructed the clevis and eye are combined in the manner shown in Figs. 6 and 7, and form a firm but flexible coupling for the frames, in which all wear is thrown upon metal surfaces, and the different parts are so braced as to afford great strength. Extending upward and rearward from the axle V, near its longitudinal center, are two standards, D', which are placed at a short distance apart, and have their upper ends connected together by means of a block, through which and through said ends passes a bolt, d'. Two braces, E', have their upper ends attached to or upon the cross-bar U at its points of intersection with the bars T. The lower ends of the standards D' are each stengthened and more firmly united to the axle by means of a metal brace, F', which embraces the sides and front of standards, and from thence extends downward along the front of said axle. Extending forward from the inner side of each brace, F', is a lug, f', within the upper side of which is formed a socket or bearing that receives and contains a round metal bar, g', upon which bar is pivoted a lever, G', that extends from immediately over the cross-bar B rearward, between the standards D', and is provided at or near its rear end with a cross-bar, H'. The front end of the lever G' being loosely connected with the cross-bar B by means of a chain, I', it will be seen that a downward pressure applied to the cross-bar H' will, through the lever G', raise said cross-bar B, and with it the rear end of the dropper-frame. A chain, K', attached to the lower side and center of the cross-bar B, and from thence extending to or over a pin upon the center of the axle V, furnishes a means whereby the downward movement of the rear end of the dropper-frame may be limited, it being only necessary that said chain should be lengthened or shortened in order to increase or diminish the amount of relative motion that is possible between said parts. Two standards, L', secured to and extending vertically upward from the ends of the cross-bar B, are provided upon their upper ends with a metal plate, l', upon which the feet of the driver may be placed whenever it is required, that his weight may be thrown upon the rear end of the dropper-frame, for the purpose of forcing the runners into the ground when passing through uneven or hard soil.

Resting upon and secured to the upper ends of the standards D' is a block, M', having a rectangular shape in plan view, upon or within the upper side of which is provided a dove-

tail-shaped groove, *m'*, which extends from front to rear or in a line with the draft. Within the dovetail groove *m'* and upon the upper side of the block M' is fitted a second block, N'', to the upper side of which is in turn secured a seat, P', for the driver, the whole thus arranged permitting said seat and its blocks to be moved to and fro within and upon the block M', so as to vary the position of the driver's weight with relation to the axle. A screw, Q' passing upward through a slot, *m''*, in the block M', and having its end secured within the lower side of the sliding block N'', limits the motion of the latter, and prevents the same and the seat from being accidentally displaced. In order that the ground-wheels may be kept free from obstructions while traveling over wet ground the following-described means are employed. A bar, R', is pivoted to or upon the upper side of each frame-bar, T, at a point about in a line with the rear side of the wheel and extending outward, is twisted so as to bring its flat side against the periphery of said wheel, the lower edge of said bar being sharpened so as to produce a cutting-edge. A second bar, S', is pivoted upon the outer side of the bar T immediately in rear of the axle, and is connected with the bar R' by means of a rod, T', which is attached to each bar at a point just outside of their pivotal bearings. A foot-plate, U', attached to the upper end of the bar S', completes the device, the operation of which will be readily understood, it being only necessary to throw forward the lever S' to bring the cutting-edge of the cleaner-bar R' in contact with the wheel, by which means, as said wheel revolves in a forward direction, the dirt adhering to its periphery will be quickly removed.

The especial advantages of this construction of a "corn-planter" are: First, the cut-off is efficient and certain in its operation, while at the same time so shaped and combined with the covering-plate as to enable it to yield and allow the passage of corn which has become so wedged within the openings of the dropper as to otherwise arrest the motion of the latter. Second, the coupling employed for connecting the dropper and wheel frames affords perfect freedom of action to said parts, is durable, as the bearing portions are composed entirely of metal, and at the same time is comparatively inexpensive and can be quickly and easily applied. Third, by means of the peculiar construction and attachment of the seat the driver is enabled to shift his position at will toward or from the axle, and thus change correspondingly the draft of the machine by a change in the relative position of his weight and the axial bearing of the frame. Fourth, the means employed for raising the rear end of the dropper-frame and for pressing the same within the ground enable the driver to completely and readily control his machine when operating in ground having an uneven surface, or having hard and soft spots. Fifth, by means of the peculiar construction of the dropper-frame a maximum of strength is secured by means of a minimum of material, while the weight is comparatively little. Sixth, the means employed for regulating the depth of the runners within the soil are simple, cheap, and can be easily and quickly changed so as to vary the position of said runners.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

1. In combination with the sections N and N' of the covering-plate, the arched bridges O, when constructed substantially as and for the purpose specified.

2. The cut-off P provided with the cross-bar *p* and the stud *p'*, and combined with the boss O', spiral spring Q, and with the covering-plate N and N', substantially as and for the purpose shown.

3. The coupling employed for connecting the dropper and wheel frames, consisting of the clevis Y, the bearing-block Z, and the bolt X, combined with each other and with the bolt A', the eye B', and the bearing-block C', when said parts are constructed substantially as and for the purpose set forth.

4. The seat P', resting upon and secured to the block N'', provided with a dovetailed tenon, *n''*, in combination with the supporting-block M' provided with the dovetailed groove *m'*, substantially as and for the purpose shown and described.

5. In combination with the hounds A and cross-bar B, the standards L' provided with the foot-plates *l'*, when the several parts are relatively arranged, substantially as and for the purpose specified.

6. The dropper-frame, composed of the hounds A, the cross-bars B, C, and D, and the braces G, when the several parts are combined and relatively arranged, substantially as and for the purpose specified.

7. The means employed for connecting together the axle V and standards D', and for furnishing a bearing for the lever G', consisting of the braces F' provided with the lugs *f'*, substantially as specified.

In testimony that I claim the foregoing I have hereunto set my hand this 8th day of January, 1872.

LEWIS H. CONVERSE.

Witnesses:
JOHN O. SLOAN,
E. S. GOODALE.