

(No Model.)

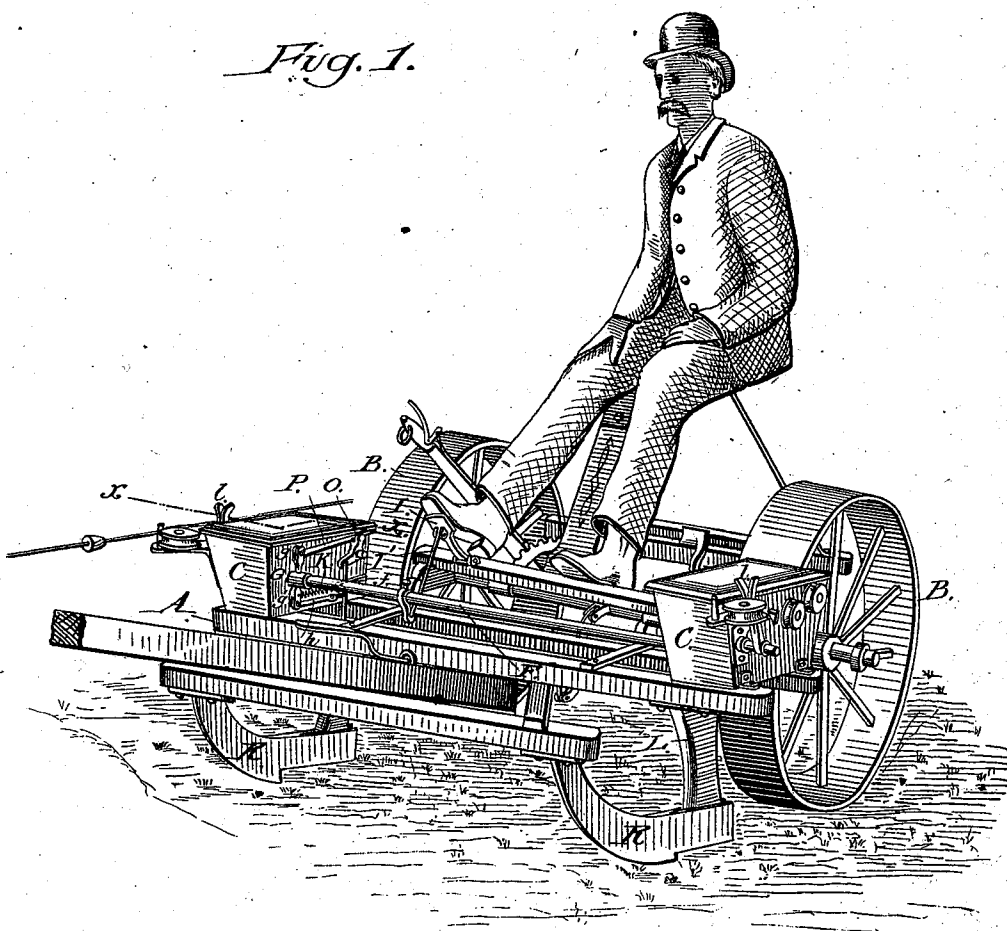
3 Sheets—Sheet 1.

A. S. & E. HOUCK.
CORN PLANTER.

No. 381,073.

Patented Apr. 10, 1888.

Fig. 1.



WITNESSES

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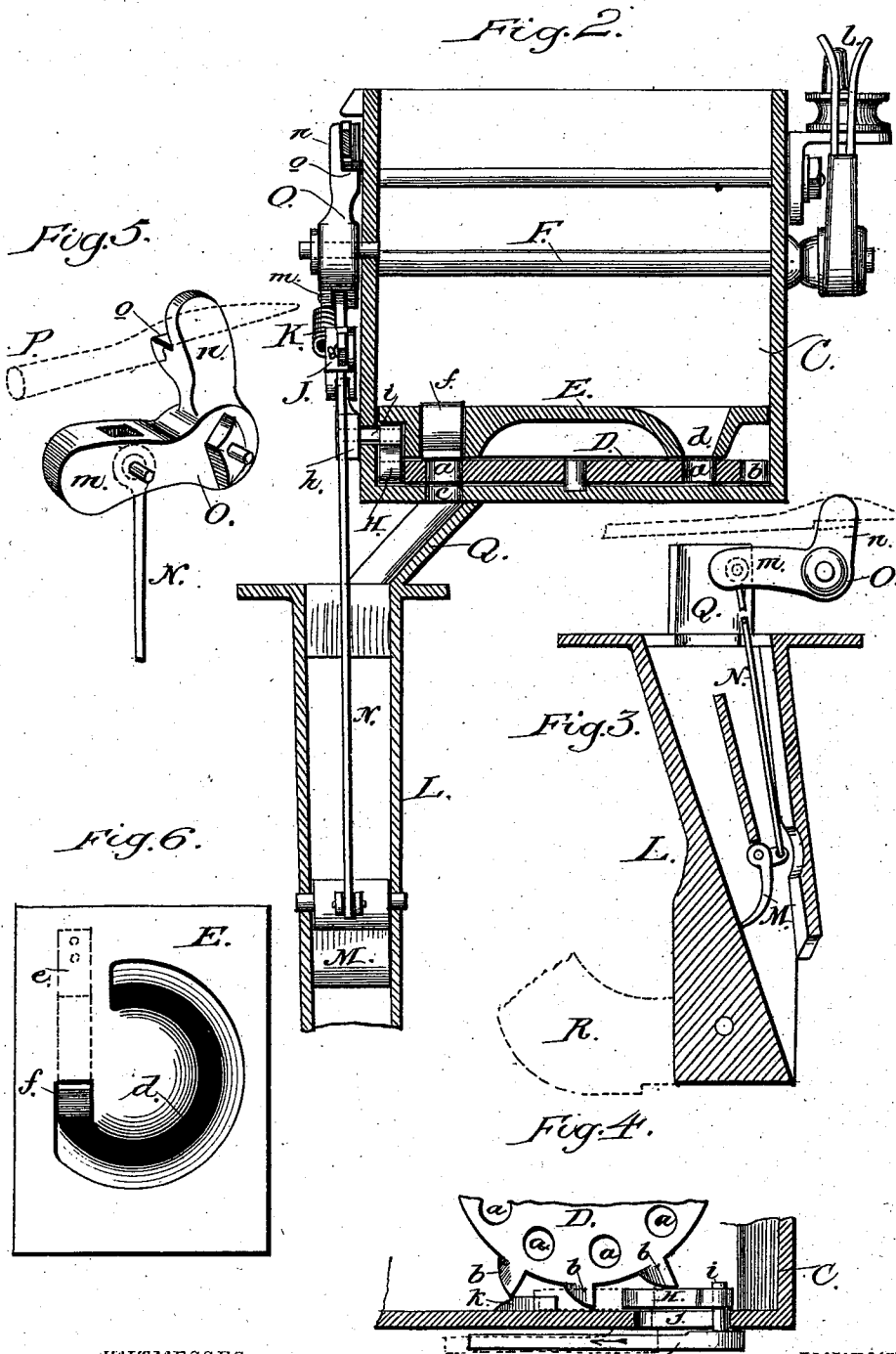
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3 Sheets—Sheet 3.

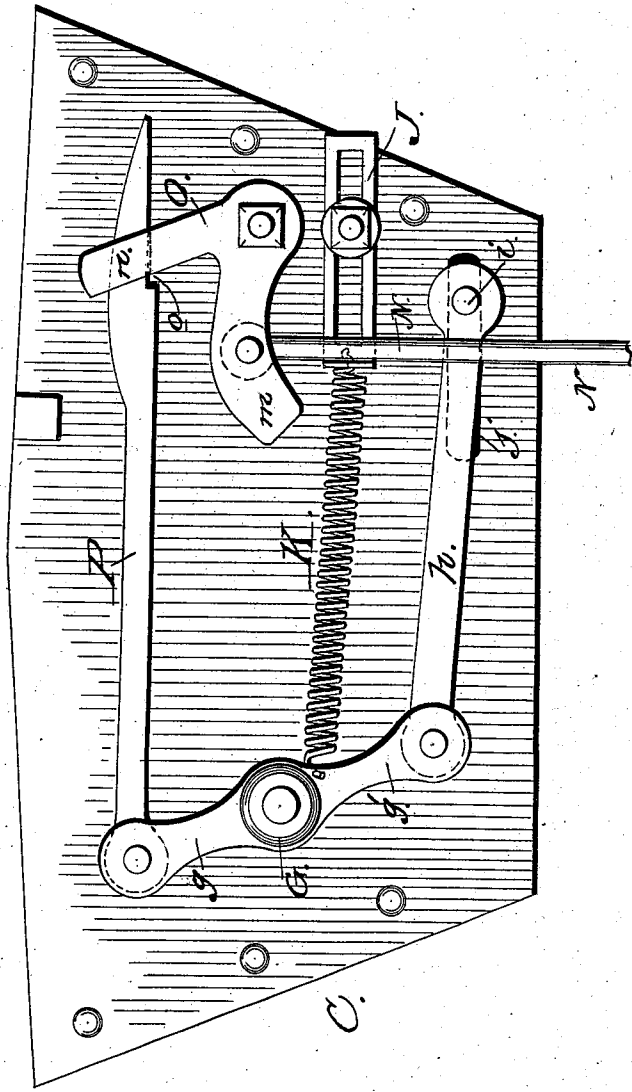
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Fig. 7.



WITNESSES

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UNITED STATES PATENT OFFICE.

AUSTIN S. HOUCK AND EDWIN HOUCK, OF BEDFORD, IOWA.

CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 381,073, dated April 10, 1888.

Application filed December 17, 1887. Serial No. 258,666. (No model.)

To all whom it may concern:

Be it known that we, AUSTIN S. HOUCK and EDWIN HOUCK, citizens of the United States, residing at Bedford, in the county of Taylor and State of Iowa, have invented certain new and useful Improvements in Corn-Planters, of which the following is a full and clear description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a perspective view of a corn-planter embodying our invention. Fig. 2 is an enlarged sectional view on the line *x x* of Fig. 1, taken through one of the seed-boxes. Fig. 3 is an enlarged sectional view showing the valve in the runners and the manner of connecting the valve-rod with the bell-crank lever on the inner side of the seed-boxes. Figs. 4, 5, and 6 represent details of construction. Fig. 7 is a side elevation showing the inner side of one of the seed-boxes with the pitmen, bell-crank lever, &c.

Our invention relates to corn-planters, and it is an improvement on a former patent granted to us June 16, 1885, No. 320,063; and it consists in the constructions and combinations of devices, which we shall hereinafter fully describe and claim.

To enable others skilled in the art to make and use our invention, we will now describe the same and indicate the manner in which the same is carried out.

In the said drawings, A represents the main frame of the machine, carrying the usual bearing-wheels, B, seed-boxes C, and such other well-known essential features as go to make up a complete planter.

On the floor of the seed-box is journaled the usual rotating dropper plate or disk, D, having openings or pockets *a* for the grain, and peripheral lugs *b*, beveled on one side and engaged by a pawl, whereby said disk is rotated to bring the openings or pockets *a* into alignment with the discharge-opening *c* in the bottom of the seed-box. A plate, E, having a segmental slot, *d*, is fitted in the seed-box immediately over the dropper-plate, the walls of said slot converging downwardly, directing the grain to the dropper-plate, and assists in preventing any clogging or choking of the dropper-plate. Secured to the under surface

of the plate E by a spring-plate, *e*, is a bar, *f*, having a curved front end extending into the discharge end of the slot, so that its under surface will lie on a level with the top of the dropper-plate. This construction prevents any but the grain in the pockets or openings *a* from being discharged from the seed-boxes, and also prevents the clogging or choking of the dropper-plate by the accumulation of grain at the discharge end of the slot.

Passing transversely across the machine and through the seed-boxes is a shaft, F, and on this shaft, adjacent to the inner side of each seed-box, is an arm, G, having its outer ends bifurcated or slotted, as shown at *g* and *g'*. The shaft F passes through the center of the arm and oscillates said arm, which is rigidly fixed to it in any suitable manner, and in the lower slotted portion of the arm one end of a pitman or link, *h*, is pivotally secured, the opposite end of the link carrying a wrist-pin, *i*, which passes through a slot, *j*, in the side of the feed-box, as shown in Fig. 4, and carries on its lower end a gravitating-pawl, H, adapted to engage the lugs on the periphery of the dropper-plate.

From this description it will be seen that as the shaft F is oscillated by means hereinafter disclosed, the arms G, acting upon the link *h*, cause the pawl H to be moved forward and backward, the said pawl on its forward stroke engaging the straight sides of the lugs *b* on the dropper-plate to move said plate, so that one of its pockets or openings is brought into direct alignment with the underlying discharge-opening to prevent the pawl pushing the dropper-plate so far that its opening or pocket will not be directly over the discharge-opening in the bottom of the seed-box. We have placed a stop, *k*, on the inner side of the seed-box, and have so located this stop that it arrests the movement of the pawl and the consequent rotation of the dropper-plate the moment one of the discharge pockets or openings in said plate is over the discharge in the bottom of the seed-box.

The oscillation of the shaft F may be accomplished by any well-known means; but we prefer to effect its movement by the methods herein described. In one instance this movement may be obtained by the knobs on the

usual check-wire engaging the slotted arms *l* on the outer ends of the shaft; or it may be accomplished by a foot-lever or treadle, *I*, pivoted on the main frame of the machine near the driver's seat, the said lever being connected by a rod, *l'*, with the shaft *F*. By this latter means the operator is permitted to regulate the dropping of the grain from his position on the machine whenever he does not wish to use the check-wire, or when he wishes to plant closer than the knobs on said wire indicate.

A spring, *K*, secured at one end to the arm *G*, has its opposite end fixed to a slotted arm, *J*, adjustably secured to the side of the seed-box, whereby said arm and its adjuncts are drawn backward into their normal positions as soon as the forward oscillation of the shaft has been completed.

The runners *L* are secured to the main portion of the machine in any well-known manner, and may be constructed as shown in our said former patent, being provided with a valve, *M*, having an upwardly-extending rod, *N*, which is connected with one arm, *m*, of a bell-crank lever, *O*, pivoted to the side of the seed-box, the other arm, *n*, of said lever being cut away on its inner side to form the notch *o*, which is engaged by the notched end of a rod or bar, *P*, loosely pivoted in the upper end of the oscillating arm *G*.

It will thus be seen that as the shaft *F* is oscillated by either of the means before described its movement transmitted through the arm *G* and rod or bar *P* forces the arm *n* of the bell-crank lever *O* backward, thereby raising the arm *m* of said lever to open the valve in the runner and to permit the escape of the grain in the feed-passage of the latter. As the arm *m* is raised, its top surface strikes the undersurface of the pivoted rod or pitman *P*, and raises the notched end of the latter out of its engagement with arm *n*. As soon as the arm *n* is released, the weight of the lower arm, *m*, and its attachments causes the bell-crank lever to resume its normal position, and permits the valve *M* to close the feed-passage in the runners. The feed of grain from the runners is thus automatically controlled by the oscillation of the transverse shaft and arm *G*, the valve in the runners being opened during the period the dropper-plate is being rotated, but closed again by the release of the bell-crank lever before the succeeding pocket of grain is deposited into the feed-passage of the runner.

The seed-boxes herein shown may be provided with the usual guide-pulleys for the check-wire, and the runners, which are placed to one side of the center of the seed-boxes, are provided with curved plates *Q*, for directing the grain from the box to the runner, and also with any well-known form of shoes *R*. In addition to these features, the machine may be supplied with the usual lever for elevating the front of the machine to regulate the depth the shoes enter the ground, and such other well-

known accessories as may be found in a successfully-operating planter.

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

1. In a corn-planter, the seed-boxes and the transverse shaft passing through said boxes, in combination with the arms *G*, fixed on said shaft, the pitmen or links pivoted in the lower ends of the arms and provided with wrist pins passing through slots in the boxes, a pawl carried by each pin and reciprocating in each box, a stop on the inside of each box for checking the forward movement of the pawl, and a spring for retracting said pawl, substantially as described.

2. The seed-boxes provided with the rotating dropper-plates and the oscillating shaft, arms, pitmen, and pawls for actuating said plates, in combination with a plate, *E*, in each box over the dropper-plate, said plate *E* being provided with a slot having downwardly-converging walls for directing the grain to the dropper-plate, and the bar *f*, projecting into the discharge end of the slot, substantially as described.

3. The main frame, an oscillating shaft, the arms *G*, the pitmen or links *h*, the pawls *H*, and the seed-boxes having rotating dropper-plates, in combination with springs connected with said arms *G*, a foot-lever or treadle pivoted to the main frame, and a rod or bar connecting said lever with the shaft, whereby the latter is oscillated, substantially as described.

4. In a corn-planter, the combination of the seed-boxes having rotary dropper-plates, the oscillating transverse shaft, the arms *G* thereon, adjacent to each seed-box, a pitman, *P*, connected to the upper ends of said arms, a pitman attached to the lower ends of said arms, pawls carried by said lower pitmen and actuating the dropper-plates, the bell-crank levers operated by the upper pitmen, the runners having valves therein, and rods extending from said valves to the lower arms of the bell-crank levers, whereby said valves are operated during the movements of the shaft and dropper-plates, substantially as described.

5. The combination, with the seed boxes, complementary seed dropping mechanism, and an oscillating shaft for actuating the seed-dropping mechanism, of a bell-crank lever on each seed-box connected with the valve in the adjacent runner, and a pitman carried by the shaft and operating the lever to open said valve, said lever having a lower arm adapted to engage the pitman during its upward movement, whereby the upper arm of the lever is released and the valve automatically closed, substantially as described.

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Witnesses:

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