2 Sheets—Sheet 1.

R. B. WERNER.

Combined Planter, Land-Roller, and Fertilizer Distributer.

No. 200,590. Patented Feb. 19, 1878.

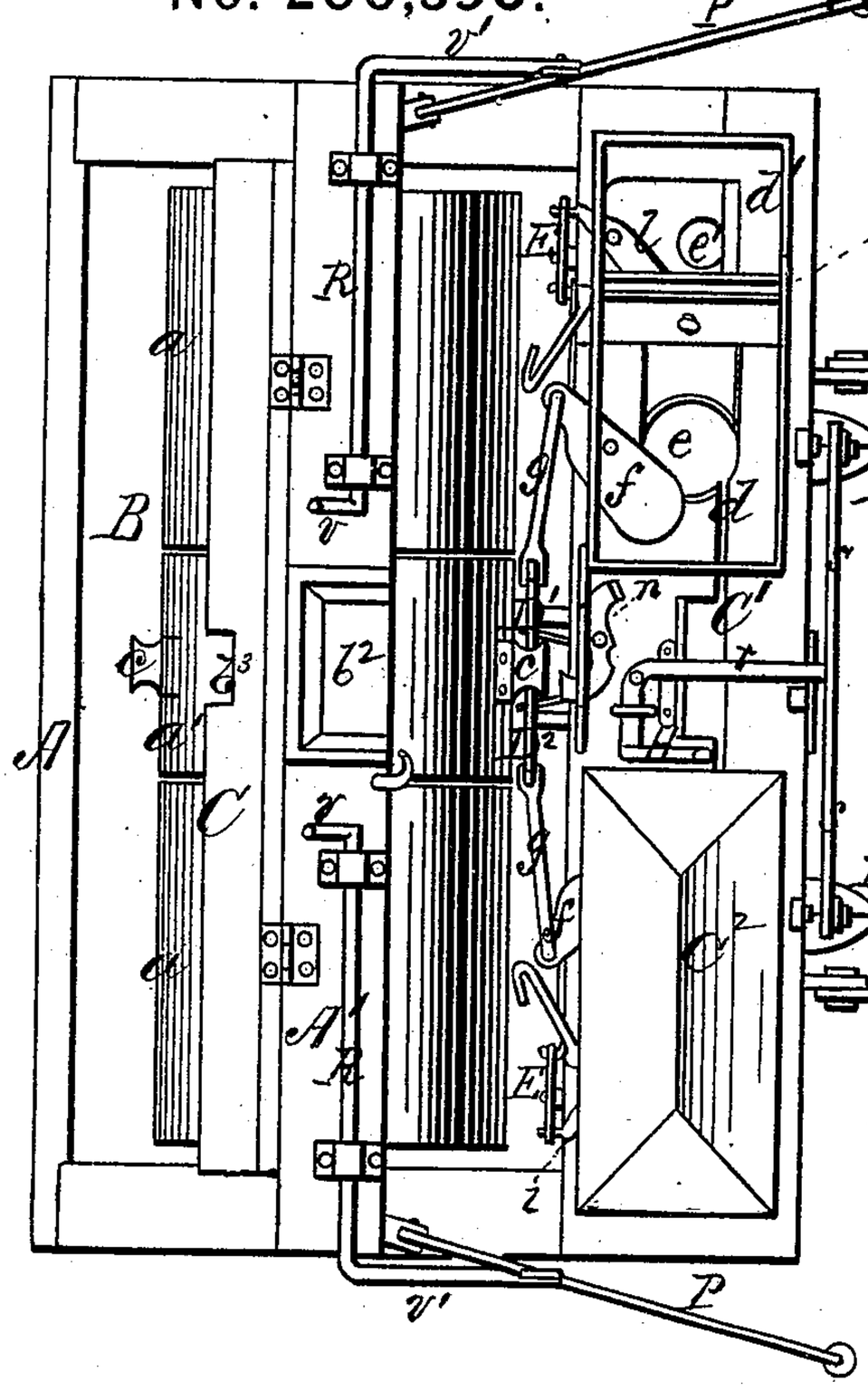

Fig. 1.

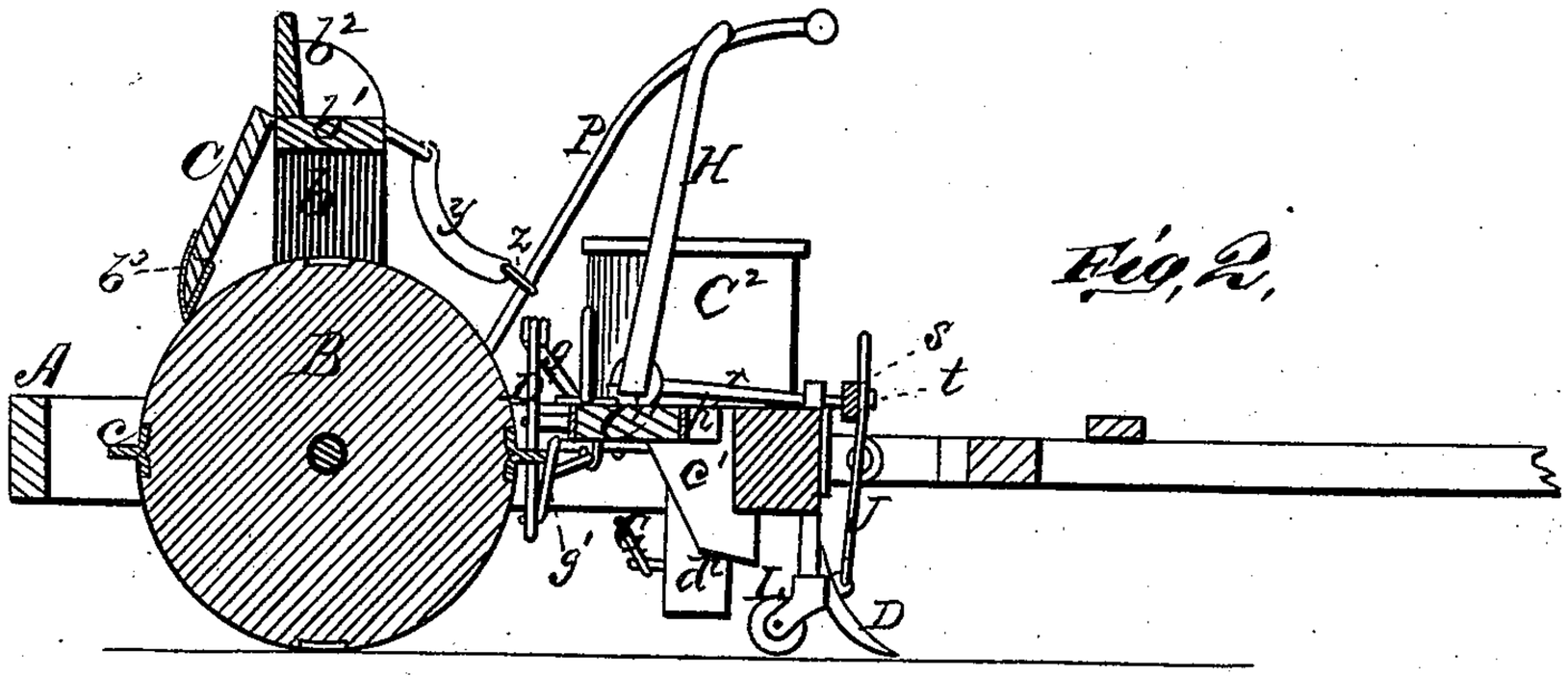

Fig. 2.

WITNESSES

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2 Sheets—Sheet 2.

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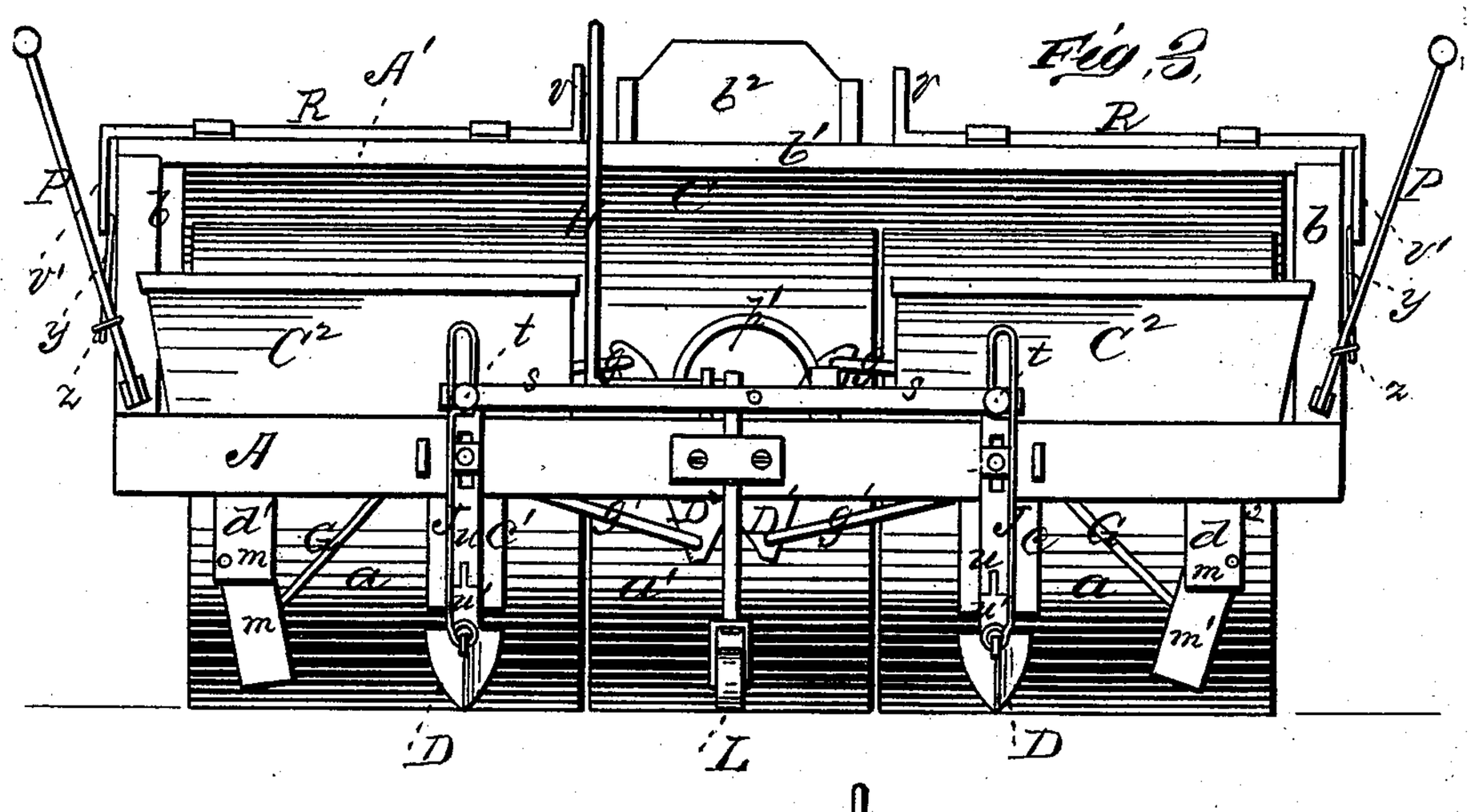

Fig. 4.

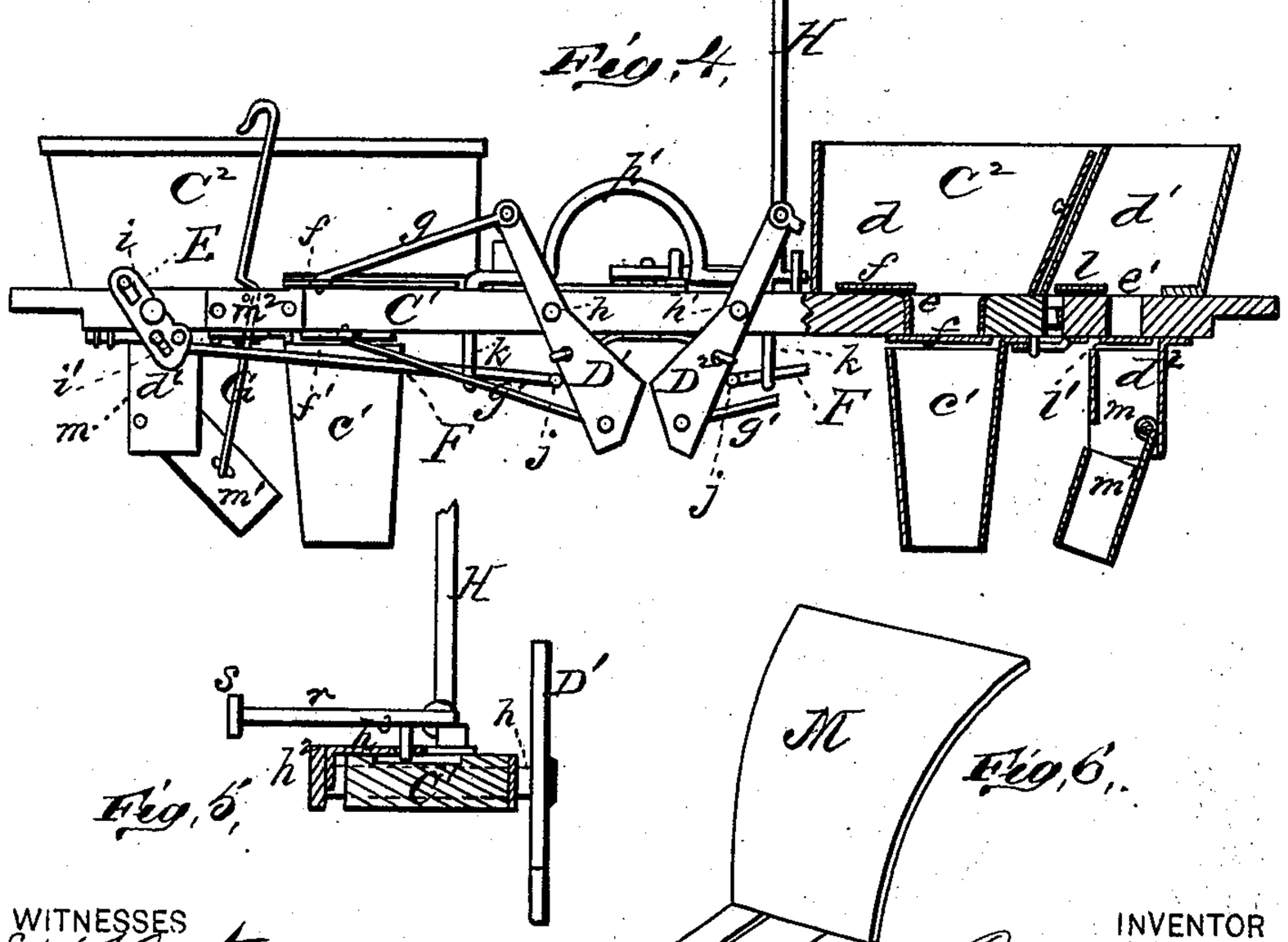

Fig. 5.

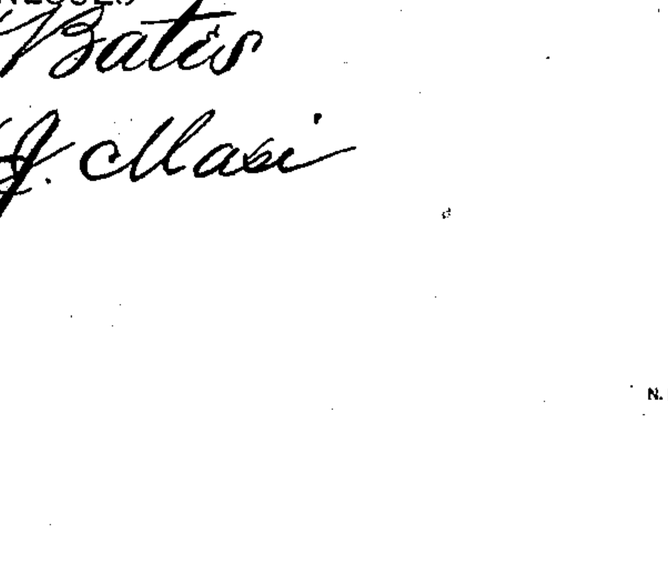

Fig. 6.

WITNESSES

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UNITED STATES PATENT OFFICE.

ROMEO B. WERNER, OF ST. JOSEPH, MISSOURI.

IMPROVEMENT IN COMBINED PLANTER, LAND-ROLLER, AND FERTILIZER-DISTRIBUTER.

Specification forming part of Letters Patent No. **200,590,** dated February 19, 1878; application filed December 22, 1877.

To all whom it may concern:

Be it known that I, ROMEO B. WERNER, of St. Joseph, in the county of Buchanan and State of Missouri, have invented a new and valuable Improvement in Combined Planting, Rolling, and Fertilizer-Distributing Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a top view of my invention. Fig. 2 is a longitudinal section thereof. Fig. 3 is a front view of the same. Fig. 4 is a rear view of the dropping attachment detached, and Figs. 5 and 6 are details of parts.

This invention has relation to improvements in combined planters, fertilizer-distributers, and land-rollers.

The nature of the invention consists in certain novel arrangements and combinations of parts, as will be hereinafter fully shown and described.

In the annexed drawings, the letter A designates a strong rectangular wooden or metallic frame, and B a roller mounted therein in the customary manner. This roller is composed of two end sections, *a*, and a smaller intermediate section, *a'*, independently arranged upon a suitable shaft extending from side to side of the frame. Above the rollers is a raised bridge, A', consisting of two end uprights, *b*, upon the side rails of the frame, and of a cross-piece, *b'*, connecting the said upright, and supporting at its center a driver's seat, b^2. To the rear edge of the cross-piece b^1 is hinged a metallic or metal-shod scraper, C, which extends from end to end of the roller B, and clears off any clay or other substance that may have adhered thereto. At its cutting-edge and center of its length a gap, b^3, is made, which allows the spaced cogs *c* upon the central section *a'* of the roller B free passage during the rotation thereof.

C^1 represents a removable beam, seated on the frame A in front of the roller B, and supporting at each end a hopper, C^2. These hoppers are divided by a partition into two compartments, the inner ones, *d*, being for grain, and the outer ones, d^1, for a fertilizing substance. Each of these compartments has an opening in its bottom leading into the respective dropper-spouts *c' d²*, the former being in line with and in rear of the shovels D, and the latter exterior thereto. The openings *e e'* of the compartments *d d¹* are provided above and below with the valves *f*, *f'*, U, and V, respectively, the valves *f'* U fitting snugly upon the lower ends of the said openings, and forming therewith seed and fertilizer cups containing a planting of grain and a proper quality of fertilizer. The upper valves *f* are in the nature of "strikers" and cut-offs, and serve to separate a planting of grain from the supply in the hopper. The valves *f f'* are connected by means of metallic rods *g g'*, respectively, to the upper and lower ends of the vertically-vibrating levers D^1 D^2, fulcrumed upon the endwise-movable rods *h* h^1, extending through the beam C^1, and connected together at their front ends by a metallic plate, h^2. This plate has an offset, h^3, extending to ths rear through a slot in beam C^1, for a purpose hereinafter explained. The levers D^1 D^2 converge at their lower ends, as shown in Fig. 4, and are actuated simultaneously to open and close the openings *e* of the hoppers *d* by the cogs *c* of the roller *a* aforesaid, which come in succession in contact with the said levers. At each movement of these levers the upper valves are swung over the openings *e* and lower ones swung free therefrom, thereby cutting off a planting of seed and delivering it into the dropper-spouts. The openings *e'* of the fertilizer-hopper d^1 are provided with similar valves *l l'* above and below, which valves have stems that engage, respectively, the slots *i i'* in the levers E, centrally fulcrumed on the beam C^1. These slots are, respectively, above and below the fulcrums of the levers E.

F represent connecting-rods pivoted to the lower ends of the levers E and extending inward toward each other. At their contiguous ends these rods are turned outward, as shown at *j*, beyond the levers D^1 D^2, so that when the said levers are actuated they come in contact with the portions *j* of the said rods, and operate the valves *l l'* to deliver a quantity of the fertilizer into the spout d^2. This spout is composed of two sections, *m* m^1, flexibly connected

together, and the lower section is operated by means of a rod, G, extending upward through a guide, m^2, upon the beam C^1 within reach of the driver, to direct the fertilizer into the hill at the same time as the grain.

The middle section a' of roller B is prevented from rotating in the act of turning at the end of a row by means of a vibrating stop, n, pivoted to the beam C^1 between the hoppers d, which the driver causes to be thrust out beyond said beam, so as to engage one of the cogs upon the said roller-section. By this means the apparatus is prevented from dropping either seed or fertilizer during the act of turning.

H represents a vertically-vibrating lever, having its fulcrum upon the beam C^1, and of angular form. The horizontal portion o of this lever has a spur upon its under side, that engages the offset h^3 of the plate h^2, that connects the front ends of the endwise-movable rods h h^1, upon which the levers D^1 D^2 are mounted. By thrusting the lever H to the front the said levers D^1 D^2 are thrust outward from the beam C^1 into position for engagement with the cogs c of the middle roller-section a'; but by drawing the lever back, the levers D^1 D^2 are drawn away from the said cogs sufficiently to avoid them, by which means the rollers may operate without actuating the dropping mechanisms.

The inner ends of the rods F are sustained by the hangers k, that extend upward through the beam C^1, and are connected together by an arched bail, p'. By drawing backward on this bail these rods are retracted under beam C^1, so that their contiguous ends clear the levers D^1 D^2, which may then be actuated without affecting the fertilizer-dropping mechanism. By thrusting the said bail to the front an opposite result will be obtained.

The lever H carries an arm, r, projecting to the front, upon the end of which a horizontal rod, s, is rigidly secured. This rod projects equally at each side of the arm r, and is provided at each end with a button, t, to which is removably secured the upper end of a connecting-rod, J. There are two of these rods, and they are each secured to the standard of one of the shovels D. These standards are made of two sections, u w', hinged together in any suitable manner. When the lever H is drawn to the rear the rod s is swung upward, causing the shovels to be raised up out of the ground, because of the flexing of their standards u w'. These standards are adjustable relative to the front beam of the frame, as is also a caster-wheel, L, between said standards, which regulates the penetration of the shovels, and aids in the management of the device.

By unshipping rods J the beam C^1 and all the seed-dropping and fertilizing mechanism may be lifted off of the frame, thus converting the apparatus into an ordinary land-roller.

P represents marking-rods pivoted to the frame at each end thereof. These rods are swung upward, with their knobbed ends clear of the ground, by means of the rock-shafts R, having at their ends adjacent to the driver's seat each an upright arm, v, and at the other ends each a depending arm, v', which shafts are journaled on the bridge A′ in any suitable manner. To the lower end of each of the arms v' a curved rigid metallic link, y, is pivoted, which link is secured, by a flexible connection, z, to the marker-rods. When the arm v is thrust to the front the marker-rods are swung up off of the ground, an opposite result being had by reversing the said lever-arm v.

The letter M represents a curved shield extending from the seat forward to the front part of the frame A, the object of which is to protect the clothing and legs of the driver from injury.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with frame A and the roller B journaled therein and having tappets c, of the converging swing-levers D^1 D^2, the connecting-rods g g', the valves f f', and the hoppers d, having openings e and dropper-spouts c', substantially as specified.

2. In combination with the levers D^1 D^2 of a seed-dropping device and their actuating mechanism, a fertilizer-receptacle having the stemmed valves l l', the levers E, having slots i i', the rods F, adapted to be engaged with and disengaged from the said levers on the bail p', and arms k, whereby seed alone may be planted or dropped into a hill along with a fertilizer, substantially as specified.

3. In combination with the roller a', having cogs c, the swing-levers D^1 D^2, simultaneously actuated thereby, the endwise-movable fulcrum-rods h h^1 and their front connecting-plate h^2, having an offset, h^3, the vibrating lever H, having a spur engaging said offset, the arm r, and the transverse supporting-rod s, the connecting-rods J, and the flexible shank m m^1 of the shovels D, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

ROMEO B. WERNER.

Witnesses:
R. W. MUSSER,
JNO. A. READ.