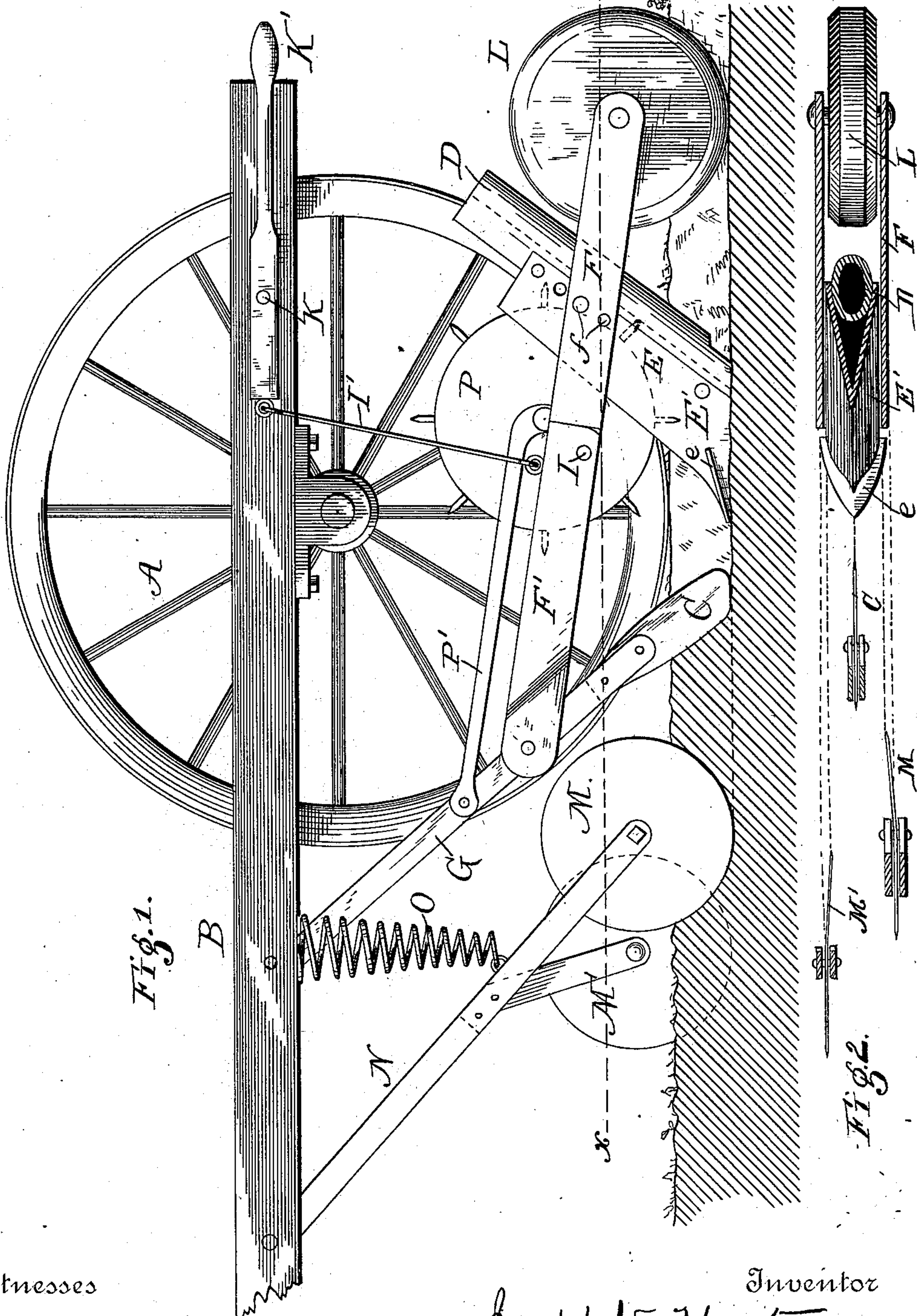


(No Model.)

J. V. HARTER.  
SEED PLANTER.

No. 376,089.

Patented Jan. 10, 1888.



Witnesses

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# UNITED STATES PATENT OFFICE.

JOSEPH V. HARTER, OF DENVER, ILLINOIS.

## SEED-PLANTER.

SPECIFICATION forming part of Letters Patent No. 376,089, dated January 10, 1888.

Application filed June 9, 1887. Serial No. 240,746. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH V. HARTER, of Denver, in the county of Hancock and State of Illinois, a citizen of the United States, have invented a new and useful Improvement in Seed-Planters, which is made and used substantially as set forth hereinafter, and as shown in the accompanying drawings, in which—

Figure 1 is a sectional elevation of my seed-planter, and Fig. 2 is a plan of the operative parts of same as seen looking down on the parts below the sectional line *x* of Fig. 1.

This invention relates to seed-planters; and it consists in an improved construction and arrangement of the same and of parts thereof, substantially as set forth hereinafter, and as illustrated in the drawings.

The planter is made with side supporting-wheels, A, bearing a frame having beams B, a suitable number, to which the operative parts are suitably attached or pivoted. A bar, N, is pivoted to beam B so as to drag below in front of each drill-opener. These bars are branched, and each arm bears a cutter, M M', to cut each side of the drill-channels. These cutters are made as revolving disks, having a suitable degree of dish, and set at suitable angles, so that the parts which enter the earth will cut straight forward in parallel lines, while the other or following sides will pry the earth between, so as to loosen it up, one being set before the other, so they will not interfere or oppose each other. The bar N is held with its cutters in the earth suitably by means of a coiled spring, O, which allows it to rise when needed.

Bars G are pivoted back of bars N and bear straight cutters C to act in the space between cutters M M'. Draw-bars F' F are pivoted to bars G and bear drill-teeth E, and press wheels or rollers L to follow in the space acted on by the cutters. These draw-bars have joints and pivots I between the parts F' F in front of the drill-teeth, arranged to be rigid and stiff toward all directions but upward, so as to hold and draw the drills and rollers properly in definite tracks. This joint is arranged to act as a lock to preserve rigidity by shoulders with solid bearings projecting upward and arranged to abut solidly together in ordinary use, except when the joint is unlocked and bent up-

ward for throwing the drill and cutter C out of the ground for turning corners, and when otherwise desired, by means of lever K', pivoted to the frame above and having the lift and lock rod I' therefor. These parts are arranged so that when this rod draws up it allows the cutter C and drill-teeth to rise, while the wheel L runs on top of the ground.

The drill-tooth E is held in bar F by two cross-bolts, *f*, and has a number of holes through it at different heights for these bolts, by which the depth of running of the drill-tooth can be regulated; but any other suitable means may be used as the equivalent of this for regulating the depth of running, as desired. The drill-teeth E are made of two parts—the drill-tube D in the rear, to which any suitable dropping mechanism may be connected, and the divider-plate E' in front, held to the rear portion by rivets or bolts or otherwise. These divider plates are made of steel or other suitable metal, and may be renewed when worn out. They have pointed and cutter-like shovels *e* in front, with two diverging shovel-like wings arranged to cut and open a channel for dropping the seed. The roller L has a flat tread and beveled sides arranged to run in this channel and to roll the bottom and sides and compact the earth and seed together therein to promote growth. The spaces between the channels may remain unbroken, and where covered with stubble this will serve to protect winter wheat by breaking the winds. Wheels P with arms are hung on separate floating bars P', so as to run between alternate pairs of drills and bear directly upon the ground and rubbish, so as to prevent trash dragging and clogging thereon.

Various modifications may be made.

I claim—

1. In a seed-planter, a drag-bar bearing a drill-tooth and a press-roller behind the tooth, said bar having a hinged lock-joint therein and a thrust-bar for locking and unlocking the same and for holding the tooth in the earth and lifting it free thereof.

2. In a seed-planter, the combination of wheel L, drill-tooth E on bar F, the bar F', connected with bar F by a hinged lock-joint, and a thrust-rod, I', to unlock and bend said joint.

3. In a seed-planter, the combination of the

wheel L and drill-tooth E, borne on a bar jointed at I, with disk-cutters M M', adapted to cut a channel for said drill-tooth.

4. A seed-planter having press-wheel L, held by draw-bar F, bearing the planter-point E, having a drop-hole through it and provided with a joint, I, in said draw-bar in front of the point E, and with the lifter-bar I', connected with frame B.

5. In a seed-planter, the drag-bar F F', having a joint, I, with a knuckle above, combined with a holder, I', and handle K.

6. The drill-tooth E, provided with a diverging point, e, and a steel cutter, E', in combina-

tion with the tube D and drag-bar F F', substantially as shown and set forth.

7. The combination of hinged bar F' F, drill-tooth E, roller L, rod I', and lever K', arranged substantially as set forth.

8. The combination of hinged drag-bar F F', drill-tooth E, held thereto by two bolts, f, through the same, and the press-roller L, borne thereon.

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Witnesses:

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