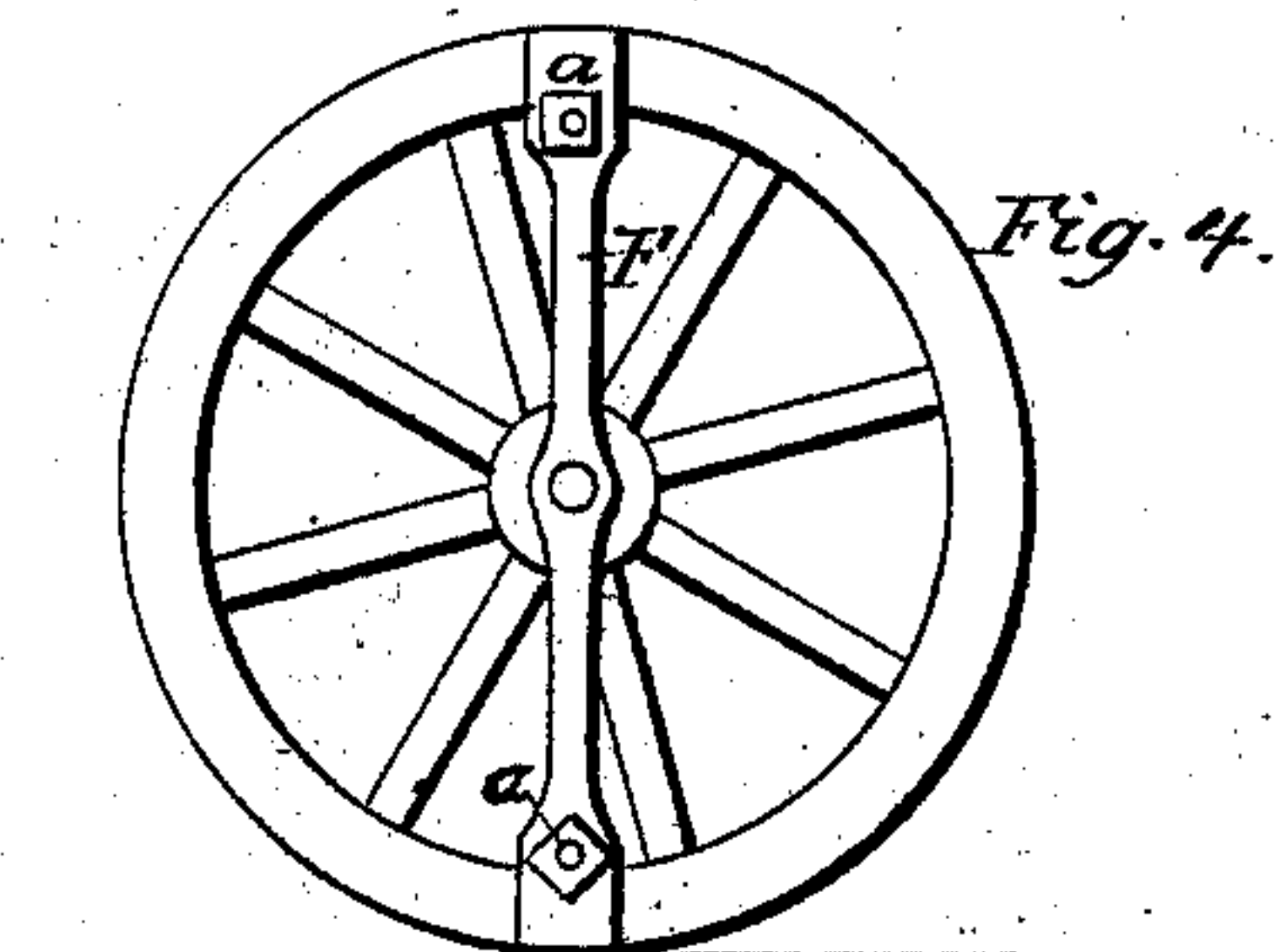
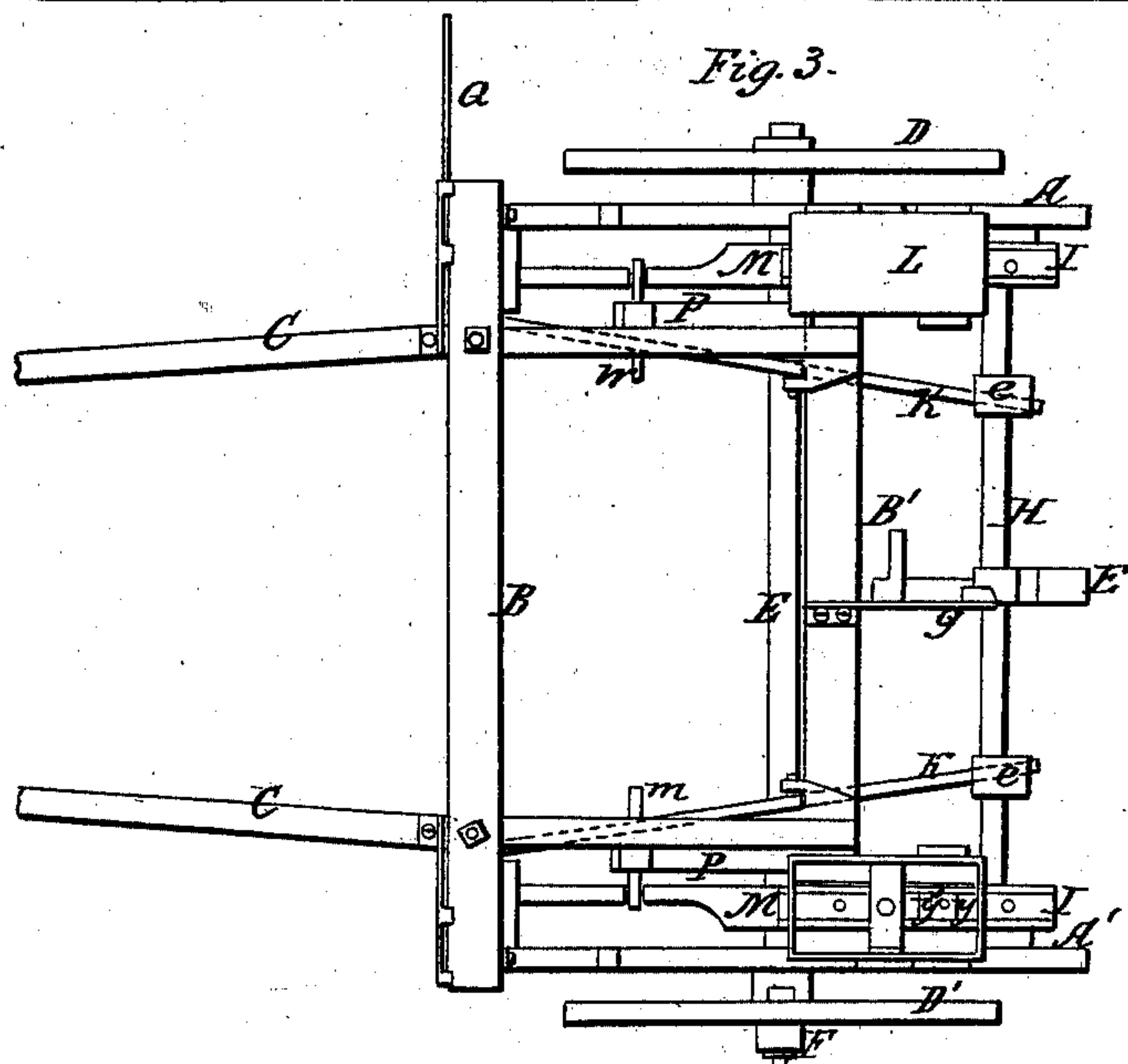
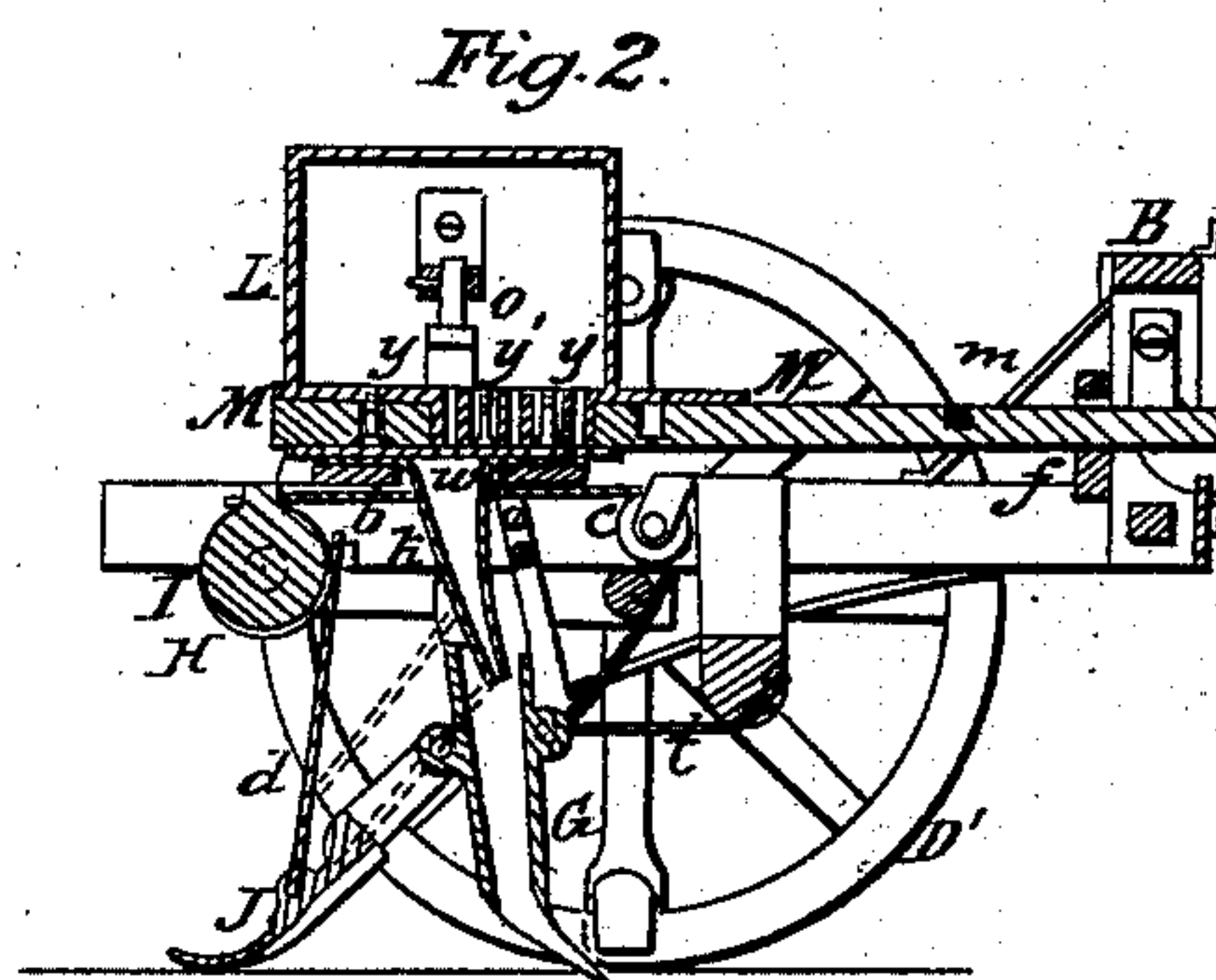
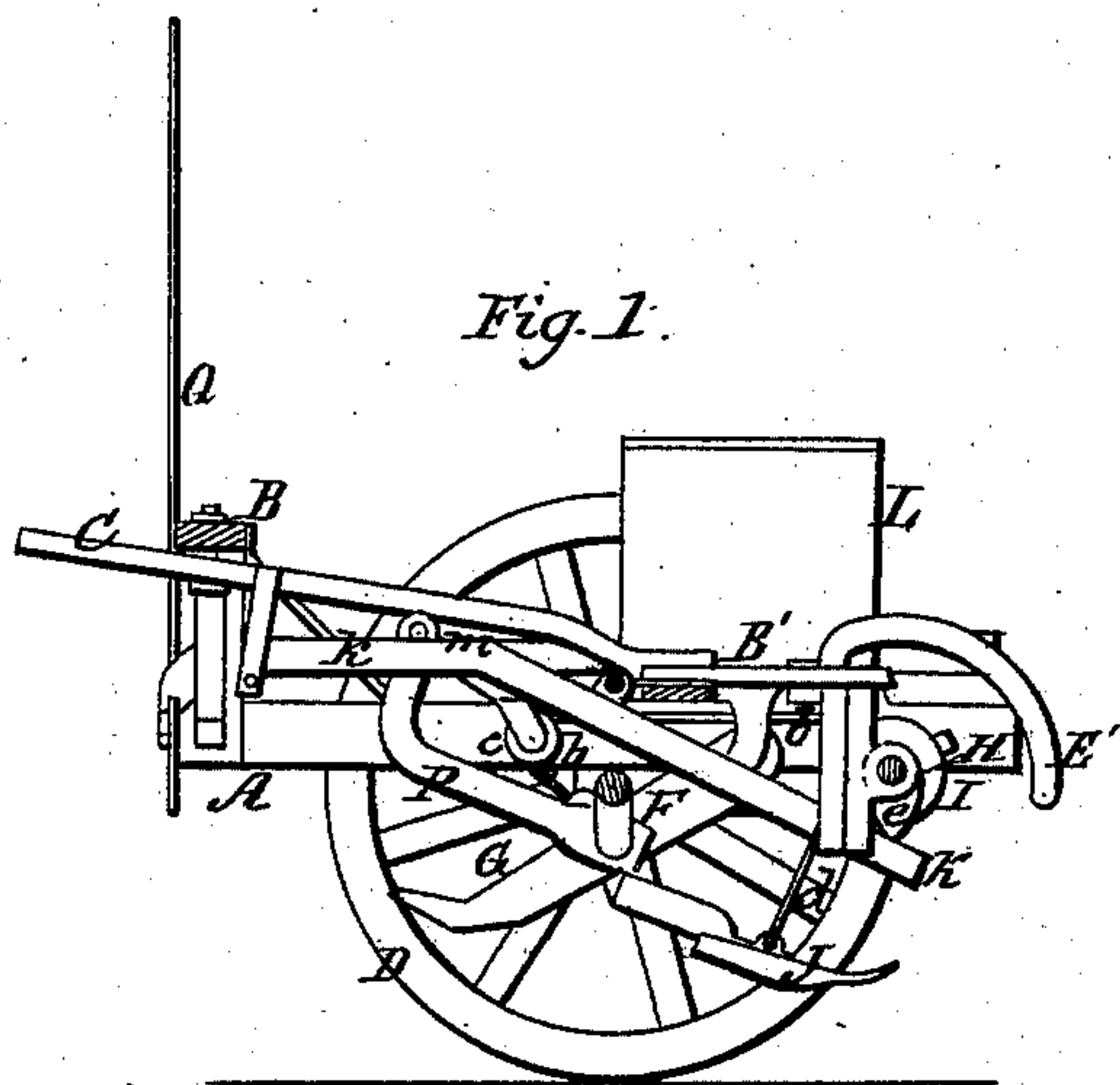


Patented Aug. 1, 1865.



Witnesses:
Wm. Albert Steel
John Parker

Inventor:
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Physician
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UNITED STATES PATENT OFFICE.

DAVID J. JONES, OF SADSBUURY, PENNSYLVANIA.

IMPROVEMENT IN GRAIN-DRILLS.

Specification forming part of Letters Patent No. 49,117, dated August 1, 1865.

To all whom it may concern:

Be it known that I, DAVID J. JONES, of Sadsbury, Lancaster county, Pennsylvania, have invented certain Improvements in Grain-Drills; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention consists in certain devices, described hereinafter, which are simple in their construction and operation, for depositing grain, seeds, &c., in the ground in such quantities and at such intervals as may be desirable.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation.

On reference to the accompanying drawings, which form a part of this specification, Figures 1 and 2 are sectional elevations of my improved grain-drill; Fig. 3, a plan view; Fig. 4, a detached view of one of the wheels of the drill, and Fig. 5 a detached sectional view drawn to an enlarged scale.

Similar letters refer to similar parts throughout the several views.

The frame of the machine consists of the side pieces, A and A', and cross-pieces B and B', to which are attached the shafts C C, the whole resting on wheels D and D', which are secured to the revolving axle E. To the outer end of the axle E, at the side of the wheel D', is hung an arm, F, which is adjustable on the wheel a, and may be secured after adjustment by the screws a.

To each side piece, A A', is hung a hollow drill-tooth, G, which is maintained in a nearly vertical position by a cord, t, secured to the frame, the drill-tooth being so hung to the frame that when the cord t is cut or broken it can be turned back to the position shown in dotted lines, Fig. 1, for a purpose described hereinafter.

In brackets secured to the side frames turns a shaft, H, near each end of which is a drum, I, and to the latter is secured one end of a cord or chain, b, the said cord passing over a pulley, c, and being attached at its other end to a staple on the front of the drill-tooth G. To each drum I is also secured one end of a cord, d, the other end of which is attached to a leveling-plate, J, hung to the rear side of the drill-tooth, the revolution of the shaft H in the direction of the arrow, Fig. 2, winding the cords

b and d on the drums and raising both the drill-teeth and the leveling-plates from the ground to the position shown in Fig. 1, the shaft being turned by an arm, E', and being prevented from turning back by a spring catch, g, which engages with the said arm E'. To the cross-pieces B', near each end of the same, is hung a lever, K, the rear end of which bears against a cam, e, on the shaft H, for a purpose described hereinafter.

On the frame of the machine, near each wheel D, is secured a hopper, L, in the bottom of which is a slide, M, the front end of the slide passing through a guide-plate, f, and having a notch, x, cut in its upper edge. In the slide M are three oblong openings, y y y', which are larger at the bottom than at the top, and in the top of the slide is a depression, in which slide the plates N N N, the ends of the latter being turned down into the openings y, Fig. 5. Through each slide M and through the plates N pass suitable set-screws, by means of which the plates may be secured in any position on the slide.

In the bottom of each hopper L is an opening, w, and above the latter is secured a brush, O, the end of which bears against the upper surface of the slide M. To the bottom of the hopper is secured a flexible tube, K, which communicates with the opening w, and the end of which projects into the hollow drill-tooth G.

Near each end of the axle E is a crank, to which is jointed one end of an L-shaped arm, P, and through the outer end of the latter passes a rod, m, which rests in the notch x in the slide M, so that as the axle revolves the slide will be moved back and forth through the hopper L.

To the front of the frame, at each side of the same, is jointed one end of an arm or rod, Q, which may be secured either in an upright or horizontal position, for a purpose described hereinafter.

The hoppers L are filled with grain, the drill-teeth G and leveling-plates are brought to the position shown in Fig. 2, and the machine is drawn forward over the ground, when the operations of the parts will be as follows: As each slide M is moved back and forth by the revolution of the axle the grain will collect in the openings y y y', and will fall from the latter through the tubes k and G as each opening y is brought over the opening w, the grain dropping into the furrow made by the drill-tooth, and being covered with earth by the action of

the leveling-plate J. As the slides M move back and forth once at each revolution of the axle, it will be apparent that when the plates N are adjusted so as to uncover all the openings $y y'$ there will be four deposits of grain at every revolution of the axle. When, however, the plates N are so adjusted as to close the opening y' , as in Fig. 5, there will be but two deposits of grain at every revolution of the axle. Before the machine is started one of the openings y is brought above the opening w , and the arm F is adjusted to a vertical position on the wheel D, so that when the plates are arranged to make but two deposits of grain to each revolution of the axle or its wheel each of these deposits will be made when one end of the arm F is in contact with the earth, this end of the arm F making an impression, which indicates the point where the grain has been deposited.

It will be apparent that by the use of the arm as thus described there will be no difficulty in determining the point where the grain is deposited, so that when the grain is being sown in a field "crosswise" to rows already planted the new deposits may be made without difficulty at points exactly midway between those first put in the ground. The rows are sown parallel to each other by turning out the arm Q to a horizontal position and so guiding the machine, after one row is planted, that the end of the arm will be always maintained over this row.

When it is desired to turn the machine or to remove it without making a further deposit of grain, the shaft H is turned in the direction of its arrow, Fig. 2, until the lever E' is caught and retained by the spring-catch g . As the shaft is turned the drill-teeth and leveling-plates will be raised to the position shown in Fig. 1, while at the same time the outer ends

of the levers K will be depressed by the cams e , so that the inner ends of the same shall be raised and lift the rods m of the levers P out of the notches x in the slides M, the rods m then sliding on the edges of the levers K without imparting any motion to the slides.

Should the drill-foot be brought against a root or stone, the cord t will be broken, and the foot, owing to the manner in which it is hung to the frame, will readily move back to the position shown in dotted lines, Fig. 2, the injury which results to the machine when the foot is rigidly secured to the frame being thus avoided.

I claim as my invention and desire to secure by Letters Patent—

1. The slides M, with their openings $y y'$, and adjustable plates N, combined with the hoppers L, and operated substantially as and for the purpose specified.

2. The crank-axle E', levers P, and slides M, combined and operating substantially as described.

3. The levers P, with the pins m , and the slides M, with the notches x , constructed and operating, in combination with the levers K, substantially as and for the purpose set forth.

4. The drums I, with their cords b and d , operating, in combination with the drill-feet G and leveling-plates J, substantially as specified.

5. The drill-foot G, hung to the frame and combined with the cord t , as and for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

DAVID J. JONES.

Witnesses:

CHARLES E. FOSTER,
JOHN WHITE.