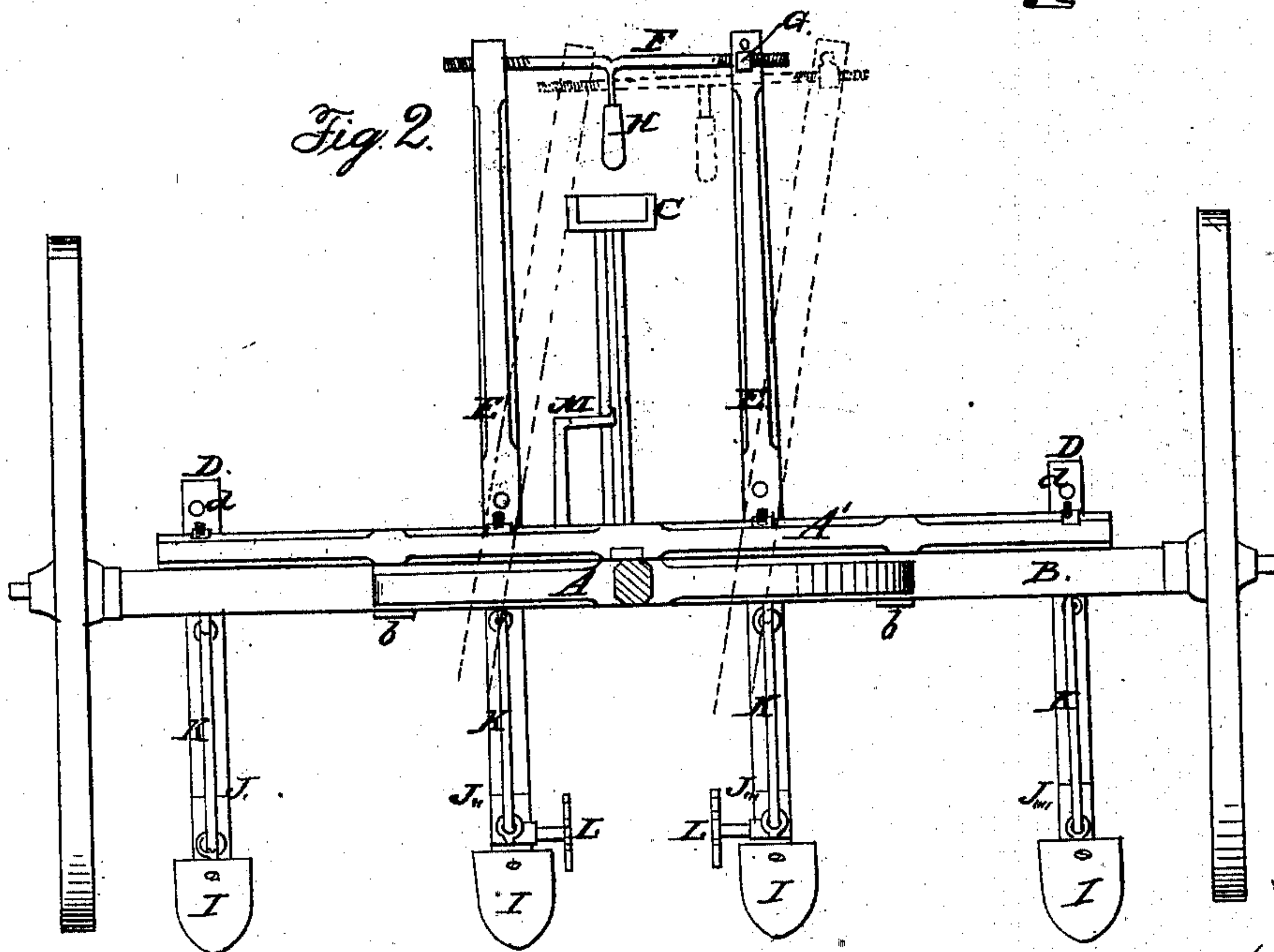
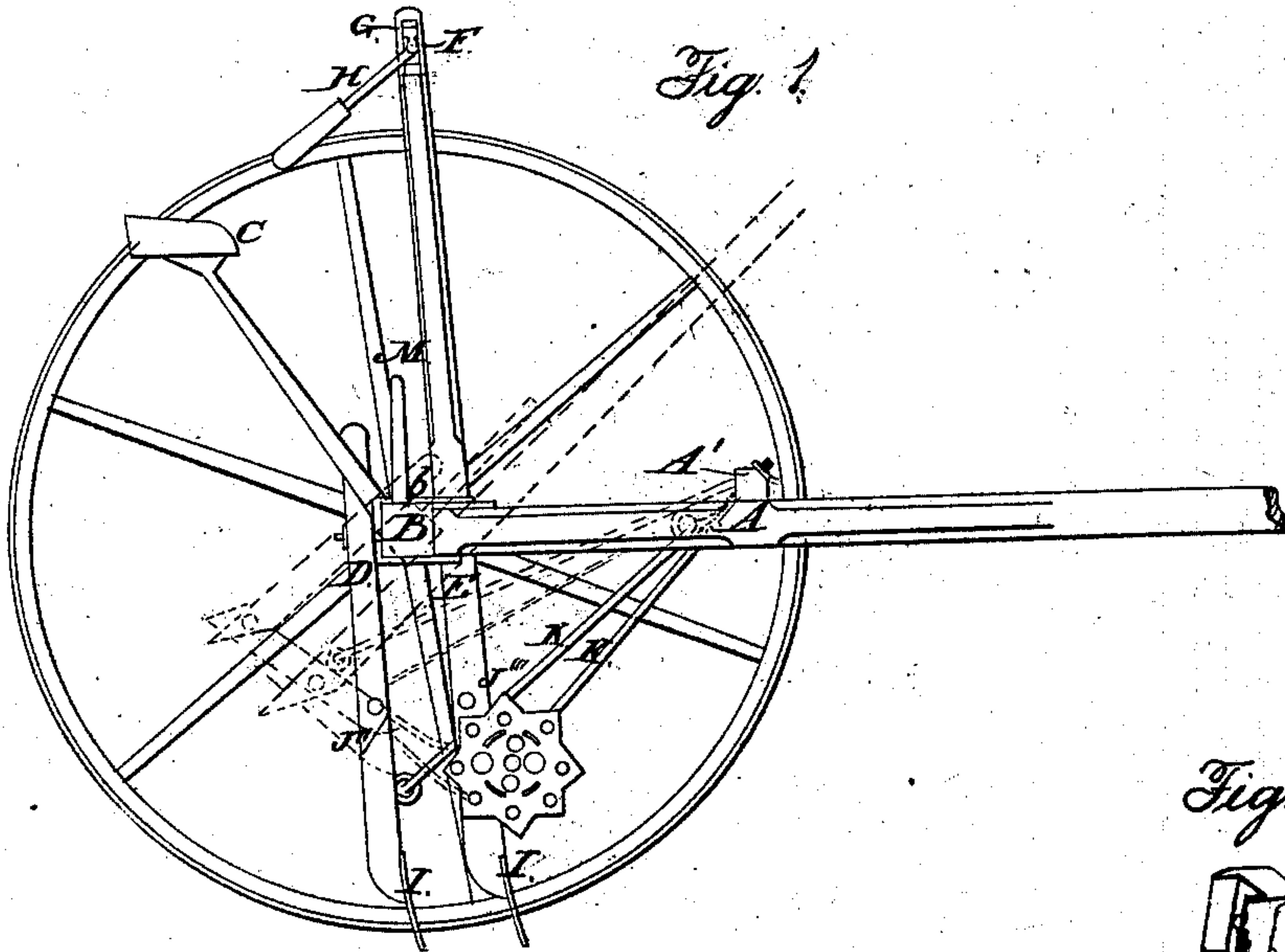


J. MILLS.  
Wheel-Cultivator.

No. 47,655.

Patented May 9. 1865.



Witnesses:  
Chas. H. Hearn  
D. J. Dodge

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Joseph Mills  
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attys



# UNITED STATES PATENT OFFICE.

JOSEPH MILLS, OF READING, ILLINOIS.

## IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. 47,655, dated May 9,

*To all whom it may concern:*

Be it known that I, JOSEPH MILLS, of Reading, in the county of Livingston and State of Illinois, have invented a new and useful Improvement in Cultivators; 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, in which—

Figure 1 is a vertical longitudinal section through the center of my machine. Fig. 2 is a front elevation of the same. Fig. 3 is a perspective view of one of the double-flanged plates.

The nature of my invention consists in a novel construction of the frame, &c., by which the shovels are guided from side to side and raised or lowered, as may be desirable.

That others skilled in the art may understand the construction and operation of my machine, I will more particularly describe it.

A is the frame, forming the tongue and permanent parts of the machine.

B is the axle, connected to the frame A by the straps *b*, which are secured to A and pass around B at points which are suitably prepared, so as to allow the axle B to turn within them or revolve partially on its own axis.

To the frame A is attached the driver's seat C, and to the axle B are attached the shovel-beams D D E E.

The two beams D D are provided with a vertical adjustment by means of a screw-bolt, or otherwise, and the holes *d d*, but are prevented from swinging sidewise by plates provided with suitable flanges attached to the axle, as shown in Fig. 3. The shovel-beams E E are likewise attached to the axle B, and have a similar vertical adjustment; but they are also so attached to the axle that they may swing laterally with freedom, as shown in red lines, Fig. 2. Their upper ends extend considerably above the axle, and are coupled together by a right-and-left-hand screw-rod at or near their upper ends. This rod passes through swinging nuts G, as shown in the figures, so that whatever position the posts E E occupy the rod F is always horizontal and does not bind in the nuts.

The rod F is provided with a handle, H, which not only serves to guide the posts E E, but it serves to turn the rod F in the nuts, so as to draw the tops of the posts E E nearer

together or set them farther apart. A short distance above the shovels I, on the lower ends of D D and E E, the said posts or beams are jointed, as at J J, the upper half being attached, as described, to the axle B, and the lower part linked to the cross-piece A' by the rods K, which are jointed or attached to eye-bolts, as shown.

Upon the inner sides of the posts E E, I place the guards L L. Upon the upper side of the axle I place a standard or step, M, convenient to the driver's foot.

When my machine is to be put in operation, the horses being attached and the driver seated, he places his foot upon M, and by pushing thereon causes the axle to rotate within the straps *b*, as described, thereby causing the shovel-beams to assume the positions indicated by red lines in Fig. 1. As the lower ends of the beams move backward, as shown, the joints J are bent, because the rods K are incapable of elongation, and the consequence is obvious. The shovels are lifted clear of the ground, so that they are not in the way of danger while being transported to or from the field. (Shown by red lines in Fig. 1.) The field being reached, by grasping the handle H and drawing it toward him the shovels are brought to the ground again and caused to plow as deeply or as lightly as desired.

If the row of plants to be cultivated be uneven the center shovels may be set farther apart, and if the plants be regular they may be brought nearer together, as desired, by means of the screw-rod F, and as the machine passes over the row the center shovels may be guided from side to side to favor this or that side of the row, as may be necessary, by means of the same handle, the shields L guarding the tender plants from being broken by heavy clods or masses of earth thrown over by the plows.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The vertically-adjustable and jointed posts D D and the vertically-adjustable jointed and swinging posts E E, in combination with the rods K, for the purpose of guiding and adjusting the shovels, substantially as described.

2. The rotating axle B, in combination with the jointed posts D D E E, substantially as described.

3. The double screw-rod F and swinging nuts G, in combination with the swinging posts E E, substantially as described.

4. The standard M, in combination with the

posts D D E E and the axle upon which they are mounted, substantially as described, and for the purpose set forth.

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