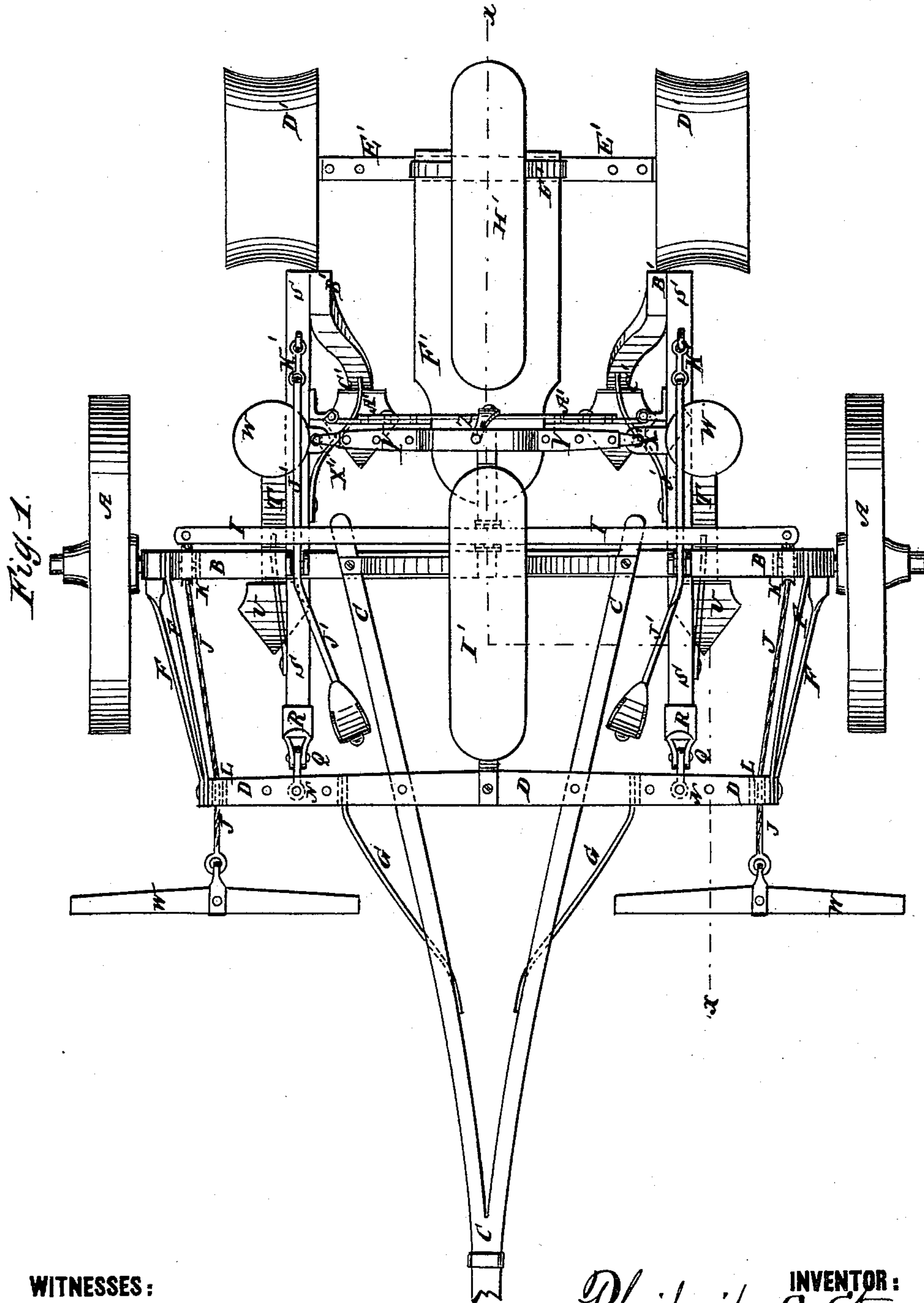


**P. S. STARNES.**  
**Corn Planter and Cultivator.**

No. 165,513.

Patented July 13, 1875.



WITNESSES:

*E. W. Woff*  
*A. F. Terry*

INVENTOR:

*Philip S. Starnes*  
BY *Starnes & Co*

ATTORNEYS.

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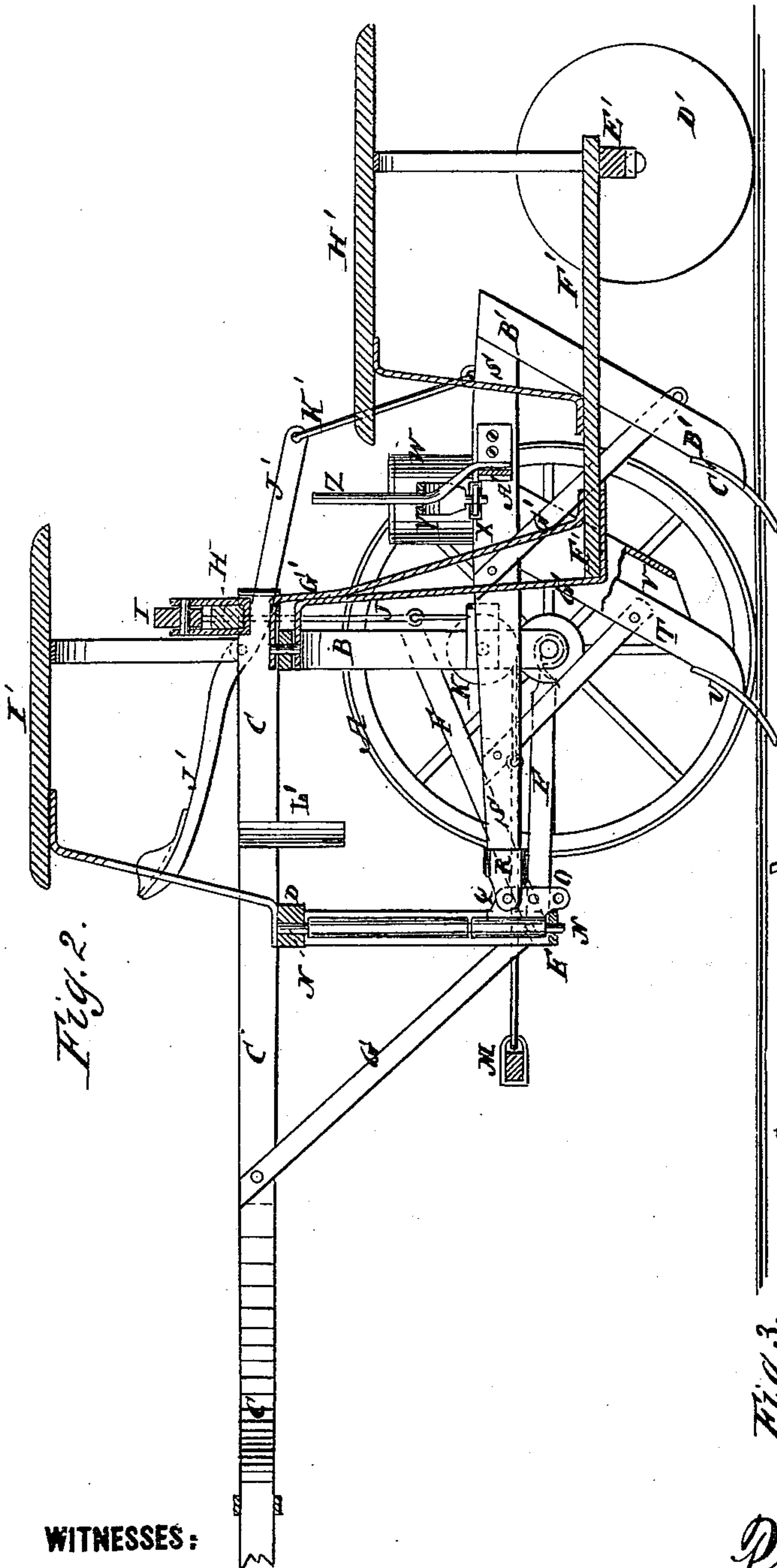


Fig. 2.

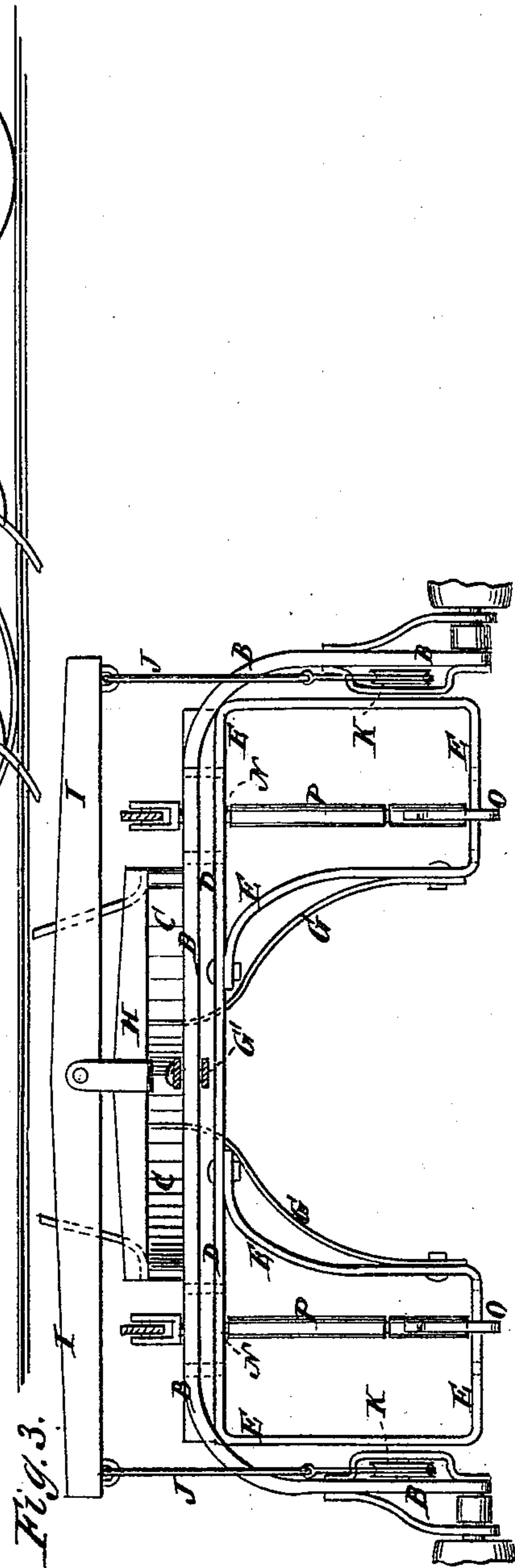


Fig. 3.

WITNESSES:

E. Wolff  
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# UNITED STATES PATENT OFFICE

PHILIP S. STARNES, OF PINK HILL, MISSOURI, ASSIGNOR TO DARNALL & WOMACKS, OF SAME PLACE.

## IMPROVEMENT IN CORN-PLANTERS AND CULTIVATORS.

Specification forming part of Letters Patent No. 165,513, dated July 13, 1875; application filed April 3, 1875.

*To all whom it may concern :*

Be it known that I, PHILIP S. STARNES, of Pink Hill, in the county of Jackson and State of Missouri, have invented a new and useful Improvement in Corn-Planter and Cultivator, of which the following is a specification :

Figure 1 is a top view of my improved machine. Fig. 2 is a detail longitudinal section of the same, taken through the line *xx*, Fig. 1. Fig. 3 is a rear view of the same, the plow-beams and their attachments being removed, and the foot-levers being shown in cross-section.

Similar letters of reference indicate corresponding parts.

The invention will first be fully described, and then pointed out in the claim.

A are the wheels, which revolve upon the journals of the axle B. The axle B is arched, as shown in Fig. 3, and to its horizontal middle part is secured the forked rear end of the tongue C, which tongue C is also attached to a cross-bar, D, placed at a little distance in front of the axle B. To the end parts of the cross-bar D are attached two stirrups or U-frames, E, which are strengthened against the draft-strain by the braces F and G. The braces F are attached to the lower outer angle of the frames E, project to the rearward, and are attached to the end parts of the axle B. The braces G are attached to the lower inner angle of the frames E, project upward and forward, and are attached to the branches of the tongue C. To the ends of the forks of the tongue C is secured a cross-bar, H, which is placed directly over or slightly in the rear of the axle B. To the center of the cross-bar H is pivoted the center of the double-tree I, to the ends of which are attached the ends of two chains, J. The chains J pass around pulleys K, pivoted to the axle B at the lower ends of its upright parts, pass around pulleys or through guide-holes L at the lower outer corners of the U-frames E, and to their forward ends are attached the single-trees M. In the end parts of the cross-bar D, and in the lower parts of the U-frames E, are formed a number of holes to receive

the rod or pin N, so that the plows may be adjusted wider apart or closer together. Upon the lower part of the rod N is placed a clevis or coupling-plate, O, the eye or socket of which is made long, so that the said plate may be held in a vertical position by the said rod N. The coupling-plate O is held down upon the rod N by a tubular washer, P, placed upon the said rod N above the said plate O. In the plate O are formed a number of holes to receive the pins Q, which also pass through the straps R, attached to the forward ends of the plow-beams S, so that the plows may be adjusted to run deeper or shallower in the ground. To the middle parts of the plow-beams S are attached standards T, having plows U attached to their lower ends, to open the furrows to receive the corn. To the rear sides of the standards T are attached spouts V, for conducting the seed to the ground, the upper ends of which are connected with the bottoms of the seed-hoppers W. The seed-hoppers W are attached to the beams S, and in their lower parts work the slides X, to receive the seed and discharge it into the spouts V. To the inner ends of the dropping-slides X are pivoted or hinged the ends of the arched bar Y, so that both the dropping-slides X may be operated at the same time. The arched bar Y is made in three parts, the adjacent ends of which overlap each other, and are secured to each other by bolts, several holes being formed to receive the said bolts, so that the bar Y can be expanded or contracted to correspond with the adjustment of the plow-beams. In the middle or arched part of the bar Y is formed a hole to receive the lever Z, the lower end of which is pivoted to the bar A'. The ends of the bar A' are hinged to the inner sides of the plow-beams S. The bar A' is also made in three parts, the adjacent ends of which overlap each other, and have a number of holes formed in them to receive the bolts by which they are secured to each other, so that the bar A' can be expanded or contracted to correspond with the adjustment of the bar Y. By this construction the plow-beams S will be held in their proper relative positions, and at the same



time may be moved laterally or vertically in guiding them. To the rear ends of the plow-beams S are attached the standards B', to the lower end of which are attached plows C', to fill the furrows opened by the plows U, and cover the seed. The standards B' are curved outward somewhat, to bring the plows C' into proper position to cover the seed. The soil is pressed down upon the seed by the wide-rimmed wheels or short rollers D', which revolve upon the journals of the axle E'. The middle part of the axle E' is attached to the rear end of the platform F', to the forward end of which is attached the lower end of the double standard or bracket G'. The upper end of the standard or bracket G' is pivoted to the center of the axle B, so that the rollers D' may be drawn from the said axle B. To the platform F' is attached a seat, H', in such a position that the operator, while sitting upon it, can conveniently reach and operate the lever Z, to drop the seed. I' is the driver's seat, the standards of which are attached to the cross-bar D, and the rear parts of the forks of the tongue C. J' are levers, which are pivoted to the axle B, upon the opposite sides of the forked rear end of the tongue C. To the rear ends of the levers J' are pivoted the upper ends of the rods or chains K', the lower ends of which are pivoted to the rear ends of the plow-beams S. The forward ends of the levers J' project forward and incline

inward, and have rests formed upon or attached to them, to receive the driver's feet, so that he can easily raise the plows upon one or both sides of the machine from the ground when desired. L' are downwardly-projecting arms attached to the forks of the tongue, in such positions that when the forward ends of the levers J' have been lowered to raise the plows from the ground, the foot-rests of said levers may be slipped beneath the lower ends of the said arms L', to hold the plows raised from the ground, for convenience in turning, and from passing from place to place. When the machine is to be used as a cultivator, the seed-dropping device and the rollers are detached, and the standards T are replaced by standards similar to the standards B', but curved in the opposite direction.

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

The combination of the extension-bar Y, connected with the dropping-slides X, and the extensible connecting-bar A', carrying the seed-slide-operating lever Z, with the plow-beams S and seed-hoppers W, as and for the purpose described.

PHILIP S. STARNES.

Witnesses:

ROBERT E. CASEY,  
JOHN T. WRIGHT.