

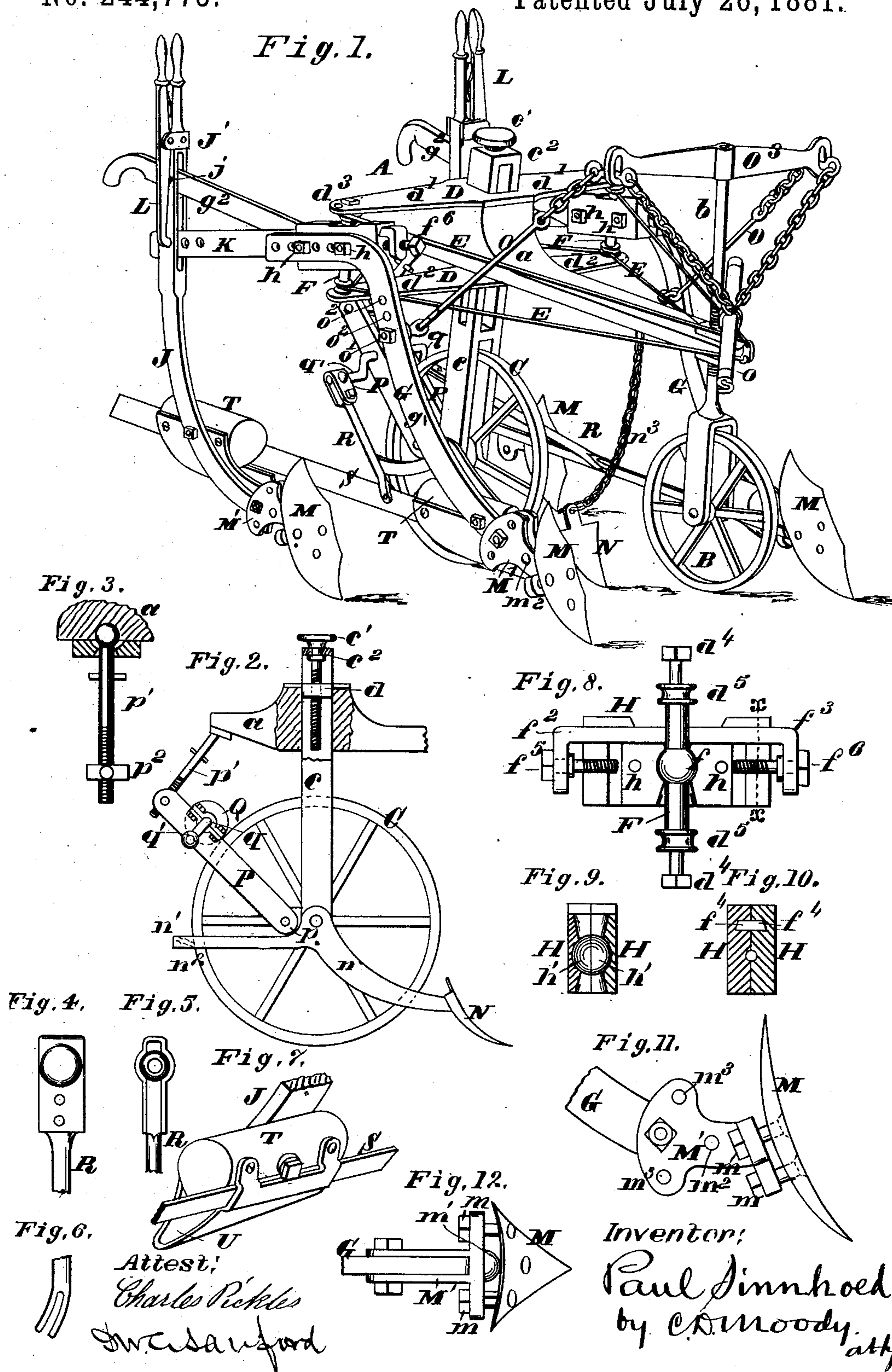
(Model.)

2 Sheets—Sheet 1

P. SINNHOLD.  
CULTIVATOR.

No. 244,773.

Patented July 26, 1881..



(Model.)

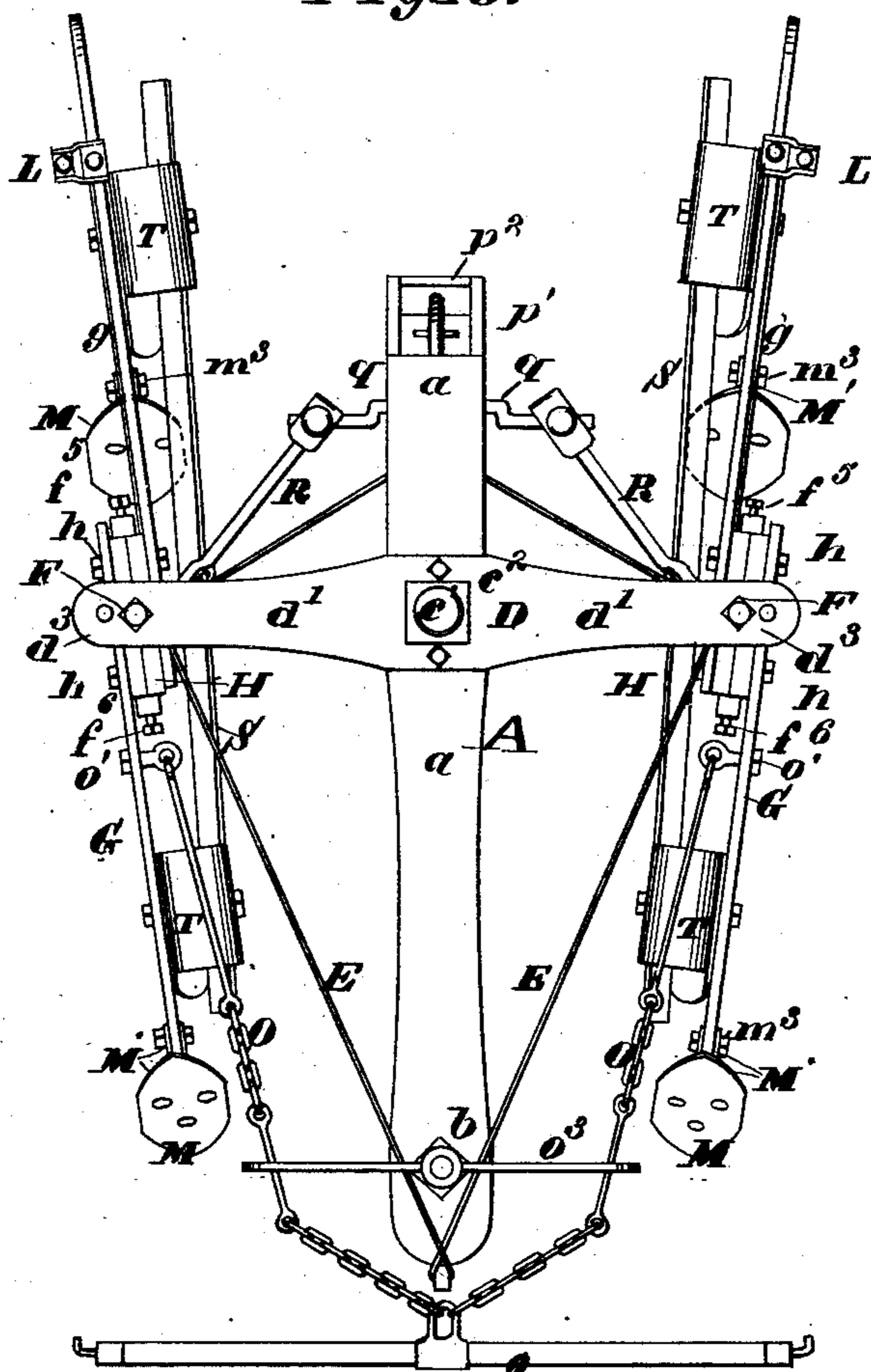
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Fig 13.



Attest.

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# UNITED STATES PATENT OFFICE.

PAUL SINNHOLD, OF ST. LOUIS, MISSOURI.

## CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 244,773, dated July 26, 1881.

Application filed January 18, 1881. (Model.)

*To all whom it may concern:*

Be it known that I, PAUL SINNHOLD, of St. Louis, Missouri, have made a new and useful Improvement in Cultivators, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a view in perspective of the improved cultivator; Fig. 2, a side elevation of the main wheel, the wheel-frame being partly in section; Fig. 3, a view of the bolt used in adjusting the friction-pulley against the main wheel; Fig. 4, a plan of the upper end of one of the pitmen that connect the friction-pulley and the seed-drill mechanism; Fig. 5, a side view of the same; Fig. 6, a view of the lower end of the pitman; Fig. 7, a perspective view of one of the seed-hoppers; Fig. 8, a central longitudinal section of the joint that connects one of the main beams to the plow-frame; Fig. 9, a vertical transverse section of the same; Fig. 10, a vertical section taken on the line  $x x$  of Fig. 8; Fig. 11, a side elevation of one of the shovels and shovel-heads; Fig. 12, a plan of the parts shown in Fig. 11, and Fig. 13 a plan of the machine.

The same letters denote the same parts.

The present invention relates to the means used in attaching the main plow-beams to the frame of the implement. It also has reference to the mode of attaching the rear beams to the main beams; also, to the mode of attaching the shovels or plows to the beams; also, to the manner of connecting the draft-rods to the beams; also, to the fifth shovel and parts immediately therewith connected.

Referring to the drawings, A represents the frame of the improved machine, consisting, mainly, of a central beam,  $a$ , arranged longitudinally in the machine, and held in place by means of a forward wheel, B, and the main wheel C. The beam is perforated to receive the forked arm  $c$  of the wheel C, as shown in Fig. 2, and the beam  $a$ , carrying the cross-beam D, can be adjusted vertically upon the arm  $c$ , and in the following manner: A screw,  $c'$ , held in the top  $c^2$  of the arm  $c$ , engages with a nut,  $d$ , that is connected with the cross-beam D, and by suitably turning the screw the beams  $a$  D are raised or lowered accordingly. The forward end of the beam  $a$  is also verti-

cally adjustable upon the arm  $b$  of the wheel B. Braces or rods E E lead from the forward end of the beam  $a$  to the ends of the cross-beam D. The latter is in two parts—an upper plate,  $d'$ , and lower plate,  $d^2$ ; and in the ends of the plates at  $d^3$  shafts F F are held, the plates coming between the nuts  $d^4$  and the collars  $d^5$ , respectively.

The main plow-beams G G are jointed to the shafts F F, and so as to turn thereon either up and down or laterally, or both up and down and laterally, or otherwise, as hereinafter explained.

H H represent two similar plates, that, by means of bolts  $h h$ , are clamped around the balls  $f f$  of the shafts F F, the plates being suitably shaped at  $h' h'$  to fit the shaft F and balls  $f f$ . The clamps H H thus have lateral and vertical motion upon the shafts F F; but to limit the motion in a vertical direction the plates are furnished with two stops,  $f^2 f^3$ , which are arranged to move in and out in a groove,  $f^4$ , in the clamp, and by means of the screws  $f^5 f^6$  to be set closely against the shafts F F, as shown in the full lines in Fig. 8, or to be withdrawn therefrom. When both stops are against the shaft F the clamp can only be turned in a horizontal plane; but when one of the stops, as  $f^2$ , is withdrawn the clamp, by reason of the stop  $f^3$ , has a limited motion in a vertical direction, and when both stops are withdrawn the clamps can be turned both up and down and laterally.

The main plow-beams G G are, by means of the bolts  $h h$ , fastened to the clamps H H, and move with them. The beams G G may be made in two parts,  $g' g^2$ , adjustable longitudinally upon each other, the former part carrying the forward shovels, M M, and the latter forming the handles. The latter also supports the rear plow-beams, J J, which at  $s' s'$  are pivoted to the handles  $g^2 g^2$ , enabling them to be turned from the position shown in Fig. 1 upward, so as to be entirely free of the ground, and so that the main beams can swing freely as desired. A tie-rod, K, aids in holding the rear beam in position, extending from the clamp H backward to the beam J, the connection with the latter being by means of the spring-dog L; and to disengage the tie-rod K it is only necessary to throw out the dog L, when

the beam J can be turned upward toward the main beam.

The shovels M M are made adjustable upon the beams both in a horizontal and in a vertical direction, the shovels being attached to the heads M' M' by means of the screws *m m*, and the back of the shovel bears against a rounded boss, *m'*, that projects from the point of the head M'. By suitably loosening the screw *m* upon one side of the shovel and tightening the screw upon the opposite side the shovel can be inclined to one side, and vice versa. The head M' is pivoted at *m*<sup>2</sup> to the end of the beam, and it, by means of the perforated plates *m*<sup>3</sup>, can be adjusted in a vertical plane.

A fifth shovel, N, is held by a forked arm, *n*, that is journaled upon the bearings of the main wheel C, and that extends across the wheel, and at *n'* is provided with a scraper-plate, *n*<sup>2</sup>, to prevent the dirt from being carried upward by the wheel C to the mechanism used in operating the seed-drill. A chain, *n*<sup>3</sup>, leads from the shovel N to the beam *a*, and serves both as a tie and as a means for adjusting the shovel vertically.

O O represent the draft-rods leading from the tree *o* through the cross-piece *o*<sup>3</sup> to the beam at *o'* *o'*—that is, the rods connect with screws *o'* *o'*, that are screwed transversely through one of a set of perforations, *o*<sup>2</sup> *o*<sup>2</sup>, in the beam, and by screwing the bolts *o'* *o'* into and out of the beam the latter is turned upon its bearing at the shaft F inward and outward accordingly, and by changing the screws upward and downward in the perforations *o*<sup>2</sup> *o*<sup>2</sup> the beams are caused to point downward or upward accordingly.

The seed-drill portion of the mechanism is as follows:

P P represent arms pivoted at their lower ends to lugs or other bearings, *p p*, upon the arm *c*, and at their upper ends connected by means of the screw-bolt *p'* with the beam *a*, the bolt *p'*, at its upper end, being held in the beam *a*, as indicated in Fig. 3, and at its lower end engaging in a cross-bar, *p*<sup>2</sup>, that is held loosely in the arms P P. By turning the bolt the arms P P are turned upon the bearings *p p* up or down accordingly.

Q represents a friction-wheel attached to the shaft *q*, which, in turn, is journaled in the arms P P. By raising the latter the wheel Q is brought in contact with the wheel C, and thereby caused to rotate. The shaft *q* is provided with cranks *q'* *q'*, each of which, by a ball-and-socket joint, is connected with a pitman, R. The latter, at its lower end, is jointed to a slide-bar, S, causing it to move forward and backward as the machine is moved along.

T T represent seed-boxes attached to the plow-beams. The boxes are furnished with openings (not shown) through which the seed drops into the conductor-spouts U U. The slides S, as they are moved forward and backward, open and close the seed-box openings and regulate the dropping of the seed. The spouts deliver the seed just behind the shovels in plain view, enabling the operator to readily inspect the operation.

I claim—

1. The combination of the beam *a*, wheel B, wheel C, arm *c*, rods E E, and cross-beam D, substantially as described.

2. The combination of the cross-beam D, shafts F F, and plow-beams G G, said beams being jointed to said shafts, substantially as described.

3. The combination of the cross-beam D, wheel C, arm *c*, and plow-beams G G, said cross-beam being vertically adjustable upon said arm, and said beams G G being connected with said cross-beam.

4. The combination of the shafts F F, having the balls *f f*, plates H H, bolts *h h*, stops *f*<sup>2</sup> *f*<sup>3</sup>, and screws *f*<sup>5</sup> *f*<sup>6</sup>, substantially as described.

5. The combination of the beam D, shafts F F, plow-beams G G, and clamps H H, substantially as described.

6. The combination of the shaft F, clamp H, and beam G, substantially as described.

7. The combination of the shaft F, clamp H, and beams *g'* and *g*<sup>2</sup>, said beams being longitudinally adjustable upon each other, substantially as described.

8. The combination of the beam G and the beam J, the latter being pivoted to the former and the beam G being jointed to the shaft F, as and for the purpose described.

9. The combination of the wheel C, pivoted arm *n*, scraper *n*<sup>2</sup>, and wheel Q, substantially as described.

10. The combination of the wheel B, wheel C, pivoted arm *n*, shovel N, chain *n*<sup>3</sup>, and beam *a*, substantially as described.

11. The combination of the draft-rods O O, screws *o'* *o'*, and beams G G, substantially as described.

12. The combination of the tree *o*, cross-piece *o*<sup>3</sup>, screws *o'* *o'*, and beams G G, substantially as described.

13. The combination of the wheel C, arms P P, bolt *p'*, beam *a*, and wheel Q, substantially as described.

PAUL SINNHOLD.

Witnesses:

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CHARLES PICKLES.