(No Model.)

2 Sheets—Sheet 1.

J. GARFIELD.

PLOW.

No. 309,453. Patented Dec. 16, 1884.

Fig. 2.

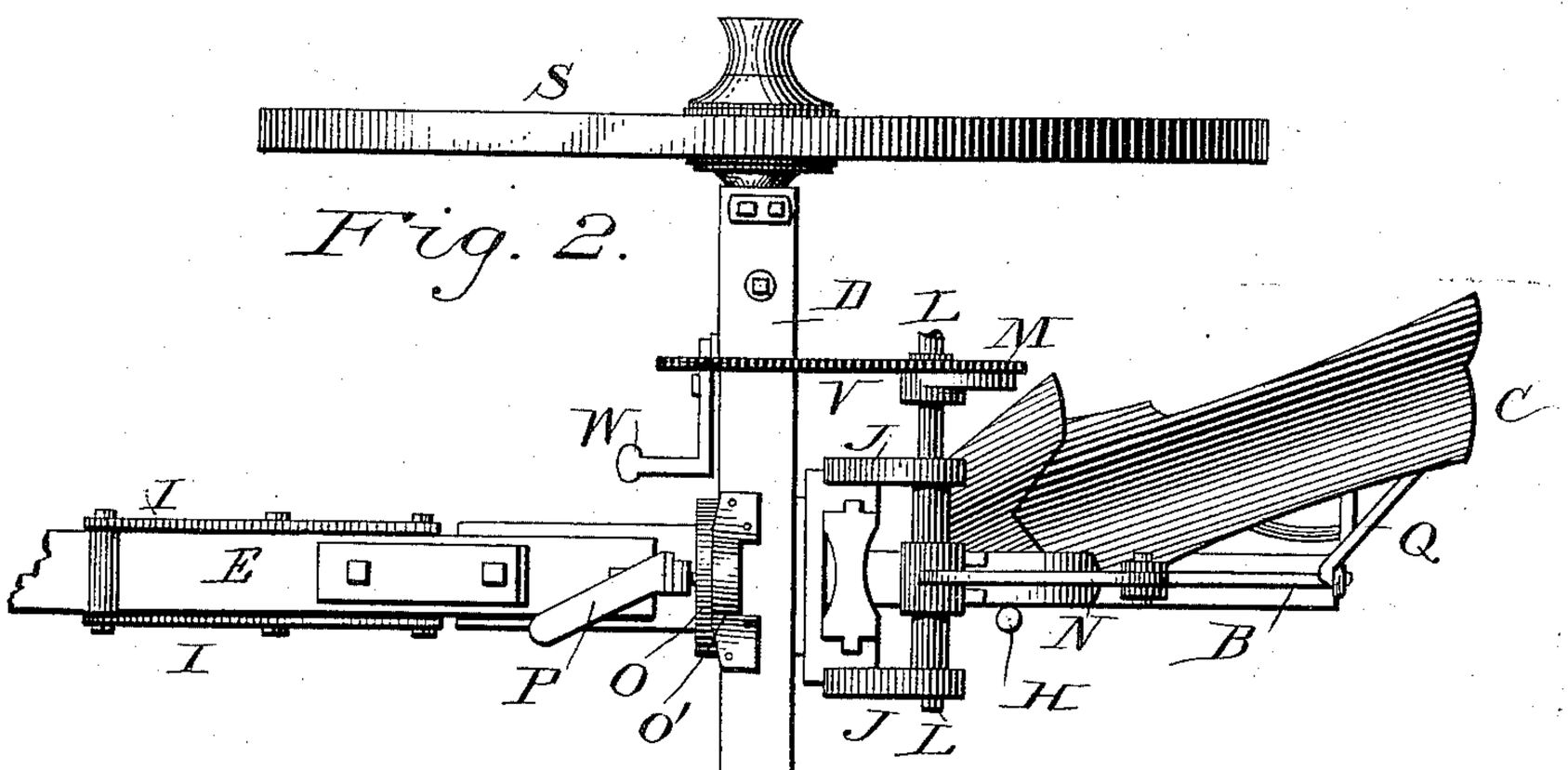
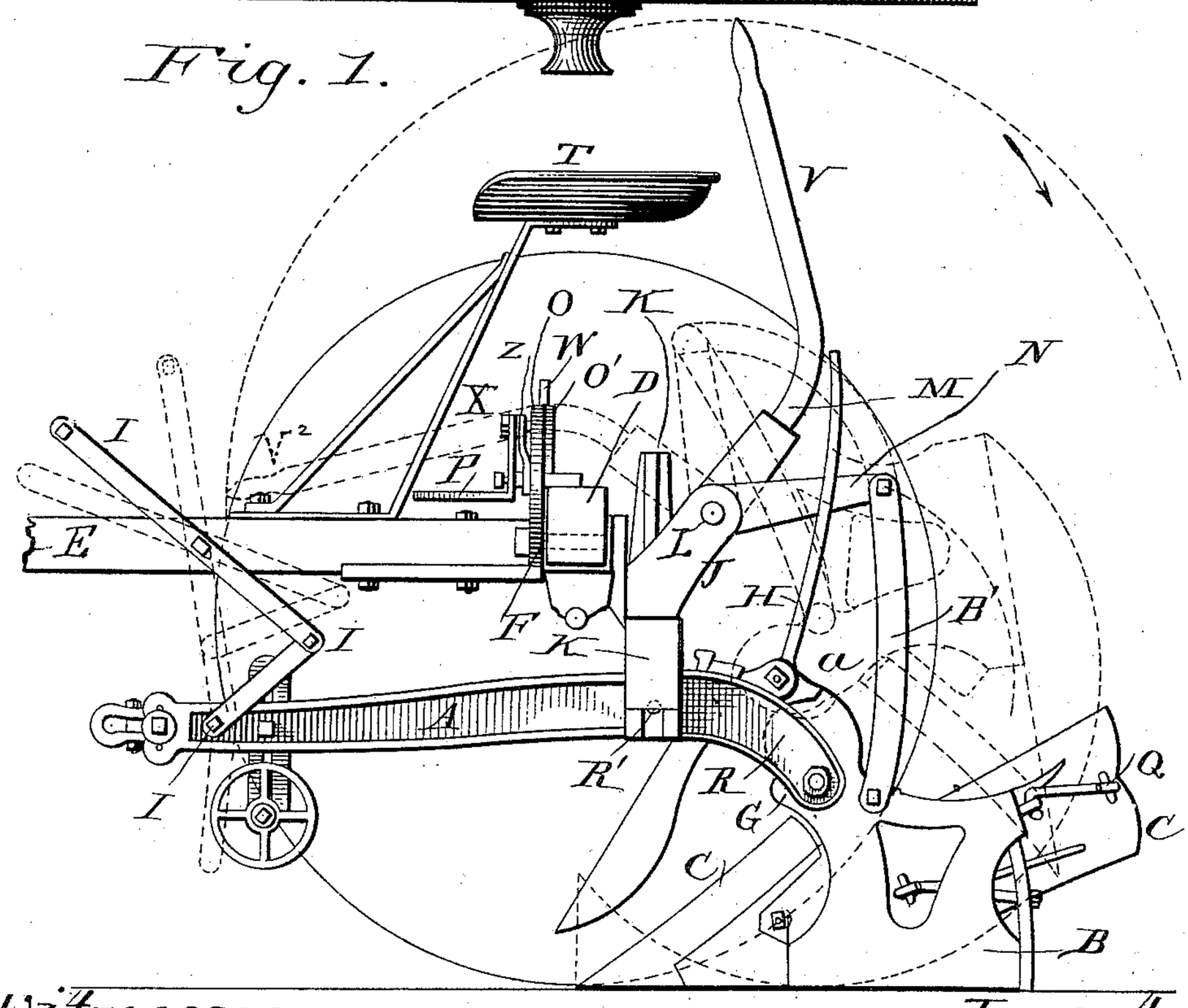


Fig. 1.



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(No Model.)

2 Sheets—Sheet 2.

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Fig. 4.

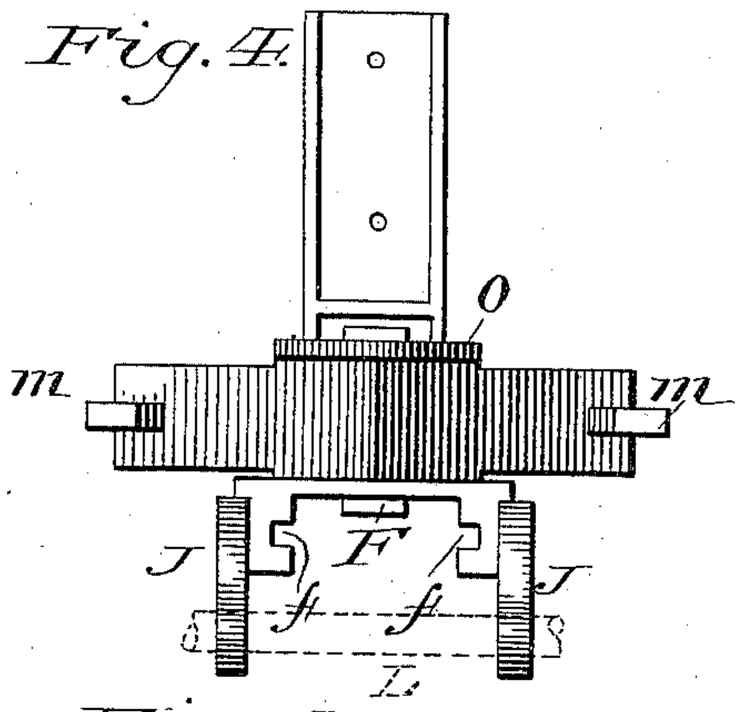


Fig. 5.

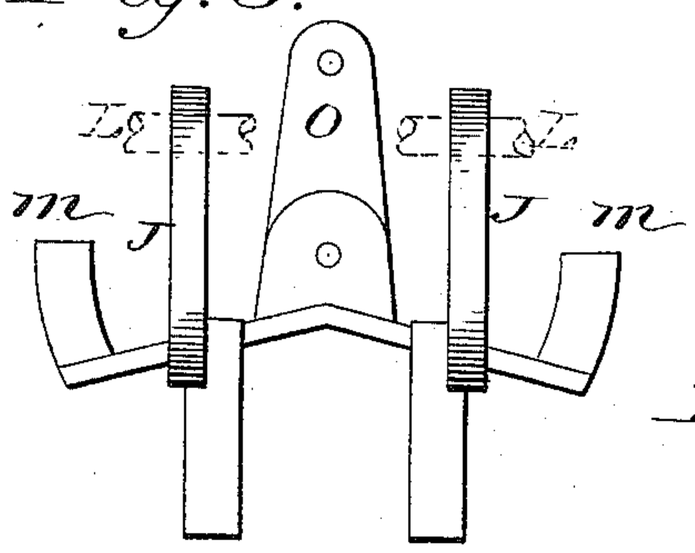


Fig. 6.

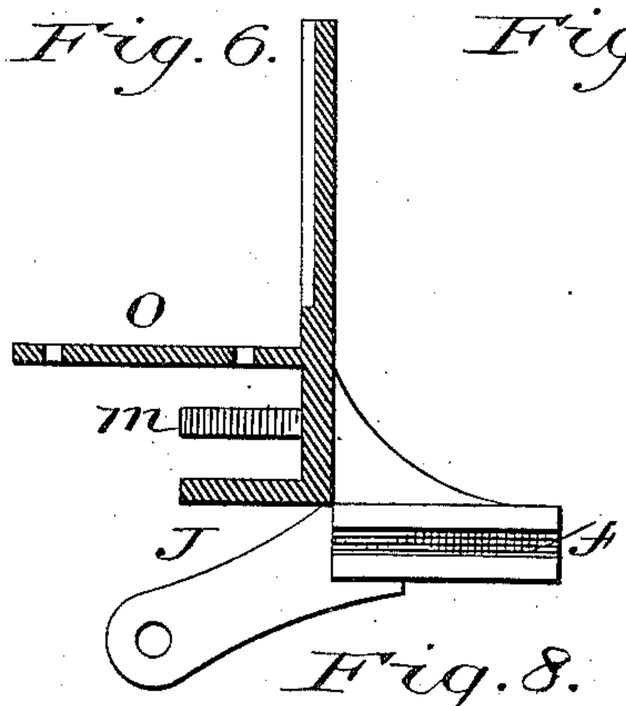


Fig. 7.

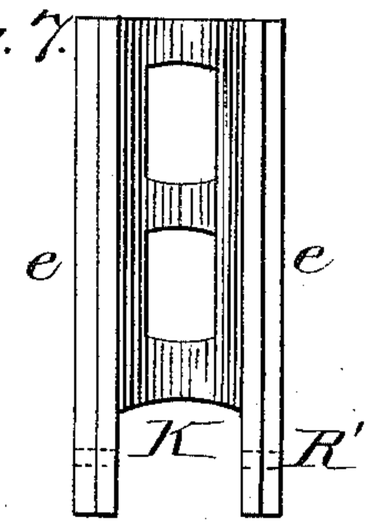
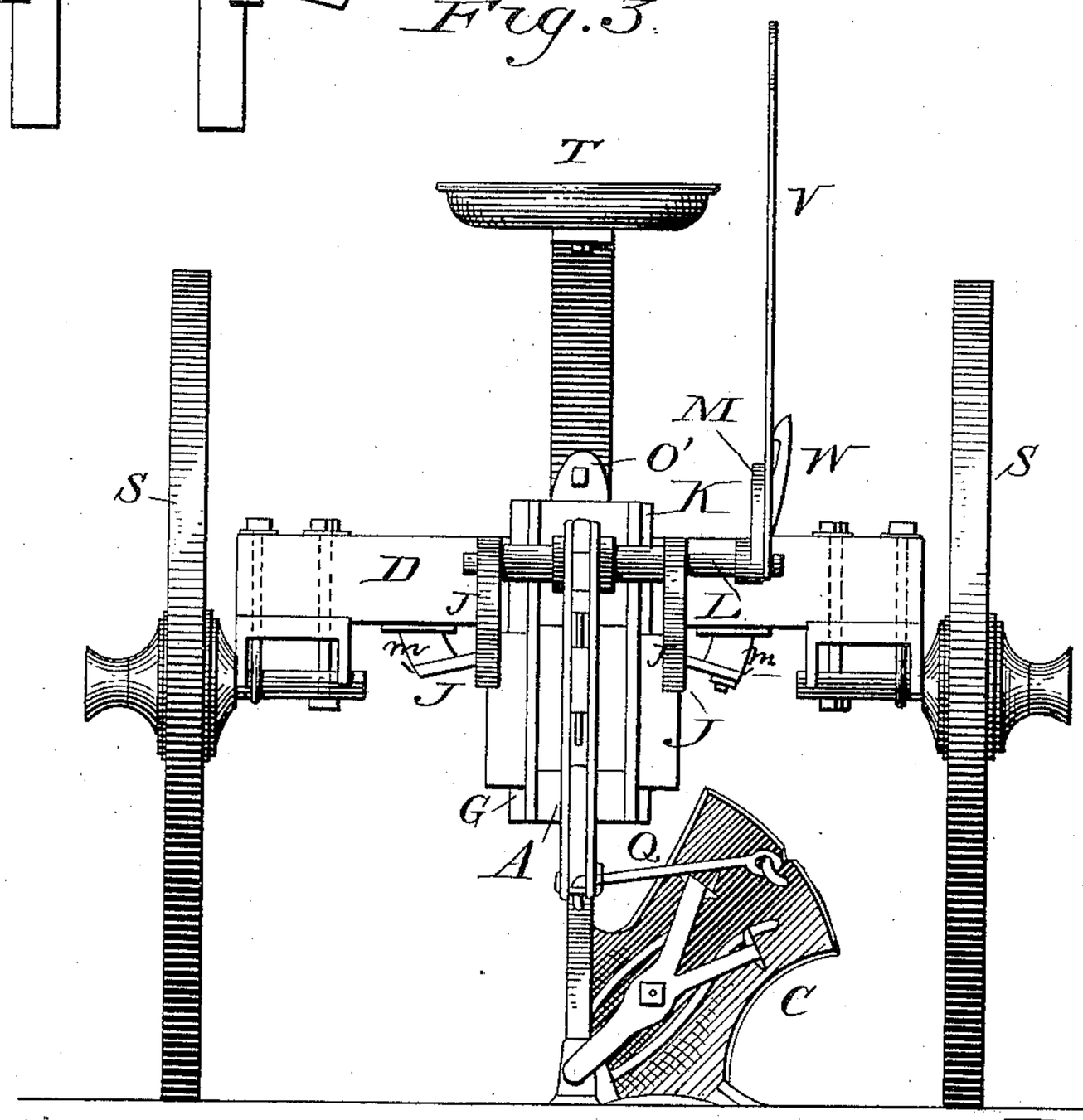


Fig. 8.

Fig. 9.

Fig. 3.



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UNITED STATES PATENT OFFICE.

JOEL GARFIELD, OF WORCESTER, MASSACHUSETTS.

PLOW.

SPECIFICATION forming part of Letters Patent No. 309,453, dated December 16, 1884.

Application filed June 11, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOEL GARFIELD, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Swivel Riding-Plows, of which the following is a specification.

My invention relates to improvements in swivel riding-plows, but may be applied to riding landside-plows.

The object of my invention is, first, to pivot the plow and beam low and near the center of the works, and secure a center draft, avoiding undue strain on the parts; second, to enable the operator to level the plow from side to side to accommodate a side hill; third, to raise and swivel the plow, and enable the operator to manipulate the plow in his seat. I attain these objects by mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side view of the machine. Fig. 2 is a top view of the same. Fig. 3 is a rear view of the same. Fig. 4 is a top view of a detached rocker. Fig. 5 is a back view of a detached rocker. Fig. 6 is a vertical section of the rocker. Fig. 7 is a back view of a detached slide, K. Fig. 8 is a side view of the slide K. Fig. 9 is a transverse section of the slide K.

Similar letters refer to similar parts throughout the several views.

I construct this swivel riding-plow with supporting-wheels S S, axle D, seat T, pole E, and swivel-plow C in the usual manner; but the standard of this plow is constructed with an enlarged projection, R, and is provided with ratchet-formed seat for the lock-lever H and pivot-seats *a* G. (See Fig. 1.)

The beam A is constructed in the usual manner, provided with cutter and gage-wheel on its forward portion; but the rear end is made to curve downward, and is constructed with sockets for the projection R on the standard B and lever H, and is provided with pivot-seats *a* and G. (See Fig. 1.)

The rocker J is provided with upward projections *m m*, which slide in seats in axle D and hold the rocker in line with the axle. The rocker J is provided with longitudinal projections which are firmly fixed to pole E. (See Figs. 1, 6.)

The lock-lever H is provided with an angular projection, and is pivoted to the beam A, and the ratchet-seat *a* on the standard B holds the plow firmly in position. (See Fig. 1.)

Slide K is constructed with flanges *e e*, which slide vertically in seats *f f*, and is attached to beam A by pivot R′. (See Figs. 1 and 7.)

The rearward-projecting arm N is firmly attached to shaft L, to which socket M and lever V are also fixed. (See Figs. 1, 3.)

The arc O is constructed with bolt-seats, and is attached to rocker J.

The standard arc O′ is constructed with bolt-seats, and is securely attached to axle D.

P is a foot-lever provided with the sliding bolt X, and is actuated by spring Z. (See Figs. 1, 2.)

The jointed foot-lever I I I is pivoted to the beam A and pole E. (See Fig. 1.)

W is an angle-pivoted latch that holds the lever V down when the plow is raised. (See broken lines, Figs. 1, 2.)

Q is the swivel-brace that holds the plow in position to turn the furrow either right or left. (See Figs. 1, 2, 3.)

The iron axles are securely attached by bolts and clasps to the wood bed D. (See Fig. 3.)

F is a horizontal longitudinal pivot that pivots the axle D and rocker J in position. (See Fig. 1.)

Operation: When the operator is in the seat T and the lever V is in position, as represented by the full lines in Fig. 1, the plow will be level on the surface of the ground. If he wishes to have the plow enter the soil to turn the furrow, he starts the team forward, and the lever V moves automatically in the arc shown by broken lines and arrow. (See Fig. 1.) The angles formed by foot-lever I I I are made less acute, the end of the beam A is forced down onto the gage-wheel, the entire plow slides down by means of the slide K on the rocker J. (See Figs. 1, 2.) When the operator wishes to make a return-furrow, he moves the long arm of the lever H toward the axle D. This unlocks the plow. He then moves the lever V into position of V². This manipulation of the lever V actuates the shaft L, the arm N being fixed onto shaft L, and being connected to the plow by arm B and pivot *a*. The plow is raised in slide-seats *f f* and turns on pivot G and shaft L. The plow is

raised from the furrow and brought into position indicated by the broken lines in rear of Fig. 1.

The lever V is held in position by means of the foot-latch W by detaching the swivel-brace Q, and by turning the plow C C on its swivel-connections the plow is turned into opposite direction. The brace Q being attached in the opposite seat, the plow is fixed on its swivel-connections to make a return-furrow. The operator lowers the plow by lever V, and locks it down by lock-lever H, and the plow is in position to make a return-furrow, and as one wheel runs in the open furrow the operator in his seat rocks the plow by disengaging with his foot-lever P the sliding bolt X, and transfers his weight to the side he wishes to depress, the mechanism of the parts resting on the longitudinal pivot F, the plow is leveled with the soil, the rocker J holding the axle and plow true with each other, the operator with his foot releases the slide-bolt X, and springs Z force it into its seat in the fixed arc O'. This holds the plow level in any desired position. The plow, being pivoted low by pivot G, makes the line of draft nearly direct with the draft of the team, constituting a center draft, which is an important feature in plowing. When the plow is raised, as shown by broken lines in Fig. 1, the lever V^2 is held down into its position by foot-latch W, and in this position the plow may be drawn from field to field, as may be desired.

The plow is elevated, swiveled, leveled, and locked by the operator in his seat.

Having thus fully described the construction and operation of my invention, what I claim, and desire to secure by Letters Patent, is—

1. A swivel riding-plow constructed and arranged with mechanism having a horizontal longitudinal pivot, F, and transverse pivot G, actuating-lever V, and shaft L, constructed with mechanism substantially as described, for the purpose set forth.

2. In a swivel riding-plow, the combination of the rocker J, shaft L, arms N and B', lever V, and standard B, constructed and arranged substantially as described, for the purpose set forth.

3. In a swivel riding-plow, the combination of the beam A, standard-pivot G, and lock-lever H, constructed and arranged substantially as described, for the purpose set forth.

4. In a riding-plow, the combination of the beam suspended from the longitudinal pivot F, and having the transverse pivot G, with the jointed foot-lever I and pole E, substantially as described.

5. In a swivel riding-plow, the combination of a foot-lever, P, the arc O, rigidly secured to the draft-pole, the arc O', rigidly secured to the axle, the pivot F, the sliding bolt connected to said foot-lever P, and the spring Z, all constructed and adapted to operate as described.

6. In a riding-plow supported on bearings provided with a horizontal longitudinal pivot, F, and transverse pivot G, the combination of shaft L, rocker J, lever V, and slide K, arranged and adapted to operate substantially as described.

7. In a riding-plow, the combination of the horizontal longitudinal pivot F, connecting the axle and rocker, the plow connected to the beam by a transverse pivot, G, and the means described for raising and depressing the plow.

JOEL GARFIELD.

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GEORGE H. MANN.