

(No Model.)

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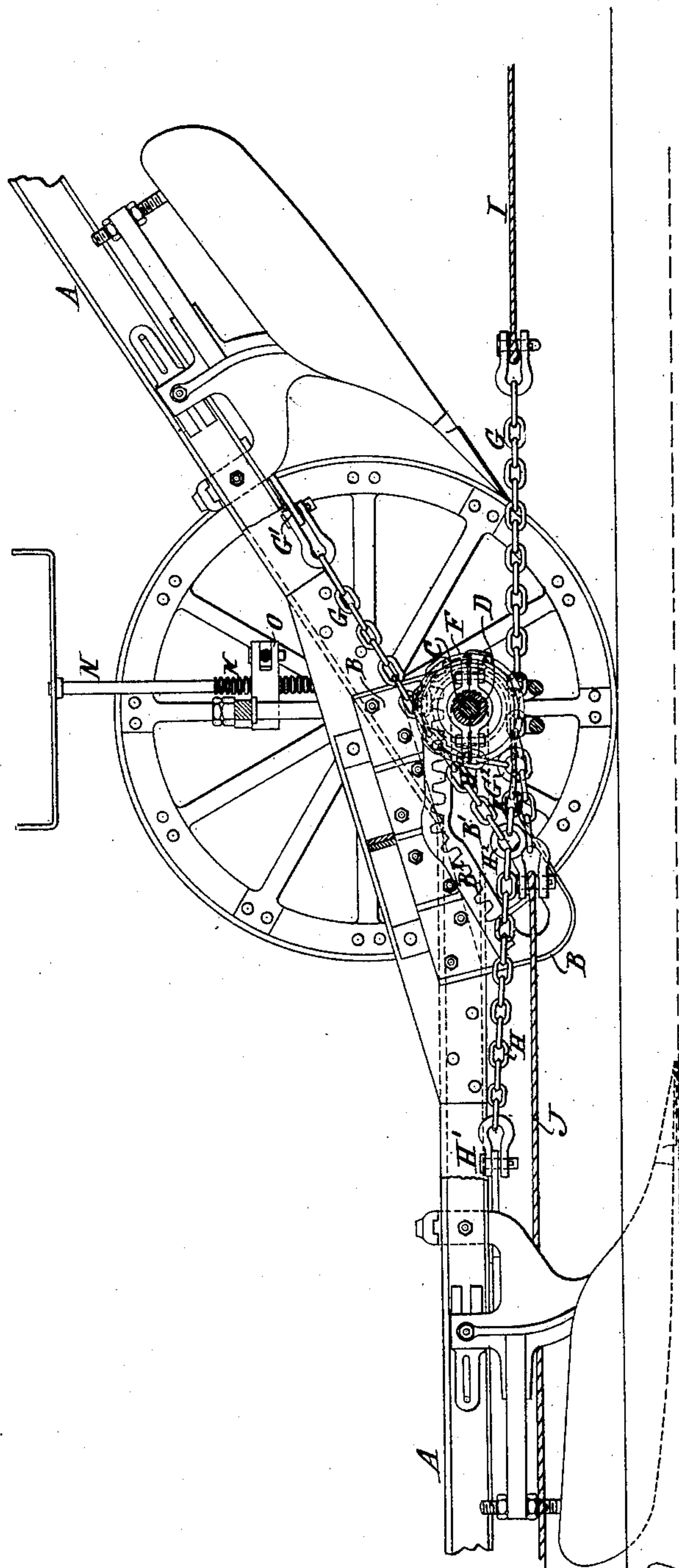
D. GREIG & T. BENSTEAD.

BALANCE PLOW.

No. 353,356.

Patented Nov. 30, 1886.

Fig. 1.



Witnesses
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Lloyd B. Wright

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(No Model.)

3 Sheets—Sheet 2.

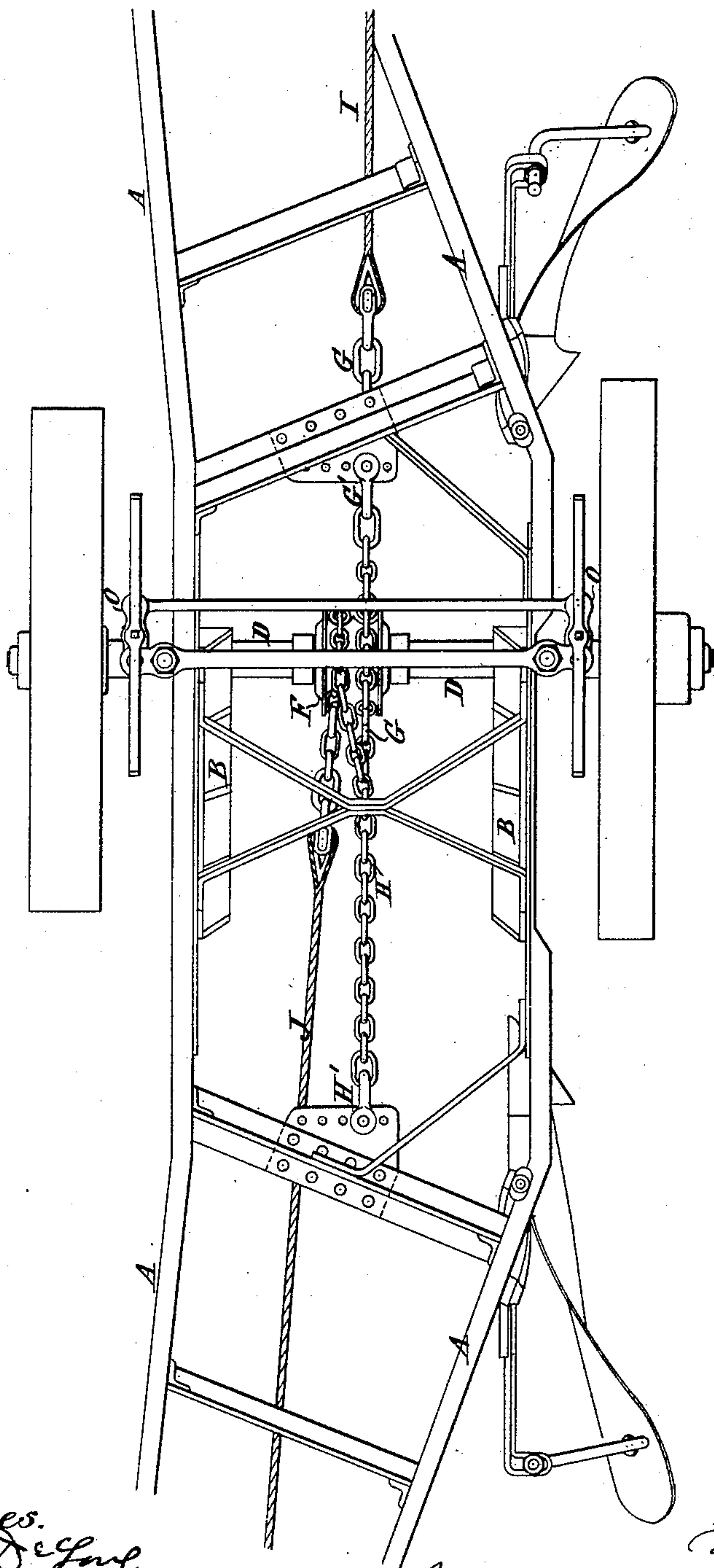
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Fig. 2.



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(No Model.)

3 Sheets—Sheet 3.

D. GREIG & T. BENSTEAD.

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Fig. 4.

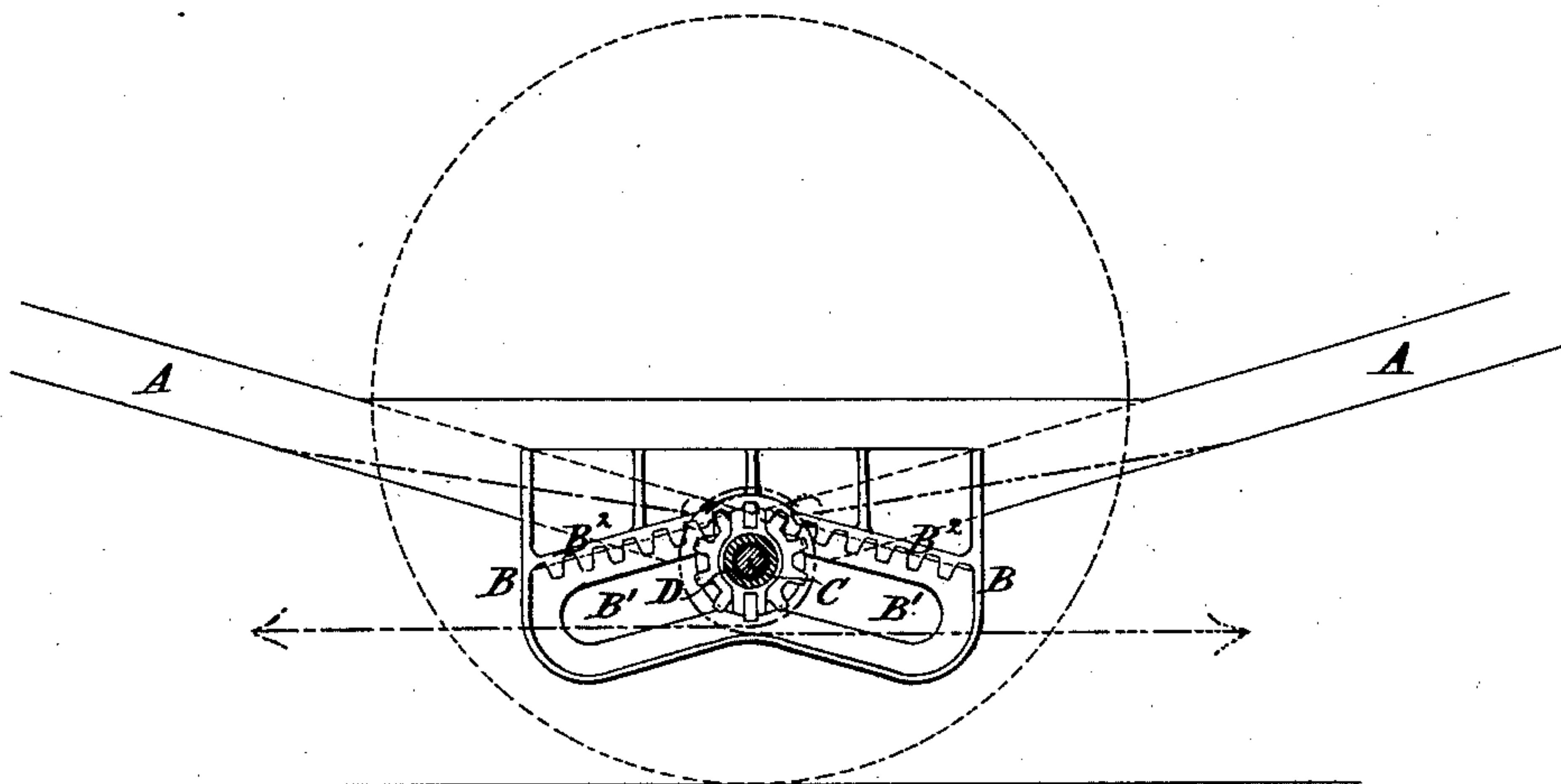
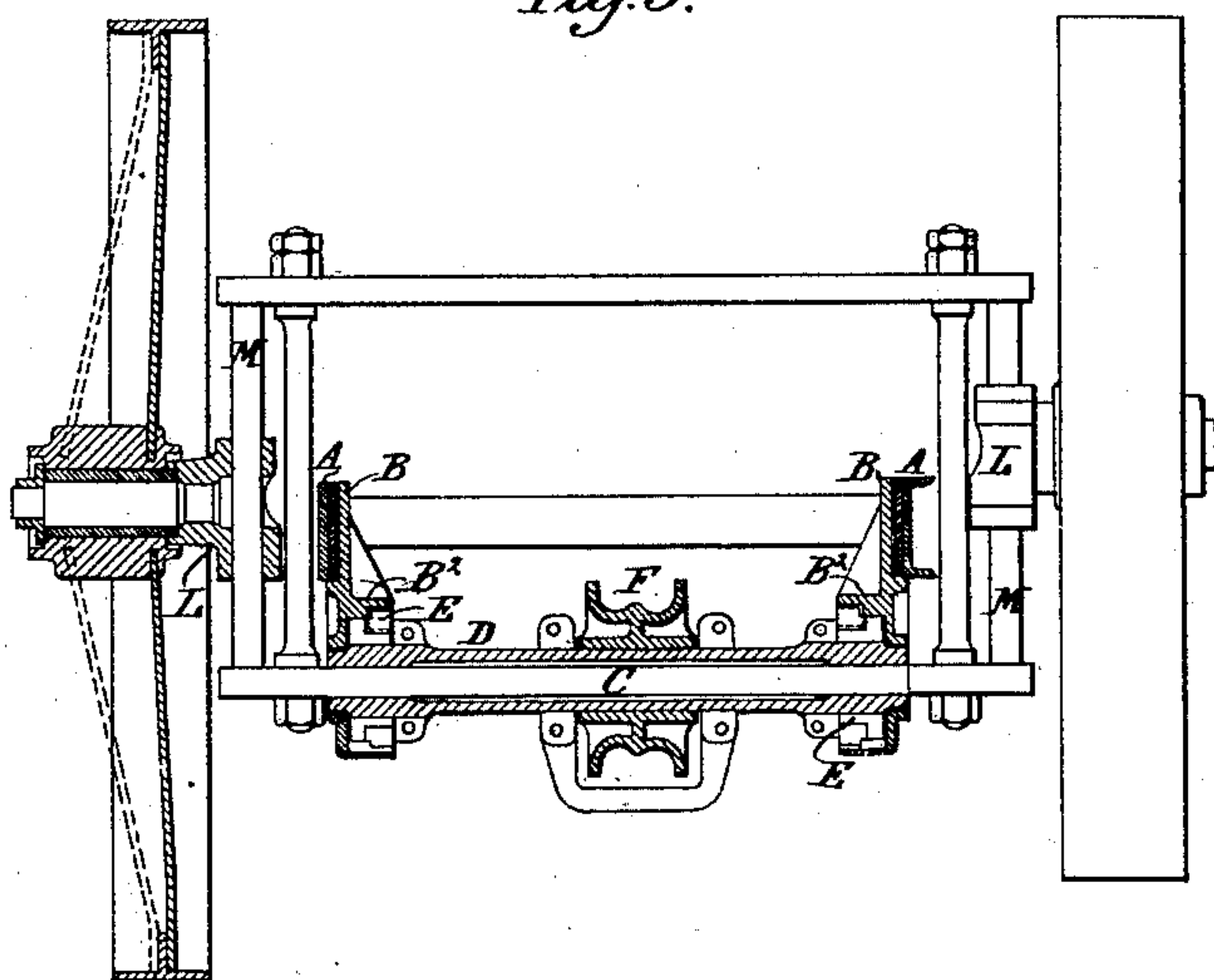


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

DAVID GREIG AND THOMAS BENSTEAD, OF LEEDS, COUNTY OF YORK,
ENGLAND.

BALANCE-PLOW.

SPECIFICATION forming part of Letters Patent No. 353,356, dated November 30, 1886.

Application filed October 11, 1886. Serial No. 215,893. (No model.)

To all whom it may concern:

Be it known that we, DAVID GREIG and THOMAS BENSTEAD, both of the Steam Plow Works, Leeds, in the county of York, England, engineers, subjects of the Queen of Great Britain, have invented certain new and useful Improvements in Balance-Plows, of which the following is a specification.

This invention consists in so constructing balance-plows that when one set of plows are set into work the center upon which the plow-beam is pivoted is pulled forward out of the center of the beam, and so shortens the length of the beam which is out of work. By these means a greater weight is brought to bear upon the plows at work, and consequently the plows will adhere more regularly to their work and give a more even surface to the bottom of the furrow.

The drawings hereunto annexed show various views of the central portion of a double balance-plow constructed to act in this manner.

Figure 1 is a side elevation, partly in section; Fig. 2, a plan view, and Fig. 3 a vertical cross-section. Fig. 4 is a vertical longitudinal section showing the plow-beam in its central position, passing from one of its working positions to the other. In this figure the chains are represented by dotted lines.

A is the plow-beam. At its center it has secured to it on each side a plate, B. C is the bar or axis upon which the plow-beam is pivoted. It passes through slots B', formed in the plate B.

D is a loose sleeve embracing the bar C, and capable of turning around it. On the sleeve D are fixed two toothed pinions, E. One gears with a toothed rack, B², on one side plate, B, and the other with a toothed rack, B², on the other side plate. On the sleeve D, at its center, is also fixed a drum, F. Two chains are led partly around this drum. One chain, G, is fixed to one arm of the plow-beam at G', and is then led over the top of and around the drum, and then back again and secured to one of the hauling-ropes, I. The other chain, H, is fixed at H' to the other arm of the plow-beam, and is similarly led over the top of the drum and back again to the other hauling-rope, J. Rings G² H², forming part of the two chains G and H, are also coupled together by a few links of chain K.

In Figs. 1 and 2 the rope I is shown to be

acting as the hauling-rope, and draws the plow forward from the point G' through a portion of each chain G and H and through the few links K which couple them together. When the plow reaches the end of the "bout," the engine at the opposite end of the field commences to pull the plow into work for the return journey. The shaft C is thereby pulled toward the center of the plow-beam A, and the opposite end of the plow to that which has been at work is then set into the ground, and the pull of the rope brings the shaft C past the center of the beam until it commences to haul the whole implement forward from the point H' through part of each chain G and H and through the few links K. The pinions and racks insure that the shaft C shall always stand across the beam at right angles to its length.

The shaft or bar C is supported by the two main wheels in the following manner: The short axles of the two main wheels project from blocks L, mounted on vertical spindles M at the two ends of a vertical rectangular frame, the lower bar of which is the bar C.

The blocks L can be raised or lowered on the spindles M by screws N, so that the height at which the shaft or bar C is carried from the ground can be adjusted, as desired.

An arm, O, on the one spindle M is also coupled to an arm, O, on the other spindle M, and the steering of the implement is effected in the ordinary manner.

Having now described our invention and the manner in which it is carried out, we declare that what we claim is—

1. A balance-plow in which the bar or shaft upon which the plow-beam is pivoted is drawn forward past the center of the beam in whichever direction the implement is being drawn.

2. The combination of the plow-beam A, toothed racks B², carried thereby, axis C, supported by the main wheels, sleeve D, loose on the axis C, pinions E, fixed upon the sleeve and gearing with the racks, drum F, and chains G, H, and K, all acting together, substantially as described.

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