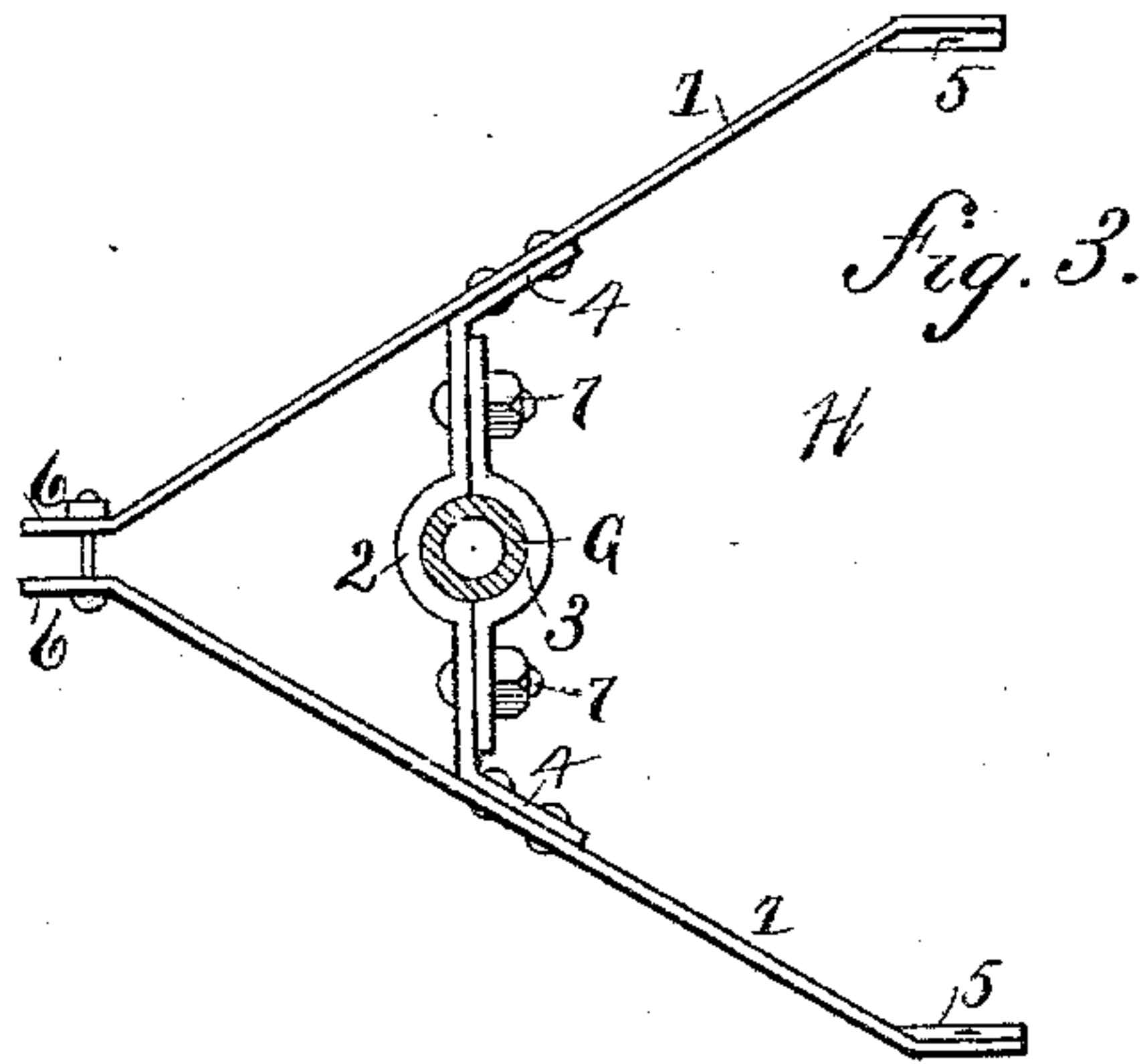
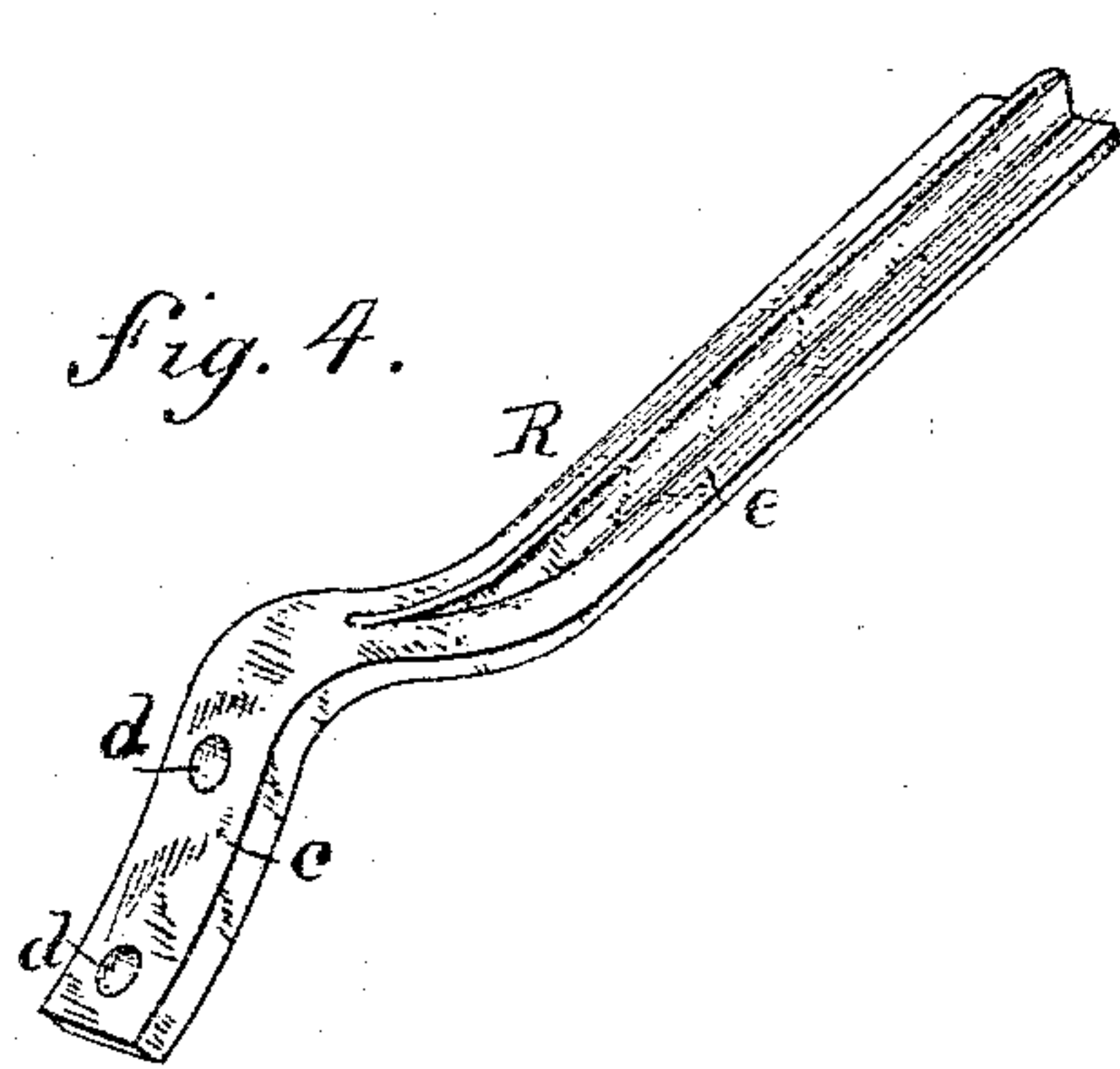
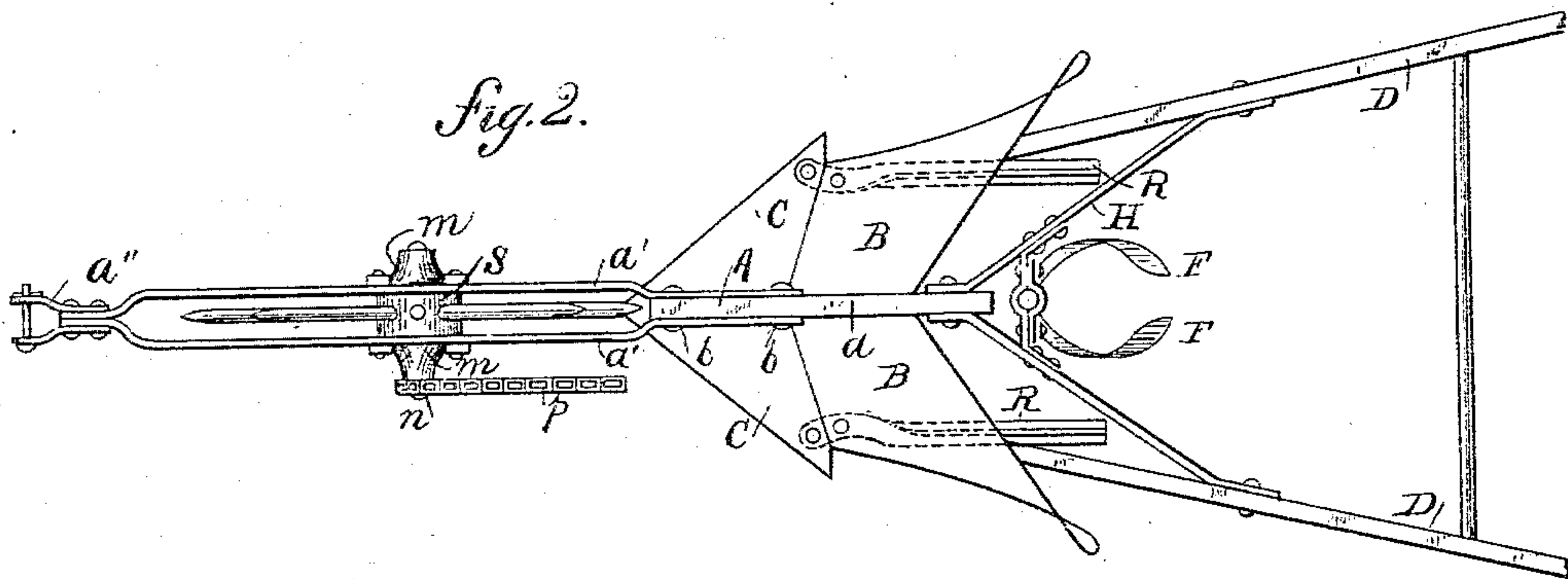
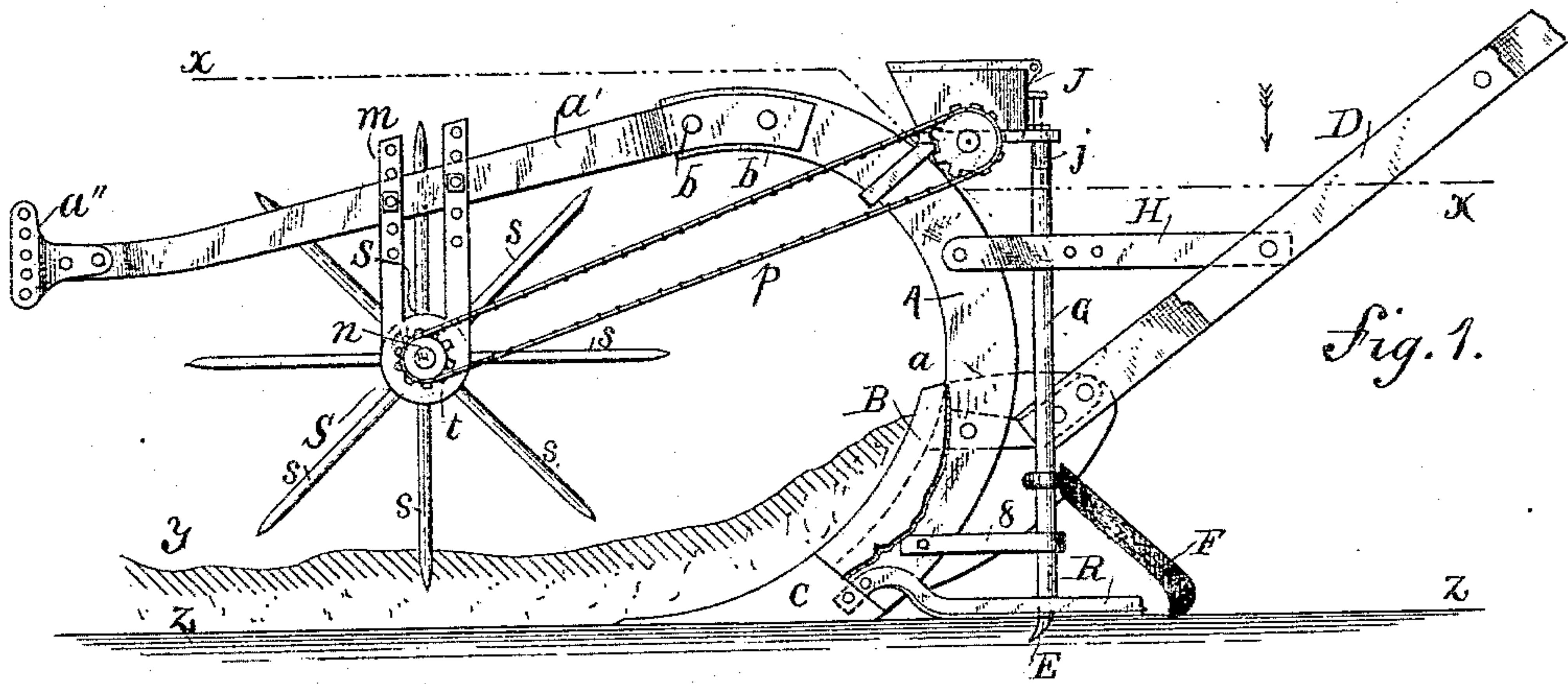


(No Model.)

J. P. BLACK.  
PLANTING PLOW.

No. 331,938.

Patented Dec. 8, 1885.



Witnesses.

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# UNITED STATES PATENT OFFICE.

JOSEPH P. BLACK, OF ALTON, ILLINOIS, ASSIGNOR TO THE HAPGOOD PLOW COMPANY, OF SAME PLACE.

## PLANTING-PLOW.

SPECIFICATION forming part of Letters Patent No. 331,938, dated December 8, 1885.

Application filed August 10, 1885. Serial No. 173,963. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH P. BLACK, a citizen of the United States, residing at Alton, in the county of Madison and State of Illinois, have invented a new and useful Improvement in Planting-Plows, of which the following is a specification.

This invention relates to planting-plows of the class known as "listing planting-plows," and has the object of providing a planting-pow that shall run more steadily, less liable to tip over, more easily held in place, and less affected by uneven ground-surface than before.

The improvement consists, first, in providing two runners bearing upon the furrow-bottom for steadying the working and assisting in holding the plow in an upright position; second, in certain other improved construction of parts, combinations, and arrangements, which will first be shown and described in the specification, and afterward pointed out in the claims.

Referring to the drawings, like letters refer to like parts in all the figures, in which Figure 1 is a side elevation of my improved listing planting-pow with parts of one handle and mold-board broken away, to better show the detail construction. Fig. 2 is a top or plan view with the seed-box J removed, to bring into view the brace-frame H, showing how said frame is combined and arranged with the plow-beam, handles, and seed-pipe. Fig. 3 is a top or plan view, enlarged, of the brace-frame H, showing its construction and how the seed-pipe is supported thereby. Fig. 4 is a perspective view, enlarged, of one of the runners R, showing how it may be constructed and how the lug *c* may be combined therewith.

My improved planting-pow may be provided with the double or two shares C C, the two mold-boards B B with the handles D D, the seed-box J, seed-pipe G, drill-tooth E, and covering-blades F F, as usual and well known and shown in the drawings.

The beam A, which I name and call "open-bar beam," I preferably construct as follows: *a* represents the rear part, which may be termed "standard," consisting of a single bar bent curved, its rear end curved downwardly, and the mold-boards and share connected thereto, its front end curved forward to connect with the front part of said beam. *a' a'* represent the

front part, consisting of two flat bars having their front ends joined, and a clevis, *a''*, connected thereto, their rear ends embracing the front end of the said rear part and rigidly attached thereto by the bolts or rivets *b b*. The said flat bars *a'*, I preferably bend with offsets, so as to provide for a suitable space between them in which the wheel S may move without interference, as will be understood by inspecting the drawings. The said beam constructed as above shown is of a shape better adapted to connect with and support all the parts of the planting-pow, of lighter weight, and stronger than heretofore, and is one of the essential features of my invention.

S represents a sprocket-wheel for operating the seed-dropping wheel, consisting of the hub *t*, provided with the spokes *s*, rigidly set therein and having their outer ends preferably sharp-pointed for easily entering the ground. The said wheel is journaled in the hangers *m m*, which may be adjustable up and down by the series of perforations in its arms, as shown in Fig. 1, by which the said wheel may be moved and adjusted up and down, and the spokes *s* made to enter the ground a greater or less depth, as may be desired.

*n* represents a pulley attached to the journal of the hub *t*, and caused to revolve by rotating the said wheel, and the belt *p*, connecting with the wheel J, operates the seed dropping, as will be understood by inspecting the drawings.

It will be observed that in the arrangement and operation the beam A admits the wheel S to be located and travel in the center line of working in advance of the plow and between the bars *a' a'*, by which the spokes will enter the soil a greater or less depth and over uneven ground, and cause the wheel to rotate without any tendency to stagger, tip, or lift the plow from a level line of working, doing better work than heretofore, as will be understood by inspecting Fig. 1, in which *y* represents the uneven top of the ground, and *z* the line of level working of the plow.

R R represent runners attached to the plow and extending rearwardly in such a manner as to rest upon the bottom of the furrow, and I preferably connect said runners so that they shall slide along the outer edge of the furrow, by which they support, steady, and assist in



holding the plow from careening or tipping, and by which the plow is operated with greater ease than heretofore. The said runners R may consist of the flat bar *e*, with a center rib, as shown, to rest upon the ground, its front end bent upwardly, as a sled-runner, to more readily slide along, and its front end may form the lug *c*, with perforations *d d*, to connect with the plow, and the said lug may preferably be utilized and used to connect the outer end of the share to the mold-board, as will be understood by inspecting the drawings.

H represents what I call and name "brace-frame," connecting and bracing the beam with the handles and seed-pipe, as shown, consisting of two flat bars, 1 1, with their ends perforated and bent for attachment to the beam A and handles D D, the cross-bar 2, having its ends 4 4 bent and rigidly attached to the bars 1 1, and its center part formed to fit and support the seed-pipe G, and the cap-bar 3, embracing the seed-pipe G, and adjustably attached to the said cross-bar 2 with bolts 7 7, as shown in detail in Fig. 2, by which the bars 1 1 connect and brace the handles with the beam, the cross-bar 2 affords a seat and support for connecting the seed-pipe G, and the cap 3 admits the seed-pipe G being moved and adjusted up and down and rigidly held in any desired position, as will be understood by inspecting the drawings.

Having thus set forth my invention, I claim—

1. The beam A, its rear part consisting of a single bar bent curved and supporting the mold-board and share, its front part consisting of two bars having their front ends joined and supporting a clevis, their rear ends embracing the said rear part and rigidly attached thereto, and a suitable space between the said two bars to admit an operating-wheel, in combination with a listing-plow provided with seed-planting mechanism and an operating-wheel, all substantially as and for the purpose set forth.

2. The sprocket-wheel S, consisting of a hub provided with spokes rigidly attached thereto, and having their outer ends pointed, and the two hangers *m m*, adjustable up and down, in combination with the beam A, having its rear part of a single bar, and its front part of two bars, and with a listing-plow provided with a drill-tooth and covering-blades, all substantially as and for the purpose set forth.

3. In a planting-plow, the combination of the sprocket-wheel S, the hangers *m m*, pulley *n*, and belt *p*, with the beam A, provided with and carrying the share C, the mold-board B, the seed-box J, seed-pipe G, drill-tooth E, covering-blades F, and handles D, all constructed and arranged to operate substantially as and for the purpose specified.

4. The runner R, consisting of a bar having its front end bent upwardly and adapted to slide upon the bottom of the furrow, and having at its front end the lug adapted to connect the share and mold-board, substantially as and for the purpose set forth.

5. The brace frame H, consisting of two flat bars, 1 1, having their ends bent, perforated, and attached to the beam and handles, the cross-bar 2, and the cap 3, embracing the seed-pipe and connected to the said bars 1 1, all constructed, arranged, and adapted to operate substantially as and for the purpose set forth.

6. In a planting-plow, the combination of the open-bar beam A, the sprocket-wheel S, the shares C, mold-boards D, the seed-box J, seed-pipe G, drill-tooth E, and covering-blades F, the brace-frame H, and handles D, all substantially as and for the purpose set forth.

JOSEPH P. BLACK.

Witnesses:

J. H. FORSYTH,  
GEO. B. HUNT.