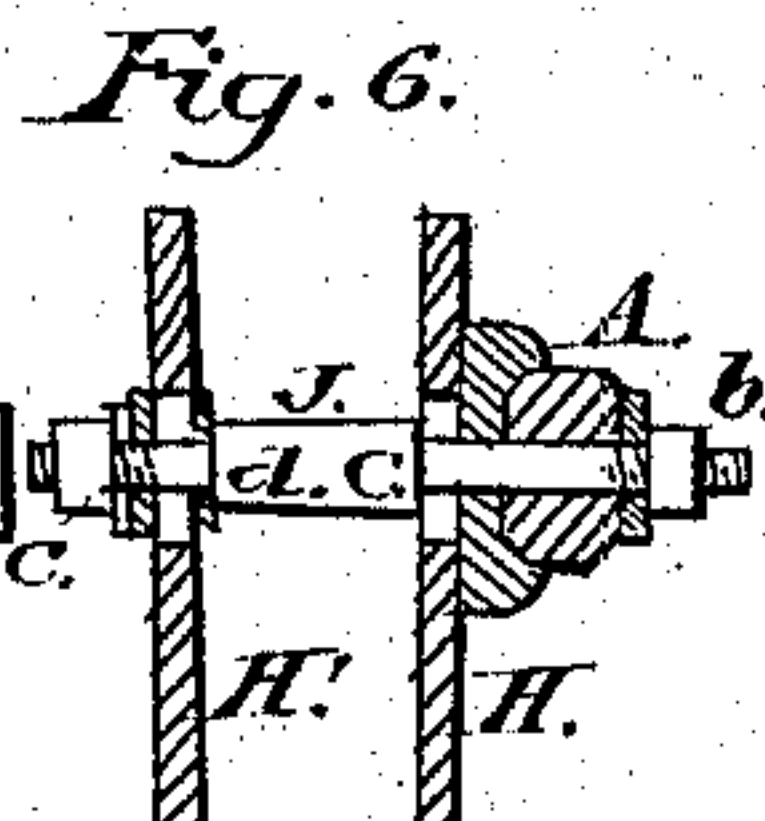
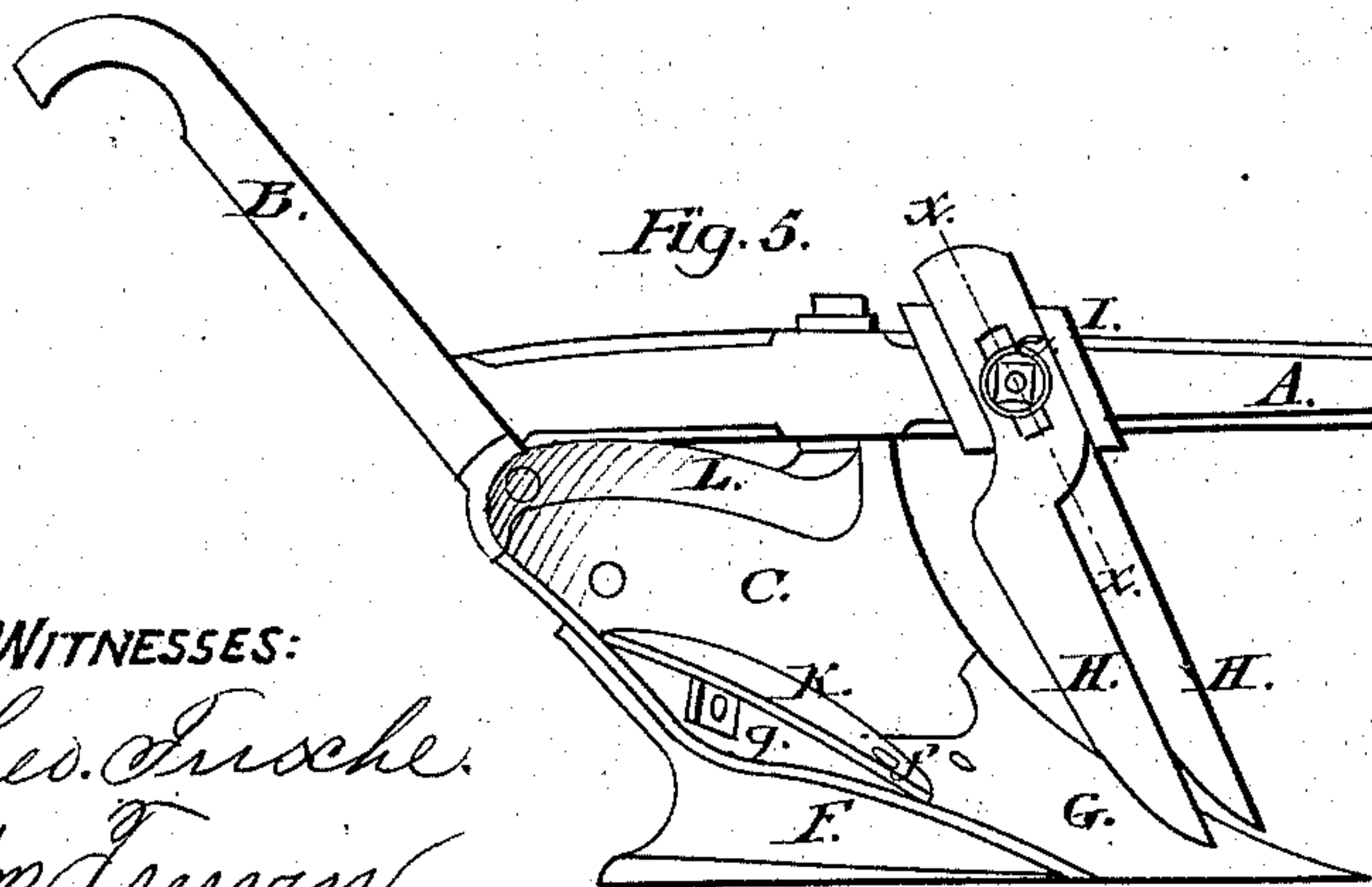
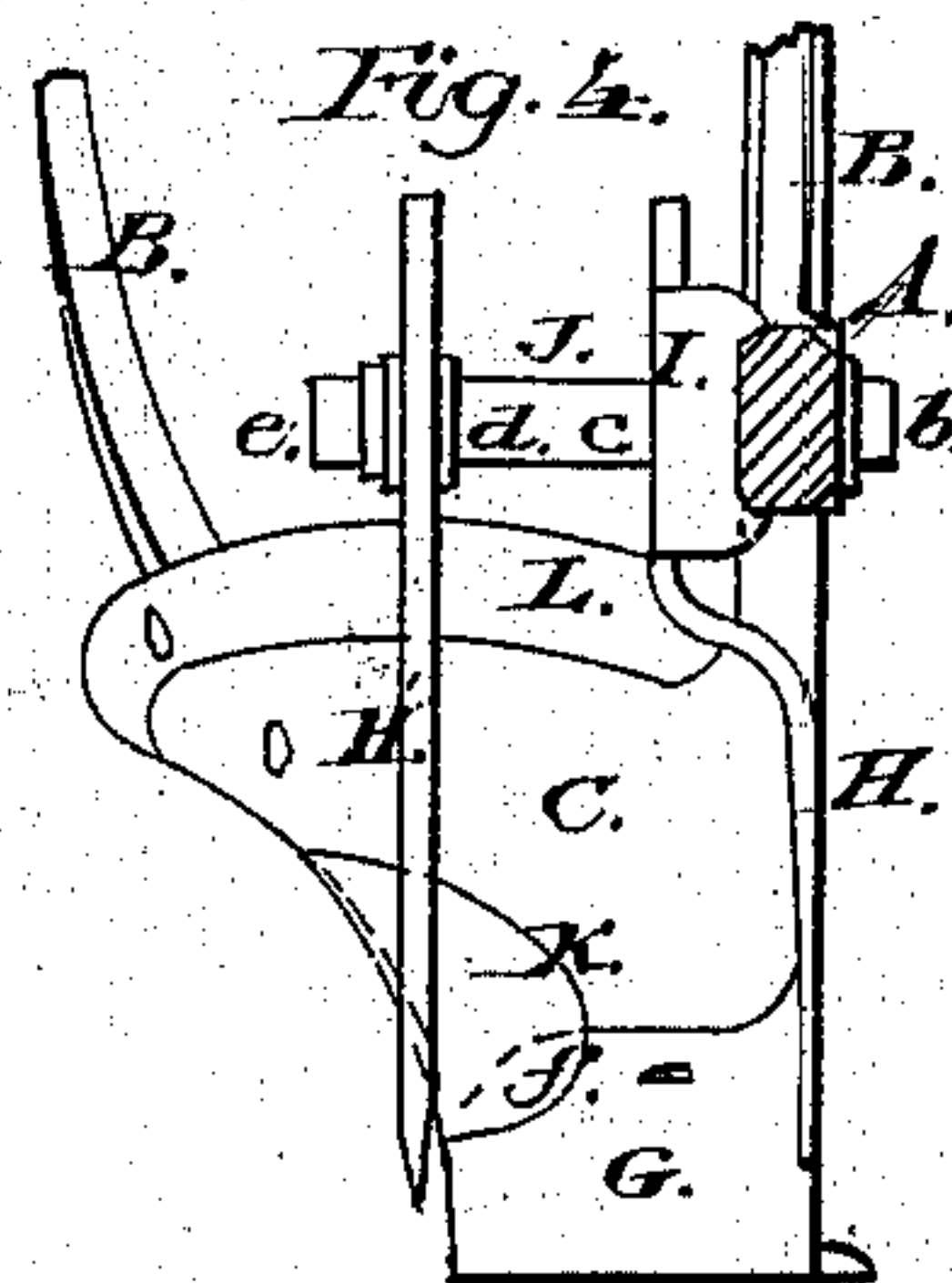
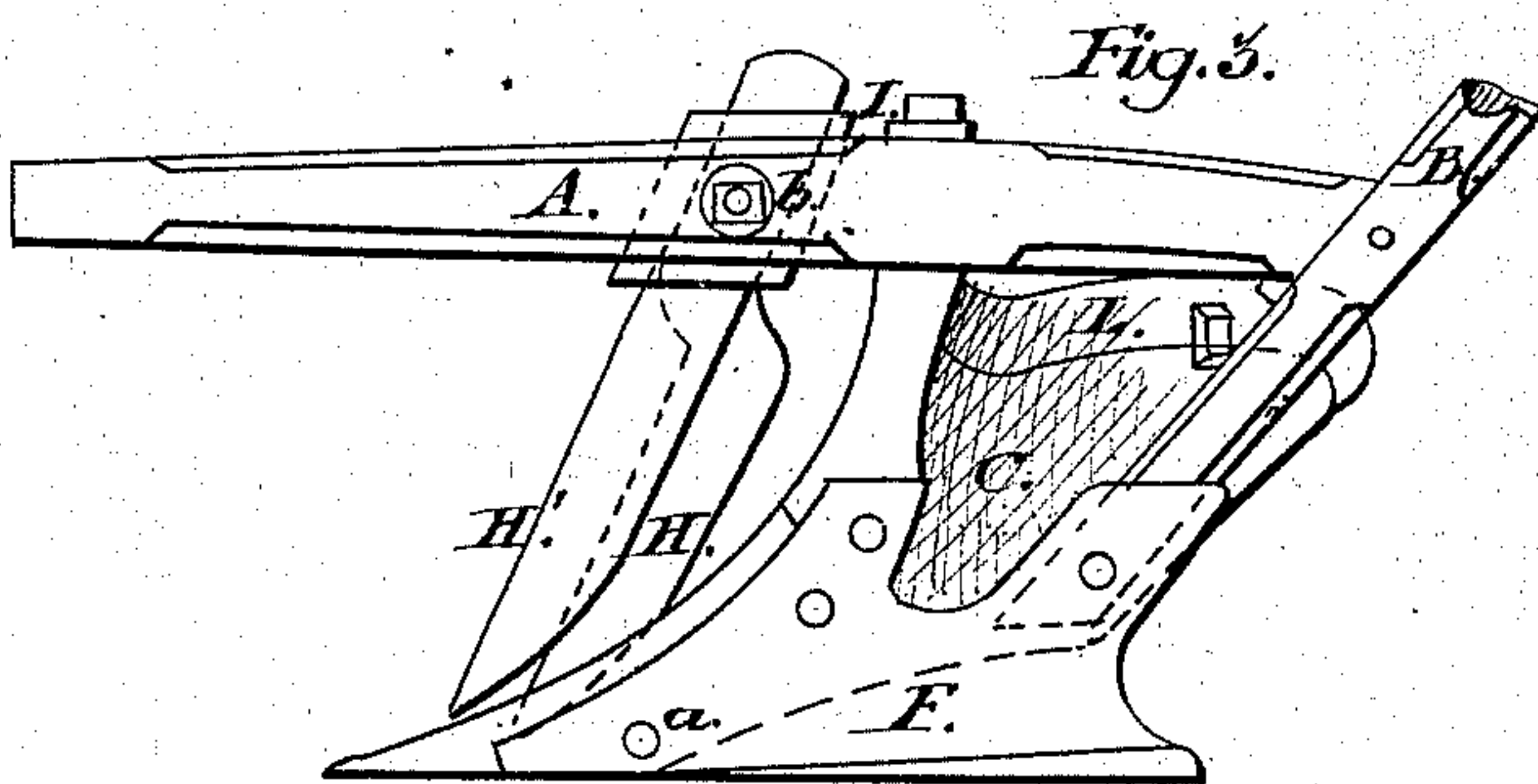
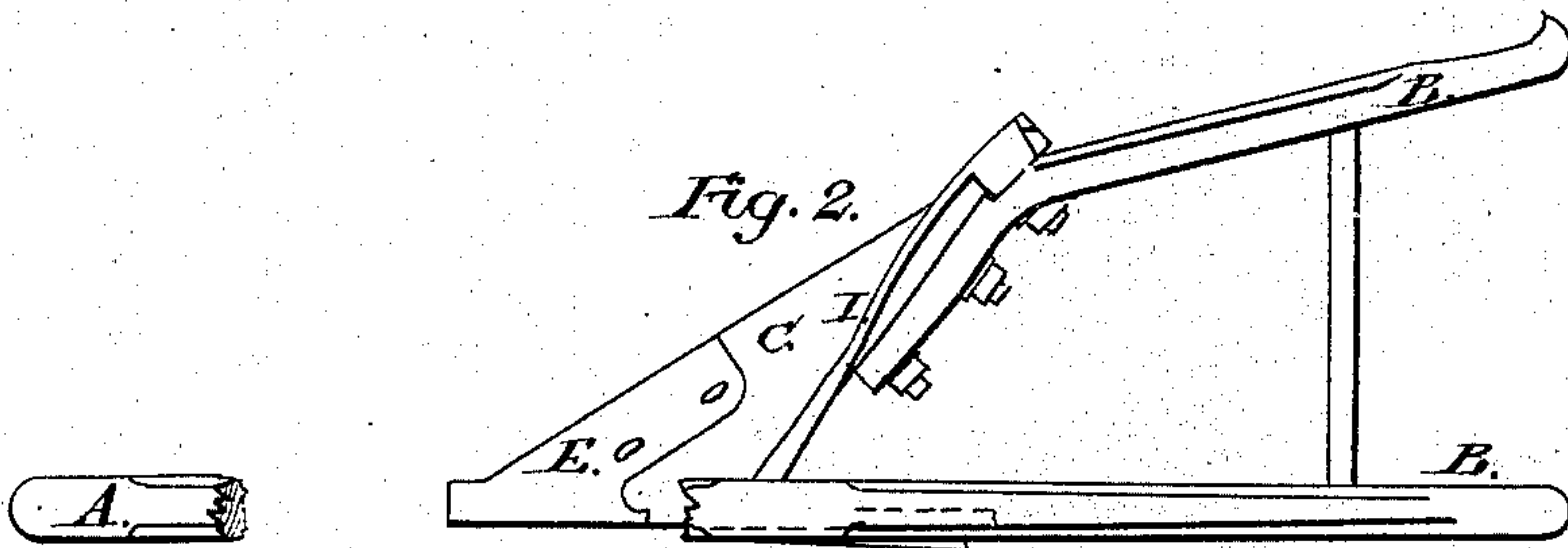
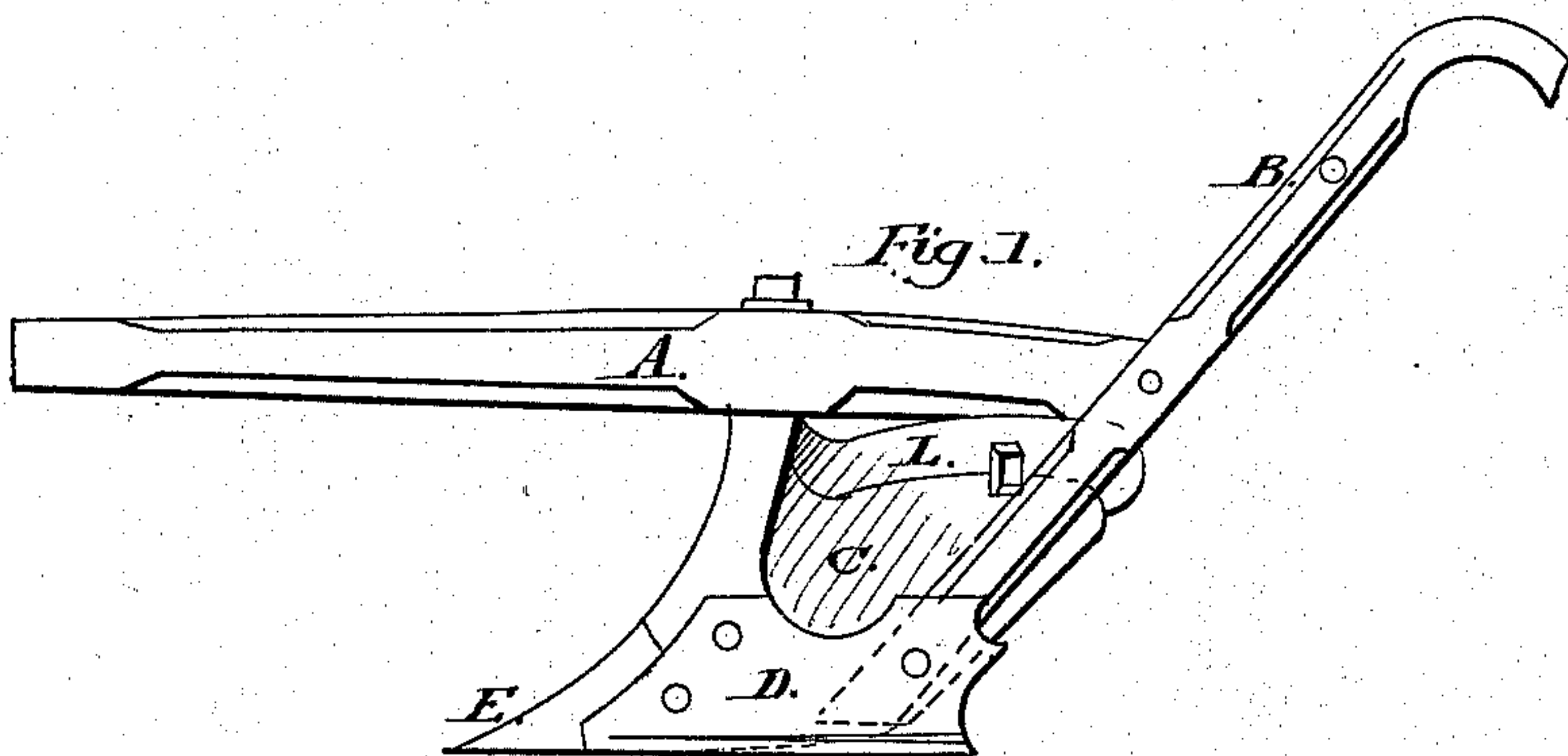


C. W. Grant.

Plow.

Nº 67,976.

Patented Aug. 20, 1867.



WITNESSES:
Theo. Trusche.
Wm. Fennell.

INVENTOR:
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United States Patent Office.

C. W. GRANT, OF IONA ISLAND, NEW YORK.

Letters Patent No. 67,976, dated August 20, 1867.

IMPROVEMENT IN PLOUGHS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, C. W. GRANT, of Iona Island, in the county of Rockland, and State of New York, have invented a new and improved Plough, and that the following description, taken in connection with the accompanying drawings, hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvements, by which my invention may be distinguished from all others of a similar class, together with such parts as I claim and desire to have secured to me by Letters Patent.

This invention has for its object the converting or transforming of any ordinary tillage-plough into an implement capable of performing many important offices for which the ordinary ploughs are either entirely incompetent or very imperfectly adapted, such, for instance, as working the soil to a great depth by bringing the unfertile portion from any desirable depth not exceeding two feet and comminuting and mingling it thoroughly with the surface soil, or, if desired, by bringing the subsoil wholly from the bottom and placing the surface soil below, entirely reversing it, and performing the work called "trenching" when done by a spade. The invention will also perform the work of a ditching-plough, open trenches for ditching, and chiefly remove the earth nearly to the depth of two feet. In the accompanying sheet of drawings—

Figure 1 is a side view of an ordinary tillage-plough, commonly known as the "D-plough."

Figure 2, a plan or top view of the same.

Figure 3, a side view of the same converted or transformed into a deep-tillage plough.

Figure 4, a front view of fig. 3.

Figure 5, a side view adapted as a trenching-plough.

Figure 6, a section of fig. 5 taken in the line *x x*.

Similar letters of reference indicate like parts.

In constructing my invention, I use the plough known as the "D" and the size "2½-D," for the reason that this kind of plough combines many of the most desirable points of our best tillage-ploughs, and the size named is the best adapted for ordinary agricultural purposes. My invention, however, is applicable to all good tillage-ploughs. A represents the beam of the plough; B B, the handles; C, the mould-board; D, the land side, and E the share of the ordinary "D-plough." These parts being old and well known, do not require a special description. In converting or transforming the plough into a deep-tillage, ditching, and trenching one, I apply a large land-side, F, (see fig. 3,) one additional bolt, *a*, only being required, and I also apply a long share, G, corresponding to the increased size of the land-side. The substitution of these two parts greatly increases its capacity for deep tillage, ditching, and trenching. I employ two coulter H H', one of which, H, nearest the beam, is slightly in advance of the other, H', and is fitted in a metallic socket, I, which is secured to the beam by a bolt, J, the latter passing horizontally through the beam and socket, and having a screw-nut, *b*, on its end, by which a shoulder, *c*, on the bolt is made to clamp the socket firmly to the beam, (see fig. 4.) On the opposite end of the bolt J there is a similar shoulder, *d*, and the bolt at this end is provided with a screw-nut, *e*, by which the other coulter H' is secured in position. These two coulters are placed in line with the sides of the share G, and cut the earth so that the mass between them may be raised with facility by the share G and turned over by the mould-board C, which is of the usual helicoidal form. In cases where the subsoil is to be elevated and turned over upon the surface soil, which is commonly termed "trenching," I employ a supplemental part, K, which is, in fact, an auxiliary to the share, as it assists in raising the subsoil and elevating it sufficiently to admit of the mould-board turning it over upon the surface soil. Without this supplemental part K the subsoil and the surface soil would be mingled together and comminuted, and hence when the implement is used for deep tillage and ditching the part K is detached. This part K is secured in position by one of the bolts *f* at the upper part of the share G, and by a lug, *g*, at its upper part, through which and the mould-board a bolt, *h*, passes. In deep ploughing, say a greater depth than twelve inches, an extension of the mould-board C is necessary, and this is effected by adjusting a strip, L, to the upper edge of the mould-board, which strip may be about three inches in width. Strips of different widths, however, may be applied, as occasion requires. My improved plough is preceded by an ordinary tillage-plough, except when used for ditching, and in the latter operation the coulters H H' are indispensably necessary.

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

1. The supplemental share G and land-side F, when used in connection with or applied to an ordinary tillage-plough, substantially in the manner as and for the purpose set forth.
2. The supplemental or auxiliary share K, applied to the share and mould-board, substantially as and for the purpose specified.
3. The two coulter H H', applied to the beam, and used in connection with the supplemental share G and land-side F, substantially as and for the purpose set forth.
4. The supplemental strip L for the mould-board C, when used in combination with the supplemental share and land-side, substantially as and for the purpose specified.

The above specification of my invention signed by me this 25th day of June, 1867.

C. W. GRANT.

Witnesses:

J. A. SERVICE,

ALEX. F. ROBERTS.