

# SOLON COOLEY.

## Improvement in Plows.

No. 120,718.

Patented Nov. 7, 1871.

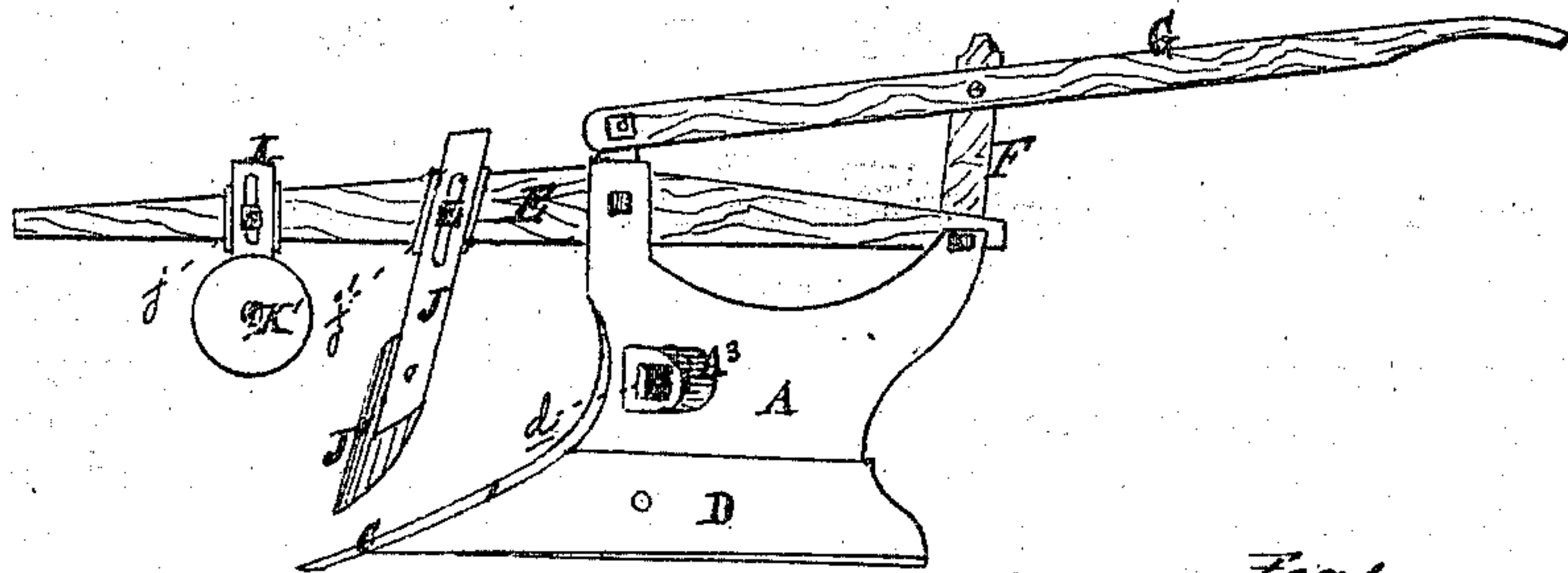


Fig. 1

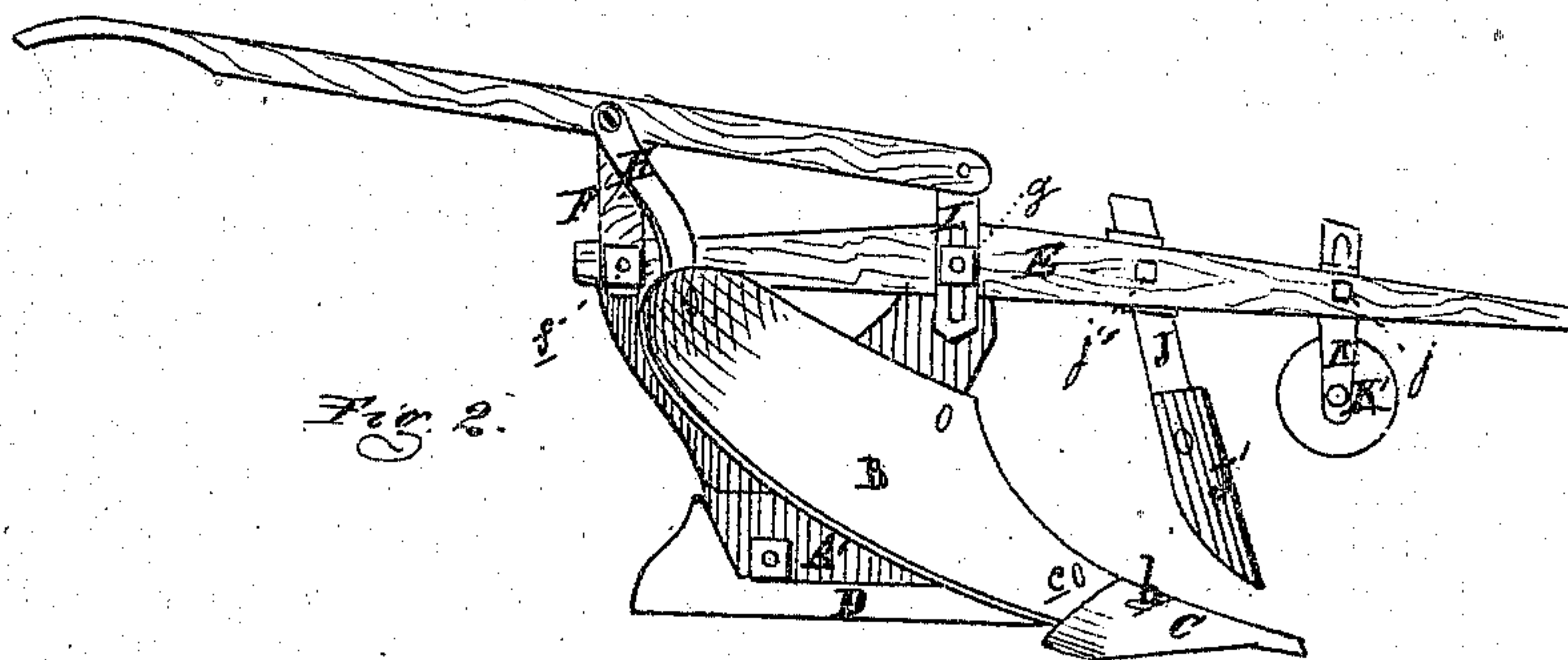


Fig. 2.

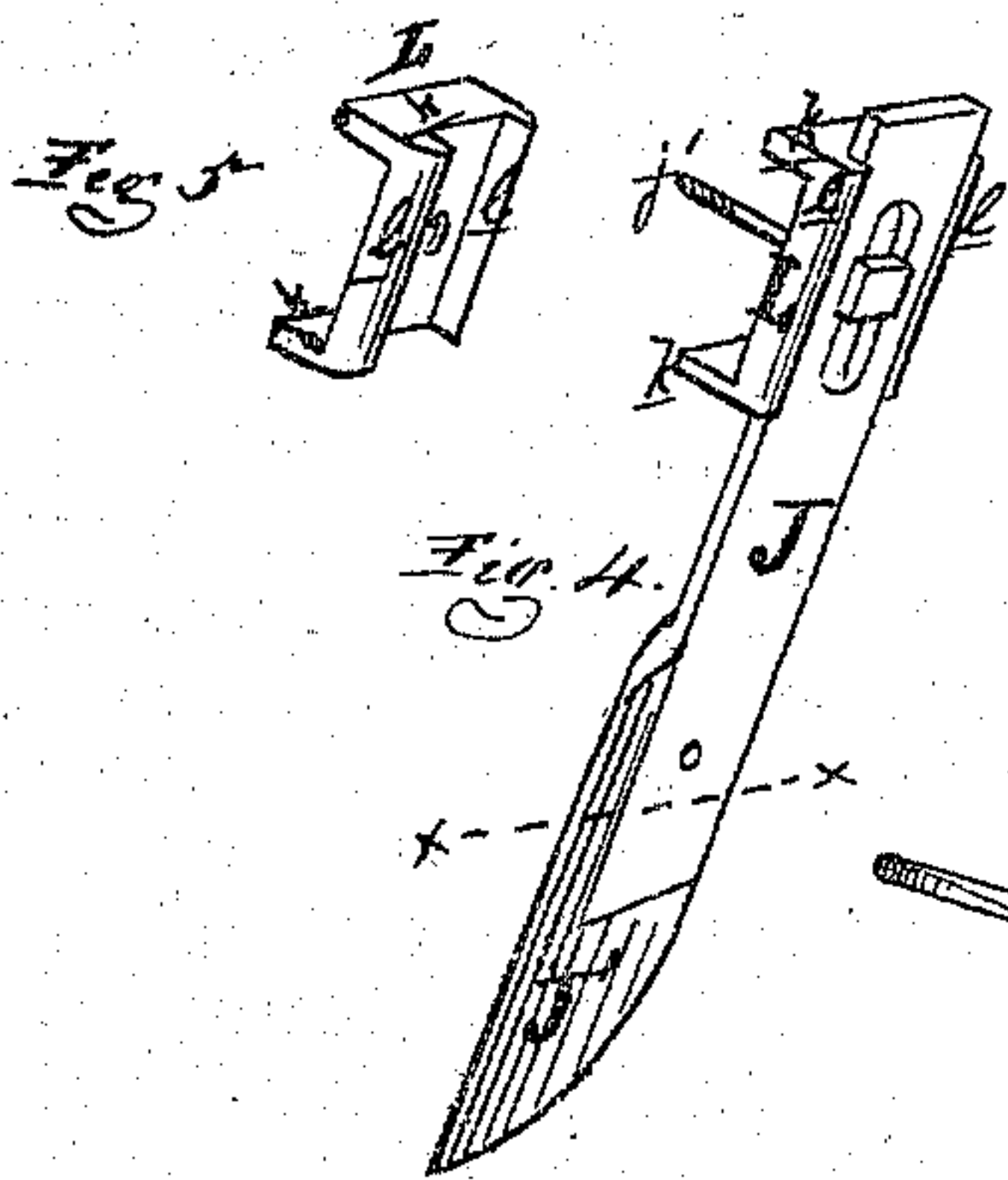


Fig. 3.

Fig. 4.

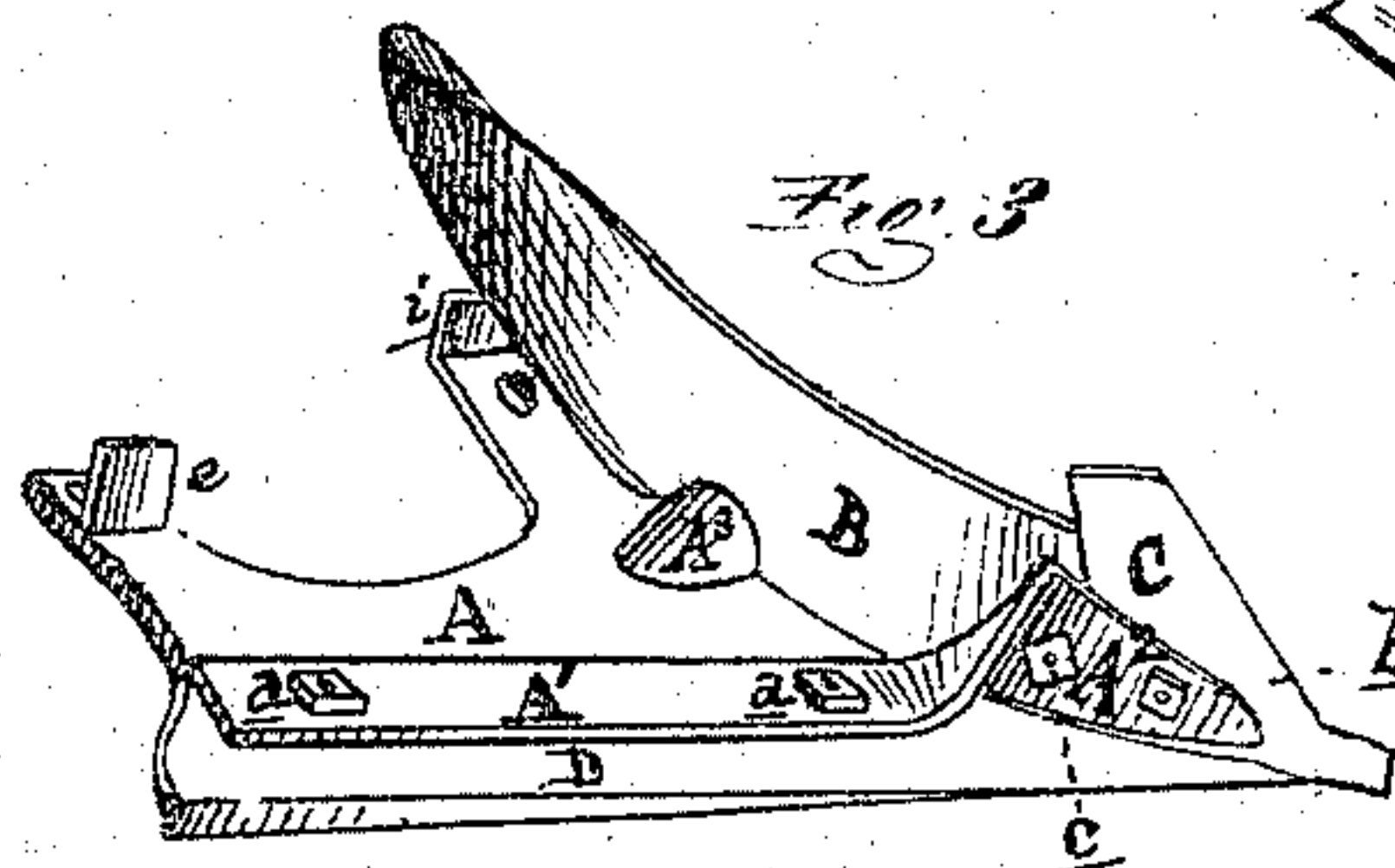


Fig. 5.

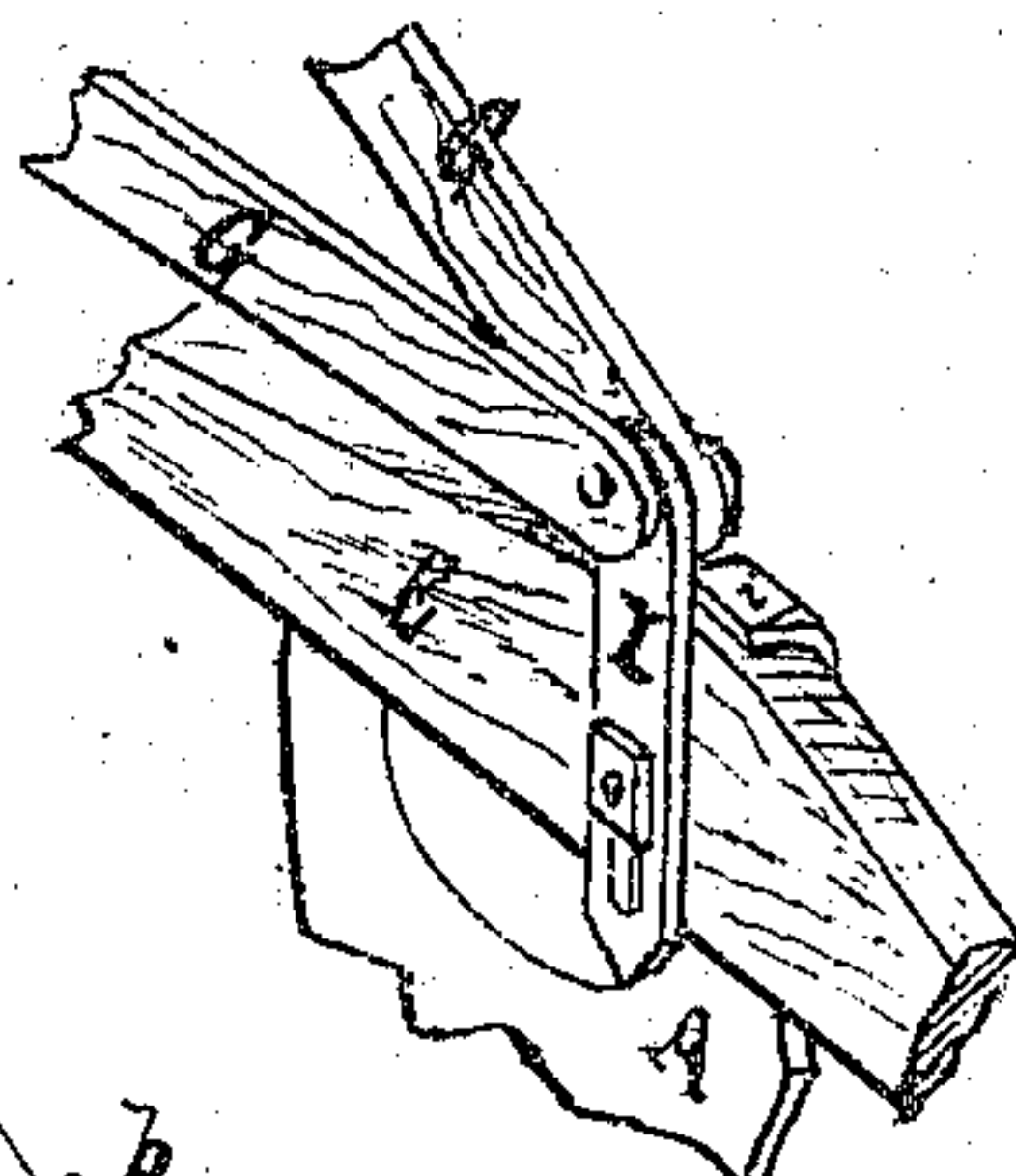


Fig. 6.

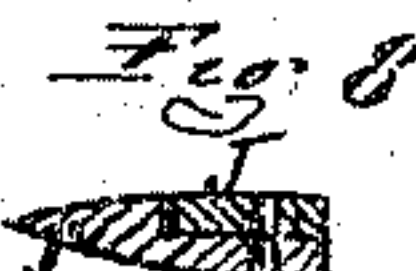


Fig. 7.

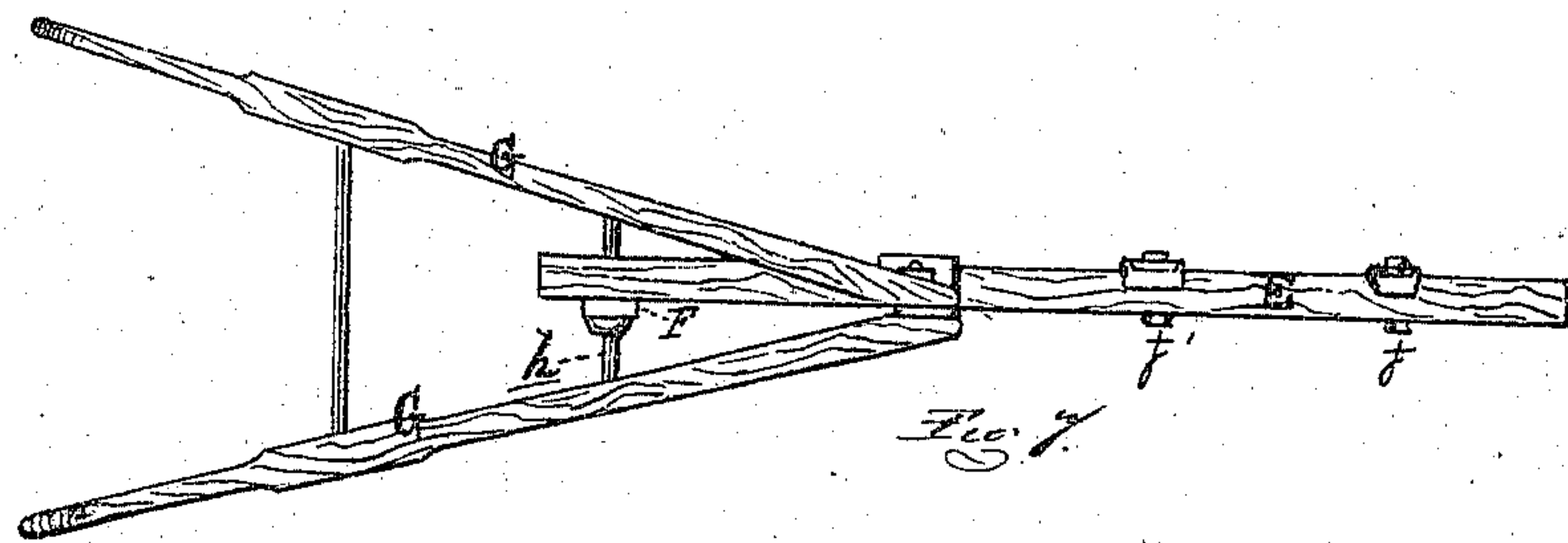


Fig. 8.

ATTEST.  
H. F. E. Church  
Myron H. Church

INVENTOR:  
Solon Cooley  
per attorney  
Thos S. Sprague



# UNITED STATES PATENT OFFICE.

SOLON COOLEY, OF CLARKSTON, MICHIGAN.

## IMPROVEMENT IN PLOWS.

Specification forming part of Letters Patent No. 120,718, dated November 7, 1871.

*To all whom it may concern:*

Be it known that I, SOLON COOLEY, of Clarkston, in the county of Oakland and State of Michigan, have invented a new and useful Improvement in the Construction of Plows; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon and being a part of this specification, in which—

Figure 1 is an elevation of my improved plow from the land-side thereof. Fig. 2 is an elevation from the furrow-side. Fig. 3 is a detached perspective view of the under side of the point, share, land-side, and beam-plate. Fig. 4 is a perspective view of the colter. Fig. 5 is a similar figure, showing the form of the colter and wheel-shank plates. Fig. 6 is a similar figure, showing the method of adjusting the pitch of the handles. Fig. 7 is a plan of the beam and handles; and Fig. 8 is a cross-section of the colter taken on the line *x x* in Fig. 4.

Like letters indicate like parts in each figure.

The nature of this invention relates to certain improvements in the construction of plows, whereby greater uniformity is secured in casting the beam-plates thereof; freedom from side-draft in use; straight handles, adjustable to any desired pitch; a sectional colter, the wearing part of which is readily and cheaply replaced when worn out; and greater strength and durability, from the novel and peculiar manner in which the various parts are secured. The invention consists, first, in the peculiar form of the beam-plate, whose pattern is in one piece, whereby a certain and uniform fitting of the braces, plates, and bolt-holes is secured, which is impossible where sectional patterns are used in molding; second, in placing the beam wholly on the furrow-side of the beam-plate, being attached thereto by horizontal bolts, thereby bringing the beam near the middle line of the plow and avoiding side-draft; third, in making the colter in two separate parts, so that when necessary the worn-out part may be easily and cheaply renewed; and, fourth, in the peculiar means employed to secure the wheel-shank and colter to the beam, as more fully hereinafter set forth.

In the drawing, A represents the beam-plate of my plow, cast with a deep offset skirt at the lower edge, forming the land-side strip A<sup>1</sup>, which

is extended laterally across to the lower corner of the mold-board B, and thence down under it and the plow-point C, forming a support, A<sup>2</sup>, for both. It is also cast with a recessed projection, A<sup>3</sup>, in the front part, against which the front upper corner of the mold-board rests. The parts A, A<sup>1</sup>, A<sup>2</sup>, and A<sup>3</sup> are cast in one piece, with the necessary bolt-holes cored out in molding, from a single solid pattern, the conformation of which is such that it may be drawn from the sand; while heretofore the patterns have been made in sections, resulting in castings which were not uniform in contour, often would not go together with the other parts of the plow, and more frequently the bolt-holes would not match with those cast in the other parts, entailing an expense to ream them before the bolts could be inserted. D is the land-side of the plow, which is secured to the land-side strip of the beam-plate by the bolts *a*, in the usual manner. The plow-point is secured in like manner to the part A<sup>2</sup> by a bolt, *b*; and the lower front end of the mold-board is secured to the same part by a bolt, *c*, while its upper front part is secured to the beam-plate by a threaded bolt, *d*, inserted from the furrow-side through the inner face of the recess A<sup>3</sup>, where it receives a screw-nut, as shown in Fig. 1. The rear standard of the beam-plate is cast with a bracket, *e*, on the furrow-side, on which rests the rear end of a straight wooden beam, E, which is bolted by a horizontal bolt, *g*, to the furrow-face of the front standard, while the rear end is in like manner secured to the rear standard of said beam-plate by a bolt, *f*. Between the nut of this bolt *f* and the beam the lower end of the handle-standard F is sleeved thereon. Through the upper end of F the front cross-bar *h* of the straight handles G is passed. From the projecting end of the bar *h* a brace, H, extends, and is bolted to the upper corner of the mold-board, so that the handles are practically pivoted at the standard F. From the front ends of the handles a slotted plate, I, serrated on its inner edges, is suspended, and the bolt *g* passes through its slot to receive its nut, which binds the plate I, beam, and beam-standard together, while the handles may be readily given any desired pitch. The front or beam-standard of the beam-plate is cast with a flange or plate, *i*, which extends over the top of the beam to relieve the bolt *g* of the strain which would otherwise be exerted upon it in



plowing. By placing the beam on the furrow-side of the beam-plate and attaching it thereto by horizontal bolts it is brought nearer to the draft-line of the plow and thus avoids side-draft. The colter I make in two parts and of different metals, of which the shank J is of wrought or malleable iron, and the cutter J' preferably of chilled or case-hardened cast-iron, recessed on one side, back of the front edge, to receive the shank, to which it is secured by a suitable bolt, as shown. When worn the cutter J' is readily and cheaply replaced with a duplicate, the shanks and cutters being interchangeable. I would here state that colters made of two different metals welded together are not new, my invention consisting only in making them separately and securing them together by a bolt. K is the wheel-standard, carrying a wheel, K', of the ordinary construction. The wheel-standard and colter are secured to the beam by the bolts *j j'*, respectively; but between each and the beam I interpose a lock-plate, L, cast with top and bottom flanges *k*, to grasp the top and bottom faces of the beam,

and with side flanges *l*, to receive the shank of the colter and the wheel-standard. These plates L, it will be seen, firmly lock the parts to the beam.

My improved plow may have a curved beam of wood or metal, as well as that shown, which is preferred on account of cheapness and ease of application.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The beam-plate A, having the parts A<sup>1</sup>, A<sup>2</sup>, and A<sup>3</sup> of the form shown, all cast in one piece from a solid pattern, substantially as described.

2. The plow-colter J', provided upon its land-side with a recess which corresponds to and receives the adjustable standard J, in combination with said standard, substantially as and for the purpose specified.

SOLON COOLEY.

Witnesses:

OVANDA COOLEY,  
ELLEN COOLEY.

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