P. S. CARHART.

Harrows.

No. 157,792. Patented Dec. 15, 1874.

Fig. 1.

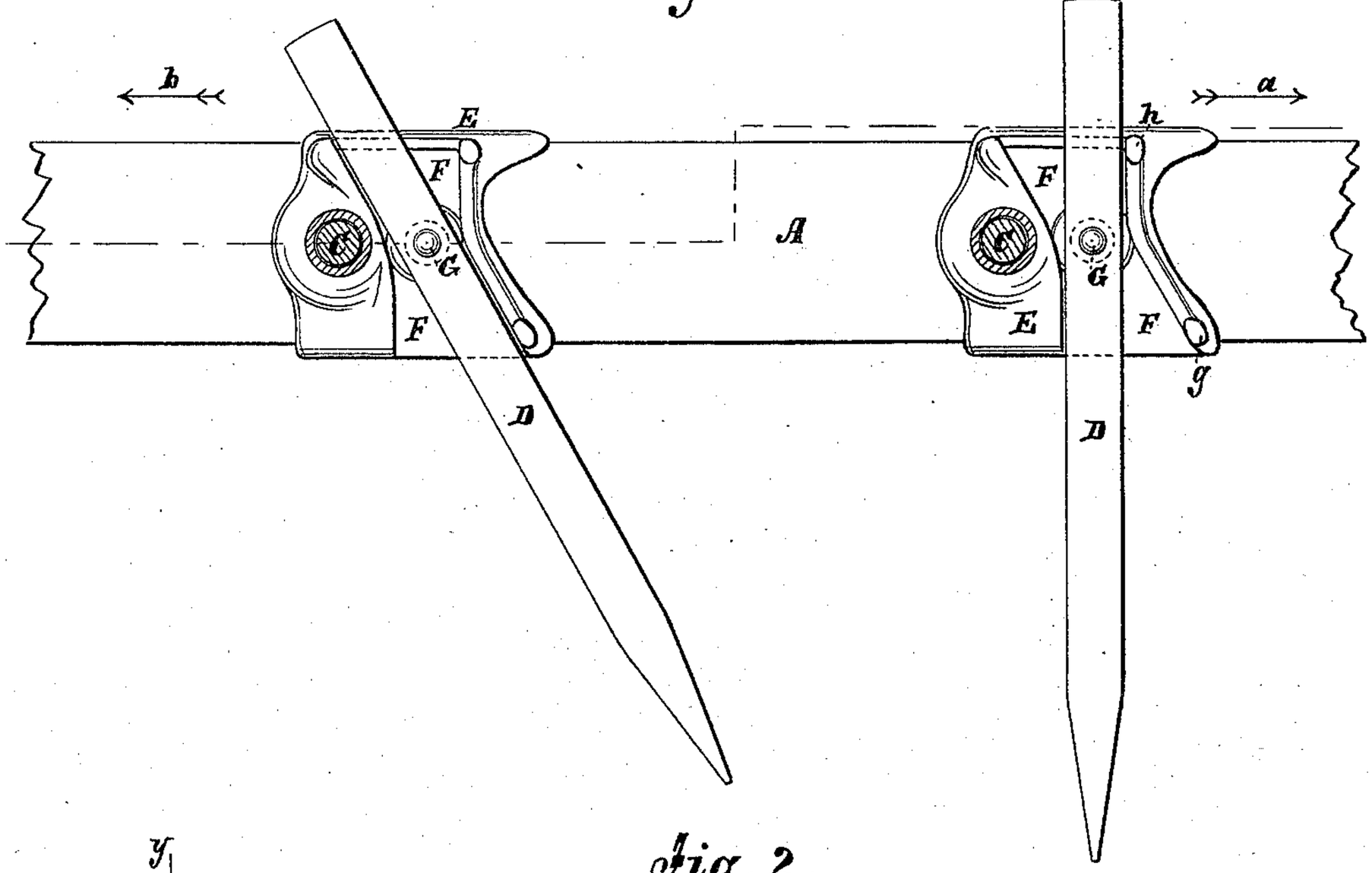


Fig. 2.

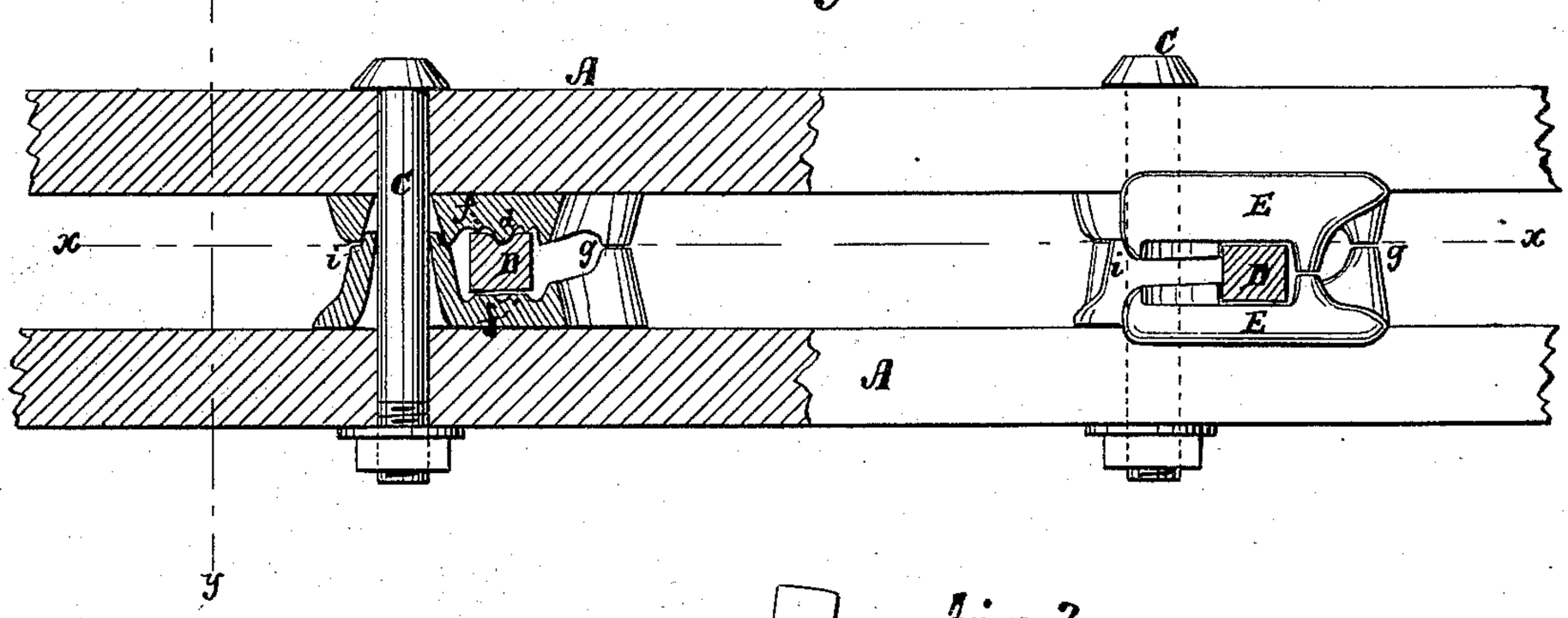
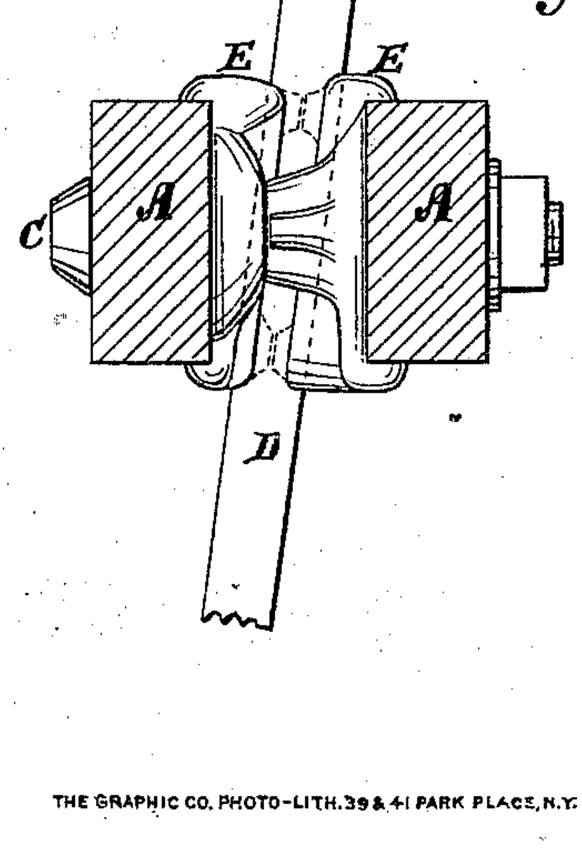


Fig. 3.



WITNESSES:

A Bennenendorf.

A. F. Terry

INVENTOR:

Peter S. Carhart

BY

Munn & Co

ATTORNEYS.

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

PETER S. CARHART, OF COLLAMER, NEW YORK.

IMPROVEMENT IN HARROWS.

Specification forming part of Letters Patent No. **157,792**, dated December 15, 1874; application filed October 3, 1874.

To all whom it may concern:

Be it known that I, PETER S. CARHART, of Collamer, in the county of Onondaga and State of New York, have invented a new and Improved Harrow, of which the following is a specification:

The invention will first be fully described, and then pointed out in the claims.

Figure 1 is a sectional elevation of a portion of one of the beams, showing the contrivances for holding the teeth between two bars, also for allowing them to shift to inclined or vertical positions, and for holding them in either, the section being taken on the line *x x* of Fig. 2. Fig. 2 is partly a plan view and partly a horizontal section of Fig. 1, and Fig. 3 is a transverse section of Fig. 2 on the line *y y*.

Similar letters of reference indicate corresponding parts.

A represents two bars, of wood or metal, of which the beams are composed, the bars being clamped together by bolts C, with the teeth D between them, and the bars or metal plates E between them, either one or both being notched to receive and hold the teeth. This method affords a better means of attaching the teeth than the common mode of driving them in holes or mortises in single beams, for the teeth can be put in and taken out more readily, and also tightened up in case they get loose; and if the metal plates are used, the beams are not weakened by cutting the holes. In this case the notches or sockets in the clamping-plates are contrived with extensions F, inclined front and back, above in one direction and below in the other, and the teeth are pivoted at G, so that when the harrow is drawn in the direction of arrow *a* the teeth will be vertical, and when drawn in the direction of arrow *b* they will be inclined. The pivot is formed by a point, *d*, on one or both of the plates entering a socket in the side of the tooth, and around each pivot is a little collar, *f*, which is to press upon the side of the tooth, so as to allow it to shift according to the way the harrow is drawn, but at the same time hold it so as to keep it tight. The plates have studs *g h i*, two of which are to touch when clamped up, while the rings *f* press on the sides of the tooth, and the other is hollow, and has the clamping-bolt pass through it to keep the plates in position.

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

1. The pivoted harrow-teeth, in combination with the plates E, having notched bearing extending in one direction above the pivots, and in the other below the pivots, to allow the teeth to shift automatically to inclined or vertical positions, substantially as specified.

2. The interposed notched metal plates E, having pivots for the teeth and studs *g h i*, in combination with the bars A and clamping-bolts, substantially as specified.

3. The pressure-ribs *f* on the plates, in combination with studs *g h i* and the pivoted tooth D, substantially as specified.

P. S. CARHART.

Witnesses:
T. B. MOSHER,
ALEX. F. ROBERTS.