HERALD & TOMPKINS.

Harrow.

No. 24,303. Patented June 7, 1859.

Fig. 1.

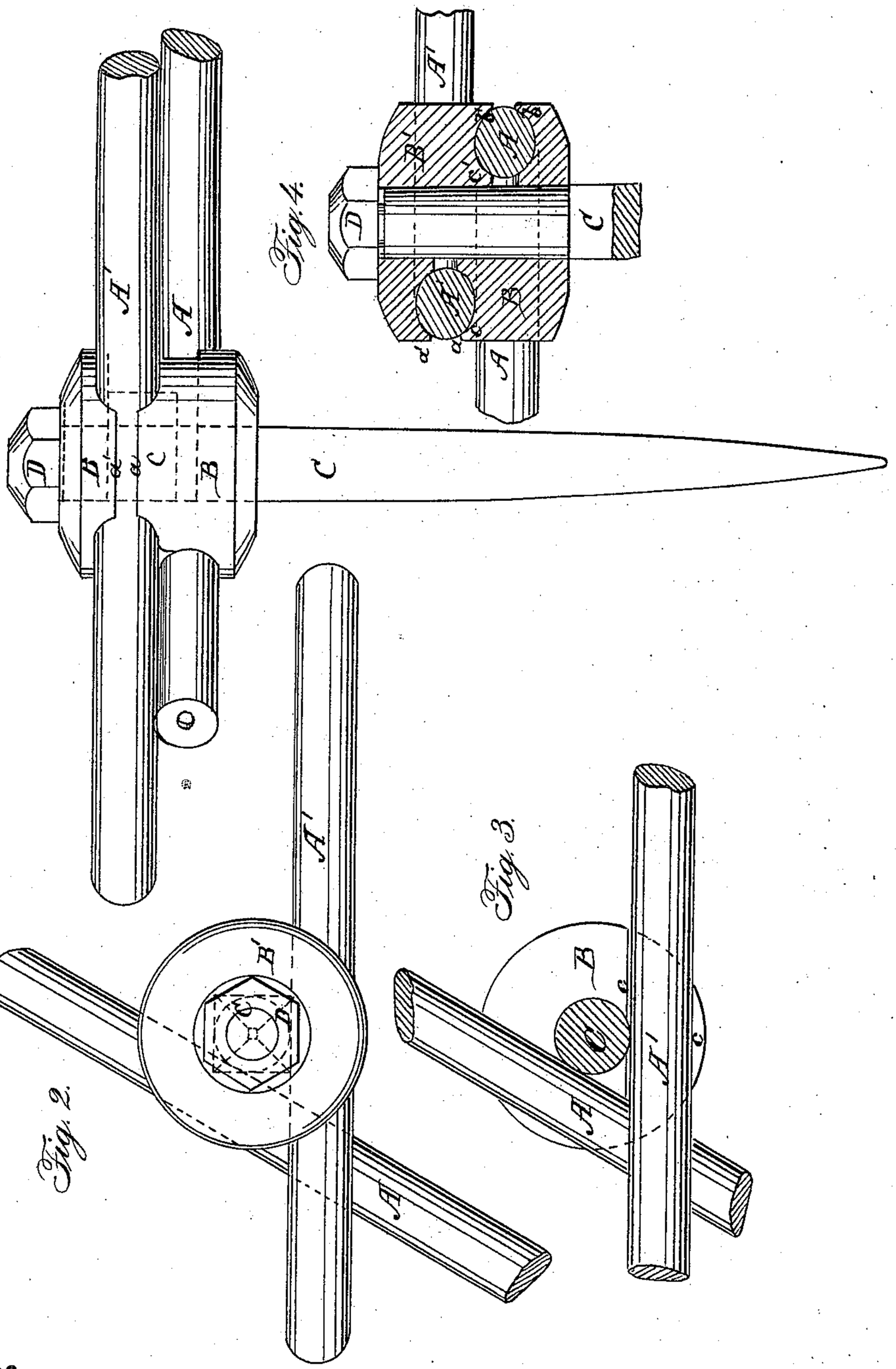

Fig. 4.

Fig. 2.

Fig. 3.

Witnesses:

D S Biggs.
E. Lovell.

Inventor:

J. Herald.
& B Tompkins

UNITED STATES PATENT OFFICE.

J. HERALD AND C. B. TOMPKINS, OF TRUMANSBURG, NEW YORK.

IMPROVEMENT IN HARROWS.

Specification forming part of Letters Patent No. **24,303**, dated June 7, 1859.

To all whom it may concern:

Be it known that we, J. HERALD and C. B. TOMPKINS, both of Trumansburg, in the county of Tompkins and State of New York, have invented a new and Improved Construction of Harrows; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a side elevation of part of a harrow constructed according to our invention. Fig. 2 is a plan or top view of the same. Fig. 3 is a horizontal section of the same, the top plate being removed. Fig. 4 is a vertical central section of the same.

Similar letters of reference in all the figures represent corresponding parts.

This invention relates to an improvement in the construction of harrows with iron frames; and it consists in arranging two plates with suitable recesses and with a central hole in such a manner that the same serve to secure the bars which constitute the frame at those places where they cross each other by the same nut which secures the tooth to the plate.

To enable those skilled in the art to fully understand, make, and use our invention, we will proceed to describe it.

A A′ are the bars which constitute the frame of a harrow when the same is made of iron, and these bars are usually selected round and of the thickness of about five-eighths of an inch, and they cross each other either at right or under oblique angles. Instead of securing these bars together by rivets or screws, as is usually done, in which case it is always necessary to drill holes, and thereby to weaken the iron, we simply place the bars one on the top of the other, and we secure them together by means of two plates, B B′, which are provided with recesses *a a′* and *b b′*, so that when the two plates are placed one on the top of the other the recesses *a a′* give room for the bar A′ and the recesses *b b′* for the bar A. These recesses, however, are not in the same horizontal plane; and in order to accomplish this and to give the bars A A′ a chance to clear each other, the plates B B′ are provided with projections *c c′*, and the recess *a* is made in the surface of the projection *c* and the recess *b′* in the surface of the projection *c′*, so that the bar A passes under the bar A′, as clearly represented in Fig. 4.

The two plates B B′ are secured together by means of the tooth C, the lower part of which is square and the upper end is rounded, so as to pass through a hole in the center of the plates, and a nut, D, serves to fasten the whole together.

From this it will be easily understood that the recesses *a a′* and *b b′* in the two plates B B′ can be made so as to bring the bars at right angles to each other, or so that they run in an oblique direction, and they may also be accommodated for bars of different size and shape; and by the aid of these plates we are enabled to secure the frame together without weakening the bars A A′, and with the same screws and nuts which secure the teeth to the frame.

What we claim as new, and desire to secure by Letters Patent, is—

The arrangement of the plates B B′ with recesses *a a′* and *b b′* and projections *c c′*, and with a hole in their center for the purpose of securing the bars A A′ and the tooth C, substantially in the manner specified.

J. HERALD.
C. B. TOMPKINS.

Witnesses:
D. L. BIGGS,
E. LOVELL.