

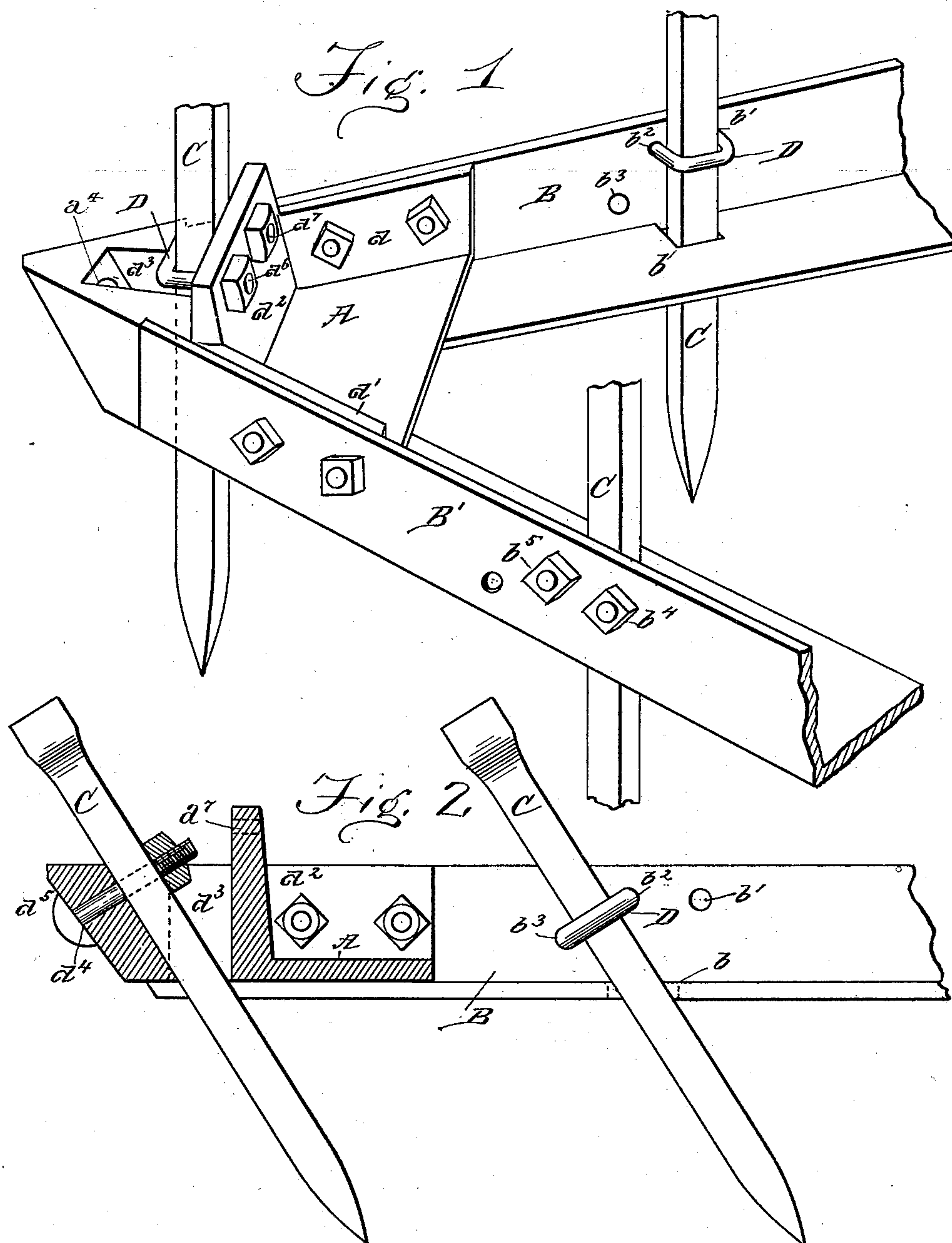
No. 623,082.

Patented Apr. 11, 1899.

R. T. HORNING.
METALLIC HARROW.

(Application filed Mar. 21, 1898.)

(No Model.)



WITNESSES
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UNITED STATES PATENT OFFICE.

RALPH T. HORNING, OF NEW PHILADELPHIA, OHIO, ASSIGNOR TO JOHN H. BROWN, OF RURAL RETREAT, VIRGINIA.

METALLIC HARROW.

SPECIFICATION forming part of Letters Patent No. 623,082, dated April 11, 1899.

Application filed March 21, 1898. Serial No. 674,557. (No model.)

To all whom it may concern:

Be it known that I, RALPH T. HORNING, a citizen of the United States, residing at New Philadelphia, in the county of Tuscarawas and State of Ohio, have invented new and useful Improvements in Metallic Harrows, of which the following is a specification.

My invention relates to improvements in harrows; and it consists of a new and novel method and means of mounting and supporting the teeth thereof.

Figure 1 is a perspective view of the toe of the harrow, showing the method of attaching the angle-iron thereto and the means of mounting and supporting the teeth therein. Fig. 2 is a sectional view through the toe, showing the method of inclining the teeth.

In the accompanying drawings similar letters of reference refer to similar parts.

A is a metallic toe of one of the points of the harrow, the harrow proper being made up of three substantially A-shaped sections. The metallic toe is substantially V-shaped, having the flanges $a a'$ along its sides, to which are bolted the angle-irons B and B'. Across the center of the toe A there is a projecting flange a^2 for the purpose of carrying the clip supporting the harrow-tooth. Through the forward part of the toe there is provided an aperture a^3 , having a larger opening at the top than at the bottom and its forward side slanting. Through the forward part of the toe and the aperture there is drilled a hole a^4 , through which passes a bolt a^5 , to engage with and hold the forward tooth C when it is locked in an inclined position.

To provide a means for locking the forward tooth C in a perpendicular position, two holes $a^6 a^7$ are drilled in the upright-projecting lug a^2 , through which there is passed a U-shaped clip D, screw-threaded upon its ends and, being passed around the tooth and projecting through the holes in the lug a^2 , is held in position by nuts engaging the screw-threaded ends thereof.

To the metallic toe A and on either side thereof there are securely bolted angle-irons having elongated openings b through the lower flange thereof, and in the upper or per-

pendicular flange there are provided round openings b' , b^2 , and b^3 for engaging the clip D in its various adjustments. When it is desired to clamp the tooth C in perpendicular position, the clip D is passed over the tooth C and through the apertures b' and b^2 , and upon the screw-threaded ends thereof are placed retaining-nuts b^4 and b^5 , and thus the tooth is clamped securely against the upper or vertical flange. When it is desired to adjust the tooth C in its inclined position, the elongated opening b being longer than the width of the tooth, the tooth is inclined therein and the clip D passed over the tooth and the ends thereof through the apertures b^2 and b^3 and is retained and locked in that position by means of the retaining-bolts b^4 and b^5 .

As heretofore referred to, I have shown my invention as applied to one form of harrow; but the same is capable of being applied to a harrow in which parallel rails or bars are used, or cross-bars.

Heretofore it has been exceedingly difficult to provide a simple and positive means of holding the tooth in its engagement with the bars of the harrow or to provide any satisfactory means of inclining the tooth. My invention overcomes all these difficulties and at the same time provides a simple and positive means of locking the tooth to the bars, and the same instrumentality also performs the same function when the tooth is inclined.

Having thus fully described my invention, what I desire to claim by Letters Patent is—

1. A metallic toe for a harrow, having flanges for engagement with the tooth beams or bars, an elongated opening in the point thereof, and means for locking the tooth therein, either in a vertical or inclined position, substantially as described and for the purpose set forth.

2. A harrow-tooth adjustment consisting of a block having an opening with an elongated upper end, and a clip adapted to hold the tooth against the front or the rear wall thereof for the purpose of effecting an adjustment of the tooth, substantially as described.

3. A harrow-tooth adjustment comprising

a block having a vertical opening, one wall
of the opening being inclined, both walls hav-
ing clip-openings, and a clip adapted to pass
through the openings of either wall and to
5 clamp the tooth thereagainst for holding it in
a vertical or an inclined position, substan-
tially as described.

In testimony whereof I have hereunto set
my hand in the presence of two subscribing
witnesses.

RALPH T. HORNING.

Witnesses:

J. F. STEPHENSON,

H. P. FRIBLEY.