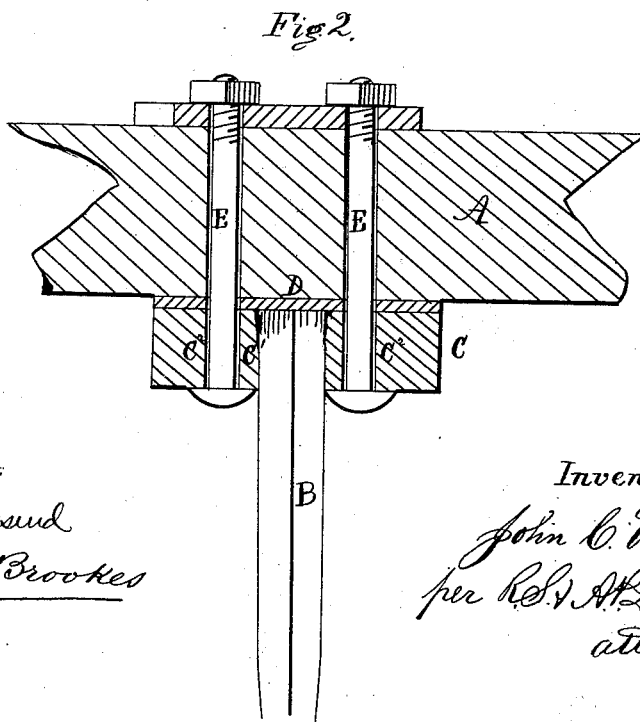
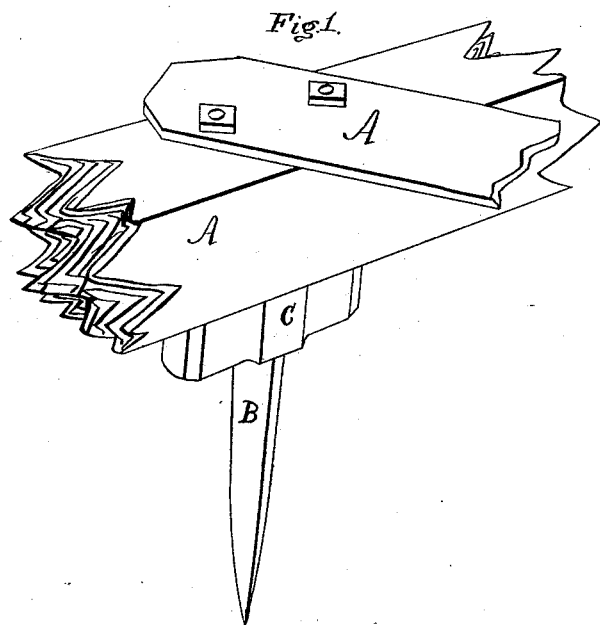


J. C. WILLIAMS.

Harrow.

No. 168,311.

Patented Sept. 28, 1875.



Witnesses:
L. B. Townsend
Colborne Brookes

Inventor:
John C. Williams
per *R. S. A. Looney*
attorneys.

UNITED STATES PATENT OFFICE.

JOHN C. WILLIAMS, OF OLIN, IOWA.

IMPROVEMENT IN HARROWS.

Specification forming part of Letters Patent No. **168,311**, dated September 28, 1875; application filed August 30, 1875.

To all whom it may concern:

Be it known that I, JOHN C. WILLIAMS, of Olin, in the county of Jones and State of Iowa, have invented certain new and useful Improvements in Harrow-Teeth Fasteners; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in fastenings for harrow-teeth; and consists in a head-piece for the tooth, a protecting and holding plate, and retaining-bolts, as hereinafter fully set forth.

In the drawings, Figure 1 is a view of a portion of a harrow-frame with a tooth secured by my fastener, and Fig. 2 is a vertical section of the fastener and frame.

A A is the harrow-frame. B is a harrow-tooth made in usual form, slightly tapering toward the point. C is the head-block for holding the tooth B. It is perforated with the mortise C', made slightly tapering to receive and hold the upper end of the tooth B, the latter being so constructed that when inserted in the mortise its upper end will be flush with the upper side of the head-block. It is also

provided with the holes C², for the passage through of the retaining-bolts. D is a plate placed between the head-block C and the frame A. It prevents injury to the frame by the working upward of the tooth B, and it holds the latter firmly in the mortise C'. It is provided with suitable holes for the retaining-bolts. E are the retaining-bolts by which the head-block C, and plate D are held together, and to the frame A, as shown.

It will be readily seen that teeth attached to the frame by my fastener may be readily removed when desired, and may be again as readily attached, and that the tooth will be held rigidly in position, and the frame perfectly protected from injury.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

The improved harrow-tooth fastener, composed of the head-block C, having the mortise C', plate D, and retaining-bolts E, all constructed and arranged substantially as shown and for the purpose described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JOHN C. WILLIAMS.

Witnesses:

W. A. SERLEY,
T. J. TOWNSEND.