No. 796,798. PATENTED AUG. 8, 1905.

G. E. BLAINE.

HARROW TOOTH FASTENER.

APPLICATION FILED JUNE 5, 1905.

Fig. 1

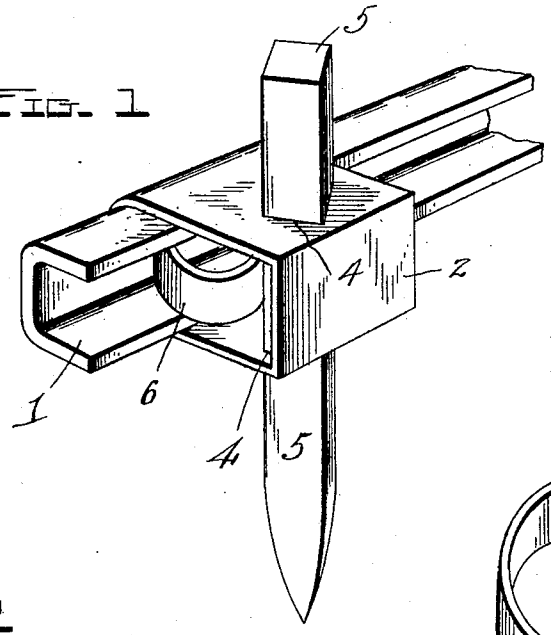


Fig. 4

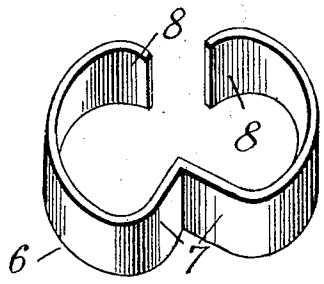


Fig. 2

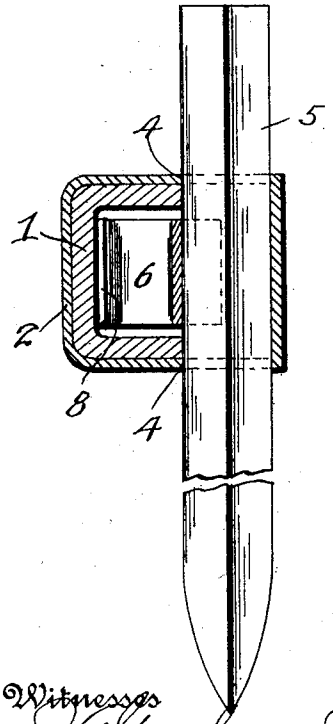
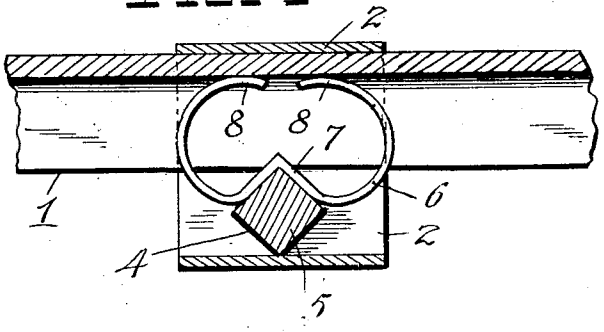


Fig. 3



Witnesses
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UNITED STATES PATENT OFFICE.

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HARROW-TOOTH FASTENER.

No. 796,798. Specification of Letters Patent. Patented Aug. 8, 1905.

Application filed June 5, 1905. Serial No. 263,813.

To all whom it may concern:

Be it known that I, GEORGE E. BLAINE, a citizen of the United States, residing at Piqua, in the county of Miami and State of Ohio, have invented certain new and useful Improvements in Harrow-Tooth Fasteners; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in harrow-tooth fasteners.

The object of the invention is to provide a fastening device for harrow-teeth by which the same may be secured to the harrow-frame without the use of bolts and nuts.

A further object is to provide a fastening device so constructed that the harrow-tooth will be securely held against vertical movement and the device itself against lateral movement, thereby serving a double function of locking the tooth and itself in place.

With the above and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of a portion of a harrow-frame, showing a tooth secured by my improved fastening device. Fig. 2 is a vertical sectional view thereof. Fig. 3 is a horizontal sectional view, and Fig. 4 is a detail perspective view, of the key or fastening device removed.

Referring more particularly to the drawings, 1 denotes a portion of one of the harrow-frame bars, which may be of any suitable shape, but which are here shown and are preferably constructed of channel-iron. Adapted to be engaged with the bars 1 of the harrow-frame is a clip 2, said clip being preferably formed integral or seamless and is adapted to conform to the shape of the bars. In the laterally-projecting portions of the clip adjacent to the channel side of the frame-bar are formed vertical alined rectangular-shaped apertures 4, through which is adapted to be inserted a harrow-tooth 5, said tooth being here shown in the form of a spike and of rectangular shape in cross-section.

In order that the teeth 5 may be secured against vertical movement in the apertures of the clip 2, a suitable key or fastening device 6 is provided. The key or fastening device 6 is in the form of a strip of spring metal bent midway between its ends to form a V-shaped recess 7, which is adapted to engage the inner corner of the tooth 5, the sides of the recess 7 being adapted to bear upon the two inner sides of the tooth. The ends of the fastening device or key are bent inwardly from the recessed portion 7 into engagement with the inner wall of the channel-shaped frame-bar 1, said engaging ends of the key being bent or curved outwardly, as shown at 8, to form a bearing-surface to engage the supporting-bar, as shown.

By constructing the key or fastening device 6 with a V-shaped centrally-disposed recess, as herein shown and described, any lateral movement of the spring will be prevented by the engagement of said recessed portion with the sides of the tooth. The engagement of the inwardly-projecting spring-metal portions of the key with the frame-bar will securely hold the teeth against vertical movement, the fastening device thus serving a double function of securing the teeth against vertical movement and itself against lateral movement.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

1. In a harrow-tooth fastener, the combination with a clip adapted to be placed on the tooth-bars of the harrow-frame, of an angularly-bent spring-metal key adapted to engage a tooth and the adjacent side of the harrow-frame bar to hold said tooth in place, substantially as described.

2. In a harrow-tooth fastener, the combination with a seamless band or clip adapted to be placed on the bars of a harrow-frame, of an angularly-bent spring-metal key adapted to engage and bear upon two sides of a tooth and to engage the adjacent side of the harrow-frame bar and thereby secure both the tooth and itself in place, substantially as described.

3. In a harrow-tooth fastener, the combination with a seamless band or clip adapted to be placed on the bars of a harrow-frame and having formed in its upper and lower sides

vertically-alined tooth-receiving apertures, a spring-metal key adapted to be inserted between said tooth and the adjacent side of the frame-bar, said key being bent to form a V-shaped recess, to receive the tooth and fit against two sides thereof, and inwardly-extending spring-arms having outwardly-curved ends to engage the adjacent wall of the harrow-frame bar, thereby securing the tooth against vertical movement and itself against lateral movement, substantially as described.

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

GEORGE E. BLAINE.

Witnesses:
GEO. W. BERRY,
J. C. HUGHES.