(No Model.)

W. V. WALKER.

HARROW TOOTH FASTENER.

No. 421,789. Patented Feb. 18, 1890.

Fig. 6.

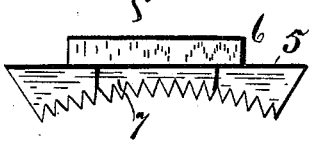


Fig. 4.

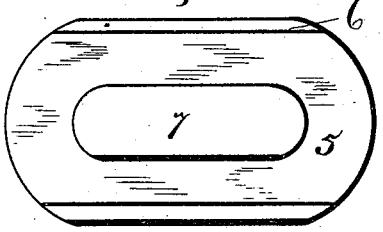


Fig. 7.

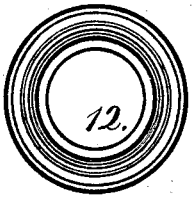
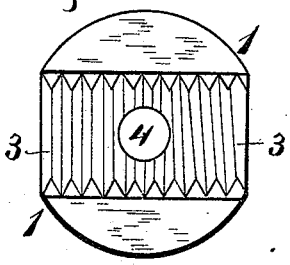


Fig. 3.



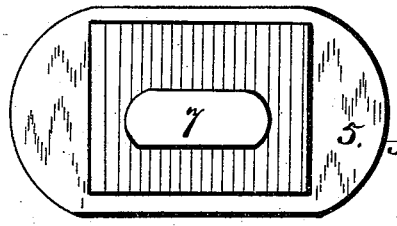


Fig. 5.

Fig. 8

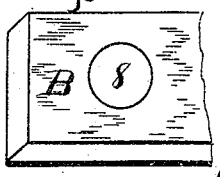


Fig. 1.

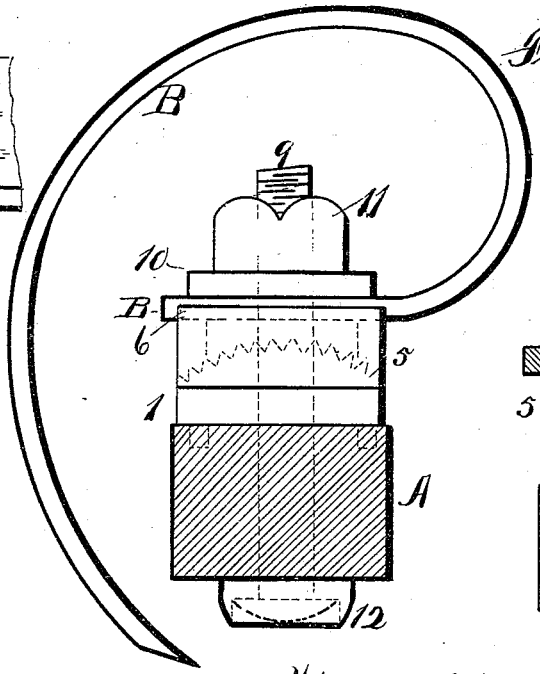
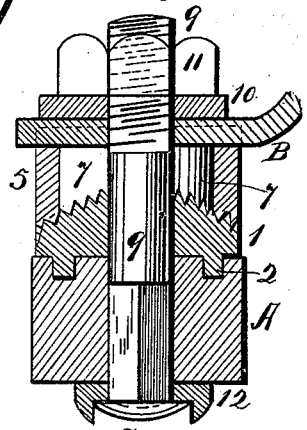


Fig. 2.



Witnesses
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By his Attorneys
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UNITED STATES PATENT OFFICE.

WILLIAM V. WALKER, OF MORAVIA, NEW YORK.

HARROW-TOOTH FASTENER.

SPECIFICATION forming part of Letters Patent No. 421,789, dated February 18, 1890.

Application filed July 20, 1889. Serial No. 318,152. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM V. WALKER, of Moravia, county of Cayuga, in the State of New York, a citizen of the United States, have invented certain new and useful Improvements in Harrow-Tooth Fasteners, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of the fastening and tooth. Fig. 2 is a vertical transverse section thereof. Fig. 3 is a top plan view of the lower plate of the fastening. Fig. 4 is a top plan view of the upper plate thereof. Fig. 5 is a bottom plan view of Fig. 4. Fig. 6 is a vertical longitudinal section of Fig. 4. Fig. 7 is a top plan of the washer between the bolt-head and the frame-bar.

My invention relates to the construction of fastenings or attachments for securing spring-teeth to the frame-bars of a harrow.

The object of my invention is to produce an attachment securing the tooth adjustably to the harrow-frame, the adjustment relating to the degree of penetration of the point of the tooth into the ground, and all such adjustments being regulated in the attachment itself and without shifting the tooth longitudinally in or upon the attachment.

My invention consists in the several novel features of construction and operation hereinafter described, and specifically set forth in the claim annexed.

It is constructed as follows:

A is the frame-bar.

B is the tooth curved or bent to any form desired except that it is straight upon its inner end for a distance about equal to the width of the frame-bar. Upon the top of the frame-bar I place a plate 1, provided on its lower face with studs or projections 2, which enter the frame-bar, and with an arching top provided with serrations 3, and 4 is a bolt-hole through the center of this plate. Upon the top of this plate I place a plate 5, concaved centrally, and in the concavity serrated to correspond with the serrations upon the plate 1, so that the serrations of the two will fit each other, and further provided with side flanges 6 and with an elongated bolt-opening 7 through the central part thereof.

The tooth B is provided with a bolt-hole 8, and 9 is the bolt inserted vertically through the frame-bar, the plates 1 and 5, the tooth B and the washer 10 on top of the tooth, and all secured together by the nut 11. The head of the bolt is inserted into a cavity in the washer 12, beneath the frame-bar, the cavity being of sufficient depth to substantially cover or inclose the bolt-head, the washer performing the function of protecting the head of a bolt from wear and from being scratched and rubbed and worn off by contact with the soil, as is the case where the bolt-head is not protected.

It will be observed that by loosening the nut 11 the plate 5 can be shifted from one serration to another upon the plate 1, and that when shifted over to the right the point of the tooth will be correspondingly raised, and when shifted to the left from the center the point of the tooth will be lowered so that the tooth will dig deeper into the soil.

It will be observed that the length of the slot 7 regulates the amount or degree to which the plate 5 can be thus shifted either way, that all this shifting can be done without moving the tooth upon the bolt and without inclining the bolt either way from a perpendicular, and without shifting the plate 1 upon the bolt.

What I claim is—

In a harrow-tooth fastening, the combination, with a rigid frame-bar and a tooth, of a plate flat upon its lower face and having on its upper face a longitudinal convexity serrated transversely and provided with a central opening, an upper plate having upon its lower face a longitudinal concavity serrated transversely and slotted centrally and longitudinally and provided with flanged edges creating a tooth-seat upon its upper face, and a bolt inserted vertically through the frame-bar, through the lower plate, through the slot in the upper one, and a washer between the nut and tooth, substantially as described.

In witness whereof I have hereunto set my hand this 11th day of July, 1889.

WILLIAM V. WALKER.

In presence of—

LEANDER FITTS,

TENY EVERSON.