

(No Model.)

J. W. HARRIS.

TOOTH HOLDER.

No. 401,883.

Patented Apr. 23, 1889.

Fig. 1.

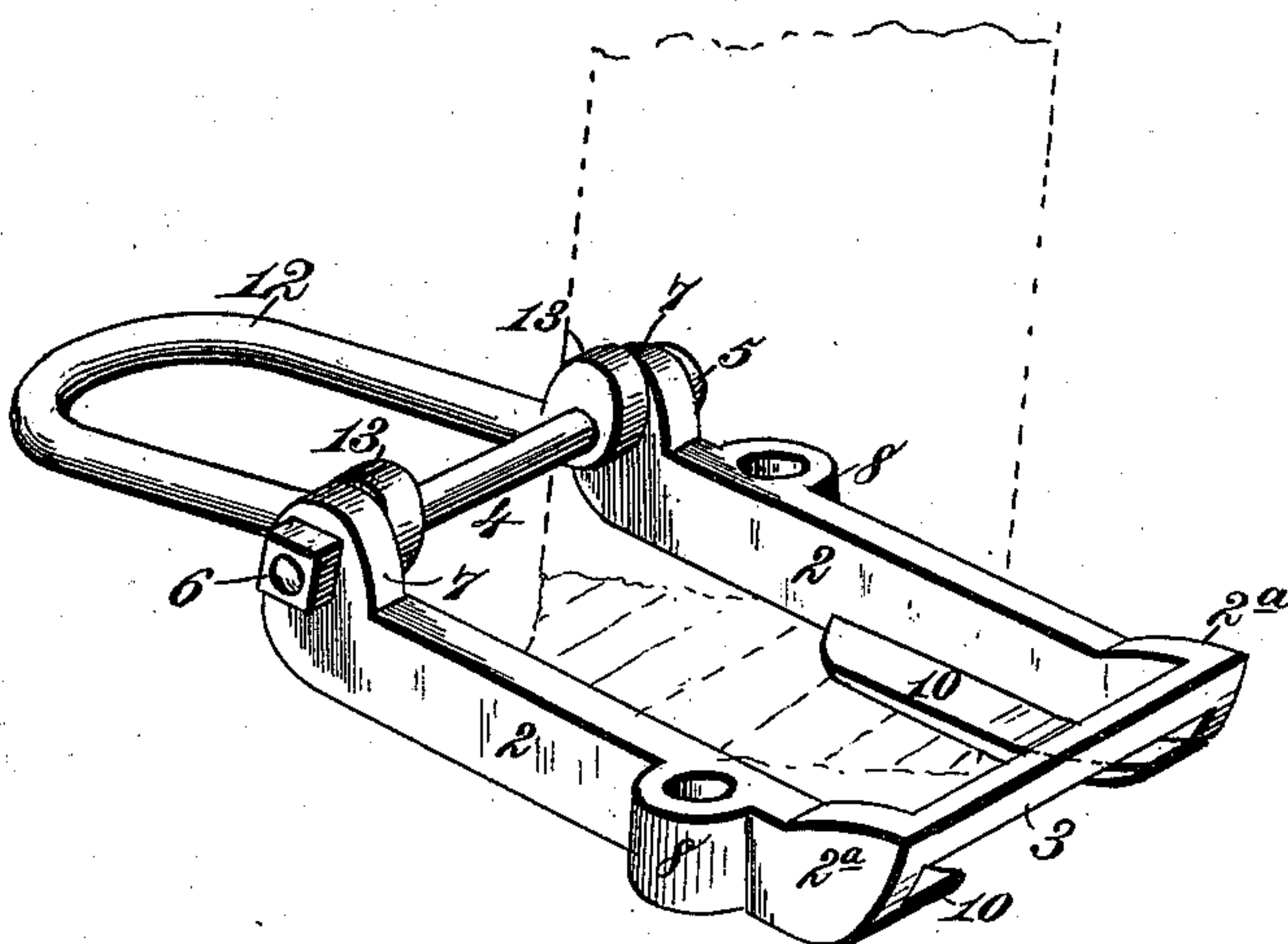
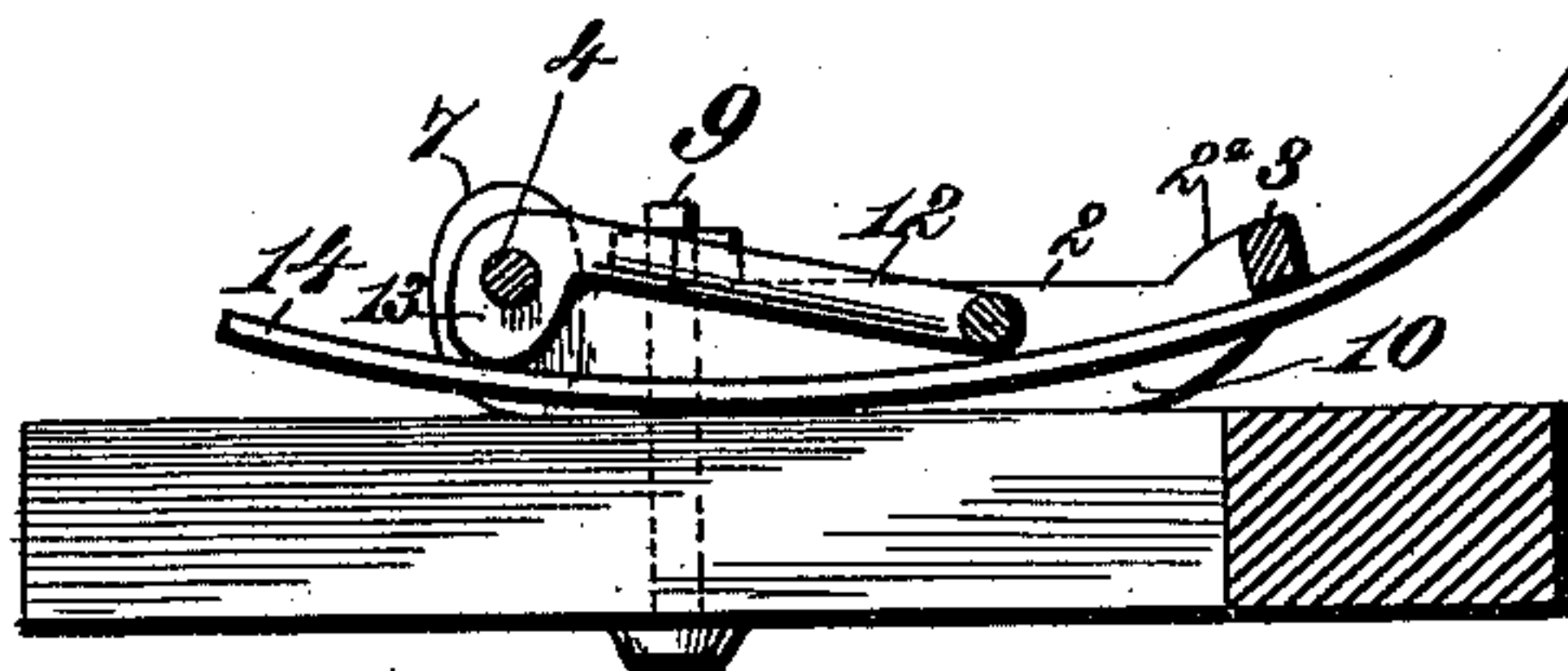


Fig. 2.



Witnesses,
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UNITED STATES PATENT OFFICE.

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TOOTH-HOLDER.

SPECIFICATION forming part of Letters Patent No. 401,883, dated April 23, 1889.

Application filed March 15, 1888. Serial No. 267,229. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. HARRIS, a citizen of the United States, residing at Shippensburg, in the county of Cumberland and State of Pennsylvania, have invented new and useful Improvements in Fastenings for the Teeth of Harrows, Cultivators, &c., of which the following is a specification.

My invention relates to that class of harrows, cultivators, or plows in which spring-teeth are employed; and the purpose thereof is to provide simple means whereby the curved shanks of said teeth may be firmly and rigidly secured in or upon the cross-beam, the more particular object being to provide such an organization of parts that the teeth may be secured in place without the necessity of notching or drilling the shank, whereby the pitch or angle at which said tooth acts upon the soil may be varied at will and the point of the tooth adjusted as to its height with relation to the tooth-bar, and whereby the several teeth may be readily adjusted in such manner as to vary their elasticity between the point of the shank.

It is my further purpose to provide a simple construction whereby the spring-teeth of a harrow may be independently attached to the tooth-bar in such manner that they will be held the more securely in proportion to the increase of the strain upon said teeth, and whereby, also, the several adjustments of the teeth may be effected with economy of time and labor without the necessity of using bolts and nuts or hammers and wrenches in effecting said adjustment.

The invention consists in the several novel features of construction and new combinations of parts hereinafter fully described, and then definitely pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a portion of a tooth-bar for a harrow, plow, or cultivator, said bar having substantially the usual construction with my improvement applied thereto. Fig. 2 is a longitudinal central section of the shoe detached.

Upon said tooth-bar at suitable intervals are mounted my tooth-fasteners, each consisting of a shoe formed of two parallel bars, 2, united at one end by a bar, 3, and at the other

by a rod or spindle, 4, the former being either separate from or integral with the parallel members 2, while the latter is provided with a head, 5, at one end, while a nut, 6, is turned upon the opposite end. The rod 4 is passed through ears 7, raised somewhat above the upper edges of the arms 2, and the connecting-bar 3 is preferably formed upon the slightly-upturned extremities 2^a of the side bars, 2.

In each of the side bars, 2, I form a boss, 8, having an aperture to receive a bolt, 9, whereby the shoe may be fastened to the tooth-bar, and these bosses are arranged near opposite ends of the shoe to permit the angular attachment of the shoe to the tooth-bar. Upon the inner adjacent faces of the parallel members 2, at or near the upturned extremities 2^a, I may form flanges 10, having inward projection and conforming to the contour of the lower edges of the side bars.

Upon the rod or spindle 4, I mount a yoke, 12, having cams 13, turning upon said spindle. The shoe, formed as described, having been mounted upon the tooth-bar 1, the curved shank 14 of the tooth is inserted beneath the connecting-bar 3 and between the side bars, 2, of the shoe, passing beneath the cams 13, which lie above the edges of the shank of said tooth. When so far inserted as to bring the point of the tooth into proper position, the yoke 12 is thrown over, and the cams 13 are thereby caused to impinge upon the edges of the tooth-shank and bind the latter firmly between said cams and the face of the tooth-bar. It is evident that all strain or draft upon the tooth will normally tend to draw the cams 13 more closely into engagement and lock the tooth more securely in place.

I may dispense with the flanges 10 without in any manner departing from my invention; but when they are employed the shank of the tooth will rest thereupon.

The tooth may be instantly fastened or released by simply throwing the yoke 12 over through an arc of about ninety degrees, no other fastenings being used. If independent adjustment or repair is needed, it may be effected without difficulty and without the necessity of detaching bolts or nuts or other auxiliary fastenings.

What I claim is—

1. The combination, with the spring-tooth and the tooth-bar of a cultivator, of the shoe comprising side bars, 2, a cross-bar, 3, at one end thereof, between which and the tooth-bar 5 the spring-tooth passes, a spindle, 4, at the other end of the side bars, and a cam-lever journaled on said spindle to bind against the tooth and clamp it to the tooth-bar, substantially as described.

10 2. In a harrow, plow, or cultivator, the combination, with a shoe composed of parallel side bars connected at one end by an integral bar and at the other by a spindle, of a yoke having cams turning upon said spindle and a 15 spring-tooth lying between said bars and beneath the cams, substantially as described.

3. In a harrow, plow, or cultivator, the combination, with a shoe composed of parallel side bars connected at both ends and having internal flanges upon their lower edges, of cams 20 mounted upon the spindle connecting one end of said bars, and having a yoke-lever operating them, and a spring-tooth lying between the side bars of the shoe, upon the flanges, and beneath the cams, substantially as de- 25 scribed.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN W. HARRIS.

Witnesses:

JOHN H. PHILLIPS,

JAMES W. KENYON.