(No Model.)

M. J. TODD.

SPRING TOOTH HARROW.

No. 556,290. Patented Mar. 10, 1896.

Fig. 1.

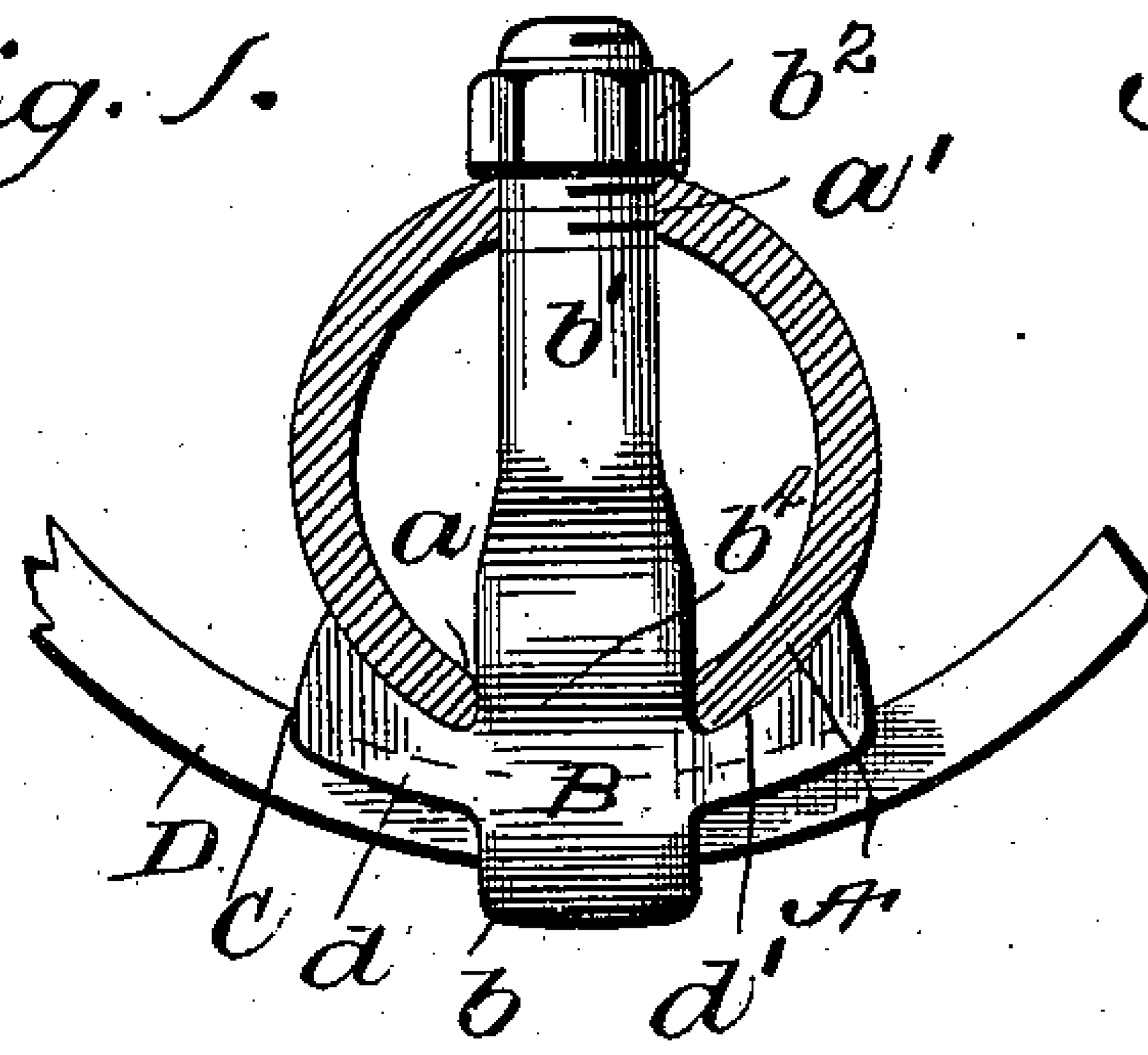


Fig. 2.

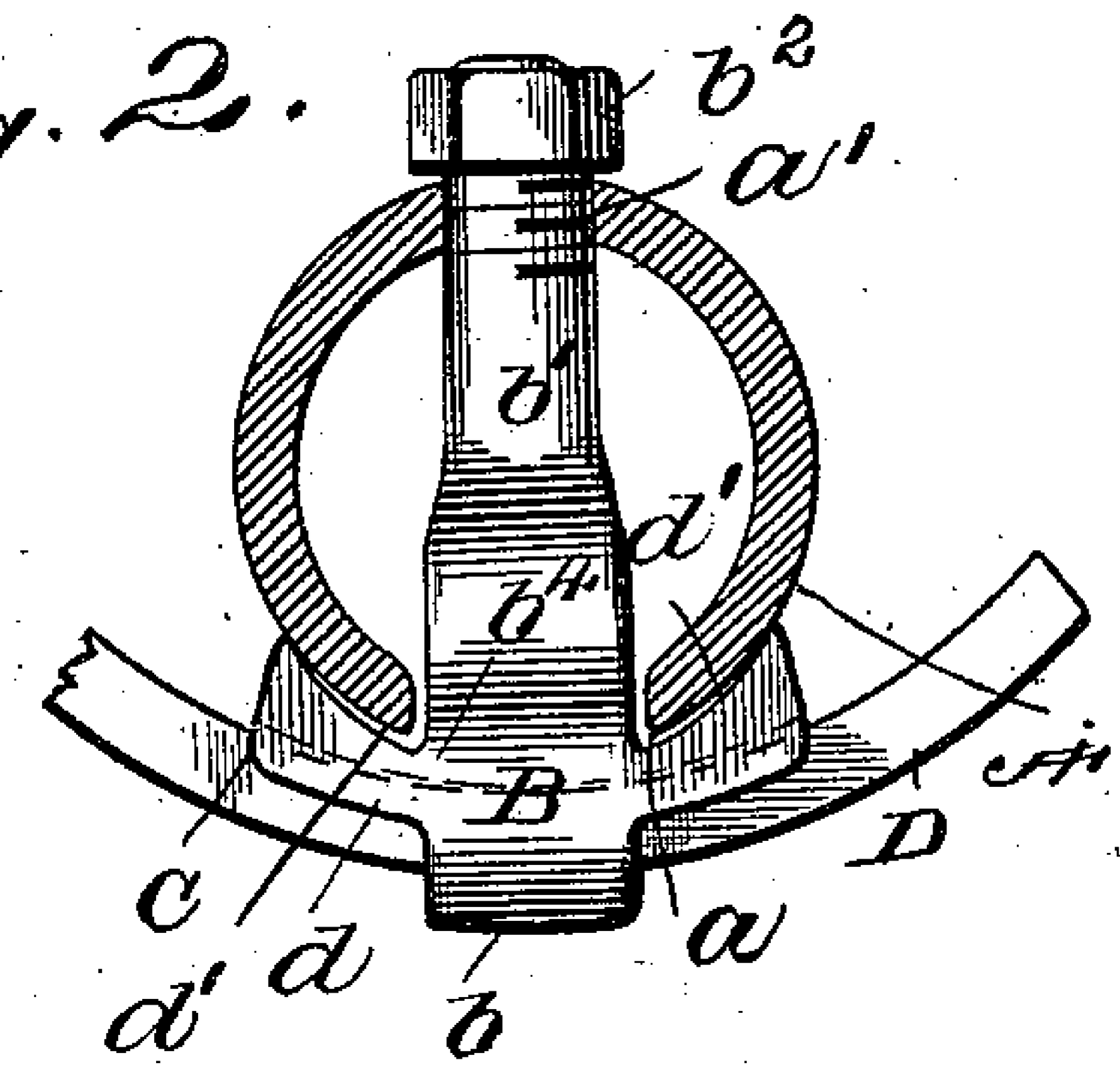


Fig. 3.

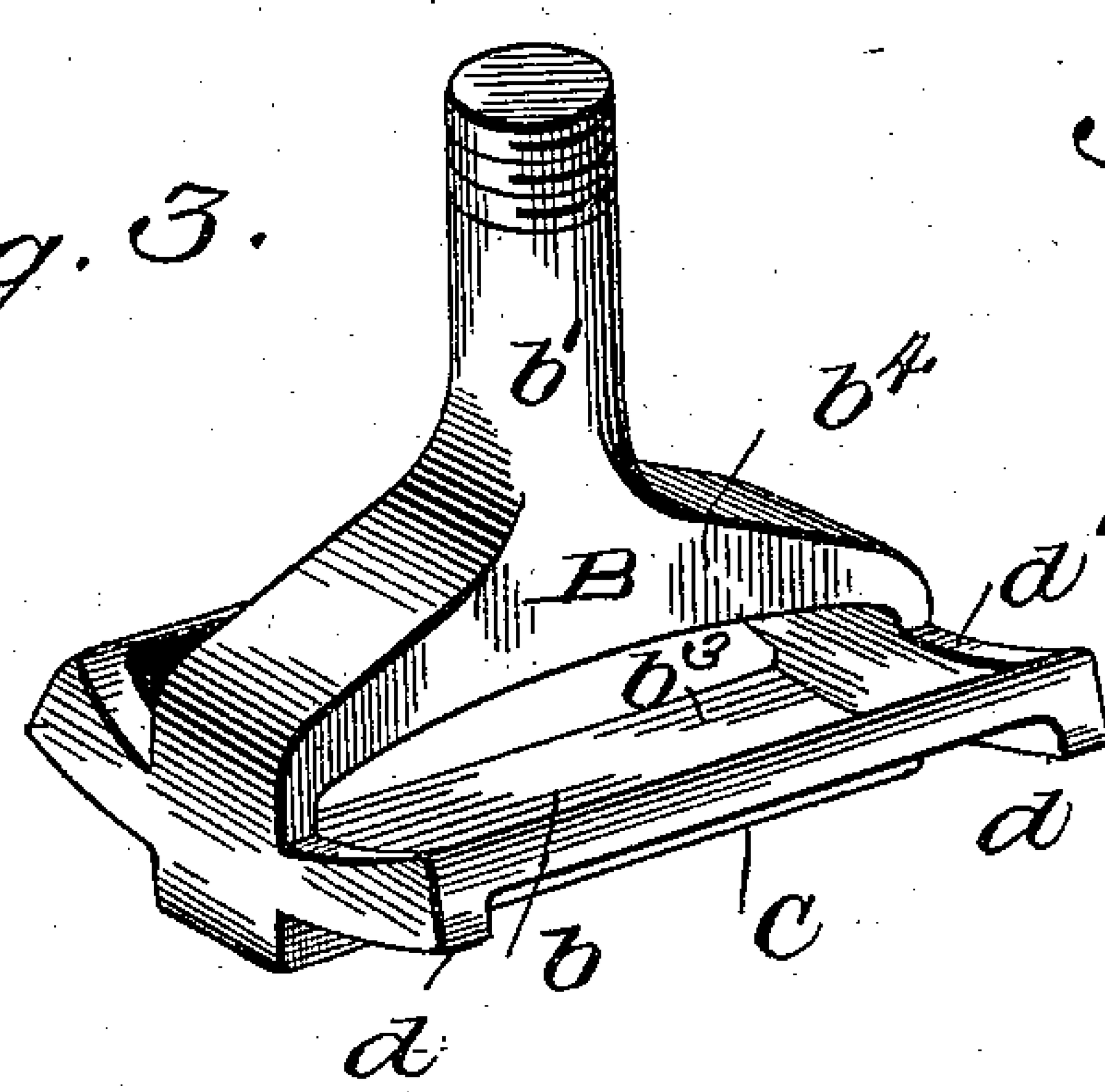
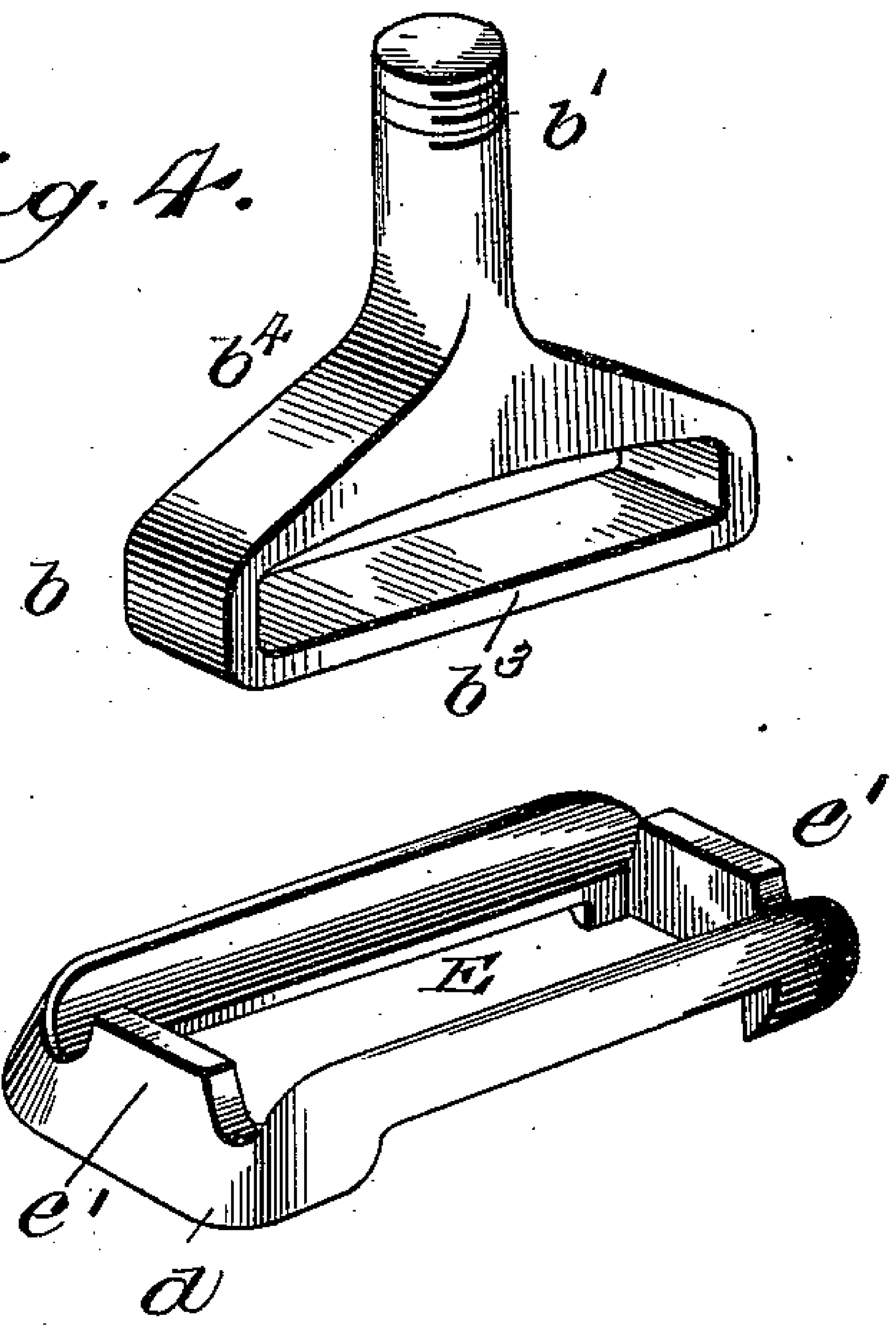


Fig. 4.



Witnesses

Inventor

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UNITED STATES PATENT OFFICE.

MARQUIS J. TODD, OF BUFFALO, NEW YORK.

SPRING-TOOTH HARROW.

SPECIFICATION forming part of Letters Patent No. 556,290, dated March 10, 1896.

Application filed December 3, 1894. Serial No. 530,696. (No model.)

To all whom it may concern:

Be it known that I, MARQUIS J. TODD, of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Spring-Tooth Harrows; and I do hereby 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 contemplates certain new and useful improvements in spring-tooth harrows, and has reference more particularly to the means employed for binding and holding the harrow-teeth to the tooth-bars.

The object of the invention is to provide a clip or holder that will allow an individual adjustment of the tooth, and which when fastened to the tooth-bar will be firmly grasped or held by the latter as against lateral displacement, thereby not only securing the tooth firmly to its seat but also causing the tooth-bar to securely hold the clip or holder in position. This I accomplish by making the tooth-bar with a continuous slot extending from end to end thereof and passing the tooth-clip up through said slot and through the bar in such manner that when the clip is fastened and the tooth is drawn to its seat the longitudinal side edges of the slot in the bar will bind firmly against that portion of the clip or holder located in said slot. The clip is provided with an inclined seat for the tooth and has upper wedge-like surfaces which contact with the sloping walls or sides of the tubular bar adjacent to the slot therein, so that when the clip is firmly bound to the bar the wedge-like surfaces of the clip-seat acting on the bar will force the longitudinal edges of the slot in said bar against said clip. This curved tooth-seat is preferably formed integral with the clip or holder, but in some instances may be made separable therefrom.

The invention comprises the novel features of construction, and also the detail combination and arrangement of parts, substantially as hereinafter fully set forth and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical sectional view of a tooth-bar with a tooth secured in position. Fig. 2 is a similar view with the parts slightly loosened. Fig. 3 is a detail view of the clip detached. Fig. 4 is a view of the clip with separable tooth-seat.

Referring to the drawings, A designates a tooth-bar, which is of tubular form and is made with a continuous longitudinal slot a, which extends from end to end of said bar. At the point of location of the harrow-tooth and diametrically opposite the slot is a hole or opening a'.

B is a clip or holder having a lower stirrup-like end b, and an upper threaded extension b', which, when projected through the hole or opening a', has a small binding-nut b^2 secured thereon. The lower cross-bar b^3 of this stirrup-like end is connected to the outer ends of two divergent arms b^4, with the inner or convergent ends of which the extension b' is formed. The tooth-seat C is formed with these divergent arms b^4, and is sufficiently far from the cross-bar b^3 to leave an opening to accommodate the harrow-tooth D. The under side of this tooth-seat C is curved on a smaller radius than the harrow-tooth, which fits snugly between the side flanges d, the latter serving to prevent lateral displacement of the tooth. This tooth-seat extends laterally on either side of the clip, and its upper surface d' is curved, the radius of the curvature being less than that of the tubular tooth-bar with which the seat has a wedge-like contact. In screwing home the binding-nut b^2, the clip is drawn up through the tooth-bar, and by reason of the wedge-like action of the tooth-seat, the ends of the latter force the longitudinal edges of the slot in said bar against the sides of the tooth-clip and press downwardly on the tooth, causing the curvature of the latter to conform to that of the seat, thus binding the tooth to its seat and securely holding the clip between the longitudinal edges of the slot in the tooth-bar, preventing any lateral movement or displacement thereof.

In Fig. 4 I have shown the tooth-seat E made separate from the stirrup-like end, which latter is designed to extend through the longitudinal slot or opening in said seat. From the connecting ends of this seat project lugs e' of substantially the same width

as the divergent arms b^4 of the tooth-clip. These lugs also extend up into the slot a of the tooth-bar A, so that when the clip is bound to the bar the longitudinal edges of the slot in the latter bind not only against the sides of the tooth-clip, but also against the ends of said lugs, thus serving to firmly hold the clip and seat as well as the tooth.

I claim as my invention—

1. In a harrow having a tooth-bar provided with a longitudinal slot and a hole or opening, a clip or holder extending through said tooth-bar and having its upper end projecting through said hole or opening to receive a binding-nut, a harrow-tooth and a tooth-seat between which and the lower end of said clip or holder said tooth is designed to fit, said seat having an upper curved or wedge-like surface of a smaller radius than said tooth-bar with which latter it is designed to engage, whereby when said tooth is seated the longitudinal edges of the slot in said tooth-bar will be drawn against the opposite sides of said clip or holder, substantially as set forth.

2. In a harrow having a tooth-bar provided with a longitudinal slot and a hole or opening, a clip or holder extending through said tooth-bar and having its upper end projected through said hole or opening to receive a binding-nut, a harrow-tooth, and a tooth-seat having a lower curved surface of smaller radius than said tooth and also having its upper surface curved on a radius smaller than said tooth-bar, whereby when said tooth is seated the longitudinal edges of the slot in said tooth-bar will be drawn against the opposite sides of said clip or holder, substantially as set forth.

3. In a harrow having a tooth-bar provided with a longitudinal slot and an upper hole or opening, a clip or holder having a lower stirrup-like end and an upper threaded extension designed to project through said hole or opening, a binding-nut thereon, a tooth-seat above the lower cross-bar of said stirrup-like end having a lower curved portion and an upper curved or wedge-like surface of smaller radius than said tooth-bar against which latter it is designed to bind, substantially as and for the purpose set forth.

4. The clip or holder herein described having a lower stirrup-like end comprising two divergent arms and a lower cross-bar connecting said arms, and a curved tooth-seat formed integral with said divergent arms and extending laterally on either side of said stirrup-like end, and having upper curved or wedge-like surfaces, in combination with a tooth-bar having a longitudinal slot extending from end to end and an upper hole or opening, said clip or holder being designed to project through said tooth-bar and secured at its outer end, whereby the longitudinal edges of said slot will be caused to bind against the sides of said clip or holder, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

MARQUIS J. TODD.

Witnesses:
J. NOTA MCGILL,
WM. S. HODGES.