

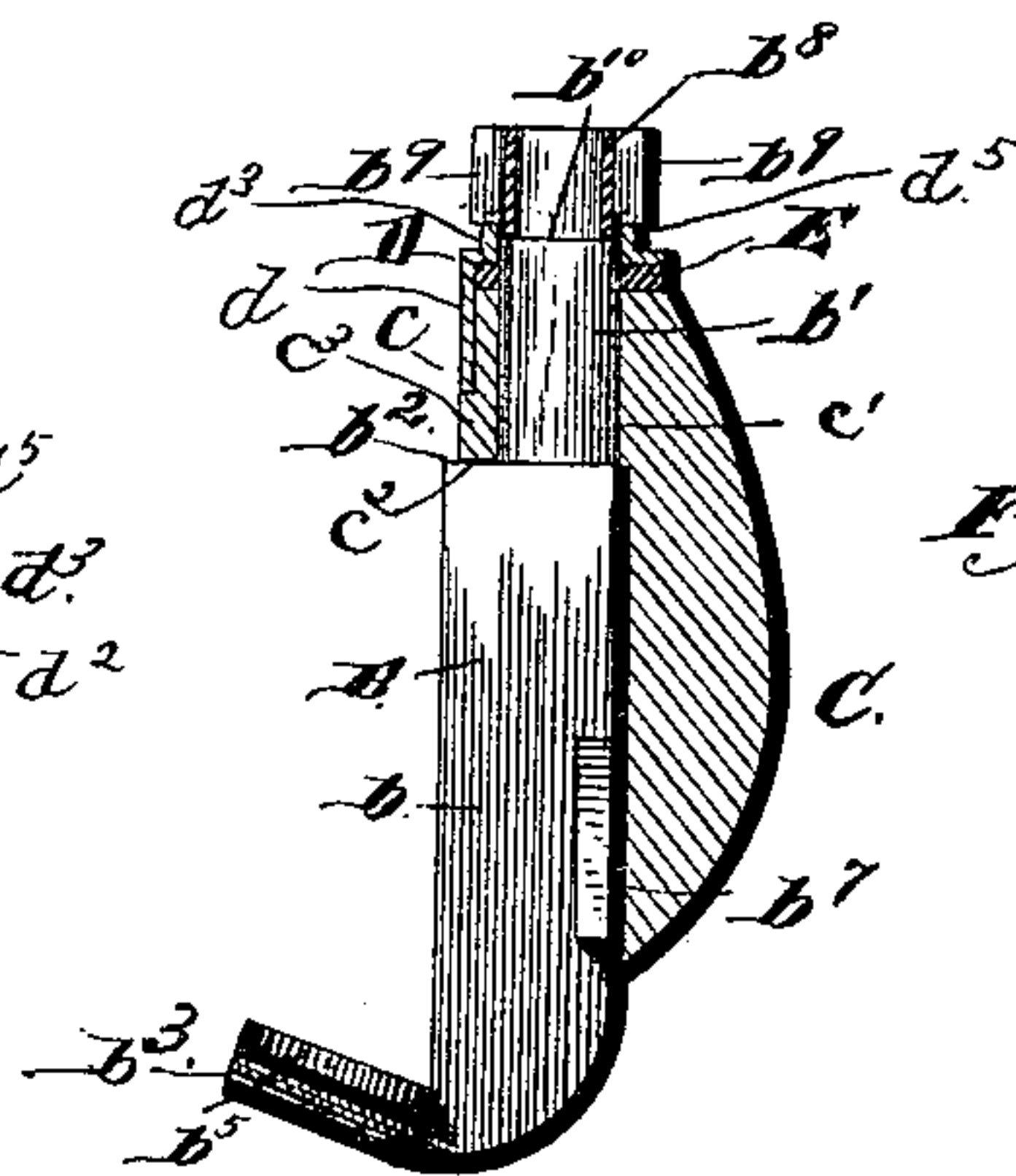
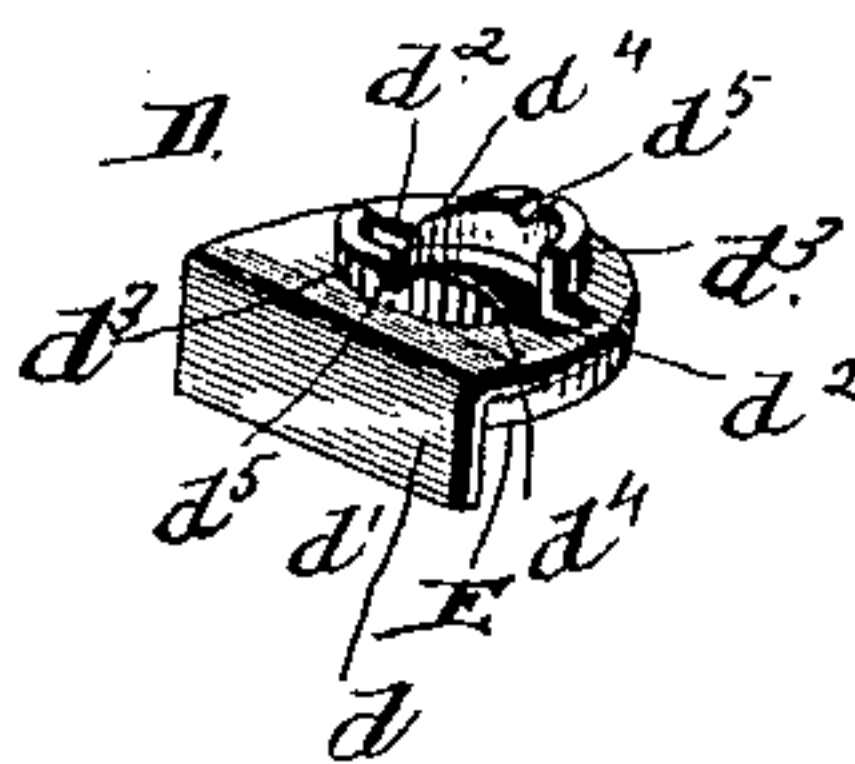
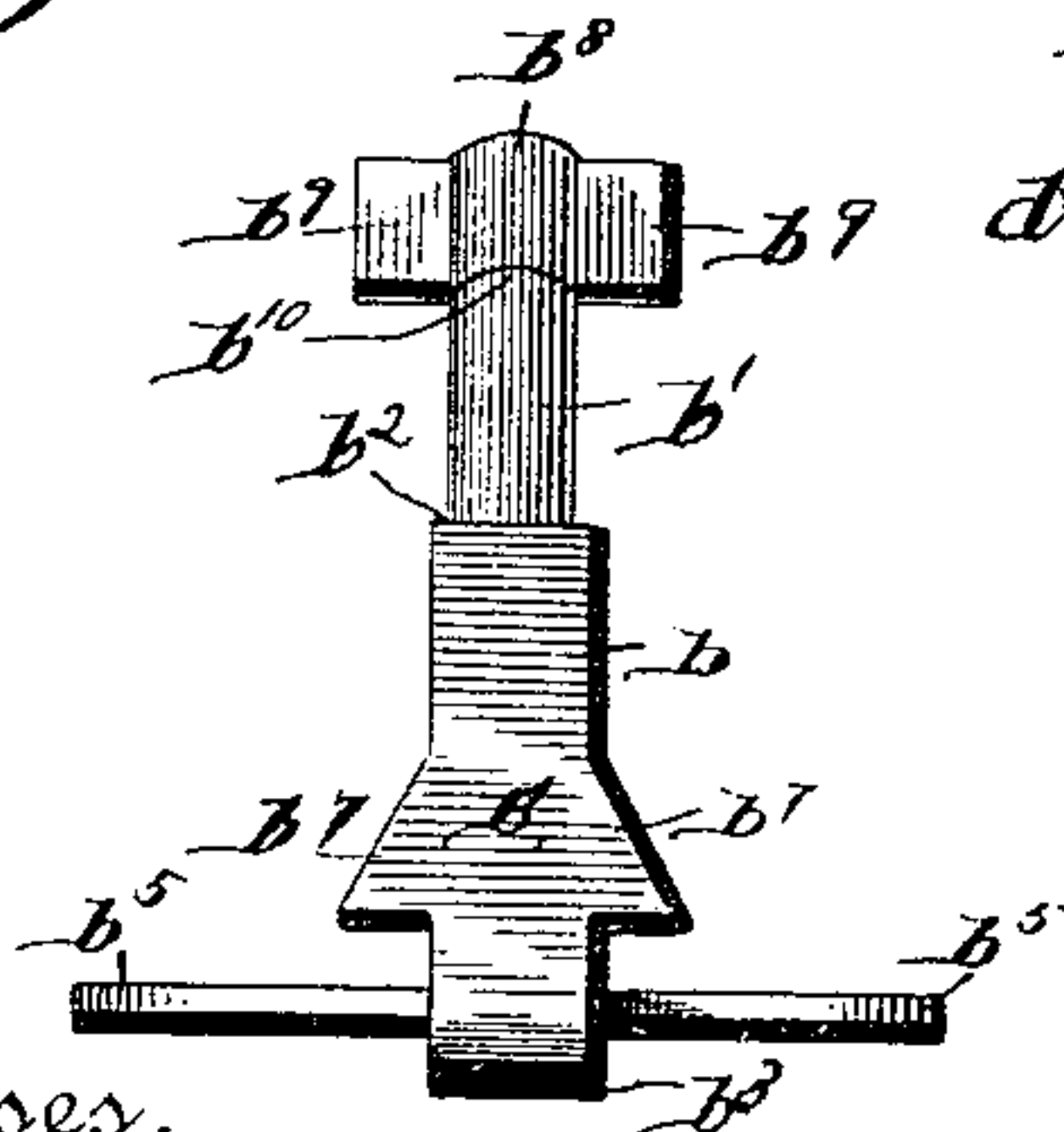
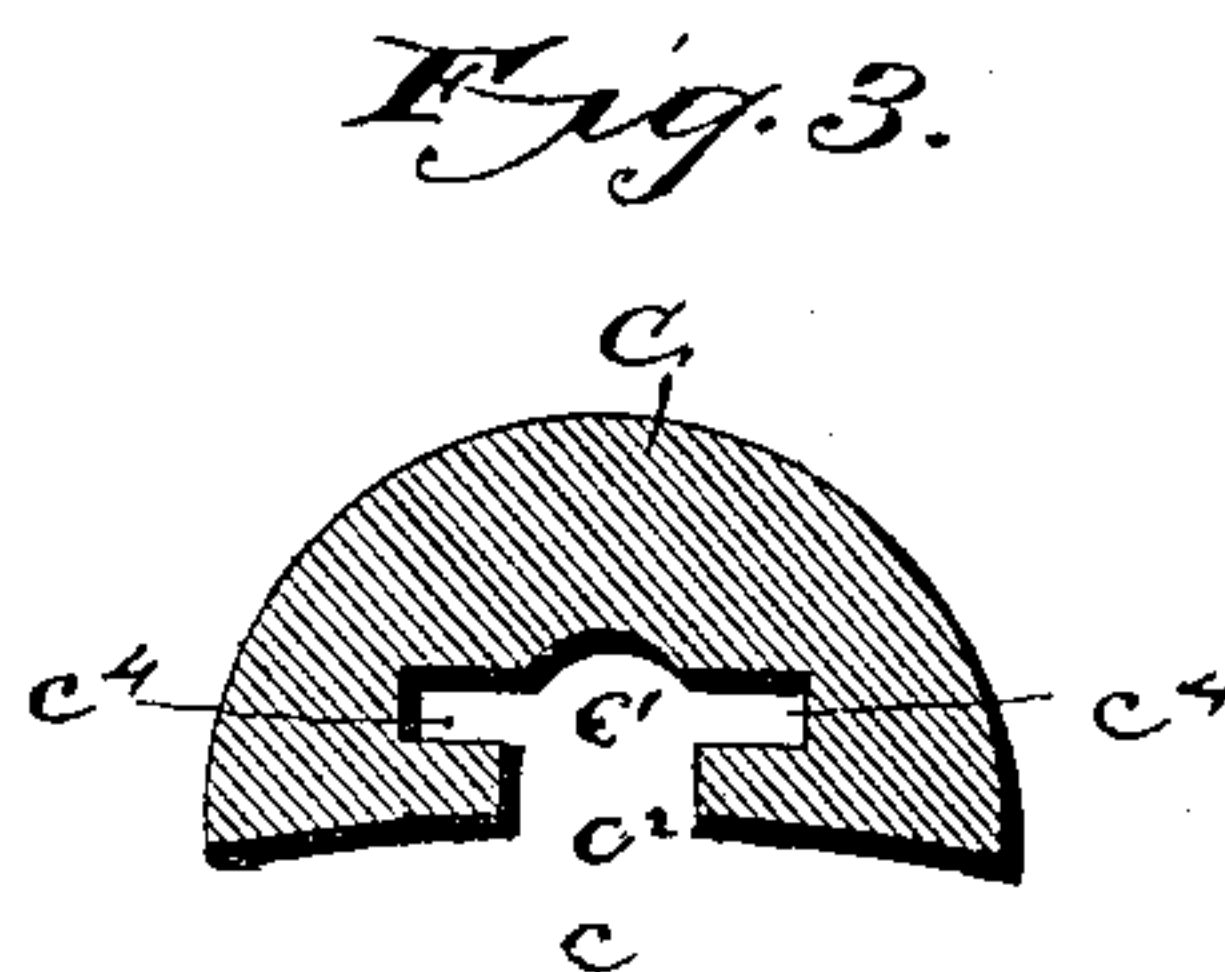
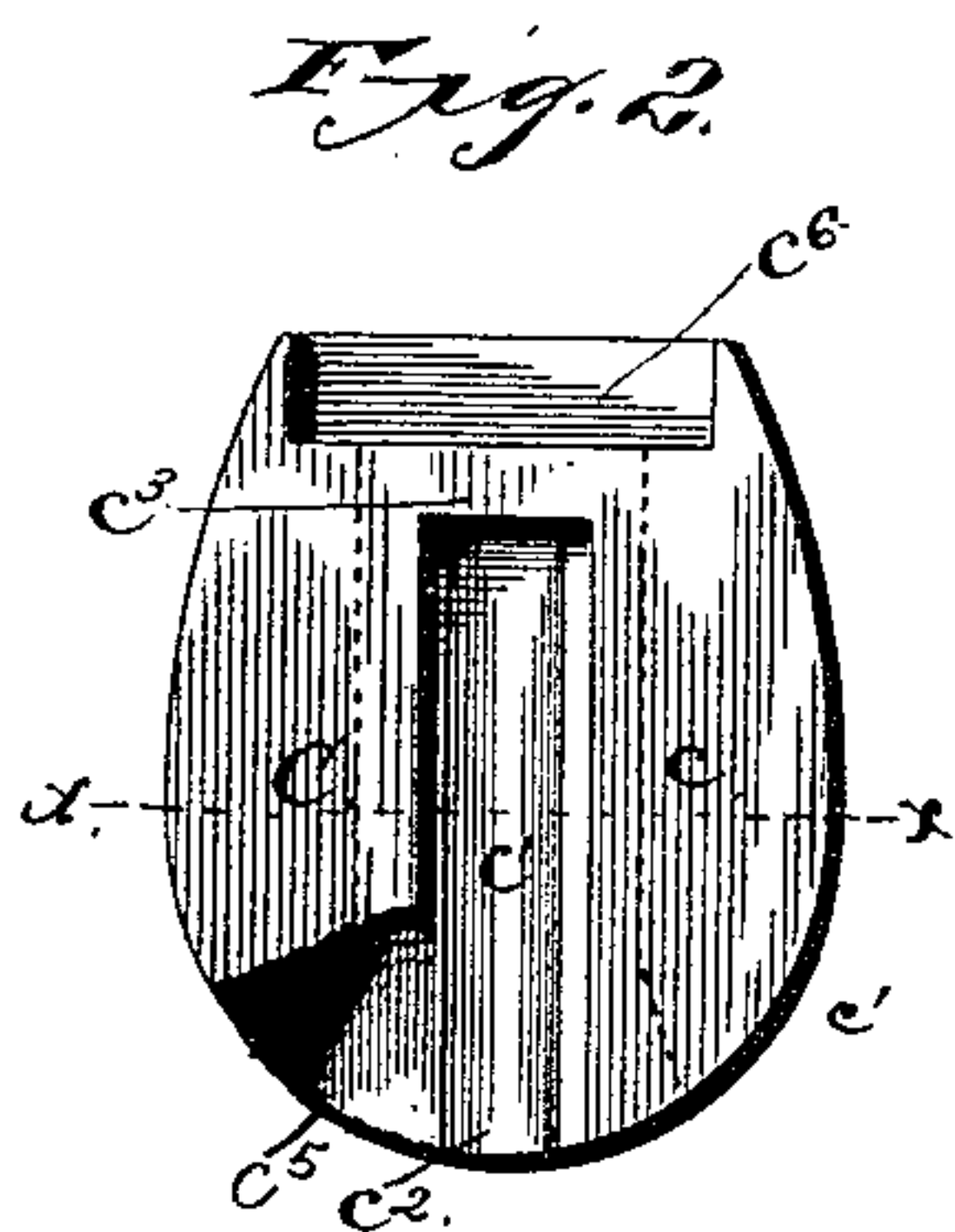
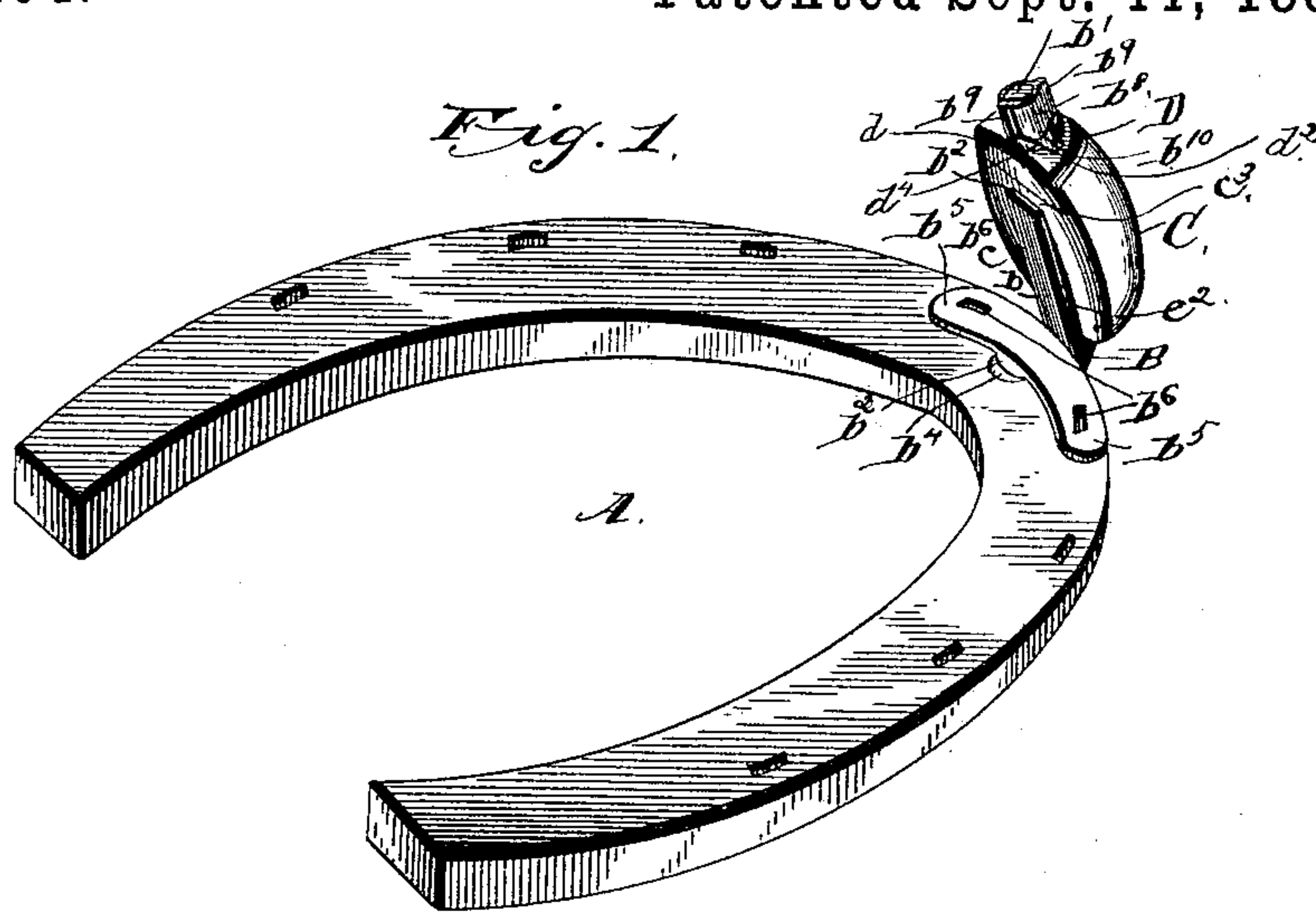
(No Model.)

C. W. CRANNELL.

TOE WEIGHT.

No. 389,204.

Patented Sept. 11, 1888.



Witnesses,

Geo. Thayer  
R. Marshall Jr.

Inventor.

*Chas. W. Cran nell.*

By her Attorneys

C. A. Snowdon



# UNITED STATES PATENT OFFICE.

CHARLES W. CRANNELL, OF OBERLIN, KANSAS.

## TOE-WEIGHT.

SPECIFICATION forming part of Letters Patent No. 389,204, dated September 11, 1888.

Application filed May 29, 1888. Serial No. 275,502. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES W. CRANNELL, a citizen of the United States, residing at Oberlin, in the county of Decatur and State of Kansas, have invented new and useful Improvements in Toe-Weights, of which the following is a specification.

The invention relates to improvements in toe-weights adapted to be attached to horse-shoes; and it consists in the construction and novel combination of parts hereinafter described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a horseshoe having a toe-weight embodying the invention attached. Fig. 2 is a view of the weight detached, looking at its inner side. Fig. 3 is a section on the line  $x x$  of Fig. 2 to show the interior of the weight. Fig. 4 is a perspective view of the shank or stem of the weight. Fig. 5 is a perspective view of the cap-plate of the weight. Fig. 6 is a central vertical section.

Referring to the drawings by letter, A designates a horseshoe, to which the shank B of the toe-weight C is attached. This shank comprises the lower rectangular portion,  $b$ , and the upper cylindrical portion,  $b'$ , the rectangular portion being elongated to form the shoulder  $b^2$  on the inner side of the shank. The lower end of the rectangular portion stands inward at an acute angle to form an arm,  $b^3$ , which is rounded on its lower side and fits in a groove,  $b^4$ , extending transversely inward on the center of the upper surface of the shoe from the outer side thereof, and this arm is provided with the lateral ears  $b^5 b^6$ , which are perforated at  $b^6$ . Through the said perforations the front horseshoe-nails are passed after being passed through the corresponding front nail-holes in the shoe, thereby securing the device in place only when the shoe is secured to the hoof and enabling it to be used with a number of shoes successively.

$b^7 b^8$  are opposite wings, preferably triangular, which stand out from the front edge of the rectangular portion  $b$ , near the lower part thereof, with their bases downward; and  $b^9$  is a sleeve swiveled on the upper end of the shank B and provided with the opposite rectangular wings,  $b^9 b^9$ , as shown. The said sleeve rests on an annular shoulder,  $b^{10}$ , at the lower

end of the cylindrical part  $b'$  of the shank, with its surface flush with that of said part, and the end of the shank is upset to hold the sleeve therein and permit it to be easily turned.

C is the weight having a convex outer surface and the flat inner surface,  $c$ . If desired, the said inner surface may be made slightly concave from side to side to conform and fit close to the hoof of the horse.

The weight is preferably semi-pyiform, has a flat upper end, and is provided with the circular longitudinal opening,  $c'$ , parallel with and near to its inner side. The inner wall of said opening is cut away from its bottom to a point near its top to form the vertical slot  $c^2$ , having the transverse shoulder  $c^3$  at its upper end.

$c^4 c^4$  are opposite grooves standing laterally from the opening  $c'$ , which grooves serve for the passage of the wings  $b^9$  of the swiveled sleeve when the shank is inserted in the weight.

When the weight is on the shank, the rectangular part of the latter projects through the slot  $c^2$  and the shoulder  $c^3$  rests on the shoulder  $b^2$  of the shank; also, the rounded portion  $b'$  of the shank projects above the weight and the lateral wings  $b^7$  rest in the outwardly beveled or inclined lower portions,  $c^5 c^5$ , of the opposite grooves,  $c^4 c^4$ .

D is a cap-plate having on its inner edge the depending flange  $d$ , that enters a shallow recess,  $c^6$ , in the inner surface of the weight. The outer edge of said plate is convex to conform in contour to the outer edge of the top of the weight. The plate D is provided with a circular opening,  $d'$ , for the passage of the end of the weight-shank, which opening is provided on opposite sides with offsets  $d^2 d^2$ , registering with the grooves  $c^4$ , to permit the passage of the wings  $b^9$  of the swiveled sleeve.

$d^3 d^3$  are semicircular cam flanges arranged on opposite sides of the opening  $d'$ , the opposite ends,  $d^4$ , of which are inclined upward from the opposite offsets,  $d^2$ , so that when the wings  $b^9$  are turned angularly away from said offsets their edges will ride upon said flanges and drive the cap-plate downward upon the rubber packing E, which is arranged between the said plate and the upper end of the weight. When the said wings are turned completely at



right angles to the offsets, their edges will catch in the notches  $d^5 d^5$ , which will prevent the wings of the sleeve from being accidentally turned.

5 The shank inclines at such an angle to the shoe to which it is fixed as to permit the inner side of the square portion of the shank to bear against the hoof of the horse; but as this portion of the shank projects slightly beyond the  
10 inner concave face of the weight the latter will thus be held out of contact with the hoof, although it conforms accurately thereto in shape. Thus the weight may be removed from the shank at any time by simply turning the  
15 winged shoe until the wings align with the offsets  $d^2$  and grooves  $c^4$ .

As there are no nuts, thumb-screws, or similar devices connected with the improved toe-weight, which are liable to be jarred loose, and  
20 as the winged sleeve is only adapted to be turned by means of a suitable key, there is no liability that the weight will become detached.

Having thus described my invention, I claim—

25 1. The combination of the shank having at its lower end the inwardly-extending arm provided with perforated wings, by means of which it can be secured by the front nails between the hoof and shoe, and the weight provided  
30 with a longitudinal opening to receive said shank, and means, substantially as described, whereby the weight is locked on the shank, substantially as specified.

35 2. The combination of the shank having the inwardly-extending shoulder between its lower rectangular and its upper rounded portions, the weight having a longitudinal opening to receive said shank, and the opposite longitudinal  
40 grooves extending laterally from said opening, the inner wall of which opening is partly cut away, forming a shoulder to rest upon the shoulder on the shank, the cap-plate having the circular opening provided with opposite  
45 offsets registering with the grooves in the weight, and the opposite cam-flanges surrounding said opening, and the winged sleeve swiveled on the end of said shank, substantially as specified.

50 3. The herein-described toe-weight, composed of the shank B, consisting of the rectangular portion  $b$ , having a shoulder,  $b^2$ , at its upper end, and provided with the perforated wings  $b^5$ , bearing on the shoe and the opposite lateral wings  $b^7$ , and of the cylindrical portion  
55  $b^1$ , provided with the circumferential shoulder  $b^{10}$ , the semi-pyriform weight C, having the longitudinal opening  $c^1$ , the grooves  $c^4$ , ex-

tending laterally from said opening, with their lower portion,  $c^5$ , inclining outwardly, the slot  $c^2$ , and the shoulder  $c^3$  at the upper end of  
60 the slot, the cap-plate D, provided with the depending flange  $d$ , the circular opening  $d^1$ , the offsets  $d^2 d^2$  from said opening, and the cam-flanges  $d^3$ , the rubber packing between said plate and the flat upper end of the weight,  
65 and the swiveled sleeve  $b^8$ , provided with the wings  $b^9$ , substantially as specified.

4. In a toe-weight, the combination of the shank attached to the horseshoe, the weight having a longitudinal opening to receive said  
70 shank, the cap-plate having the opening provided with opposite offsets, and the opposite cam-flanges surrounding said opening, and the winged sleeve swiveled on the end of said shank and engaging the cam-flanges, as set  
75 forth.

5. In a toe-weight, the combination of the shank attached to the horseshoe, the toe-weight fitted on said shank, the cap-plate, and the  
80 winged sleeve, substantially as specified.

6. In a toe-weight, the inclined shank affixed to the front of the horseshoe and provided with a rearwardly-elongated rectangular portion,  $b^3$ , adapted to bear against the front of  
85 the hoof of the horse, in combination with the removable weight having an opening fitting on the shank, and also provided with a slot,  $c^2$ , communicating with the said opening, through which the elongated portion of the  
90 shank projects, whereby the rear side of the weight is out of contact with the hoof, substantially as specified.

7. In a toe-weight, the shank affixed to the horseshoe and provided with the triangular wings  $b^7$ , and the weight provided with a longitudinal opening fitting the shank, and lateral  
95 grooves  $c^4$ , arranged on opposite sides of the said opening and having their lower portions inclined outwardly to fit the triangular wings  $b^7$ , in combination with the cap-plate mounted  
100 on the upper end of the weight and having cam-flanges, the elastic packing arranged between the cap-plate and the upper end of the weight, and the winged sleeve mounted on the  
105 upper end of the shank and adapted to engage the cam-flanges on the cap-plate to force the latter down, substantially as specified.

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

CHARLES W. CRANNELL.

Witnesses:

F. W. CASTERLINE,  
C. F. RATHBONE.