

No. 706,543.

Patented Aug. 12, 1902.

J. W. FISHER.
HORSESHOE.

(Application filed Apr. 19, 1902.)

(No Model.)

2 Sheets—Sheet I.

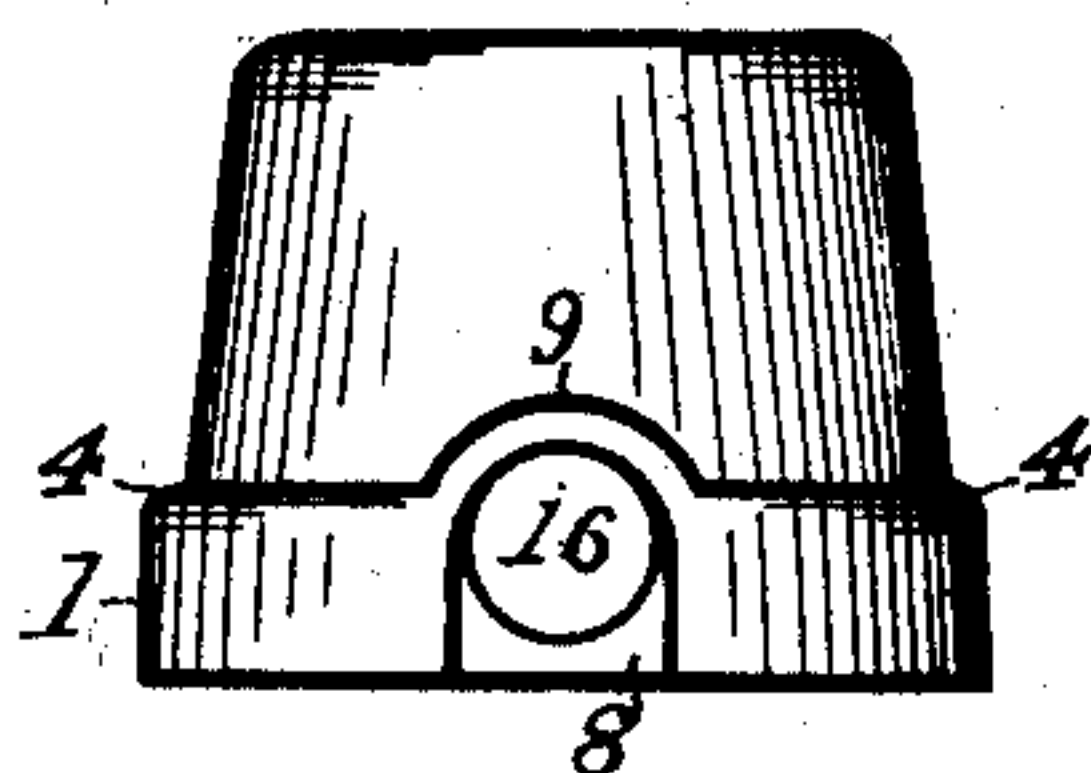
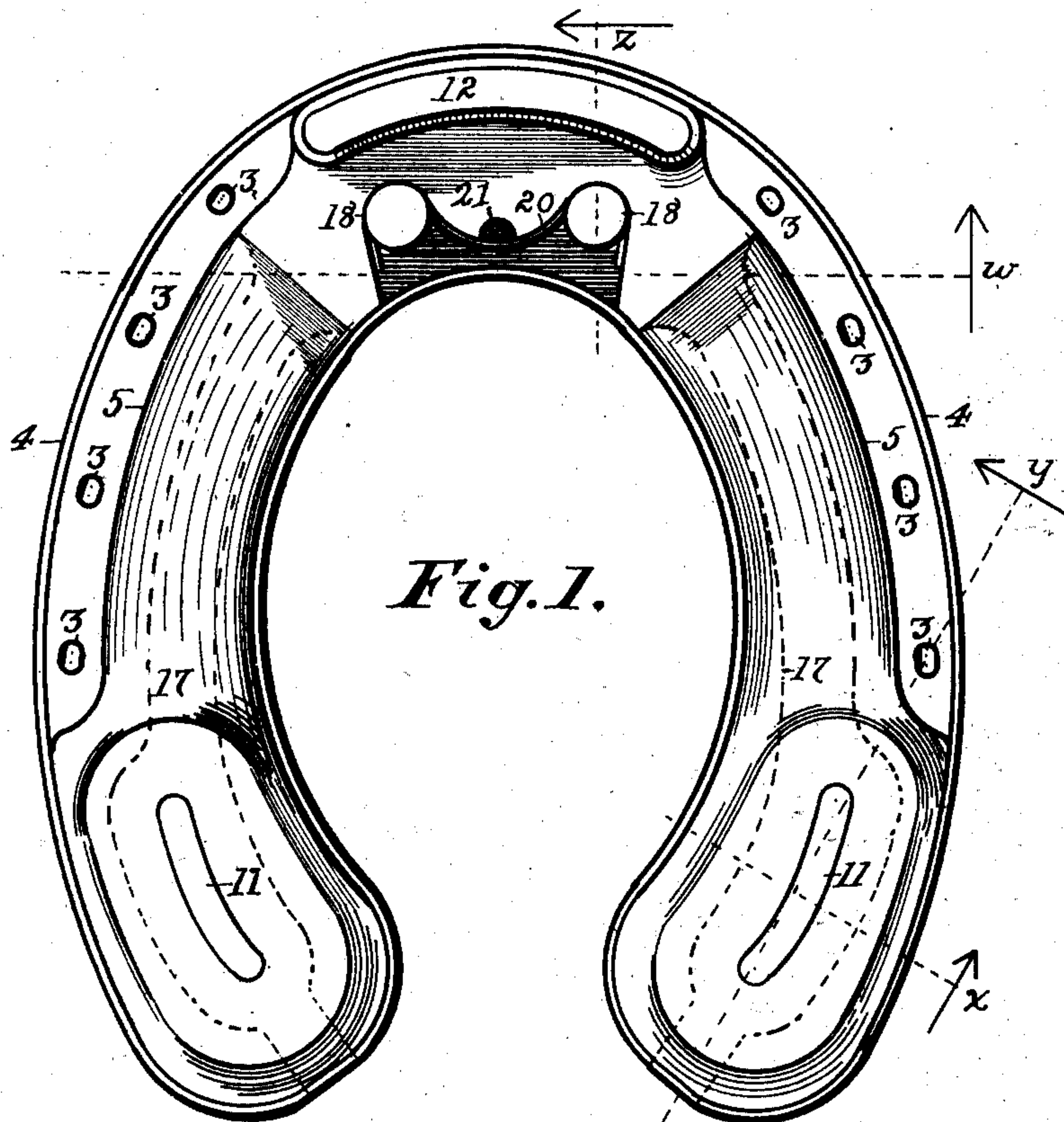


Fig. 2.

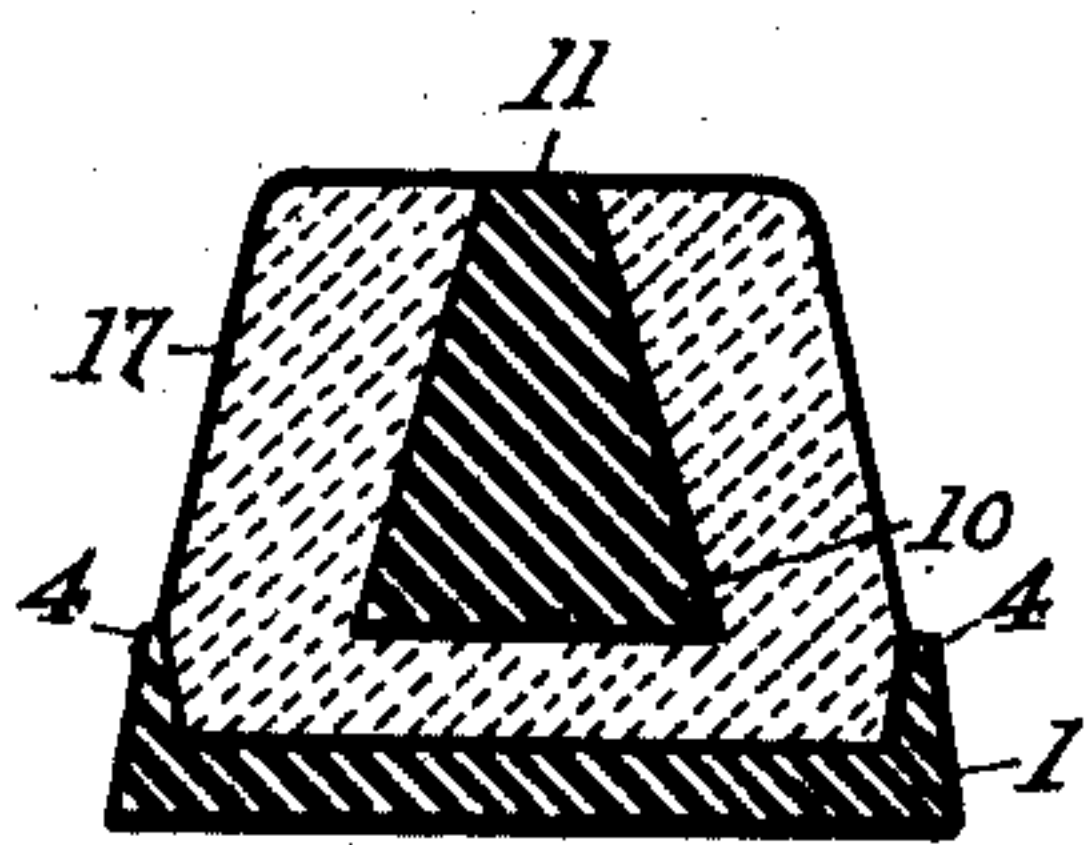


Fig. 3.

Witnesses:

Walter Bowman.
Maudie Gwisler.

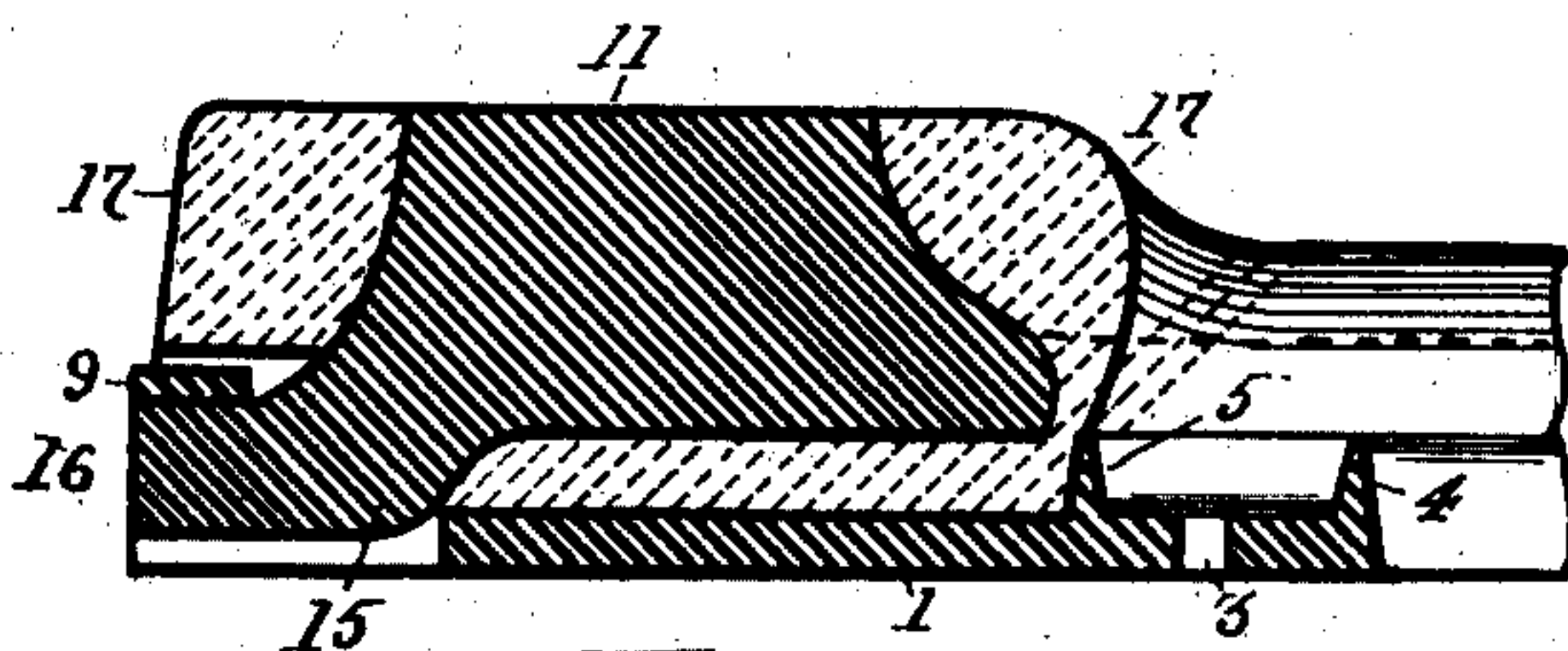


Fig. 4.

Inventor:

John W. Fisher,
by Humphrey & Humphrey,
Attorneys.

No. 706,543.

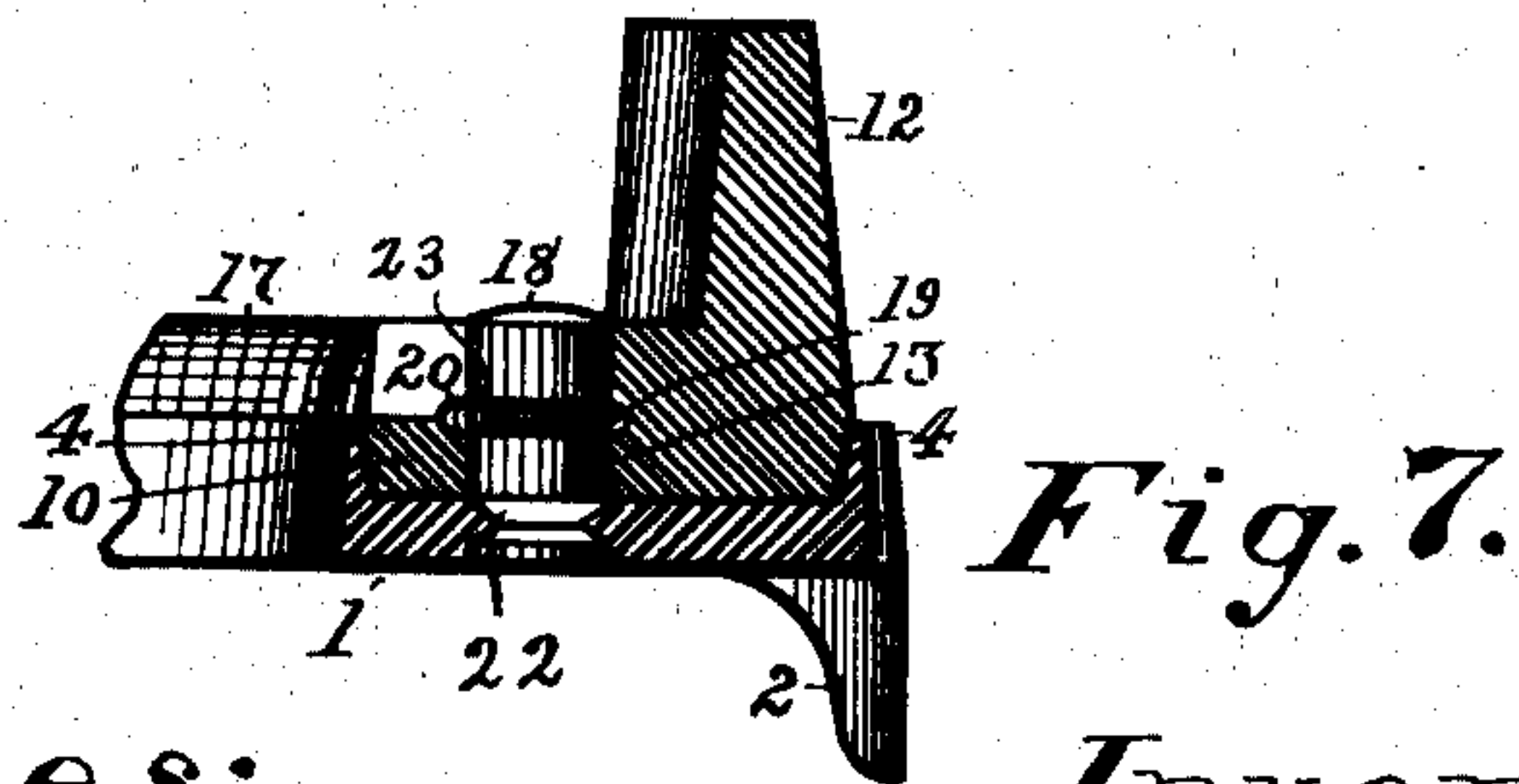
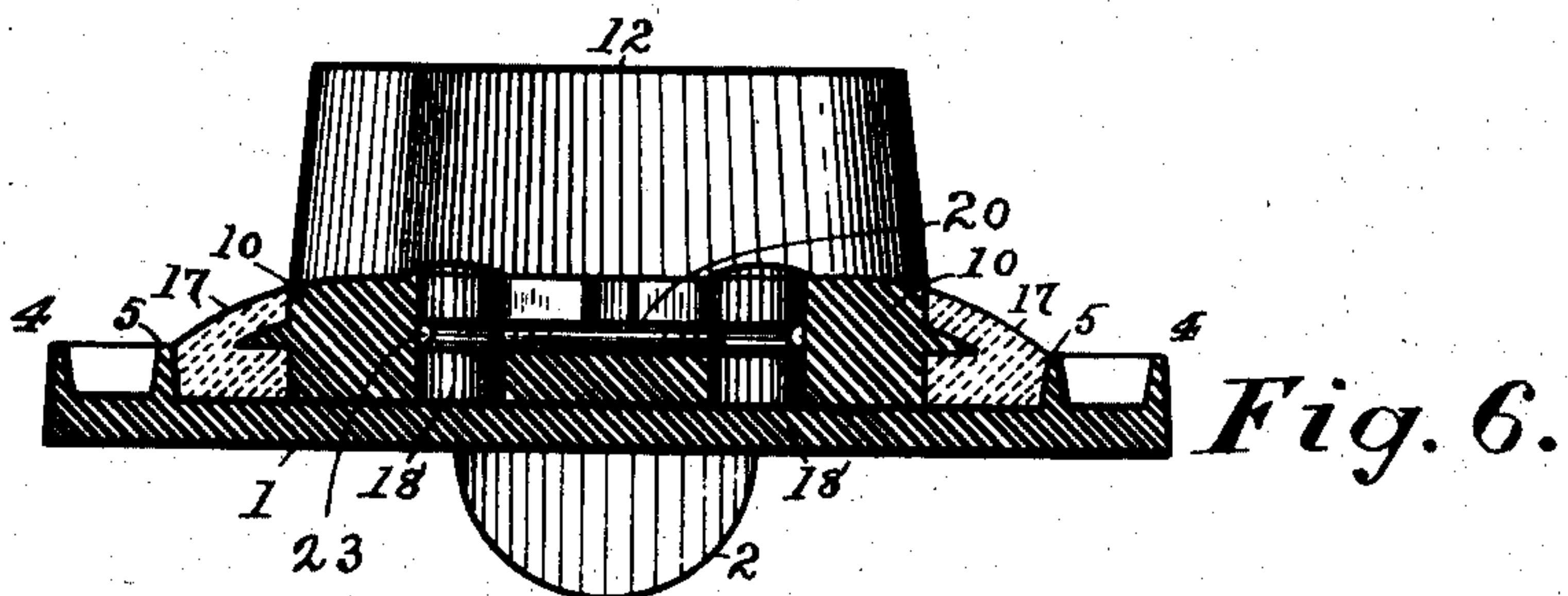
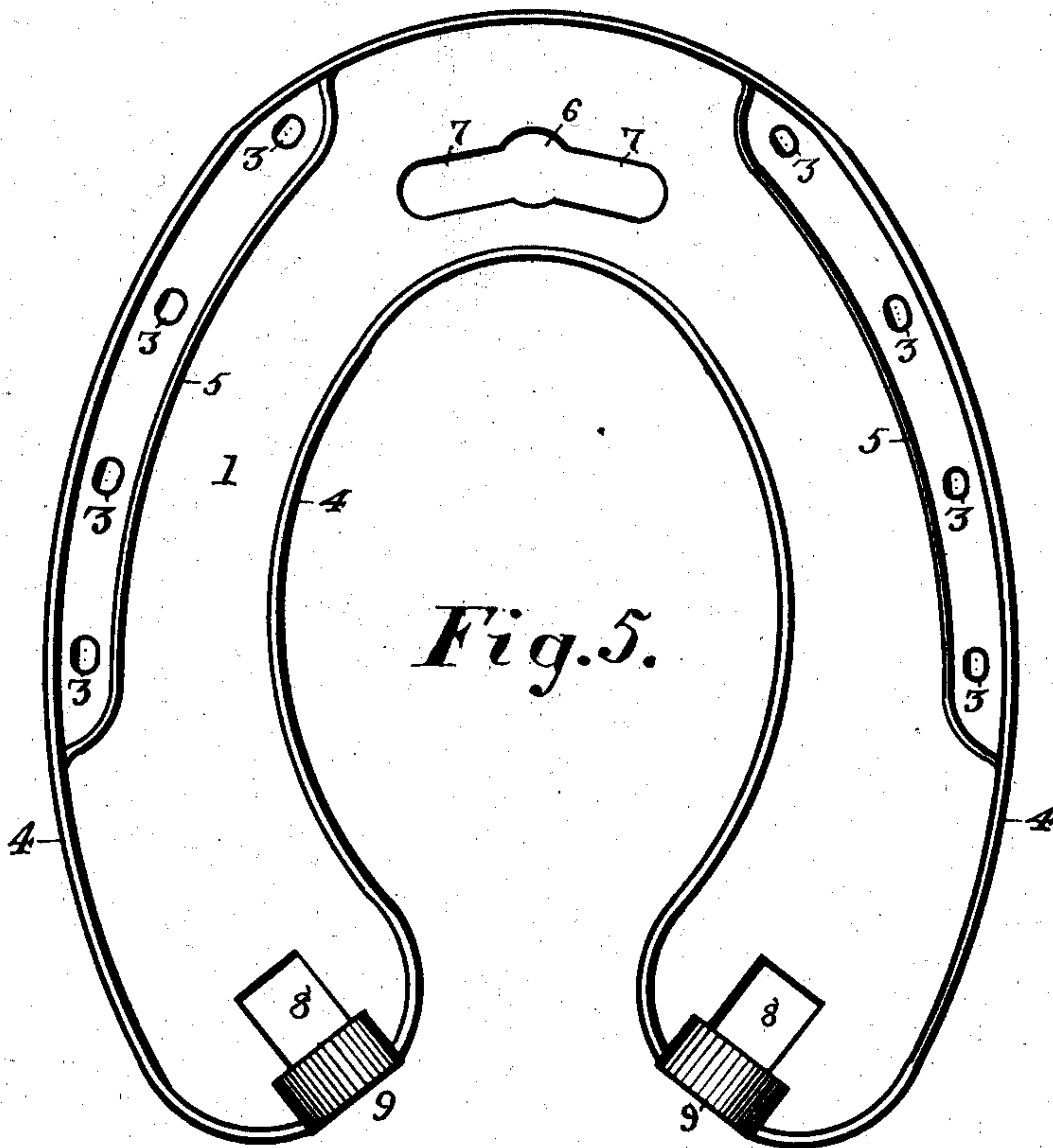
Patented Aug. 12, 1902.

J. W. FISHER.
HORSESHOE.

(Application filed Apr. 19, 1902.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses:

Walter Bowman.
Maude Givler.

Inventor:

John W. Fisher,
By Humphrey Humphrey,
Attorneys.

UNITED STATES PATENT OFFICE.

JOHN W. FISHER, OF AKRON, OHIO, ASSIGNOR OF ONE-HALF TO FRANK REIFSNYDER, OF CHICAGO, ILLINOIS.

HORSESHOE.

SPECIFICATION forming part of Letters Patent No. 706,543, dated August 12, 1902.

Application filed April 19, 1902. Serial No. 103,707. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. FISHER, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented a certain new and useful Improvement in Horseshoes, of which the following is a specification.

My invention has relation to improvements in horseshoes known by the name of "soft" or "cushion" tread and constructed of a combination of iron or steel and vulcanized india-rubber.

The object of my invention is to produce an improved shoe of the general class named that shall have the advantages of the cushion element combined with a metallic toe-calk and metallic strengthening for the heel-calks that shall embody a metallic shoe to be permanently fastened to the hoof with the rubber and calk portion detachably secured thereon, so that it may be removed and renewed when it becomes worn without disturbing the metal shoe.

To the accomplishment of the aforesaid objects my invention consists of the peculiar and novel construction, arrangement, and combination of parts hereinafter described and then specifically pointed out in the claims, reference being had to the accompanying drawings, which form a part of this specification.

In the accompanying drawings, in which similar reference-numerals indicate like parts in the different figures, Figure 1 is an inverted plan of the entire shoe; Fig. 2, an end elevation of one of the heels of Fig. 1; Fig. 3, a section of Fig. 1 at the line *x*; Fig. 4, a section at the line *y*; Fig. 5, an inverted plan of the metal shoe to be secured to the hoof; Fig. 6, a section of Fig. 1 at the line *w*, and Fig. 7 a section of the same at the line *z*.

Referring to the figures, 1 is the metal shoe, having at the toe an upturned flange 2 to bear against the front of the hoof and provided with nail-holes 3, the entire upper face being of the usual flat form.

About the entire edge of the lower face of the shoe is a flange 4 and inside the line of the nail-holes on each side a similar flange 5, united at each end with the flange 4.

In the toe of the shoe 1 is a central round hole 6, from each side of which branches 7

diverge in lines slightly inclined toward the heels. The sides and ends of these branches 7 are beveled from top and bottom, so as to present inwardly-projecting edges, as shown in Fig. 7.

In each heel of the shoe is a rectangular notch 8, extending forward substantially in alinement with that portion of the shoe, over the outer end of which notch is a curved metal band 9, integral with the shoe.

The support or reinforce of the rubber portion, to be described, consists of metal frame 10 of peculiar form and shown in outline by dotted lines in Fig. 1, excepting at the toe and partially at the heels, as will now be explained. Between the front of the heel-calks and the ends of the toe portion this frame is a narrow band, flat below and rounded on top, gradually widened toward the toe and heels. At the heel this frame is widened into a somewhat elliptical shape and extends downward in a gradually-decreasing thickness to a narrow edge, thus presenting it dovetailed in section, as seen in Fig. 3, and decreased in length, as appears in Fig. 4, and constituting the metallic centers 11 of the heel-calks. At the toe of the frame 10 it is thickened above and below on each side by substantially abrupt shoulders, the one on the under face to abut the rubber portion, to be described.

At the toe is an integral calk 12, curved to conform to the line of the shoe, and back of the calk on each side of the center are holes 13, that register with the outer ends of the branches 7 of the shoe 1. Back of the holes 13 is a recess for a binding-wire, to be described, which recess is in the under face of the frame about one-half the thickness of the metal in depth, with its ends abrupt and the intermediate line conformed to the inner line of the toe-calk, and in the inner edge of this recess is a groove 19, semicircular in section and arranged to register vertically with the semicircular grooves in the binding-posts, to be described.

On the top of the heels of the frame a short distance in front of the ends are integral depending lugs 15, from the rear ends of which extend round pins 16, adapted to enter the notches 8 of the shoe 1 and rest under the bands 9.

The elastic portion 17 is of rubber, which

incloses the frame 10 from the abrupt shoulders at each side of the toe to the ends of the pins 16, and the rear ends are thickened and widened, so that their lower faces are even with the metallic centers 11, which they also inclose, thus forming an elastic heel-calk with a metallic center.

In operation the rubber is vulcanized in suitable molds on the frame. The parts are then assembled by passing the pins 16 into the notches 8 and pushing the combined frame and rubber backward until the pins rest under the bands 9. Previously, however, two binding-posts 18 are prepared. These posts are alike and each is round, of such a diameter as to pass through the hole 6 in the shoe 1. Each post has a V-shaped groove 22 to fit the inner edges of the branches 7 and near its center a curved semicircular groove 23 for a purpose to be stated. These binding-posts having been inserted in the hole 6 are then severally pushed outward in opposite directions to the ends of the branches 7. The toe of the frame 10 is then pressed down until it rests on the shoe 1, with the posts 18 entering the holes 13. A wire 20, curved to fit the front curve of the recess and rest in the curved grooves 23 of the posts 18, is then inserted in the opposite half-grooves 19 and 23 of the recess and posts 18, respectively, and serves to hold the posts and frame together, thus securing the parts firmly. When it is desired to remove the frame 10 and its rubber coating, a small lever, like an awl or similar implement, is inserted in the notch 21 and the wire 20 pried out, when the various parts are separated by reversing the action by which they were assembled. By this construction a new frame and rubber coating can be substituted for the first when the latter is worn.

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

1. An improved cushion-horseshoe consisting of a metal shoe to be secured to the hoof having means for securing thereto an independent underimposed vulcanized-rubber tread-surface inclosing a metal frame provided as described with a rubber coating, excepting at the toe and arranged to be detachably secured to said shoe and means for connecting said shoe and frame, substantially as shown and described.

2. An improved cushion-horseshoe consisting of a metal shoe to be secured to the hoof having means for securing thereto an underimposed vulcanized-rubber tread-surface, in combination with a metal frame having integral toe and heel calks and provided with a rubber coating, and a rubber envelop inclosing said frame and thickened at the heel substantially even with the heel-calks, and means for detachably uniting said frame and shoe, substantially as shown and described.

3. An improved cushion-horseshoe consist-

ing of a metal shoe to be fastened to the hoof having on its under face, flanges to form a seat for an underimposed cushion and means for securing said cushion thereto, in combination with a metal frame having integral toe and heel calks and a rubber envelop, arranged to lie within said flanges, thickened at the heel about said heel-calks, and means for uniting said frame and envelop, with said metal shoe, substantially as shown and described.

4. An improved cushion-horseshoe consisting of a metal shoe to be fastened to the hoof having notches in the heel with bands over the back ends of said notches, in combination with a metal frame having integral toe and heel calks with offset pins to enter said notches and rest under said bands, and means for detachably securing the toe of said frame to the shoe, and a rubber envelop inclosing said frame back of the toe portion, and thickened at the heel about said heel-calks, substantially as shown and described.

5. An improved cushion-horseshoe consisting of a metal shoe 1, to be fastened to the hoof having means at the heel for securing a rubber-covered frame, and a hole 6, at the toe with lateral narrower branches 7, and posts 18, to enter said hole having grooves to fit said branches 7, in combination with a frame 10, having integral means 16, for securing it to the heels of said shoe 1, and holes to register with and receive said posts 18, a rubber envelop 17, on said frame, and means for holding the toe of said frame on said posts, substantially as shown and described.

6. The herein-described cushion-horseshoe consisting of a metal shoe 1, to be secured to the hoof, having flanges to form a retaining-seat for an underimposed cushion, with notches in the heel with bands 9, over their back ends, a hole 6, at the toe with lateral narrower branches 7, and posts to enter said hole having grooves to fit said branches, and other grooves for a binding-wire 20, in combination with a metal frame 10, having integral toe and heel calks, with offset pins 16, to enter said notches and rest under said bands 9, and holes to register with and receive said posts at the ends of said branches and a recess at the toe back of and between said holes, a rubber envelop 17 inclosing said frame 10 back of the toe portion and thickened about said heel-calks, and a wire 20, to rest across said recess and in the grooves 19 thereof, and in the grooves 23 of said posts 18, to retain the toe of said frame, substantially as shown and described.

In testimony that I claim the above I hereunto set my hand in the presence of two subscribing witnesses.

JOHN W. FISHER.

In presence of—

C. P. HUMPHREY,
C. E. HUMPHREY.