

(No Model.)

C. N. TYLER.
HEEL PLATE.

No. 547,822.

Patented Oct. 15, 1895.

Fig. 1.

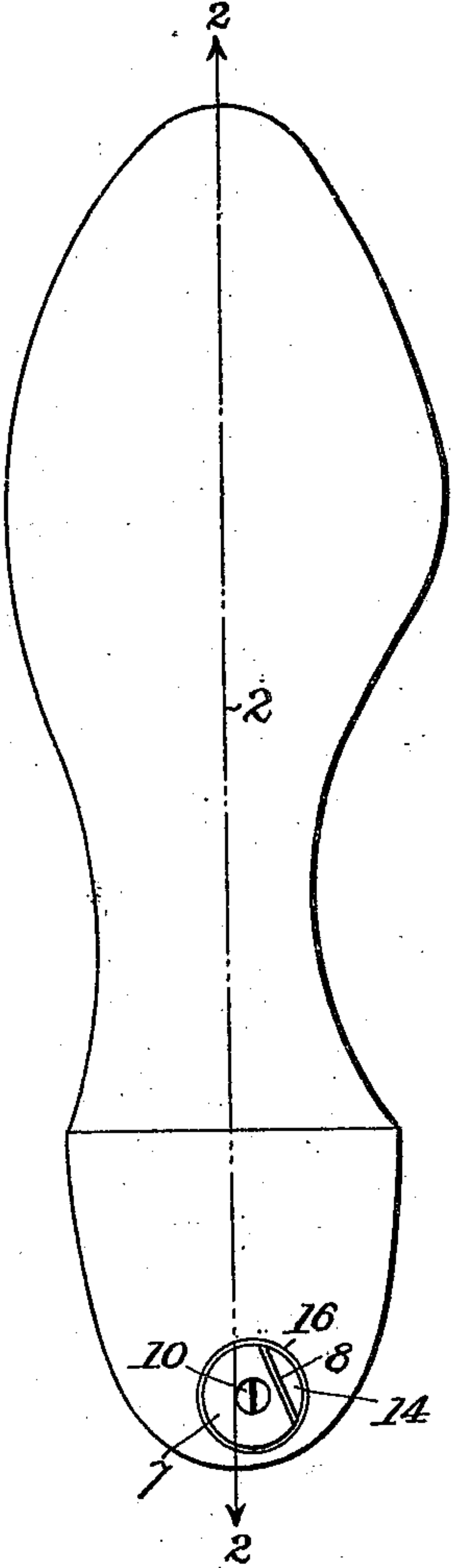


Fig. 2.

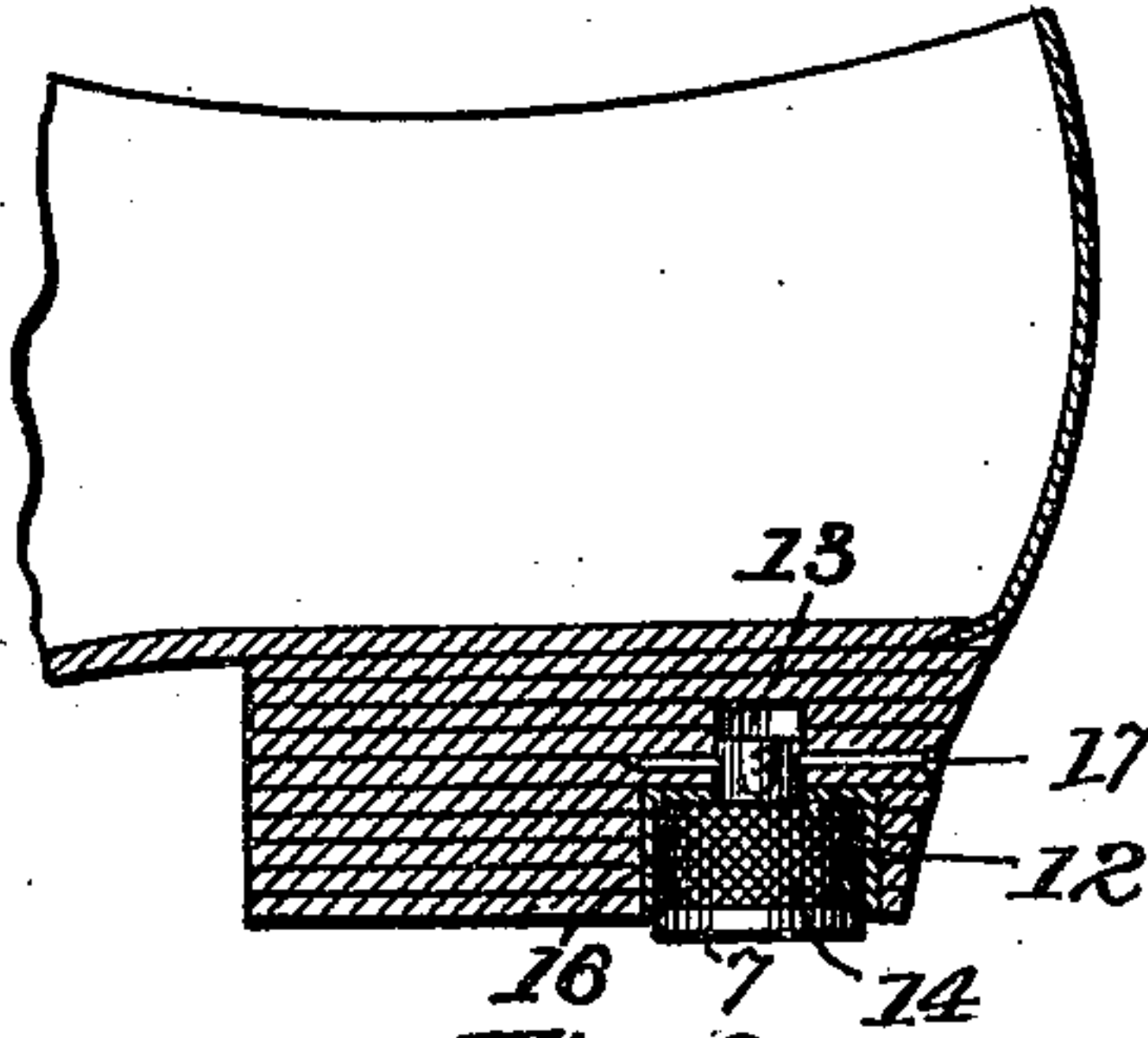


Fig. 3.

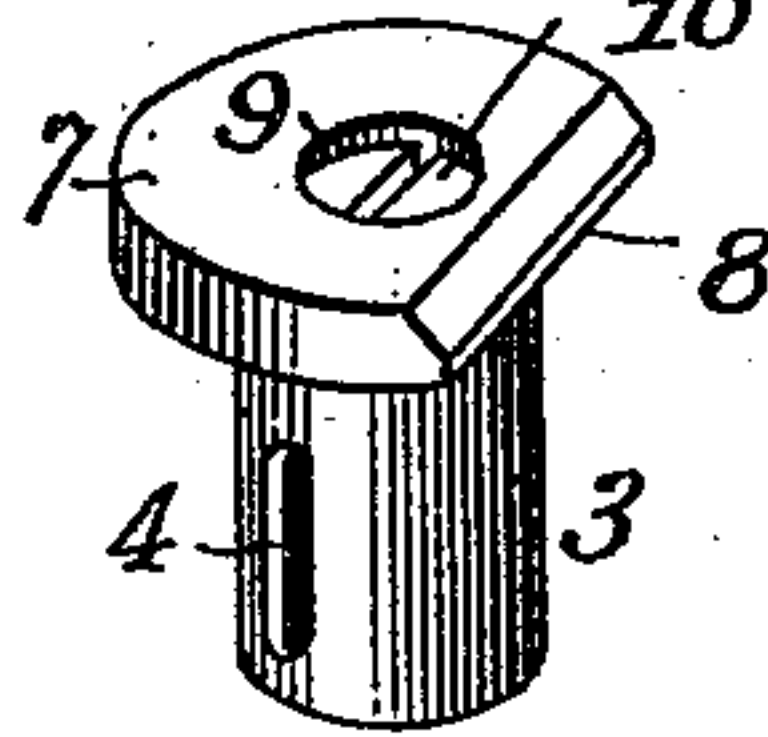


Fig. 4.

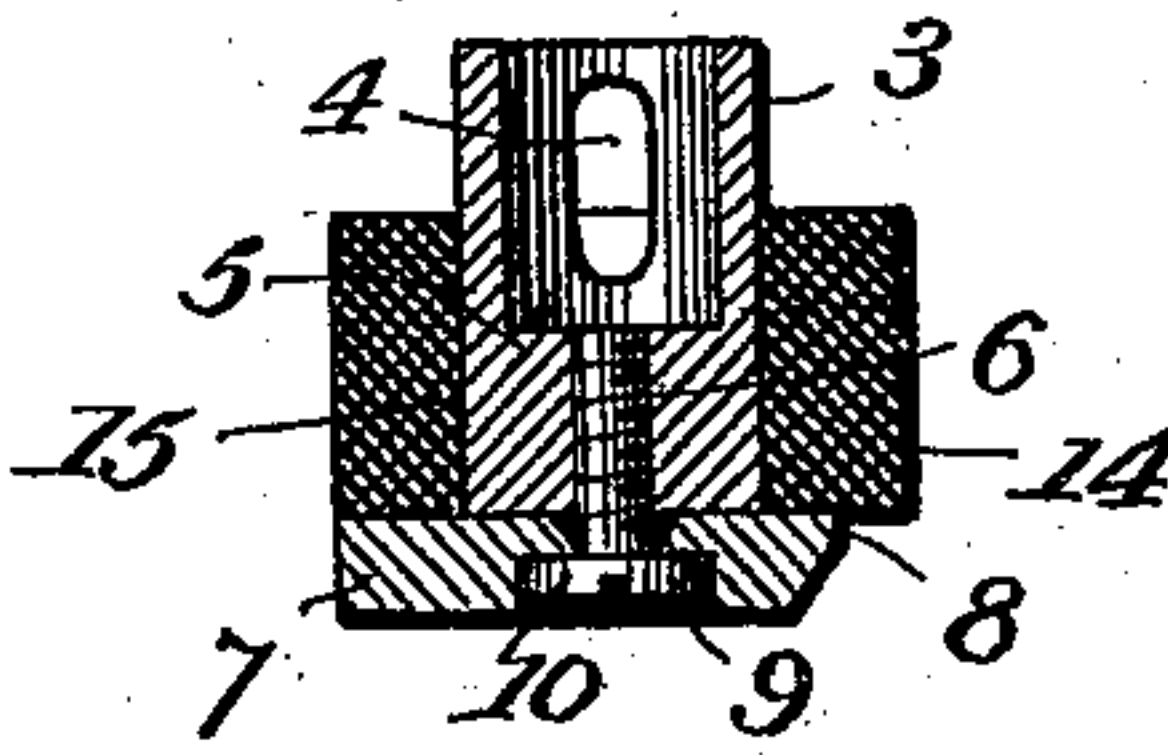


Fig. 5.

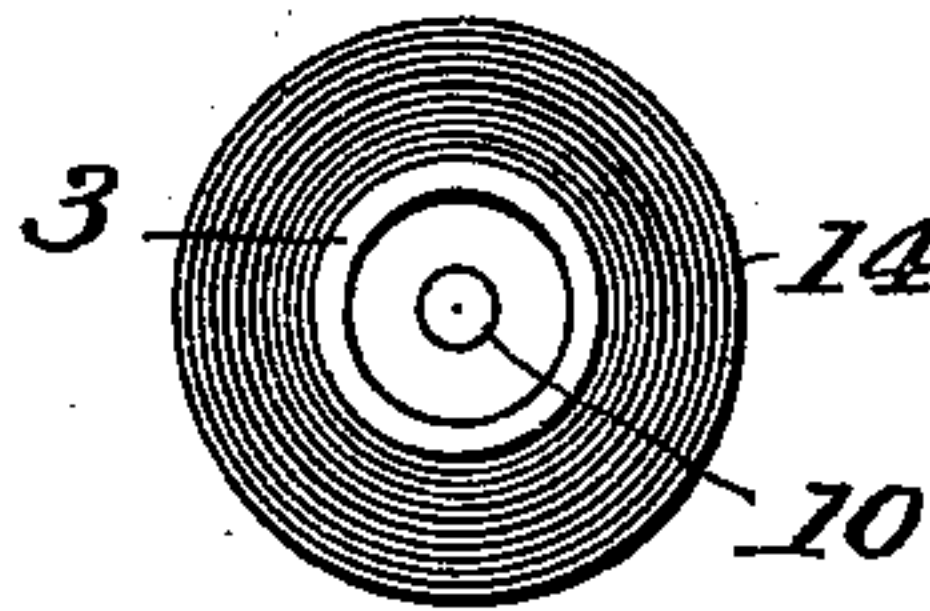
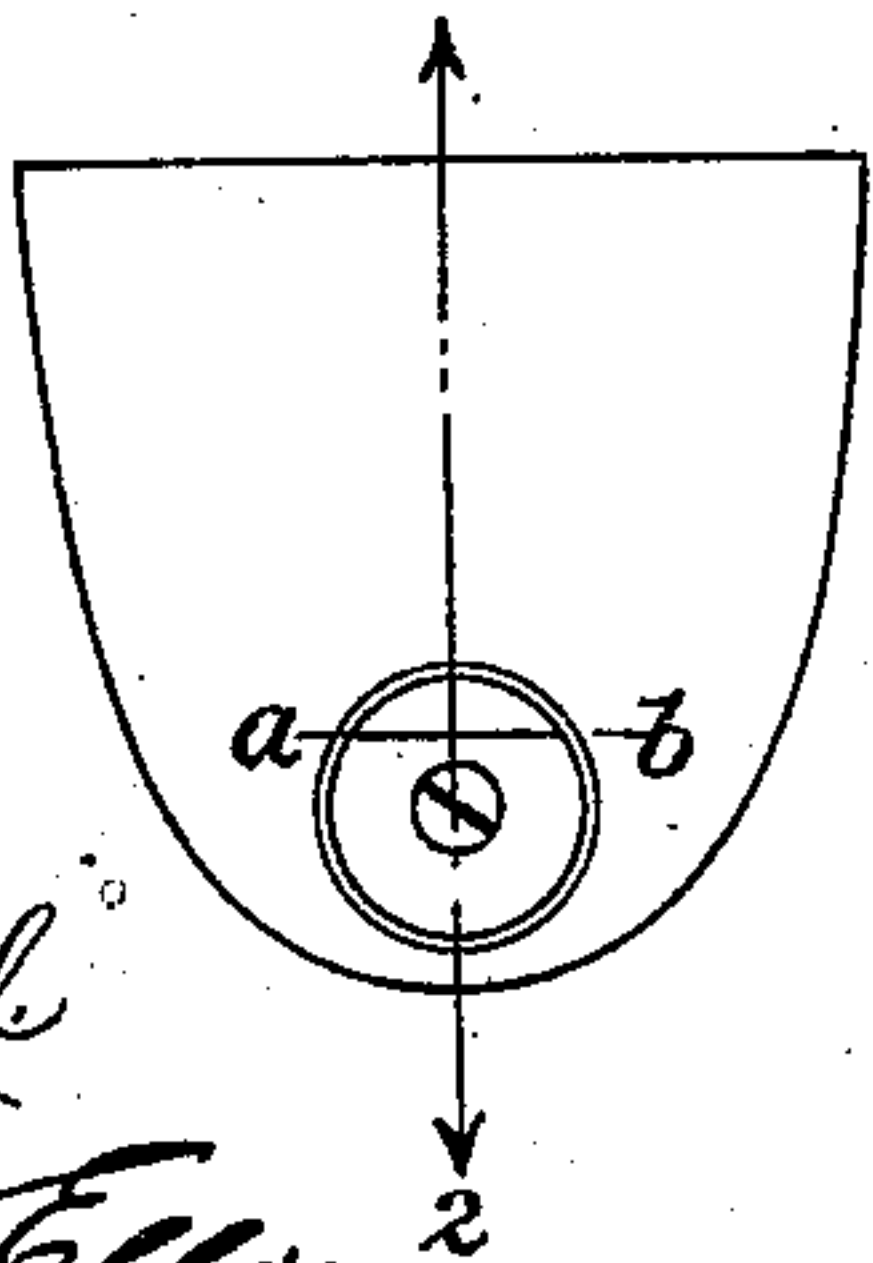


Fig. 6.

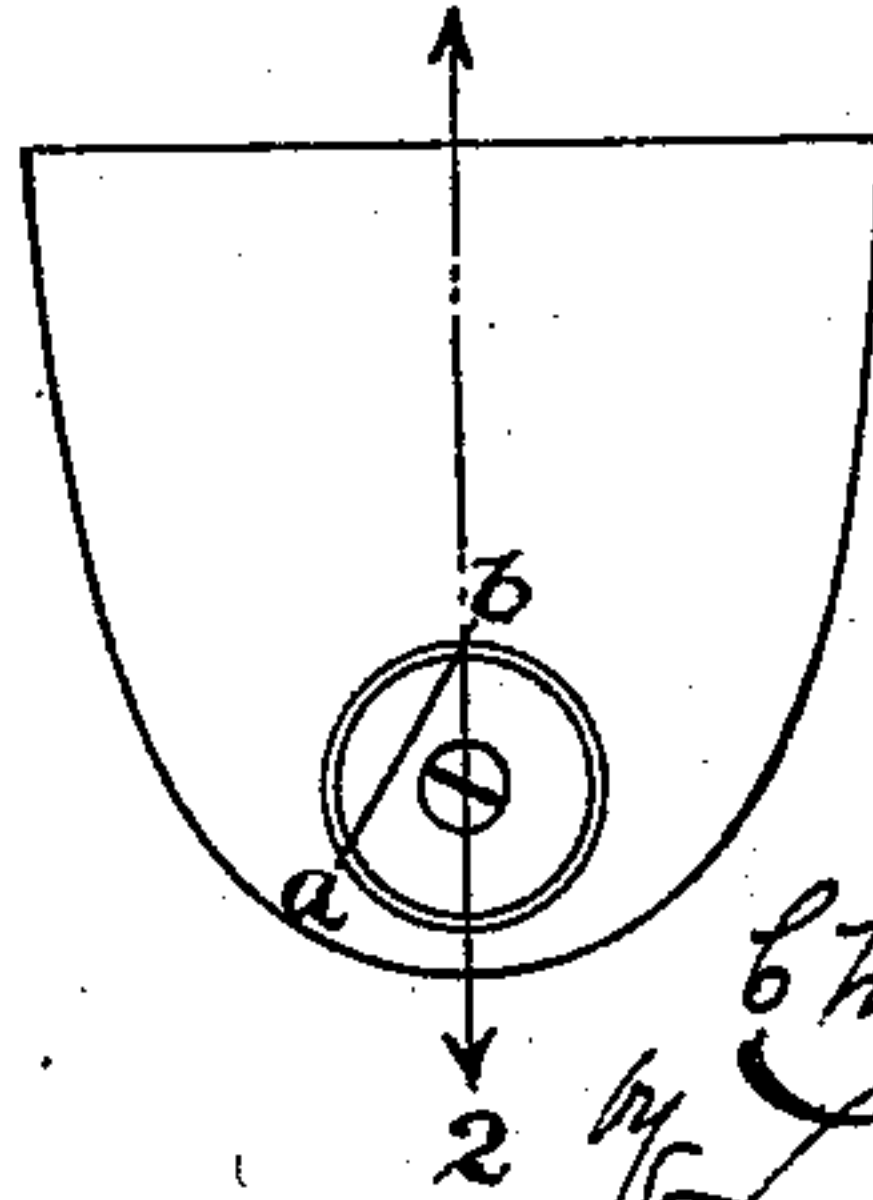


Witnesses

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Fig. 7.



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HEEL-PLATE.

SPECIFICATION forming part of Letters Patent No. 547,822, dated October 15, 1895.

Application filed February 11, 1895. Serial No. 537,974. (No model.)

To all whom it may concern:

Be it known that I, CHARLES N. TYLER, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Heel-Plates, of which the following is a specification.

This invention relates to certain new and useful improvements in heel-plates for boots and shoes; and it consists, substantially, in such features of construction, arrangement, and combinations of parts as will hereinafter be more particularly described.

The object of the invention is to provide for adjustment to the tread of the foot, and to so distribute or equalize the weight of the body as to derive even wear of the surfaces of both the sole and heel of the shoe.

A further object of the invention is to alter or direct the wear upon any part of the sole or heel of a shoe, accordingly as the natural tendency may be to carry the same in a different or contrary direction, substantially as will hereinafter more fully appear when taken in connection with the accompanying drawings, in which—

Figure 1 is a bottom plan view of a boot or shoe representing my improved device as located in the heel and occupying such position with regard to the central line of the shoe as will cause the weight of the body to bear more to one side of said line. Fig. 2 is a vertical section through the heel and my improved device by which the general interior construction of the heel and the arrangement of the device therein will be more fully understood. Fig. 3 is an enlarged perspective view of my improved device minus the cushion, representing the same as when ready to be inserted within the opening in the heel. Fig. 4 is a enlarged vertical section through the device. Fig. 5 is a bottom or plan view. Figs. 6 and 7 are diagrammatic views illustrating the alteration of the plate to effect the different results or changes.

Before proceeding with a more detailed description of my invention, and in order that the same may be more fully understood, I desire to call attention to the bottom plan view shown in Fig. 1, wherein the line indicated at 2 represents the central line of

weight to the shoe, and when we assume that the tread of the foot continues to be absolutely perfect it of course follows that the relation of the weight to this line will remain the same. Owing to many causes however—such as soreness, lameness, and other defects—the tread is never perfect, and the weight is inclined to be greater either forward or back, or upon one side or the other, and therefore I have provided my improved device or heel-plate of such construction and arrangement that the weight of the body can be made to be borne by one side or the other, and consequently the wear is equalized and made perfectly even. The construction of the plate proper and its adjustability also cause the tread to be altered or changed in such manner that the sole and shank have an equal wear and strain, and the comfort of the shoe or boot is assured. The tread is rendered elastic and the resilient action of the device assists greatly in the elevation of the heel from the ground during the act of walking.

My improved device is capable of being constructed in a great many different ways, but preferably the same is composed of a small cylinder 3, having at diametrically-opposite sides the vertical slots or elongated openings 4 4, and formed interiorly of the neck 5 thereof is a screw-thread 6. The plate proper is designated at 7, and is preferably flat and segmental in form, and it is provided with an opening 9, which, if the plate were continued to form a complete circle, would be at the center thereof. To more clearly define the form or construction of said plate, it may, perhaps, be added that the contour thereof is that of an arc of a circle, the straight edge thereof being the chord. Said edge, instead of being straight, however, could, of course, be curved. This construction leaves a space or opening between the straight edge of the plate and the cavity of the heel, (hereinafter referred to,) which allows of the outward swelling of the cushion, as and for the purpose hereinafter mentioned. Said plate is fitted or secured to the neck of the cylinder 3 by means of a small screw 10, which passes through the opening 9 and is received by the thread 6. The opening 9, it will be observed,

is countersunk or is sufficiently large and tapering as to completely receive the head of the screw and prevent it from projecting beyond the plate. At the proper point the heel of the shoe is cut out to form a double circular cavity—that is to say, a cavity having a lower enlarged diameter 12 and an upper smaller diameter 13—and inserted within said enlarged portion of the cavity is a circular rubber or other elastic cushion 14, having a central opening 15, slightly less in diameter than the diameter of the cylinder 3, so as to fit closely when the latter is inserted in place. I sometimes prefer to line the enlarged portion of the cavity with a metal ring or band, such as is indicated at 16, but the use of this is not absolutely essential to all kinds of shoes. As thus constructed, the cylinder 3 is inserted into the opening of the cushion 14 and is pushed upward or inwardly until the plate 7, the outer contour of which fits the opening 12, is close against the cushion, which yet, owing to its thickness, projects beyond the surface of the heel so as to strike the ground in advance of the heel. A headed fastening-pin 17 is driven through the side of the heel at a point to enter or pass through the slots in the sides of the cylinder at its opposite end from the plate, holding the plate from further outward movement, and in this way my improved device is permitted a slight vertical movement while the person wearing the shoe is walking. As the heel strikes upon the ground flatly, the device is pushed inwardly and the cushion is compressed. Then, as the weight on the heel is relieved by lifting the foot from the ground, the resiliency of the cushion again sends or forces the device outwardly, as before. This action greatly facilitates the operation of the shoe in walking, and by reason of the opening or space left by the edge 8 of the plate 7 the cushion 14 is caused to bulge or swell outwardly under the weight, which, as is obvious, keeps the cavity in the heel always completely filled or packed with no liability to the entrance of dirt or moisture. It is by cutting off a portion of the plate at 8 that I am enabled to obtain all of the advantageous results herein ascribed to my device. Again referring to Fig. 1, it will be seen that the axial line of said plate does not intersect with the central straight line 2 hereinbefore referred to as representing the central line of the shoe. On the contrary, the plate is set to one side of such line, or to that side which will cause the greater part of the weight to rest or bear a little to the inner side of the shoe, assuming the bottom of the shoe to be on the ground. If the plate were kept at this point until the sole of the shoe became worn out, then the inner side of the heel and sole would wear in excess of the outer side. By setting the device on the opposite side of the line 2 to that herein shown, the effect will be the reverse—that is to say, the greater part of the weight

will be shifted to the outer side of the sole and heel. While the device is in any part of the heel the tread can be altered simply by starting the screw and turning the plate to bring the edge 8 thereof to such a position as will effect the change desired and again fastening the plate. In some instances the desired effect is had by so adjusting or turning the device in the cavity in the heel as to cause the longest diameter of the plate to extend straight across the heel. When in this last position, the tendency of the heel may be to run down at one side or the other after a time, and to overcome which it is only necessary to adjust or turn the plate so as to carry the greater part or diameter thereof to lie on the contrary or opposite side of the central line 2.

I have found that the objects and results of my invention are best fulfilled by locating my device at the rear part of the heel, because the plate then strikes or touches the ground first, and the vertical resiliency of the device centralizes the weight upon it and directs the foot in a central line forward.

As the shorter diameter of the plate is altered or changed with respect to the heel, the weight-line is accordingly altered, and thus is the weight centralized. The action of the shank of the shoe is also changed by bringing the open space of the device nearer to or parallel to the front edge of the heel.

Referring to Fig. 6, the cord line or edge *a* *b* is represented as parallel to the center line of the plate at its largest diameter. In this position the weight of the body is equal upon both sides of the line 1. In Fig. 7 the position of the plate is altered, bringing the cord edge to one side of the line 2, thus changing the position of the bearing-face of the plate relative to the line 1 and throwing the weight of the person more to one side.

Therefore, without limiting myself to the precise details herein shown and described, I claim—

1. A heel plate for boots and shoes adapted to fit an opening in the heel, and comprising an adjustable segmental metallic plate, a cushion interposed between the plate and heel, and a fastening, substantially as described.

2. A heel plate for boots and shoes, the same comprising a segmental plate, a slotted tube to which the plate is removably attached, a cushion, and a fastening, substantially as described.

3. A heel plate for boots and shoes, the same comprising a segmental plate, a tube interiorly screw-threaded at one end and having diametrically opposite slots, a screw attaching the plate to the tube, a cushion, and a fastening, substantially as described.

4. The combination in a boot or shoe heel, of a bearing plate and cushion inserted within the heel to one side of the longitudinal center thereof and adjacent to the rear edge, the said plate being segmental in form, substantially as described.

5. The combination in a boot or shoe heel having a cavity therein adjacent to the rear edge, a cushion within the cavity, a slotted tube passing through the cushion, a plate resting against the cushion and secured to the tube, and a fastening, said plate being in the form of a segment, substantially as described.

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

CHARLES N. TYLER.

Witnesses:

H. D. FOLINSBEE,
JOHN LEWIS.