H. G. CALEF.

SHANK FOR SHOES.

APPLICATION FILED JULY 28, 1915.

1,154,690. Patented Sept. 28, 1915.

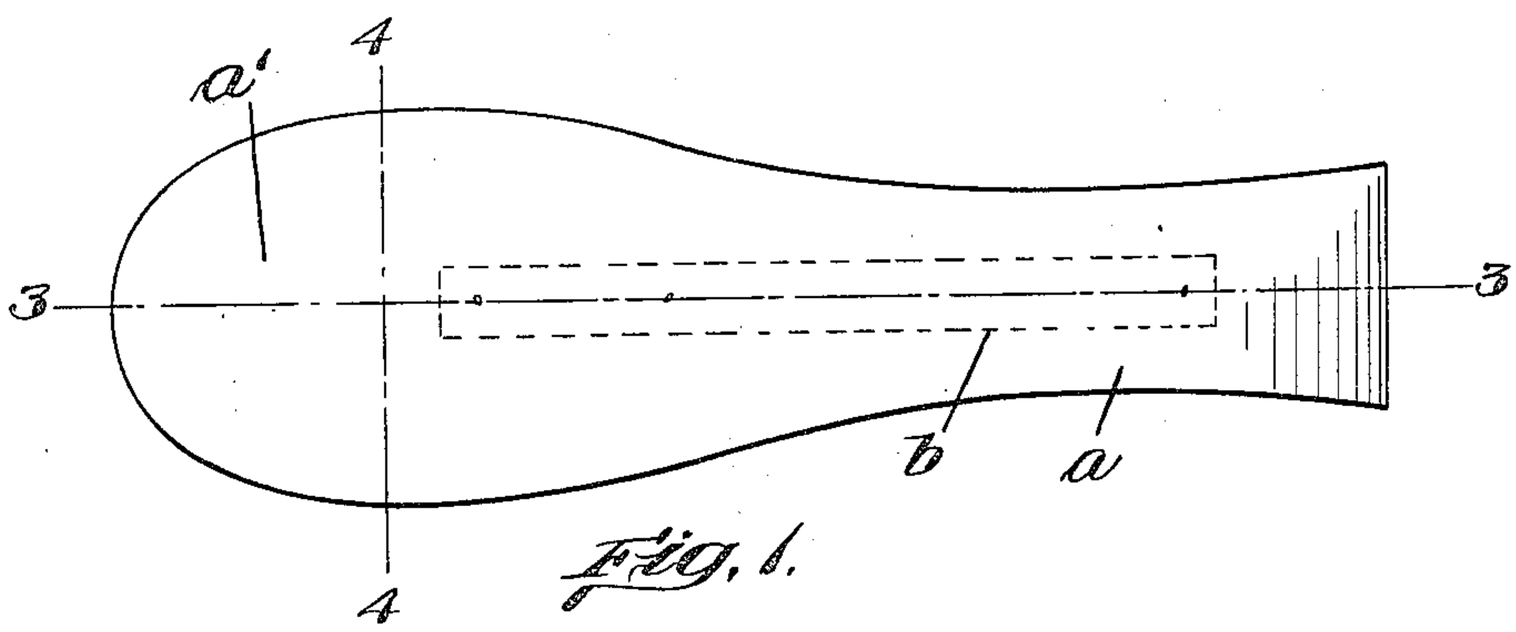

Fig. 1.

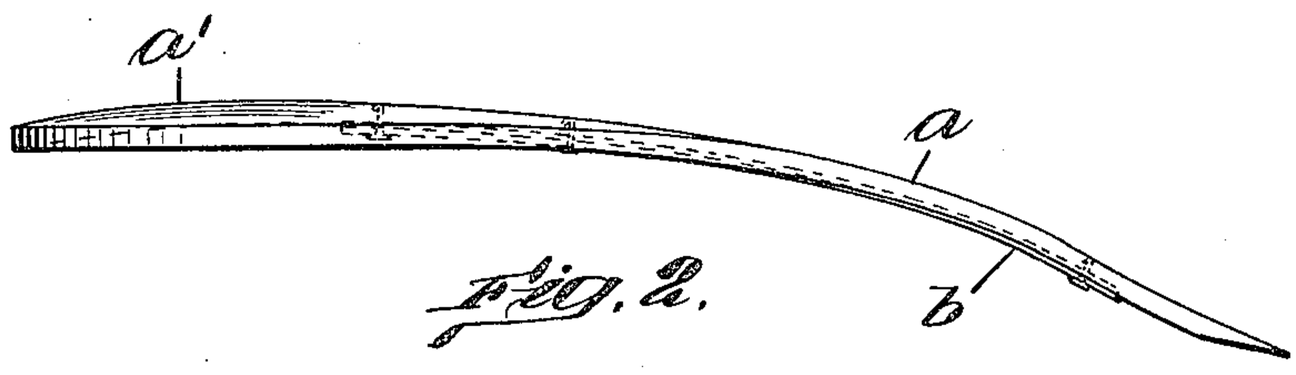

Fig. 2.

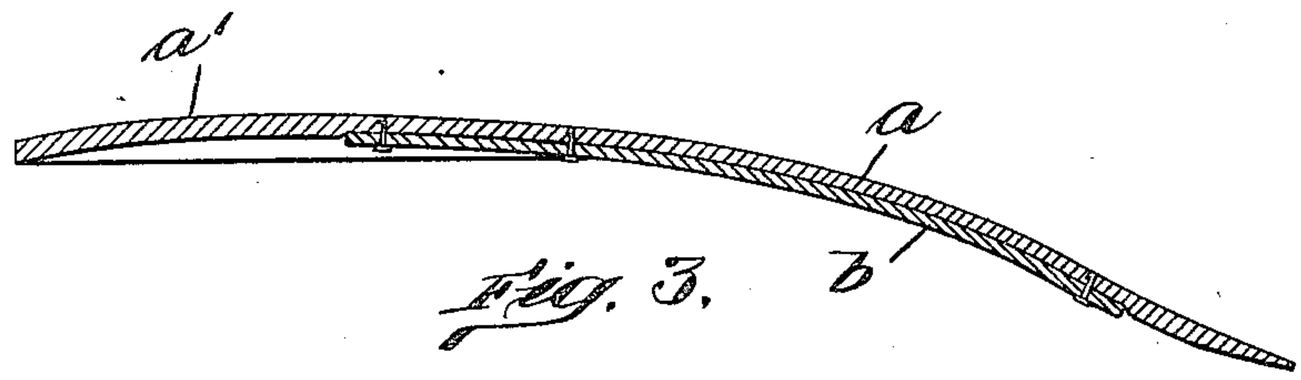

Fig. 3.

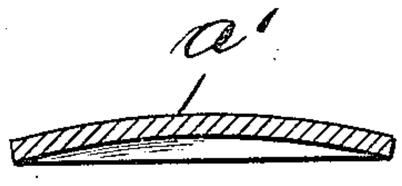

Fig. 4.

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UNITED STATES PATENT OFFICE.

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SHANK FOR SHOES.

1,154,690. Specification of Letters Patent. Patented Sept. 28, 1915.

Application filed July 28, 1915. Serial No. 42,417.

To all whom it may concern:

Be it known that I, HARRY G. CALEF, a citizen of the United States, residing at Haverhill, in the county of Essex and State of Massachusetts, have invented an Improvement in Shanks for Shoes, of which the following is a specification.

This invention relates to certain improvements in shoe shanks disclosed in my Patent #1,110,885, dated September 15, 1914, and employed in performing the process described and claimed in said patent, said process being more particularly advantageous and most generally employed in the manufacture of low-cut turned shoes, of the kind generally known as "slippers", or "pumps." In shoes of this character, the counter is relied on, practically wholly, to hold the shoe from slipping at the heel when worn, so that it is desirable to have the edges of the upper, about the foot opening, fit or be drawn against the sides of the foot as closely as possible, when on the foot, and, to this end, and to the end, also, that the appearance of the shoe, before it is worn, may be improved, it is desirable that these shoes be so made that the opposite edges of the upper will be drawn together as closely as possible.

I have ascertained that in the manufacture of shoes of the above-described character, employing in their construction, stiffeners, the heel portions of which are either flat, or are molded to conform to the concavity of the heel, *i. e.*, convex on their under side, certain difficulties are encountered which have an important effect on the final results which are secured. The more important of these is the difficulty in forming a uniformly flat seat for the reception of the heel, and the difficulty in preventing the counter and sides of the upper from being spread outward when the heel it attached. The difficulty in forming, and the frequent failure to form a level seat for the reception of the heel, is largely due to the fact that, when a shank stiffener is employed which is molded that it is convex on the under side, the middle portion of the heel of the sole is forced out beyond the level of its edge portion, so that, in the beating-out process, this middle portion, which is highest, receives the main force of the blows of the beating-out hammer, instead of the edge portion. Also, if special pains are taken to pound down or level the inturned edge-portion of the counter, against which the edge of the heel is to rest, eventually it is found that such portion is not supported with sufficient firmness to enable this portion to be beaten down to a level surface. This difficulty is present, although perhaps not to as great a degree, when the heel portion of the shank stiffener is not molded, as above described, or is flat, as no support is provided for the edge portion of the sole which is sufficiently strong to serve as a suitable resistance to the blows of the beating-out hammer, so that said edge-portion is, in most instances, beaten down to an unequal extent. The result is that, in practically all such cases, the edge portion is not properly leveled.

Before attaching a wooden heel, the edge portion of the heel of the sole is cut away, so that the edge of the heel may rest directly on the inturned edge of the upper and counter, and, consequently, if the heel seat formed by said inturned edge portion is not properly leveled the edge of the heel will not bear against the heel seat at all points, so that a tight joint will not be formed therebetween when the heel is attached, making it necessary that these parts be pressed together at a subsequent operation, which usually consists in forcing the parts together by a press, or other suitable means, with the result that the sides of the shoe opening are frequently spread and the tread of the shoe is affected to an objectionable extent. This result is caused through the fact that, when an open joint between the rear portion of the heel and the heel seat is to be pressed together, the front end of the heel acts as a pivot for the sole, so that, as the portion in the rear is pressed down, the forepart of the sole will be pressed up, causing the sides of the upper to be spread apart and the ball of the sole to be moved out of the plane of the top lift, so that the shoe no longer treads properly.

The object of the present invention is to provide a form of shank, which when employed in the manufacture of shoes of the above described type, will enable the difficulties above referred to to be obviated, with the result that the heel seat will be properly leveled under all conditions, so that, when the heel is applied thereto, it will accurately fit the same and the shoe will not be thrown out of shape by the action of closing the joint between the heel and heel seat, and so that, when the heel is actually attached, the

counter may be drawn inwardly, so that it will fit more closely about the heel of the wearer, and the sides of the upper will be drawn together more closely than before. I accomplish this object, primarily, by providing a form of shank stiffener, which, instead of having a flat heel portion, or instead of being molded so that said portion is convex on the under side, is convex on the upper side, so that the margin of the heel seat is supported above the level of the middle portion of the sole during the beating-out operation, thereby providing a sufficiently strong support for the edge portion of the sole to enable the heel seat to be properly leveled and the difficulties hereinbefore noted to be avoided, and further enabling the counter to be drawn inward when the heel is attached.

For a more complete understanding of the present invention reference is made to the accompanying drawings, forming a part of this specification, in which,

Figure 1 is a top plan view of a shoe shank embodying my invention. Fig. 2 is an edge view thereof. Fig. 3 is a longitudinal section on line 3—3 of Fig. 1, and, Fig. 4 is a transverse section on line 4—4 of Fig. 1.

In the drawing, *a* indicates a shank stiffener embodying my invention, said stiffener being composed of stiff, flexible material, such as leather or leather board, usually the latter, and having the usual reinforcing metal strip *b* on its under side, and being of ordinary shape, except that its heel portion *a'*, instead of having a flat heel portion, or instead of being molded so that the upper surface of said portion is concave, and its under surface is convex, as is customary, is so molded that its under surface is concave, and its upper surface is convex, as best shown in Figs. 3 and 4.

In the manufacture of the shoe, after the shoe has been sewed and turned, the stiffener is inserted in the shoe, and is secured to the sole thereof by a nail which is driven through the middle portion of the heel parts of the sole and the stiffener. This causes the edge portion of the stiffener to be pressed firmly against the edge-portion of the heel of the sole, and, as the sole is then in temper, it is much more easily bent than the stiffener, so that the edge-portion is pressed outwardly above the middle portion. The shoe is then relasted or leveled or beaten out, and, when the heel seat is leveled, the pressure or blows of the hammer will be brought to bear principally on the edge portion of the sole, which is yieldingly supported above the middle portion thereof by the then upturned edge portion of the stiffener, and provides a substantially uniform resistance for the blows of the beating-out hammer. As these edge portions are beaten down to the last the inturned edge of the counter, which practically constitutes the heel seat, will be forced down firmly onto the edge portion of the stiffener and will be made level and uniform, and a sharp bend or shoulder will be formed therein at the edge of the stiffener. The shoe, which was previously in temper, is then permitted to dry on the last, so that the parts will approximately retain the shape in which they are thus held. If a wood heel is to be attached, the edge portion of the sole is then cut away, so that the inturned counter portion directly therebeneath, at the point where it was sharply bent inward and leveled by the leveling process, is exposed, and then the heel is placed in position thereon, so that its base edge bears directly against the sharp shoulder, or bend formed in the counter by the leveling process.

It may be here noted that, when the forms of stiffener, which have been previously employed, are used, usually either the heel of the sole bears on the breast of the heel, entirely across the same, and on the back end portion, so that the middle edge portion of the heel does not touch the heel seat, or it bears on the middle of the heel, so that the edge of the heel is held out of contact with the edge of the heel seat. In the first instance, if the edge of the heel does not firmly engage the edge of the heel seat at its middle portion, before the pressure necessary to attach the heel is applied, then, when sufficient pressure is applied to bring the middle portion of the heel seat against the edge of the heel, the breast of the heel will act as a pivot so that, as the sole portion in the rear of the breast is pressed down against the heel, the portion in front of the breast will be thrown up, with the result that the shoe frequently is thrown out of shape, to such an extent that the top of the heel no longer "treads" with the ball of the sole, the counter is spread outward so that it will not grip the heel when the shoe is worn, and the foot opening is made to gape to a most objectionable extent. In the second instance, the middle portion of the sole will hold the heel seat and the heel edge out of contact, so that when they are drawn together, the counter will be spread open, as with the first instance, and with like results.

When the form of stiffener, which is normally convex on the inner side or side opposite from the heel, is employed, while the heel of the sole will not be drawn inwardly at its middle portion by the stiffener to as great an extent as before relasting, yet it will be drawn in slightly, so that in practically all instances the middle portion of the sole will be held at some distance from the middle portion of the heel base. With the parts thus arranged, a number of attaching nails are driven through the stiff-

ener and sole into the heel, causing the middle heel-part of the sole and of the stiffener to be drawn into the concave recess in the base of the heel and pressed firmly thereon. As the edge of the heel is resting fairly on the heel seat at the beginning of the attaching operation, it follows that this operation will not only force these edge portions firmly together, so as to form a tight joint, but will also cause said edge portion to be drawn or swung inward, thus causing the counter, the inturned edge of which is clamped between the sole and stiffener, to be swung inwardly to a corresponding extent. The result is that the counter is firmly set in this indrawn position, not only causing it to fit tightly about the heel of the wearer, but also acting to draw the sides of the upper, about the shoe opening, inward to a corresponding extent, materially decreasing the width of said opening, a result which is greatly desired. It may be noted in this connection, that, where the flat or the oppositely dished, or molded stiffener is employed, so that the heel part of the sole and stiffener conforms almost exactly to the concavity of the heel base before attachment, when the heel is attached, there is no inward bending of the sole and counter which would tend to swing the counter inward.

As the uniform and accurate leveling of the heel seat is made possible by the action of the stiffener in forcing the same outwardly and providing a suitable support therefor during the leveling process, and as the heel seat and edge of the heel are closely drawn together by the attaching process, as previously explained, a continuous tight joint is formed between the heel and heel seat, which will be in a straight line with the edge of the shank portion of the sole.

While the use of the above-described shank piece is particularly advantageous in connection with shoes to which wood heels are attached, it is also advantageous if leather or leather board heels are to be attached, not only for the reasons already indicated, but also for the reason that its use frequently obviates the use of a rand about the heel seat. That is, where a leather heel is to be attached and the middle portion of the heel seat is so much higher than its edge portion that it holds the edges of the heel and heel seat out of contact, a rand is frequently tacked on the heel seat about its edge to raise it to a sufficient extent to fill in this open joint, but, with the above-described form of shank piece, the edge of the heel seat will always be raised to such an extent that the use of a rand is rendered unnecessary, thus making a very material reduction in the cost of making the shoe.

I claim:—

1. A shank stiffener for shoes consisting of a flexible sheet of stiffening material adapted to extend from the rear end of the shoe over the shank, and having its heel-portion molded to provide a convex upper surface and a concave under surface.

2. A heel-seat support for shoes consisting of a sheet of flexible stiffening material formed to fit the heel of the shoe, and molded so that it is concave on the side adapted to be placed next the heel portion of the sole, and convex on the opposite side, to provide a raised edge for yieldingly supporting the edge-portion of the heel seat, when it is leveled.

In testimony whereof, I have signed my name to this specification.

HARRY G. CALEF.

Witness:

L. H. HARRIMAN.