June 19, 1923. 1,459,239

W. H. NICKERSON

SHANK STIFFENER

Filed Nov. 16, 1922

Fig. 3.

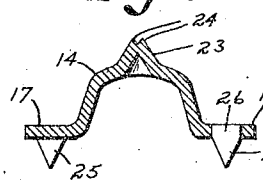


Fig. 1.

Fig. 2.

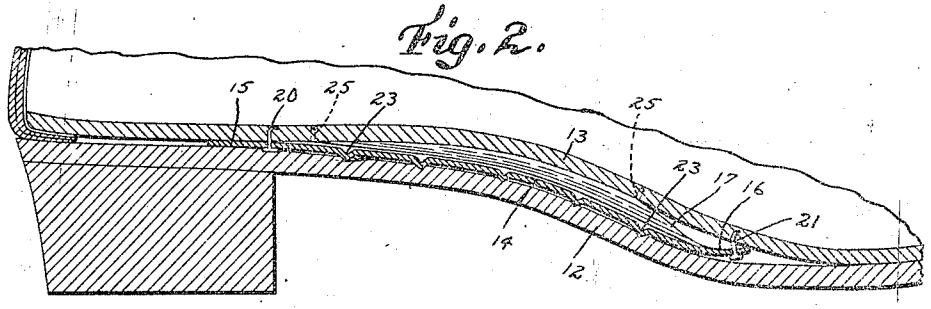
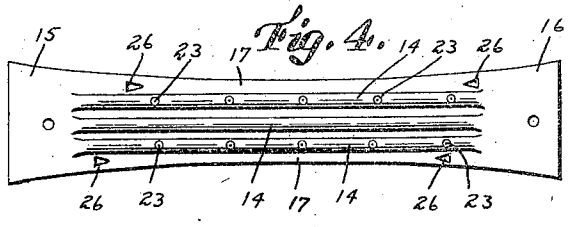


Fig. 4.



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Patented June 19, 1923. 1,459,239

UNITED STATES PATENT OFFICE.

WILLIAM H. NICHERSON, OF BROOKLINE, MASSACHUSETTS.

SHANK STIFFENER.

Application filed November 10, 1922. Serial No. 600,366.

To all whom it may concern:

Be it known that I, WILLIAM H. NICHERSON, a citizen of the United States, residing at Brookline, in the county of Norfolk and State of Massachusetts, have invented new and useful Improvements in Shank Stiffeners, of which the following is a specification.

This invention relates to a shank of sheet metal, such as steel incorporated as a stiffener between the shank portions of the inner and outer soles of a shoe, and extending forward from the heel to or toward the ball portion of the shoe bottom, to make permanent the arched form of the shank portion of said bottom.

The stiffener is longitudinally arched and is provided with a longitudinal stiffening rib or ribs, projecting from its under surface, and having a limited bearing on the inner surface of the outer sole, the rib being much narrower than the width of the stiffener, and presenting a narrow runner-like rounded outer surface, having a tendency to slip on the outer sole.

One object of the invention is to prevent the tendency of the said rib to slip on the outer sole.

Another object is to prevent a tendency of the stiffener to slip on the inner sole, the upper surface of the stiffener which contacts with the inner sole being interrupted by the rib, so that it presents narrow bearing portions contacting with the inner sole at opposite sides of the rib. The stiffener is therefore liable to slip on the inner sole more freely than would be the case if the stiffener were not ribbed.

I attain the above-mentioned objects by the improved construction hereinafter described and claimed.

Of the accompanying drawings forming a part of this specification,—

Figure 1 is a perspective view, showing a stiffener embodying the invention, as it appears when applied to the inner sole of a welted shoe, before the application of the outer sole.

Figure 2 is a longitudinal section, showing the stiffener, the outer sole, and the inner sole, as said parts appear in the completed shoe.

Figure 3 is an enlarged transverse section of the stiffener, taken on line 3—3 of Figure 1.

Figure 4 is a side view of a stiffener having a plurality of ribs.

The same reference characters indicate the same parts in all the figures.

The shank stiffener shown by the drawings is made by pressing a strip of sheet steel to impart a longitudinal curvature corresponding to that of the shank portions of the outer sole 12, and the inner sole 13, and to form a longitudinal rib 14, extending nearly from end to end of the stiffener, the rib having an arched form in cross section, and merging at its end portions into the body of the stiffener, so that the end portions 15, 16, of the stiffener are transversely flat and are not ribbed. The transversely flat body is interrupted by the rib between the end portions, to form narrow longitudinal portions 17, extending beside the rib, and contacting throughout the greater portion of their length with the inner sole, the end portion 16 being preferably curved, as shown by Figures 1 and 2, so that only its terminal edge contacts with the inner sole, and its under side presents a salient curvature of the outer sole.

The stiffener is usually confined in a predetermined position on the inner sole, as indicated by Figure 1, by a lasting tack 20, or by two lasting tacks 20, and 21, serving merely to locate the stiffener, and prevent its displacement while the outer sole is being applied and secured, without constituting a connection which is reliable as a permanent means for preventing movement of the stiffener relative to the inner sole, such means being provided by the spurs hereinafter described.

A stiffener embodying the invention is characterized as next described.

The rib 14 is provided with spurs 23, projecting downward from the outer surface of the rib, and adapted to engage the outer sole and prevent movement of the stiffener relative to the outer sole, or in other words, to prevent the runner-like rib from creeping or slipping in any direction on the outer sole. Said spurs are preferably substantially conical bosses, integral with the rib and formed by dies which slightly fracture the apexes of the bosses, and thereby form minute points 24, shown much enlarged by Figure 3. The spurs 23 are adapted to slightly indent the inner surface of the outer sole, as shown by Figure 2. It is obvious that the spurs 23 may be otherwise formed, if desired.

To prevent movement of the stiffener relative to the inner sole, I provide the body por-

tions 17 with upwardly projecting spurs 25, adapted to indent the under surface of the inner sole, as indicated by dotted lines in Figure 2. The spurs 25 are preferably struck up from the portions 17, by dies which sever two edges of each spur from the sheet metal and form openings 26. The spurs thus formed are pointed and flat sided, and adapted to be forced well into the inner sole. They are preferably arranged in pairs, one pair being adjacent to the end portion 15, and the other to the end portion 16.

A connection between the stiffener and the inner sole of sufficient strength and reliability, is provided by the spurs 25.

The stiffener may be provided with a plurality of ribs, as shown by Figure 4, and one or more of the ribs may be provided with the spurs 23.

I claim:

1. A shoe-shank stiffener comprising a sheet metal plate longitudinally arched to conform to the curvature of the shank portions of an outer and an inner sole, and provided with a longitudinal rib projecting from its under side, said stiffener being characterized by spurs projecting downward from the outer surface of the rib, and adapted to engage the outer sole and prevent movement of the stiffener relative to the outer sole.

2. A shoe-shank stiffener comprising a sheet metal plate longitudinally arched to conform to the curvature of the shank portions of an outer and an inner sole, and provided with a longitudinal rib projecting from its under side, said stiffener being characterized by spurs projecting downward from the outer surface of the rib, and adapted to engage the outer sole and prevent movement of the stiffener relative to the outer sole, and by spurs projecting upward from the upper surface of the stiffener beside the rib, and adapted to engage the inner sole and prevent movement of the stiffener relative to the inner sole.

In testimony whereof I have affixed my signature.

WILLIAM H. NICKERSON.