July 24, 1923

1,462,798

W. H. NICKERSON

SHANK STIFFENER

Original Filed Jan. 21, 1922

FIG. 1.

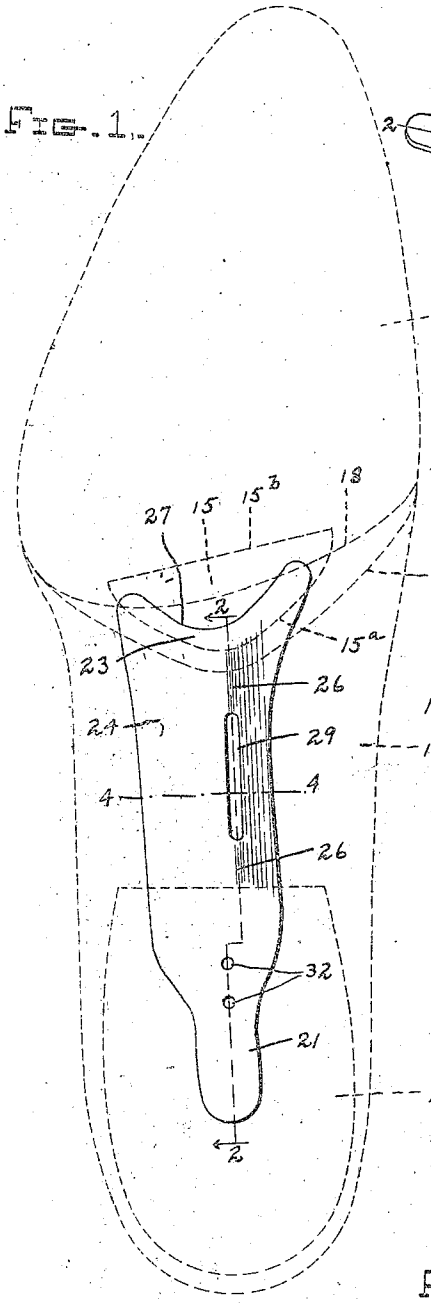


FIG. 6.

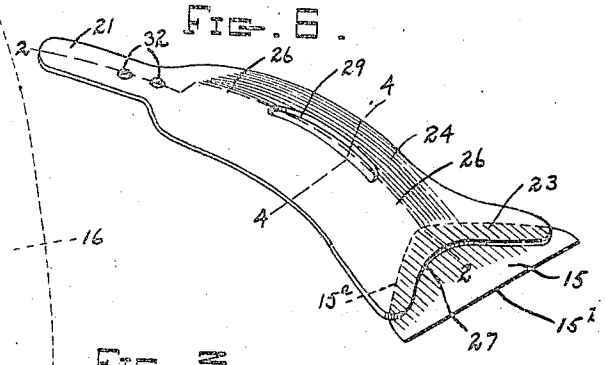


FIG. 3.

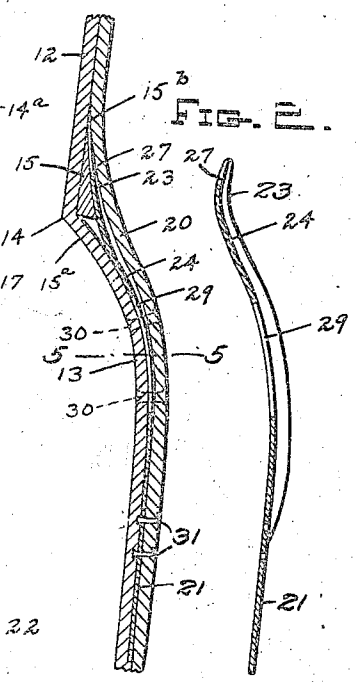


FIG. 2.

FIG. 4.

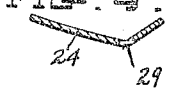
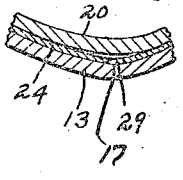


FIG. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM H. NICKERSON, OF BROOKLINE, MASSACHUSETTS.

SHANK STIFFENER.

Application filed January 21, 1922, Serial No. 530,070. Renewed May 21, 1923.

To all whom it may concern:

Be it known that I, WILLIAM H. NICKERSON, 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 molded sheet metal shank stiffener having a longitudinal ridge, supporting a similar ridge on the shank portion of an outer sole between which and the inner sole, the shank stiffener is interposed. In particular the invention relates to a shank stiffener, the forward end of which is formed with reference to the usual transverse and obliquely arranged, substantially V-shaped ridge at the junction of the tread and shank portions of an outer sole in a well known type of shoe.

The invention is embodied in the improved stiffener hereinafter described and claimed.

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

Figure 1 is a bottom view, showing my improved stiffener by full lines, and showing by dotted lines a wedge piece with which the stiffener cooperates and the bottom of a last.

Figure 2 is a section on line 2—2 of Figures 1 and 6.

Figure 3 shows the stiffener in section on line 2—2, and shows also in section the outer sole, the inner sole, and the wedge piece.

Figure 4 is a section on line 4—4 of Figures 1 and 6.

Figure 5 is a section on line 5—5, of Figure 3.

Figure 6 is a perspective view, showing the stiffener associated with the wedge piece as in Figure 3.

In the drawings, 12 represents the tread portion, and 13 the shank portion of an outer sole. The rear end of the tread portion and the forward end of the shank portion are defined by an approximately V-shaped ridge 14, the location of which is indicated in Figure 1 by the dotted line 14^a. 15 represents a wedge piece of leather or leather board, which is seated on the inner side of the outer sole, and has a salient edge 15^a which conforms approximately to a portion of the ridge 14, as indicated by Figure 1, which shows in dotted lines the bottom of a last having a fore portion 16 and a shank portion 17, said portions meeting to form a ridge at 18 which is less pronounced than the outer sole ridge. The wedge piece 15 has a thin forward edge 15^b, which overlaps a portion of the fore part 16 of the last bottom. The inner side of the wedge piece supports the portion of the inner sole 20 which bridges the outer sole ridge 14, so that the inner sole has a gradual curvature, and is not ridged like the outer sole, as shown by Figure 3.

The construction above set forth is well known, and is thus particularly described to make clear the novel features of the improved shank stiffener next described.

Said stiffener is composed of sheet metal, preferably steel, and includes a relatively narrow rear end portion 21, formed to lie flat on the heel portion of the outer sole over the usual metal heel plate 22 of the last bottom, a widened forward end portion 23, formed to bear on the thickened rear edge portion of the wedge piece 15, and an intermediate portion 24, which has a longitudinal ridge indicated at 26 in Figures 1, 4, 5 and 6. The intermediate ridged portion is curved, as shown by Figures 2, 3 and 6, and the stiffener cooperates with the wedge piece 15 in maintaining, not only the transverse ridge 14, but also a longitudinal ridge on the shank portion of the outer sole.

The forward end portion 23 of the stiffener is provided with a recess 27, formed in the transversely extending forward edge of the stiffener, and conforming approximately to the salient thickened edge 15^a of the wedge piece, the form of said recess being such that it defines the inner edges of two diverging arms, each overlapping a portion of the wedge piece. The recess imparts transverse flexibility to the forward end portion of the stiffener, so that the said end portion is adapted to be flexed crosswise without causing its forward end to bulge above the inner surface of the wedge piece, and indent or chafe the portion of the inner sole bearing on said forward end.

To impart longitudinal flexibility to the intermediate portion 24 of the stiffener, I form an elongated slot 29 in the ridge 26, and between the opposite end portions of the ridge, as shown by Figures 1 and 6. Said slot is adapted to receive rivets 30, uniting portions of the outer and inner soles, as shown by dotted lines in Figure 3.

The transverse flexibility imparted by the recess 27, and the longitudinal flexibility im-

parted by the slot 29, render the portion of the shoe bottom of which the stiffener forms an element, more comfortable to the wearer than would be the case if the recess and slot were not employed.

The rear end portion 21 of the stiffener may be secured to the inner sole by small nails or tacks 31, driven through holes 32 in the stiffener and clinched on the metal heel plate 22. The wedge piece 15 is in many instances cemented to the outer sole. It may be riveted to the end portion 23 of the stiffener.

I claim:

1. For use in a shoe which includes an outer sole having an approximately V-shaped ridge defining the salient rear end of the tread portion and the forward end of the shank portion of the sole, a wedge piece bearing on the inner surface of the outer sole, and having a salient thickened edge conforming to a portion of said ridge, and an inner sole conforming to the inner side of said wedge piece; a molded sheet metal shank stiffener, shaped at its forward end portion to bear on the inner side of the thickened rear portion of the wedge piece, and having a recess in its forward edge conforming approximately to the salient edge of the wedge piece, the stiffener having a longitudinal ridge between its front and rear end portions, adapted to support a longitudinal ridge on the under surface of the shank portion of the outer sole, said recess imparting transverse flexibility to the forward end portion of the stiffener.

2. A shank stiffener substantially as specified by claim 1, provided, in a portion of said longitudinal ridge, with a longitudinal slot whereby longitudinal and transverse flexibility is imparted to the stiffener between its end portions, said slot being adapted to receive rivets connecting the shank portions of the outer and inner soles.

In testimony whereof I have affixed my signature.

WILLIAM H. NICKERSON.