

Feb. 22, 1944.

H. GORDON

2,342,466

SHANK STIFFENER FOR SHOES

Filed June 1, 1942

Fig. 1.

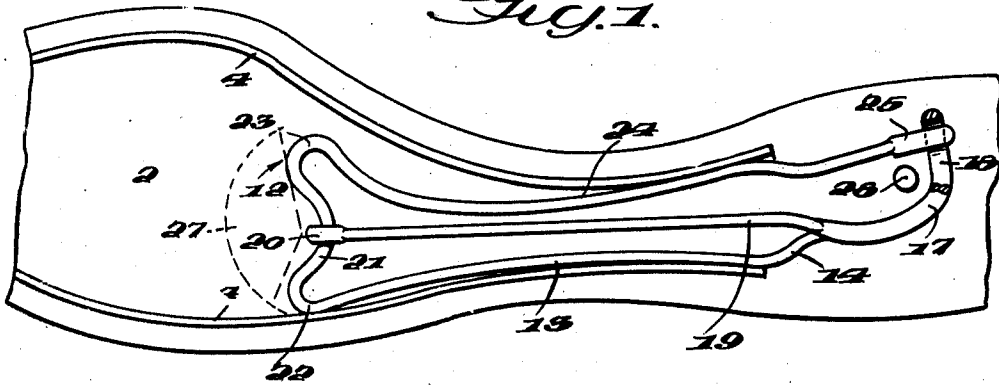


Fig. 2.

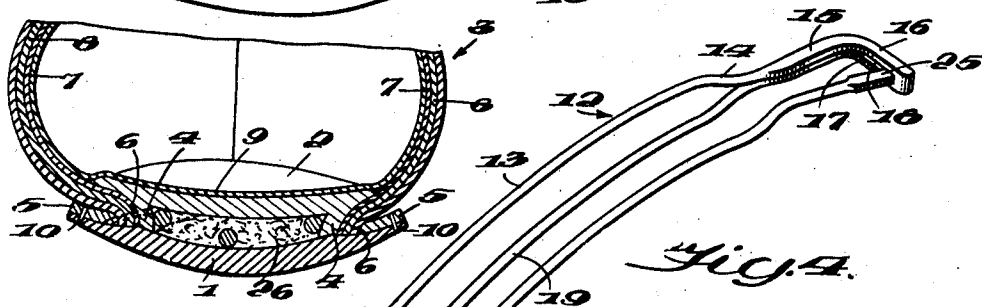
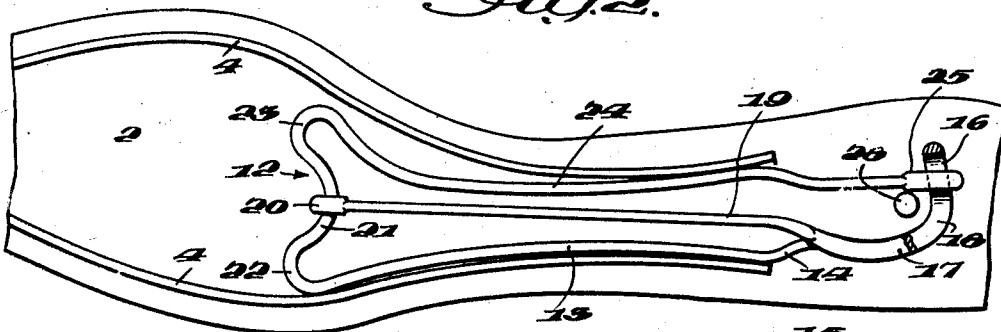
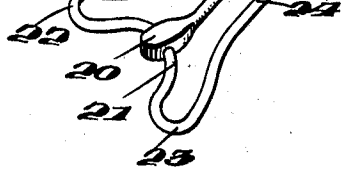


Fig. 4.

Fig. 3.



Inventor

Hiram Gordon,

By *W. S. McHowell*

Attorney

UNITED STATES PATENT OFFICE

2,342,466

SHANK STIFFENER FOR SHOES

Hiram Gordon, Columbus, Ohio, assignor to The
Walker T. Dickerson Company, Columbus,
Ohio, a corporation of Ohio

Application June 1, 1942, Serial No. 445,336

4 Claims. (Cl. 36—76)

This invention relates to shoe shank reinforcements, having particular reference to an improved shank stiffener of the type employed in reinforcing the arch construction or instep regions of shoe soles.

Metallic shank stiffeners have been employed for many years in various types of shoes, and the advantages and improvements attending their use are now well understood by shoe manufacturers and wearers alike. Such stiffeners, however, as heretofore formed, comprise integral sheet metal stampings of steel or the like which are, often, arched longitudinally and bowed transversely to conform to the arch or instep configuration of the shoes in which they are incorporated.

There are certain objections present in these conventional shank stiffeners which this invention aims to overcome. For instance, the solid one-piece construction of standard types of shank stiffeners render the same in many cases objectionably heavy, rigid, cumbersome and costly. Moreover, due to their integral one-piece construction, it is necessary for shoe manufacturers to employ a considerable number of sizes of such stiffeners in order that the latter may be properly adapted to shoes of different widths. Again, it is customary to place such shank stiffeners between the insole and outsole of a shoe so that such stiffeners may occupy a pocket or chamber formed between said soles and the welting ribs thereof. In shoe manufacture, it is a common practice to fill such pockets or chambers with insulating composition such as ground cork, mineral wool or the like, and because of their imperforate construction, standard shank stiffeners interfere with the proper incorporation of the insulating materials into such internal sole chambers.

In order to overcome these and other objections, the present invention has for an object the provision of an improved shank stiffener which is formed wholly from a length of wire and which is fashioned to produce a plurality of spaced substantially parallel sections which are arched longitudinally to conform to shoe sole configuration and which, when placed in a shoe, are light in weight, provide proper support for the foot of a wearer, may be economically manufactured and do not interfere to any substantial degree with the incorporation of filler compositions in the chambers or pockets formed between the joined insole and outsole of a shoe.

It is another object of the invention to so construct my improved shank stiffener that one of

the wire legs or members thereof is resiliently movable in the horizontal plane of the stiffener within regulated limits, so that the stiffener may be adapted for longitudinal engagement with the welting ribs of shoe insoles of various widths, so that through such adjustment, the number of shank stiffeners for shoes of different sizes may be substantially reduced over that now required with the employment of standard integral and solid shank stiffeners of plate-like formation.

For a further understanding of the invention, reference is to be had to the following description and the accompanying drawing, wherein:

Fig. 1 is a bottom plan view of a shoe insole disclosing my improved shank stiffener incorporated therein, the outsole being omitted in order to illustrate the operating position of the shank stiffener in relation to the welt ribs of the insole, the stiffener being shown in its fully expanded position as when employed in an insole possessing considerable width;

Fig. 2 is a similar view disclosing the shank stiffener when contracted, as when employed in a shoe sole of a width narrower than that depicted in Fig. 1;

Fig. 3 is a vertical transverse sectional view taken through the instep or arch region of a welted shoe and illustrating the operative positions occupied by my improved stiffener therein;

Fig. 4 is a perspective view of the shank stiffener forming a preferred form of the present invention.

Referring more particularly to the specific embodiment of the present invention illustrated in the drawing, the numeral 1 designates the standard outsole of a shoe, the insole being indicated at 2 and the upper or body portion of the shoe at 3. These parts may be formed from the usual materials employed in shoe manufacture and assembled by customary methods. Thus, in the welt type of shoe shown in the drawing, the insole has its under surface marginally cut to provide downwardly extending ribs 4. Similarly, the marginal portions of the outsole are provided with welts 5, and the lower marginal portions of the upper or body 3 are disposed between the ribs 4 and the welts 5 and are permanently secured in connection therewith by transverse stitching 6. The body 3, of course, includes the usual inner lining 7 and the leather or semistiff reinforcing counter 8. A sock lining 9 may be applied, as usual, to the interior of the shoe. Likewise, as is customary, the marginal portions

of the outsole, which are employed in producing the welt 5, are united by the stitching shown at 10.

In providing my improved shank reinforcement in a shoe of this general character, the shoe while held on a last and prior to the application thereto of the outsole and heel, has placed thereon a metallic shank stiffener 12 of the form disclosed particularly in the drawing. Instead of being formed from blanks of sheet metal, the stiffener 12 is formed from a suitable length of wire. This wire is bent, preferably by a suitable forming machine, to provide a stationary outer leg 13 which, when the stiffener is positioned on an insole, as shown in Figs. 1 and 2, has extended longitudinal engagement with the outer of the ribs 4.

The leg 13 toward the heel end of the shoe is inwardly bent as at 14 and is flattened as at 15, terminating in a substantially hook-shaped heel extremity 16. The length of wire, forming the stiffener, is then folded upon itself to lie immediately below and to conform to the configuration of the heel extremity 16, as indicated at 17, the portion 17 being spaced from the portion 16 in order to produce an elongated slot 18 at the heel end of the stiffener. The hook-shaped portion 17 terminates in a longitudinally extending centrally disposed leg 19, which extends the full length of the stiffener and has its forward end terminated in a flattened head 20. The latter is rigidly connected with the U-shaped portion 21 of the forward end of the stiffener.

The portion 21 on one side is joined with a flaring loop 22 which merges into the forward end of the leg 13, while the opposite side of the portion 21 is shaped to form a loop 23 which merges into a resiliently movable or adjustable leg 24. The leg 24 extends generally parallel with the legs 13 and 19, being disposed, as shown in Fig. 3, in approximately the same horizontal plane as the stationary leg 13 but slightly above that of the center or tie leg 19. The leg 24 is adapted to closely engage and follow the general configuration of the inner of the ribs 4, being positively but resiliently maintained in such engagement. This is accomplished by providing the heel end of the leg 24 with a flattened extremity 25 which is movably positioned in the slot 18, permitting the leg 24 to be flexed from its expanded or outermost position, as shown in Fig. 1, to its contracted position disclosed in Fig. 2. It will thus be seen that by the provision of the resiliently movable leg 24, the stiffener may be adapted conveniently to shoe soles varying considerably in width, thereby reducing the number of models necessary for shoes of all sizes and widths.

In view of the foregoing, it will be manifest that the present invention provides a very lightweight, efficient and inexpensive shank stiffener for shoes. This stiffener may be incorporated in shoes in exactly the same manner as is now done with the plate type of stiffener, but with the added advantages of lightness in weight, economy in manufacture, adaptability to shoes of various widths and providing, further, an open construction by means of which filler compositions, as shown at 26, and which consists usually of ground cork admixed with a suitable binder,

insulating wool and the like, may be inserted for the improved protection of the shoe sole against heat transmission.

The forward end of the stiffener, as shown at 5 21, 22 and 23, is flared and flattened, as it were, to provide a seat for the reception of the usual metatarsal pad or button 27. The stiffener as a whole is arched longitudinally to conform to the desired configuration of the arch or instep portion of the shoe in which it is placed. The central tie leg 19 rigidly connects the opposite extremities of the stiffener, so that undesirable elongation thereof under the weight of the shoe wearer is prevented. By placing the central leg 15 19 somewhat below the plane of the outer legs 13 and 24, the stiffener will resiliently resist vertically applied downwardly directed forces, providing a cushioning action which contributes to the comfort of the shoe wearer.

The hook-shaped extremity at the heel end of the shoe is located or disposed so that it will surround an opening 28 in the insole employed in the fastening of an associated heel.

While the invention has been particularly described in connection with a preferred form thereof, it will be understood that the same is not limited thereto, since various changes may be made without departing from the spirit of the invention as the same is set forth in the appended 30 claims.

What I claim is:

1. A shank stiffener for shoes comprising a wire body formed to provide a pair of outer leg members and a central leg member, said outer 35 leg members being spaced for engagement with the welt forming ribs of a shoe insole, and said central leg member being disposed in a horizontal plane slightly below that of the outer leg members, whereby to render the stiffener resiliently yieldable to vertically applied forces.

2. As a new article of manufacture, a shank stiffener for shoes composed of a wire body formed to provide spaced substantially parallel extending leg members, said members terminating 45 at their forward ends in a flaring pad-receiving seat and at their rear ends in a heel-fastening eye.

3. A shank stiffener for shoes comprising a wire body formed to provide a pair of insole rib engaging leg members, said members being 50 curved longitudinally to conform to the configuration of the arch or instep region of a shoe, and a centrally disposed intermediate leg member uniting the forward and heel ends of the stiffener against longitudinal extension when the 55 stiffener is operatively positioned in a shoe.

4. A shank stiffener for shoes comprising a wire body formed to provide stationary and resiliently movable outer leg members, said leg 60 members terminating at their forward ends in a flaring pad-receiving seat, and a central leg member disposed between said outer leg members and uniting the heel end of the outer leg member with the central portion of said seat, said central and outer leg members forming a slot in 65 which the heel terminal of said resilient outer leg member is movably confined.

HIRAM GORDON.