April 5, 1932. R. C. RHOADES 1,852,822

BOOT OR SHOE AND SHANK STIFFENER THEREFOR

Filed April 10, 1930

Fig. 1.

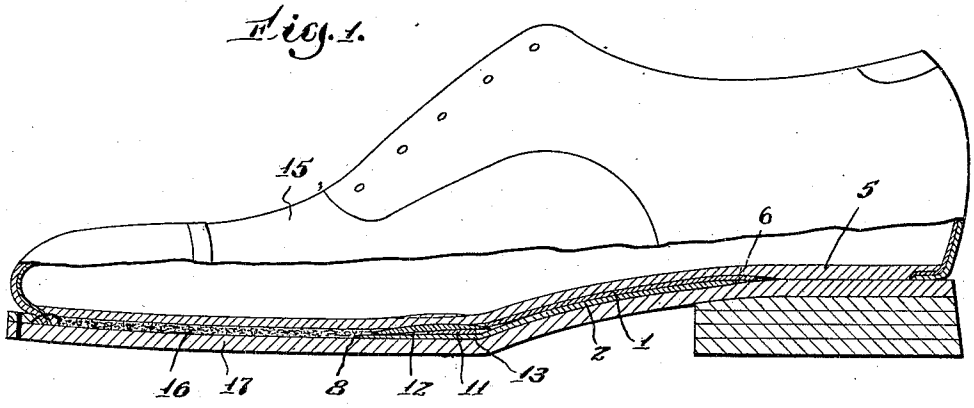
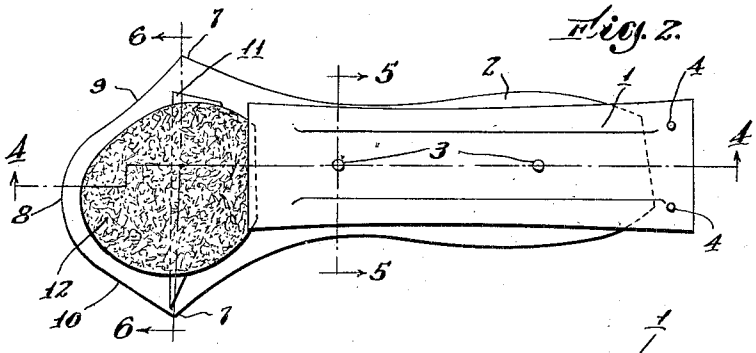


Fig. 2.



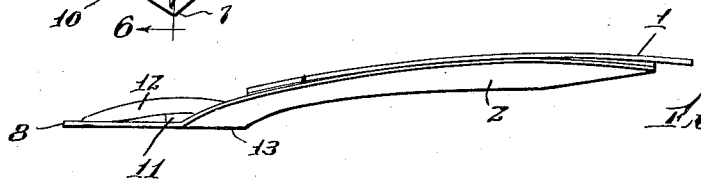


Fig. 3.

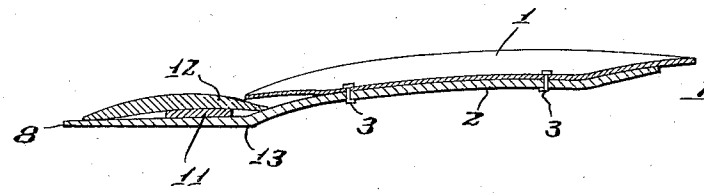


Fig. 4.

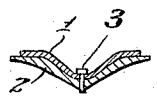


Fig. 5.

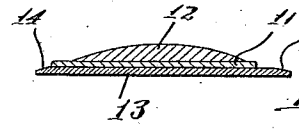


Fig. 6.

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Patented Apr. 5, 1932 1,852,822

UNITED STATES PATENT OFFICE

ROBERT C. RHOADES, OF STOUGHTON, MASSACHUSETTS

BOOT OR SHOE AND SHANK STIFFENER THEREFOR

Application filed April 10, 1930. Serial No. 443,179.

My present invention relates to boots and shoes, and more particularly to a novel and improved shank stiffener for use therein.

An important object of the present invention is the provision of a shank stiffener having a metatarsal arch supporting portion formed as a part thereof.

Another feature of the invention resides in so constructing my novel device that it will function as a metatarsal arch support in the proper position, allowing the insole, and hence the foot of the wearer, to be depressed slightly at each side of the metatarsal arch supporting portion.

Another object of the invention resides in constructing said metatarsal arch supporting portion of a plurality of layers or sections, as for example a rigid layer, a reinforcing layer, and a layer of cushioning or resilient material, thus providing the greatest strength and comfort, while at the same time insuring retention of the shape of the shoe.

Other features and objects of the invention reside in the particular details of construction and arrangement of parts of the arch stiffener and supporter.

The above and other objects and features of the invention, details of construction, combinations and advantages, will be hereinafter more fully pointed out, described and claimed.

Referring to the drawings, illustrating a preferred embodiment of the present invention,

Fig. 1 is a side elevation of a shoe, partly in section, illustrating the application of my novel device thereto;

Fig. 2 is a top plan view of my novel combined shank stiffener and arch support;

Fig. 3 is a side elevation of said device;

Fig. 4 is a longitudinal sectional view on the line 4—4 of Fig. 2;

Fig. 5 is a cross-sectional view on the line 5—5 of Fig. 2; and

Fig. 6 is a cross-sectional view on the line 6—6 of Fig. 2.

Referring now to the drawings for a particular description of the invention, its construction and assembly, 1 designates a metallic shank stiffening element of the usual so-called "cottage" type, because of its peaked formation, it being preferably substantially triangular in cross-section throughout the major portion of its length.

Affixed to this metallic portion or member 1 is a second member or portion 2, shaped to fit the metallic member and secured thereto by rivets, tacks, or the like 3. The member 2 is preferably of leather, leatherboard, fibreboard, or other strong and tough material, but with some degree of flexibility. As clearly illustrated, the member 2 projects beyond the forward end of the member 1, while the member 1 projects beyond the rearmost end of the member 2, said rearwardly projecting end of the member 1 being flattened and provided with apertures 4 by means of which the device may be attached to the insole 5 of a shoe by tacks 6.

The member 2, at its forward portion, flares outwardly from the member 1, as illustrated at 7, 7, and terminates in a rounded forward end 8, the said forward end being curved inwardly at 9 to provide a seat for the outer ball of the foot, the edge 10 opposite the inwardly curved edge 9 being substantially straight, the inner ball of the foot being thus provided with a proper seat.

Extending transversely of this forward portion, and secured thereto by adhesive or in any other desired manner, is a strip 11, of reinforcing material such as leather, leatherboard, fibreboard or other suitable material, which will tend to still further retain the shape of the supporter. Overlaying the reinforcing strip or layer 11, is a layer or pad 12 of cushioning or resilient material, such as felt, the rearmost end of this pad projecting beneath the forward end of the member 1. The means of attaching the pad 12 to the member 2 is preferably a suitable adhesive, although other means may be employed if desired. The projection of the member 1 over a portion of this pad will effect a further retention of the pad 12 in position.

The forward portion of the member 2 tapers from the point 13 forwardly to the extreme tip 8, as clearly shown in Fig. 4, thus obviating any abrupt break in the insole of

the shoe when the weight of the wearer is placed thereon. The upper marginal edge of this forward portion is also beveled, as indicated at 14, so that the insole will seat smoothly thereover and not cause any discomfort to the foot of the wearer.

It will thus be apparent that my novel device not only acts as a shank stiffener and arch support, but also as a filler, in place of the usual shoe bottom filler which would be required were it not for the forwardly projecting rounded end of my supporter.

After the device is attached to the insole, the upper materials 15 are then attached, the filler 16 applied and the outsole 17 attached, and the shoe completed in the desired manner.

As clearly illustrated in Fig. 1, the presence of my novel supporter and stiffener in the completed shoe will not interfere with the smoothness of the insole, while yet constituting a desirable metatarsal arch support as well as a shank stiffener. When the device is incorporated in a shoe, the lapping of the forward end of the member 1 over the cushion or pad 12 will lock said pad in place and prevent displacement thereof.

It will thus be appreciated and understood by those skilled in this art that I have devised an efficient, desirable and satisfactory combined shank stiffener and metatarsal arch support, and since I believe the same is novel, I have therefore claimed said device in this application.

While I have necessarily described my present invention somewhat in detail, it will be appreciated that I may vary the size, shape and arrangement of parts within reasonably wide limits without departing from the spirit of the invention.

My invention is further described and defined in the form of claims as follows:

1. A combined shank stiffener and metatarsal arch supporter, comprising a metallic member, a non-metallic member affixed thereto, the forward portion of said non-metallic member projecting beyond said metallic member and terminating in a rounded end adapted to be located under the metatarsal arch, said forward portion having a depression formed therein, and a non-metallic reinforcing member affixed to said forwardly projecting portion of said first non-metallic member and located in said depression.

2. A combined shank stiffener and metatarsal arch supporter, comprising a metallic member, a non-metallic member affixed thereto, the forward portion of said non-metallic member projecting beyond said metallic member and terminating in a rounded end adapted to be located under the metatarsal arch, said forward portion having a depression formed therein, and a non-metallic reinforcing member affixed to said forwardly projecting portion of said first non-metallic member and extending transversely thereof in said depression.

3. A combined shank stiffener and metatarsal arch supporter, comprising a metallic member, a non-metallic member affixed thereto, the forward portion of said non-metallic member projecting beyond said metallic member and terminating in a rounded end adapted to be located under the metatarsal arch, a non-metallic reinforcing member affixed to said forwardly projecting portion of said first non-metallic member, and a pad of cushioning material affixed to said forwardly projecting rounded portion over said reinforcing member.

4. A combined shank stiffener and metatarsal arch supporter, comprising a metallic member, a non-metallic member affixed thereto, the forward portion of said non-metallic member projecting beyond said metallic member and terminating in a rounded end adapted to be located under the metatarsal arch, and a pad of cushioning material affixed to said rounded portion, a portion of said pad projecting beneath one end of said metallic member.

5. In a shoe, a combined shank stiffener and metatarsal arch supporter, comprising a metallic member adapted to be affixed at one end to the insole of said shoe, a non-metallic member affixed to said metallic member and projecting forwardly thereof, said forwardly projecting portion flaring outwardly for a predetermined distance at each side from said metallic member, said projecting portion terminating in a rounded end, a strip of non-metallic reinforcing material affixed to said projecting portion and extending laterally thereof, and a pad of cushioning material affixed to said projecting portion over said reinforcing strip and extending partially under one end of said metallic member, the said end of said metallic member preventing displacement of said cushioning pad, the upper marginal edge of said forwardly projecting rounded portion being beveled, whereby the smoothness of the insole will not be materially interrupted, and said rounded forward end being shaped to permit the inner and outer balls of the foot of the wearer to seat at each side thereof in order to constitute an effective metatarsal arch support.

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

ROBERT C. RHOADES.