Jan. 14, 1936. C. WHITFIELD ET AL 2,027,757

ARCH SUPPORTER

Filed Jan. 9, 1934

Fig. 1

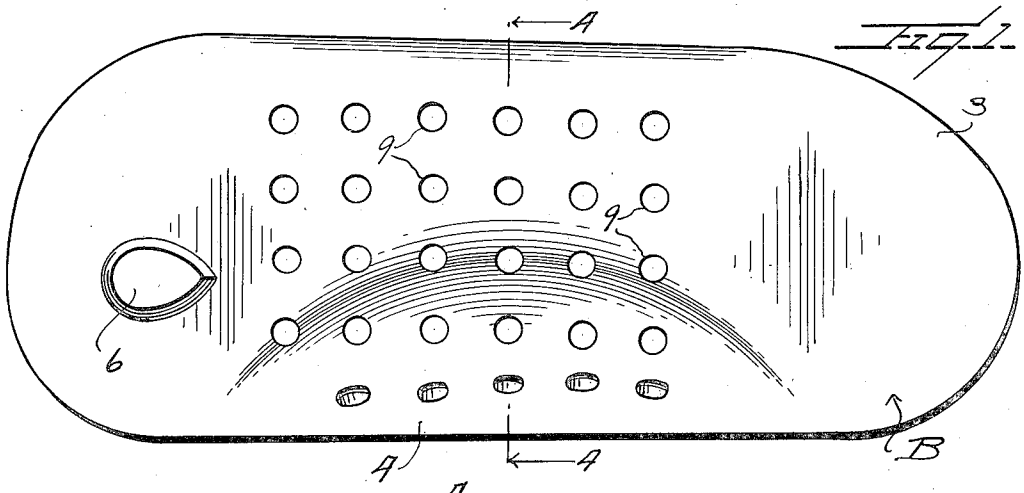


Fig. 2

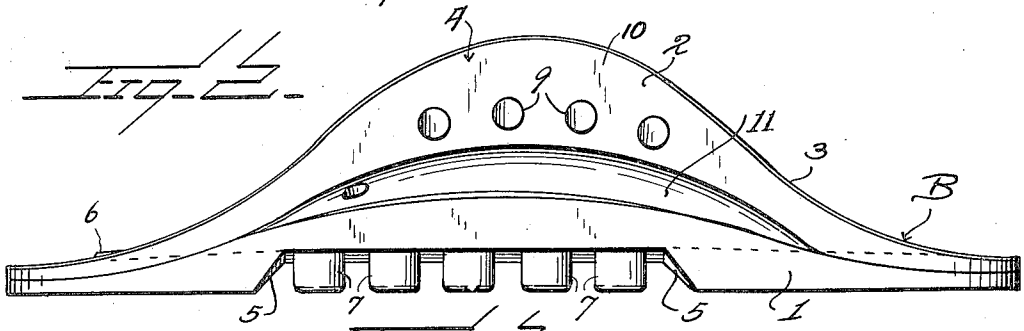


Fig. 3

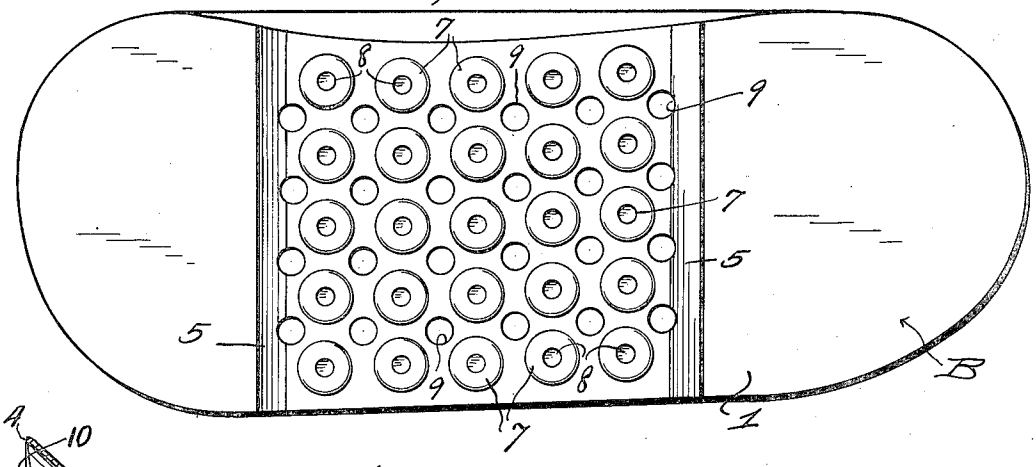
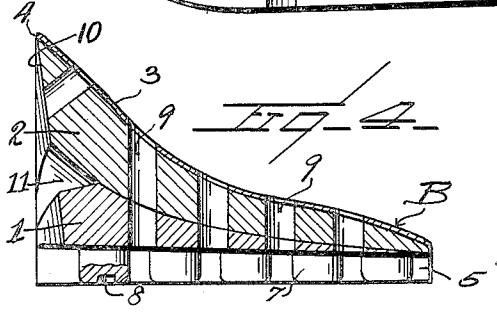


Fig. 4



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ARCH SUPPORTER

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2 Claims. (Cl. 36—71)

This invention relates to an arch supporter, and it is an object of the invention to provide a device of this kind which serves effectively as a rebound for the arch and thus gives to a broken arch its natural springy action and helps to maintain the arch in its natural position.

Another object of the invention is to provide a device of this kind constructed in a manner which gives the arch a natural springy action under the ball of the foot or just where the toes are joined to the foot whereby is further assured the maintenance of the foot in its natural adjustment.

A still further object of the invention is to provide a device of this kind having means to assure the maintenance of the supporter in applied position within a shoe and which is also provided with means to allow ventilation to keep the foot cool and dry and to allow for the escape of sweat and odor.

The invention also has for an object to provide a device of this kind having a marginal portion turned up or over to closely approach the ankle bone, which is always weak with a broken arch, so that when the shoe is laced or otherwise fastened both the arch and ankle will be held in natural positions.

An additional object of the invention is to provide a device of this kind comprising a lower structure of a hard character, preferably a hard rubber compound, with an upper portion relatively soft, preferably a soft rubber compound.

The invention also has for an object to provide a supporter of this kind provided with a metatarsal support in a fixed position thereon.

The invention consists in the details of construction and in the combination and arrangement of the several parts of our improved arch supporter whereby certain important advantages are attained and the device rendered simpler, less expensive and otherwise more convenient and advantageous for use, as will be hereinafter more fully set forth.

The novel features of our invention will hereinafter be definitely claimed.

In order that our invention may be the better understood, we will now proceed to describe the same with reference to the accompanying drawing, wherein:—

Figure 1 is a view in top plan of an arch supporter constructed in accordance with an embodiment of our invention;

Figure 2 is a view in side elevation of the device as herein disclosed;

Figure 3 is a view in bottom plan of the supporter as herein embodied;

Figure 4 is a transverse sectional view taken substantially on the line 4—4 of Figure 1.

Our improved supporter as herein disclosed comprises a body member B of desired dimensions and configuration and which has in its construction a bottom lamination 1 of a hard rubber compound or kindred material, an upper lamination 2 of a soft rubber compound or kindred material, and a lamination 3 of leather or other desired material disposed entirely over the upper or exposed face of the lamination 2.

The body B is adapted to be fitted within a shoe and it is built up from one side to the other and inwardly from points adjacent to its ends as indicated at 4 to have effective fitting below the instep of the foot.

The central portion of the lamination 1 or that portion which is positioned directly below the instep is reduced in thickness from below with the end walls of such reduced portion outwardly and downwardly beveled to provide what may be termed grooves 5 separating the middle or instep portion of the body B from the heel and toe portions and particularly to allow a springy action of said heel and toe portions with respect to the central or instep portion of the body B to assure a natural springy action under the ball of the foot or just where the toes are joined to the foot and to allow a spring action of the heel thereby materially facilitating the maintenance of the toes, the arch and the heel of the foot all in their natural positions.

As particularly illustrated in Figure 1, an end portion of the body B, and more particularly the lamination 2 thereof, may be provided with an upstanding pad 6 of desired material formed with the lamination 2 or otherwise carried thereby in a fixed position. This pad 6 is to provide an effective metatarsal support.

The reduced central or instep portion of the body B, and more particularly the lamination 1, carries depending knobs 7 herein disclosed as arranged in a series of rows disposed transversely of the body B with their outer and substantially end flat faces coplanar with the outer heel and toe portions of the body B. These knobs 7 are preferably of the same material as the lamination 1 and cylindrical in form with their outer faces provided with the suction cups 8 whereby means is provided to prevent the applied supporter from slipping within the shoe or, in other words, to maintain the supporter in desired placement. These knobs 7 also serve to hold the foot in its

natural position without interfering with the desired springy action of the supporter which is essential to eliminate leg pains generally accompanying a fallen arch. This desirable function is assured in view of the fact that the knobs 7 are of substantially the same transverse diameter from one end to the other and that there is a material spacing between adjacent knobs 7 at their junctions with the lamination 5.

The intermediate or instep portion of the body B as well as the raised portion 4 thereof has disposed entirely therethrough the openings 9 to allow air circulation to provide for desired ventilation particularly to allow for the escape of sweat and foot odors. These openings also provide means to assure maintaining the foot cool and dry.

To facilitate the desired functioning of the openings 9 through the raised portion 4 of the body B, the inner side face of such portion is disposed on a slight inward and downward angle and inwardly curved from end to end as indicated at 10 in Figure 4, and to further assure the desired springy action at this high portion 4 it is to be noted that the same is slightly separated from the lower lamination 5 by a suitably formed groove 11 extending lengthwise of the instep portion of the body B and extending partially over the heel and toe portions. This groove 11 is also provided in the outer side face of the high portion 4.

From the foregoing description it is thought to be obvious that an arch supporter constructed in accordance with our invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated, and it will also be obvious that our invention is susceptible of some change and modification without departing from the principles and spirit thereof and for this reason we do not wish to be understood as limiting ourselves to the precise arrangement and formation of the several parts herein shown in carrying out our invention in practice except as hereinafter claimed.

We claim:—

1. An arch supporter comprising a body member shaped to fit within a shoe and to conform to the natural shape of the instep portion of the foot, said body member comprising two superimposed laminations, the lower lamination being substantially hard and the upper lamination soft, said body member at its instep portion having a high portion extending from substantially one side of the body to the other, the high side of said portion being separated from the first lamination by a groove in the inner side face of said high portion, said groove extending lengthwise of the instep portion and extending partially within the heel and toe portions.

2. An arch supporter comprising a body member shaped to fit within a shoe and to conform to the natural shape of the instep portion of the foot, said body member comprising two superimposed laminations, the lower lamination being substantially hard and the upper lamination soft, said body member at its instep portion having a high portion extending from substantially one side of the body to the other, the high side of said portion being separated from the first lamination by a groove in the inner side face of said high portion, said groove extending lengthwise of the instep portion and extending partially within the heel and toe portions, the lower lamination being reduced in thickness from below at the instep portion thereof, said reduced portion separating the toe portion and heel portion of the body member, and knobs extending from the reduced instep portion of the body with their outer ends substantially coplanar with the under surfaces of the toe and heel portions.

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