Oct. 13, 1936. A. E. BLOCK 2,057,510

ARCH SUPPORTING APPARATUS

Filed Jan. 15, 1934

Fig. 1.

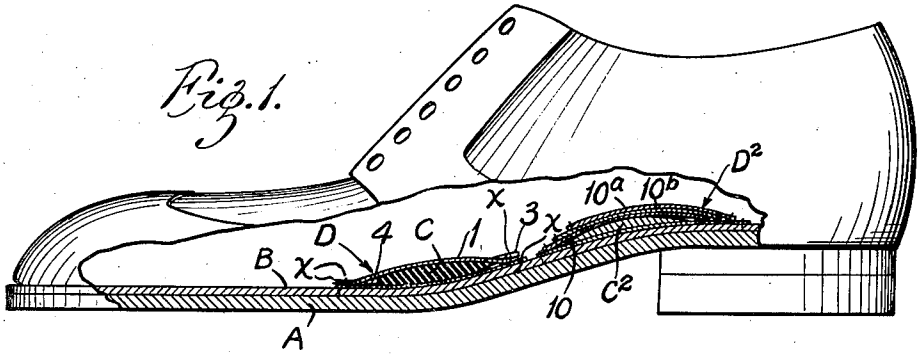


Fig. 2.

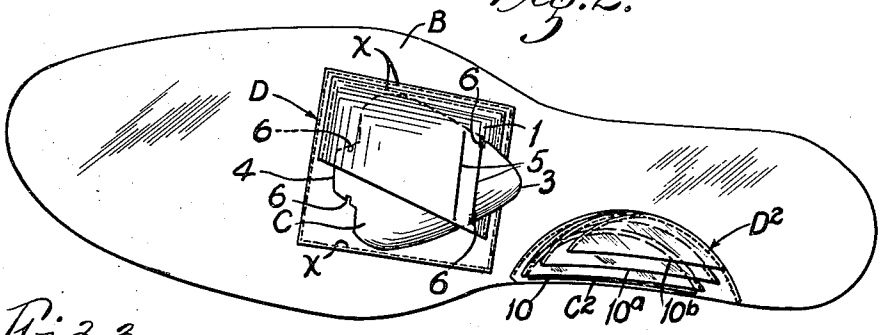


Fig. 3.

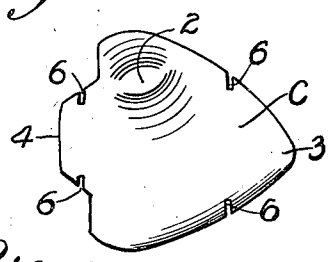


Fig. 4.

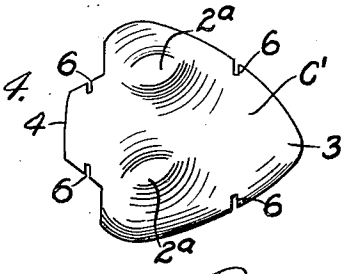


Fig. 5.

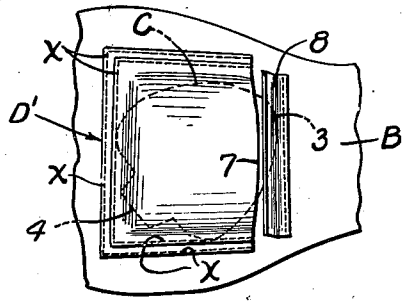
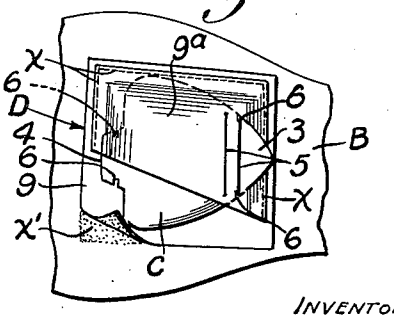


Fig. 6.



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ARCH SUPPORTING APPARATUS

Alexander E. Block, St. Louis, Mo.

Application January 15, 1934, Serial No. 706,640

5 Claims. (Cl. 36—71)

This invention relates to an arch supporting apparatus that is equipped with a novel means for correcting or assisting in the treatment of various foot diseases or ailments.

One object of my invention is to provide a shoe that may be used as a conventional shoe by a person having no so-called "foot trouble" but which may be easily converted into a corrective shoe having provision for changing the position of certain bones or various bones of the user's foot.

Another object is to provide an arch supporting apparatus which is equipped with a removable pad, insert or corrective device, that is mounted on the top side of said inner sole in such a position that the user can quickly and easily adjust it or replace it with another pad, insert or other devices of various shapes or dimensions.

Another object is to provide an arch supporting apparatus which has a pocket adapted to receive and securely hold a pad, insert or analogous device, and constructed in such a manner that the top portion of said pocket will not wrinkle or cause discomfiture to the wearer's foot.

And still another object of my invention is to provide a foot treatment appliance that comprises an adjustable pad, insert or corrective device, which is constructed in a novel manner that greatly enhances the utility of the appliance, due to the fact that the pad or corrective device is capable of being adjusted in twice as many different positions as the pads or inserts of foot treatment appliances of conventional construction.

Figure 1 of the drawing is a longitudinal sectional view of a shoe constructed in accordance with my invention.

Figure 2 is a top plan view of the inner sole of the shoe shown in Figure 1.

Figure 3 is a top plan view of the pad shown in Figure 2.

Figure 4 is a top plan view illustrating another form of pad or insert that may be used.

Figure 5 is a top plan view illustrating another way of constructing the pocket on the top side of the inner sole that receives the pad, insert or corrective device; and

Figure 6 is a top plan view illustrating a foot treatment appliance embodying my invention that may be constructed and sold in the form of a unit which can be easily installed in a conventional shoe.

My invention is applicable to metatarsal arch pads, longitudinal arch pads, and various other kinds of pads or devices that are employed to treat or provide comfort for a part or portions of the human foot, and contemplates equipping a shoe with one or a plurality of pads, inserts or corrective devices of any preferred or suitable construction or shape. While I have herein illustrated my present invention embodied in a so-called corrective shoe in which the pocket structure or structures that receive the pads, inserts or the like are attached to the inner sole of the shoe, I wish it to be understood that my invention is applicable to an arch supporting apparatus of the kind in which the pocket structure or structures are carried by a member removably mounted in the shoe. In Figure 1 of the drawing A designates the outer sole of a shoe, B designates the inner sole of the shoe, and C designates a metatarsal arch pad, insert or corrective device that is arranged on the top side of the inner sole B. Said pad C is retained in position by a pocket or casing, designated as an entirety by the reference character D in Figure 2, that is positioned on the top side of the inner sole B and which is combined with same in such a manner that it virtually forms an integral part of said inner sole. Said pocket or casing D may be constructed in various ways, but it preferably comprises a top part or portion 1 made of thin leather or other suitable flexible material that is thin enough to conform approximately to the shape of the top side of the pad C. This is for the two-fold purpose of permitting the bottom of the wearer's foot to conform approximately to the shape of the pad C and for permitting the shoe to be worn without the pad C without causing discomfiture to the user, as one of the main advantages of my invention is that it produces a shoe, which, when not equipped with the pad C, is practically the same as the conventional or ordinary shoe, but which may be easily converted into a corrective shoe simply by inserting the pad C in the pocket or casing D provided for same on the top side of the inner sole of the shoe. It is immaterial how said top part 1 is combined with or secured to the inner side.

Another outstanding advantage of my invention is that it eliminates one of the principal objections to foot corrective shoes, i. e., the necessity of a user seeking the services of a person skilled in the use and adjustment of such shoes every time the user finds it necessary or desirable to change the position of the pad or one of the pads with which such shoes are usually equipped. This is because the pad C and the

pocket D in which it is held, are mounted on the top side of the inner sole B and are constructed in such a manner as to permit the user to easily grasp and adjust the pad, and moreover, are constructed in such a manner that it requires no special skill or training to set the pad in the position where it will be most comfortable to the user's foot. Although the pad C can be removed or adjusted quickly and easily, nevertheless, said pad is held securely in the position in which it is arranged, as it is confined in a pocket or casing on the top side of the inner sole in such a way that it will not work rearwardly when the shoe is in use. In the preferred form of my invention shown in Figures 1 and 2, the pocket or casing D is formed by securing two pieces of relatively thin leather to the top side of the inner sole B by one or more rows of stitches x inserted in such a way as to produce a pocket whose mouth or inlet extends substantially longitudinally of the sole, the top piece of said pocket being designated by the reference character 1 in Figures 1 and 2. The top part 1 of said pocket is preferably so proportioned with relation to the pad C that when said pad is arranged in operative position in said pocket, part of the pad protrudes from the pocket or projects laterally from the free edge of the overlapping piece 1 of the pocket, and hence, can be grasped easily by a person who desires to adjust or remove the pad. In order to facilitate the insertion and removal of the pad and prevent the top piece 1 of the pocket or casing D from wrinkling and thus causing discomfiture to the user of the shoe, the free edge of the top piece 1 of the pocket which forms one margin of the mouth or inlet of the pocket, is cut diagonally or at an angle to the longitudinal axis of the inner sole, as shown in Figure 2.

The pad C that I prefer to use is made of rubber or other relatively soft material that has some resiliency, and consists of a substantially feather-edged element of approximately disk shape in general outline provided with a flat bottom face and a convexed top face that has an eccentrically-disposed hump 2. One portion of the marginal edge of said pad comprises a tapered or pointed portion 3, and the diametrically opposed marginal edge portion of said pad is constructed so as to produce a tapered tang or portion 4 of considerably less width than the widest portion of the pad. The top piece 1 of the pocket or casing D which overlaps the pad is provided with one or more slits 5 that are adapted to receive either the tapered portion 3 or the tang 4 of the pad C when said pad is arranged in operative position in the pocket, and in order to securely hold the pad in its pocket, the parts 3 and 4 of the pad are provided with marginal notches 6 located so that when said tapered portion or tang is inserted in one of the slits 5 provided for same, the marginal notches 6 will snap into engagement with the ends of the slit, and thus securely hold the pad in position. The pad C, in addition to being capable of being turned over or upside down, as is usual in foot treatment appliances equipped with eccentrically humped pads, is also capable of being turned end for end so as to position either the tapered portion 3 or the tang 4 of the pad in one of the slits 5 in the top piece of the pocket D. Hence, said pad is capable of being adjusted in twice as many positions as the eccentrically humped pad heretofore in use, which was provided with only one notched portion adapted to be inserted in a slitted holding means.

In Figure 4 I have illustrated another form of pad or insert C' that may be used, said pad differing from the pad C shown in Figures 2 and 3, in that it is provided with two different sized eccentrically-disposed humps 2^a instead of a single eccentrically-disposed hump.

While I prefer to construct the pad pocket or casing D in such a way that the mouth or inlet of same extends lengthwise of the inner sole of the shoe, whereby one of the side edges of said pocket will effectively prevent the pad from working rearwardly when the shoe is in use, it is not absolutely essential that this particular type of pad pocket be used. Therefore, in Figure 5 of the drawing I have illustrated another type or form of pad pocket D' which is provided with a mouth or inlet 7 that is disposed transversely of the inner sole of the shoe, the pad that is positioned in said pocket being prevented from working rearwardly out of the pocket by a narrow flap 8 that is arranged transversely of the inner sole of the shoe at the rear end of the pocket D'.

The preferable method of producing the pocket or casing that receives the pad C is to connect a piece 1 of leather or some other suitable material to the top side of the inner sole B of the shoe by stitches x that terminate inside of the channeled portion of the sole, preparatory to building the inner sole into the shoe. However, this is not essential, as the pad pocket or casing could be constructed in other ways without departing from the spirit of my invention. For example, it may be constructed in the form of a separate unit that is applied after the shoe has been completed. Accordingly, in Figure 6 I have illustrated a pad pocket made up of a base piece 9 to which a piece of leather 9^a or other suitable material is connected by stitches x, or in any other suitable way, so as to form a pocket carried by a shoe inner sole or other suitable supporting member, and adapted to receive a pad, insert or corrective device C, the base piece 9 being provided on its underside with an adhesive x' for securing it to the top face of the shoe inner sole.

If the shoe is equipped with means for correcting or relieving longitudinal arch trouble, a pocket structure designated as an entirety by the reference character D^2 in Figure 1 is attached to the top side of the inner sole B, the pocket structure D^2 herein illustrated having the same general characteristics and desirable features of the pocket D, and being provided with a plurality of pockets 10, 10^a, and 10^b, any one of which is adapted to receive a longitudinal arch pad C^2.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In an arch supporting apparatus, the combination of a shoe inner sole, a pocket or casing on the top side of said inner sole, and an adjustable pad, insert, or corrective device mounted in said pocket, the top piece of said pocket having a free marginal edge disposed substantially diagonally to the longitudinal axis of the shoe inner sole so as to prevent said top piece from wrinkling and causing discomfiture to the user.

2. An adjustable pad for foot treatment appliances, consisting of a pad of substantially disk shape in general outline adapted to be removably mounted in a pocket and provided with a plurality of eccentrically-disposed humps of dif-

ferent sizes, any of which may be brought into use by reversing the pad in the pocket.

3. An arch supporting apparatus of the kind described in claim 1, in which the top piece of the pad pocket is provided with a slit through which a portion of the pad projects.

4. An arch supporting apparatus of the kind described in claim 1, in which the top piece of the pad pocket is provided with a plurality of slits disposed so as to permit the pad to be adjusted in various positions.

5. An arch supporting apparatus of the kind described in claim 1, in which the pad is provided with diametrically opposed, notched, marginal portions and the top piece of the pad pocket is provided with a slit adapted to receive either one of said notched marginal portions.

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