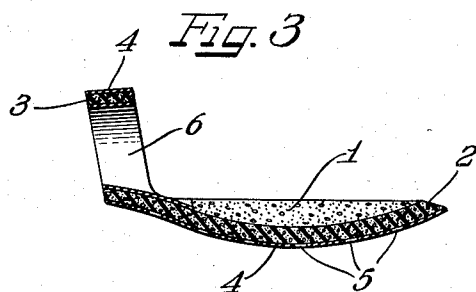
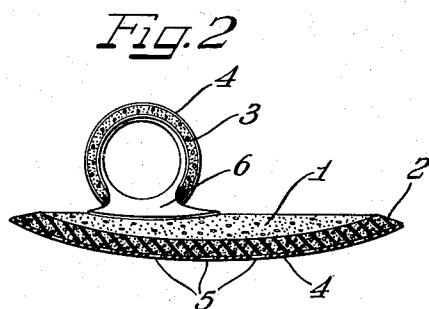
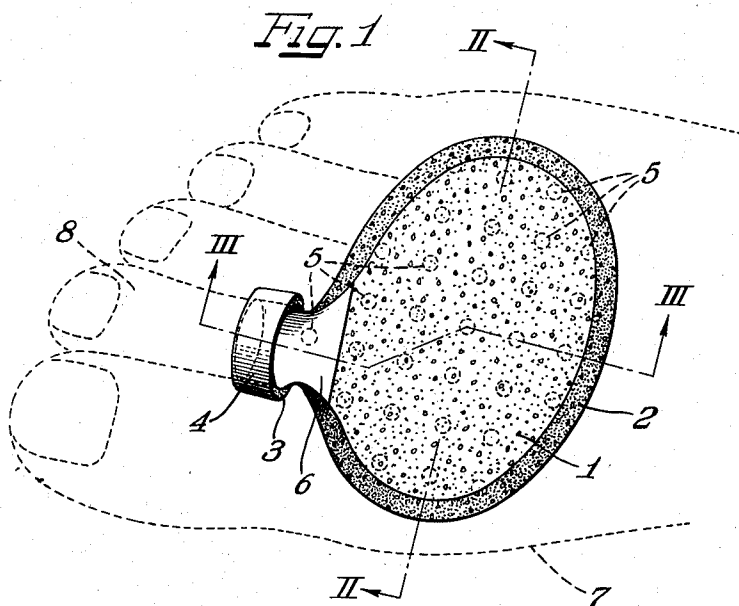


March 31, 1953

C. F. CRAWFORD
FOOT CUSHIONING APPLIANCE

2,633,129

Filed Feb. 28, 1950



Inventor
Claud F. Crawford

by *The Firm of Charles Hall* Attys

UNITED STATES PATENT OFFICE

2,633,129

FOOT CUSHIONING APPLIANCE

Claud F. Crawford, Pasadena, Calif., assignor to
The Scholl Mfg. Co., Inc., Chicago, Ill., a corporation of New York

Application February 28, 1950, Serial No. 146,749

5 Claims. (Cl. 128—166.5)

1

This invention relates to improvements in a foot cushioning appliance, and more particularly to an appliance highly desirable for disposition beneath the plantar surface of the human foot, especially in the region of the metatarsal arch, although the invention may have other uses and purposes as will be apparent to one skilled in the art.

More particularly, the instant invention is designed to act as a cushion and lend protective aid to the foot, and the device may readily be shaped for positioning beneath the plantar surface of the metatarsal arch region of the foot to ease callouses, make walking more comfortable, cushion shock to a wearer of high heel shoes, and to lend protective aid and give relief to a weakened metatarsal arch. Thus, it will be noted that the device will materially add to the comfort of a normal foot, and also give relief and corrective aid to an afflicted foot.

In the past, many and various types of foot cushioning appliances have been designed to both cushion shock and lend corrective aid to a foot or various parts thereof, but in nearly all instances these devices were general in character and not made for use particularly with the right foot as distinguished from a left foot, and vice versa, and accordingly were not capable of effecting proper relief to the desired degree. Further, many of these formerly known devices were maintained in place by a circumscribing elastic strap around the foot, or by means of adhesive, both of which are somewhat irritating, and the latter especially in the event the adhesive comes attached to a stocking or the like, or the device becomes partially loosened. In addition, many devices of this character heretofore known designed to add to the comfort and cushion shock in connection with a normal foot were not of proper shape and frequently caused some discomfort and nervous irritation by virtue of the fact the wearer was constantly conscious of the presence of the device, this being aggravated in many cases by the objectionable bulk of the device and the resultant uncomfortable crowding of the foot in a shoe or the like.

With the foregoing in mind, it is an important object of the instant invention to provide a foot cushioning device designed particularly to fit either a right or a left foot.

Another object of the invention is the provision of a foot cushioning device having a shape in keeping with the plantar surface contour of a normal foot.

Still another object of the instant invention is

2

the provision of a foot cushioning device, highly desirable for disposition beneath the ball of a foot, and which may be attached to the foot without the aid of adhesive or the like, the device being held against lateral displacement by the stocking or other foot covering.

A further feature of the instant invention resides in the provision of a foot cushioning and corrective device which may be made in various sizes and which may be readily removed and replaced, and laundered whenever desired.

It is still a further feature of the instant invention to provide a foot cushioning and corrective appliance for disposition beneath the plantar surface of the human foot, which device is extremely light in weight, highly resilient, and is provided with a smooth exterior surface to eliminate any drag against articles of apparel.

Also an object of this invention is the provision of a foot cushioning and corrective appliance highly desirable for disposition beneath the ball of a foot so as to underlie the metatarsal arch, and which device is held in position by a highly resilient toe loop which is provided with a smooth surface both interiorly and exteriorly thereof so as to enhance ease of application and removal, and provide no discomfort or irritation.

While some of the more salient features, characteristics and advantages of the instant invention have been above pointed out, others will become apparent from the following disclosures, taken in conjunction with the accompanying drawing, in which—

Figure 1 is a top plan view of a foot cushioning device embodying principles of the instant invention, illustrating in phantom outline the anterior portion of a human foot which is presumed to be above the body portion of the appliance;

Figure 2 is a substantially central vertical sectional view through the appliance taken substantially as indicated by the line II—II of Fig. 1, looking in the direction of the arrows; and

Figure 3 is a transverse vertical sectional view taken substantially as indicated by the staggered section line III—III of Fig. 1.

As shown on the drawings:

At the outset, it may be mentioned that the instant invention is a carrying forward of the principles of the invention set forth and described in my copending application for patent entitled *Bunion Pad and the Like*, filed November 25, 1949, Serial No. 129,327, now Patent 2,585,629, the instant invention being for a different purpose and for different disposition on the foot than

the device set forth in the aforesaid copending application.

The illustrated embodiment of the instant invention is shown in the form of a cushioning appliance for disposition beneath the ball of a right foot. A device adapted to fit beneath the ball of a left foot will obviously have an opposite shaping and disposition. The illustrated embodiment of the invention includes a concavo-convex or downwardly arched body 1 having a generally oval contour and which is provided with a skived or beveled edge 2 therearound to cause the device to more smoothly and intimately fit the plantar surface of the foot without any discomfort due to abrupt edges. It will be noted that the concave upper face of the body 1 is quite in keeping with the convex plantar surface of the foot in the region of the metatarsal arch so that the device will comfortably fit the foot and not crowd a normally fitting shoe.

This body portion 1 is preferably made of foam rubber or latex, a cellular latex structure in which the cells are intercommunicating with each other and with the exposed surface cells, so that adequate ventilation is provided through the body portion of the structure. Foam latex is also extremely light in weight, highly resilient, and retains its elasticity indefinitely against compacting, immediately assuming its original shape and size upon the removal of pressure. The body portion may be made from sheet material by removing sectors and cementing the adjacent edges together to acquire the convex-concavo shape, or it may equally as well be molded from foam latex.

Preferably integral with the body 1 and extending from an offset forward part thereof is a toe engaging loop 3 and this, of course, is of the same material as the body 1. The toe engaging loop extends upwardly from the body so as to readily circumscribe or embrace a toe of a foot.

Over the outer surface, or lower surface when applied, of the body 1, is a cover 4 which also extends around the entire outer surface of the toe engaging loop 3. This cover is preferably formed of a relatively thin normally impervious latex sheet, having a smooth external surface. A suitable material for this purpose is a thin latex sheet of the character customarily utilized for dental dams. The cover 4 may be attached to the body 1 and loop 3 by vulcanization, or by the aid of cementitious material, or in any other suitable manner. The attachment however, is preferably intimate so that the structure is to all effects and purposes one integral unit. Since this cover is normally impervious, it is provided with a plurality of apertures 5 therethrough for ventilation purposes, air passing through the body 1 by virtue of the inter-connection of the cells therein.

In order to facilitate application and removal of the device to and from a foot, a lining 6 of similar material to the cover 4 is provided inside the toe engaging loop 3, as clearly seen in Figs. 2 and 3.

With the structure above described, it will at once be apparent that the instant invention is extremely resilient, flexible, stretchable, and may be made sufficiently thin and light in weight as to be substantially unnoticeable to the user while being worn within an article of footwear.

To show the application of the device to the foot, in Fig. 1, I have illustrated the forward portion of a human foot in phantom outline, as indicated by the dotted lines 7. The device is pre-

ferably positioned beneath the metatarsal heads of the foot by slipping the toe engaging loop 3 over the second toe 8 of the foot, and drawing it back to the web of the toes. This is very easily accomplished by virtue of the smooth surfaced lining 6 inside the loop. The smooth surfaced cover 4 permits a stocking to be drawn readily over the foot without drag on the appliance, and the stocking when donned will effectively prevent lateral displacement or distortion of the appliance. No adhesive whatever or any other securing means than the loop 3 are necessary in order to retain the device properly in position. Thus, there is no binding of the device against any part of the foot, and the wearer after an extremely short interval of time is totally unaware of the presence of the device. The lower surface of the metatarsal region of the foot fits comfortably within the concave upper surface of the appliance, and the appliance will effectively cushion shock, especially to a wearer of high heel shoes, relieve and ease the pressure on callouses, and lend supportive aid in the nature of soft yielding pressure to the metatarsal arch of the foot, should that arch be somewhat weakened.

It will at once be apparent that the appliance may be removed whenever desired and thoroughly sterilized or laundered without injury to the appliance. In addition, it will be noted that the device is economical in construction, and extremely long lived.

It will be understood that modifications and variations may be effected without departing from the scope of the novel concepts of the present invention.

I claim as my invention:

1. A foot cushioning appliance for disposition beneath the transverse arch of a human foot, including a resilient concavo-convex body part to underlie the foot, and a toe loop connected with said body part to engage over the second toe of the foot to retain the device in position, said body part being of generally oval contour and of a size to receive a plurality of metatarsal heads in the concavity thereof, and said toe loop being offset with respect to said body part to fit the device to a left or right foot only.

2. A foot cushioning appliance for disposition beneath the plantar surface of a human foot, including an imperforate foam latex body portion, a smooth surfaced covering over said body portion apertured for ventilation, and a toe engaging loop on said body portion and having a soft interior and both an inside and outside smooth surface.

3. A foot cushioning appliance for disposition beneath the plantar surface of a human foot, including an imperforate foam latex body portion, a smooth surfaced covering over said body portion apertured for ventilation, and a toe engaging loop integral with said body portion and having both an inside and outside smooth surface, said covering being a relatively thin rubber-like sheet.

4. A foot cushioning device, including a resilient downwardly arched concavo-convex body part of a size to receive a plurality of metatarsal heads in the concavity thereof and shaped to underlie the metatarsal arch of the foot, and a loop projecting from the forward portion of the body part to circumscribe an intermediate toe of the foot to hold the device in position.

5. A foot cushioning device, including a resilient downwardly arched concavo-convex body part of a size to receive a plurality of inter-

mediate metatarsal heads in the concavity thereof, said body part being generally of oval contour and shaped for disposition beneath the plantar surface of the foot with the long axis of the body substantially paralleling the metatarsal arch of the foot, and a toe loop projecting forwardly of the body part to engage over the second toe of the foot and hold the device in position.

CLAUD F. CRAWFORD. 10

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
876,022	Schiffhauer -----	Jan. 7, 1908
1,006,134	Saul -----	Oct. 17, 1911
1,295,611	Schwartz -----	Feb. 25, 1919
1,545,512	Pease -----	July 14, 1925
2,190,016	Day -----	Feb. 13, 1940
2,358,966	Einstoss -----	Sept. 26, 1944
2,499,768	McGlumphy -----	Mar. 7, 1950