July 5, 1938. W. L. SCHRADER 2,123,121

CORN PAD AND PLASTER

Filed April 15, 1935

Fig. 1.

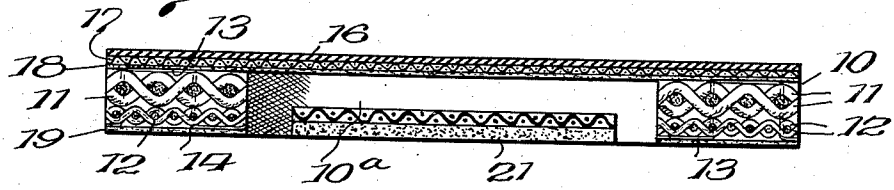


Fig. 2.

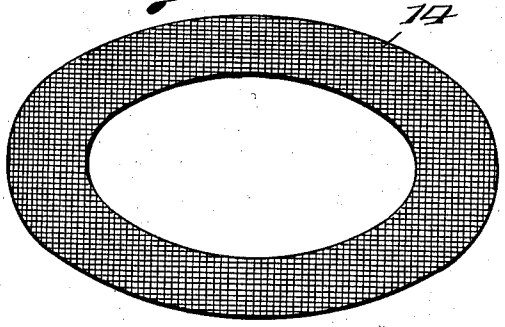


Fig. 3.

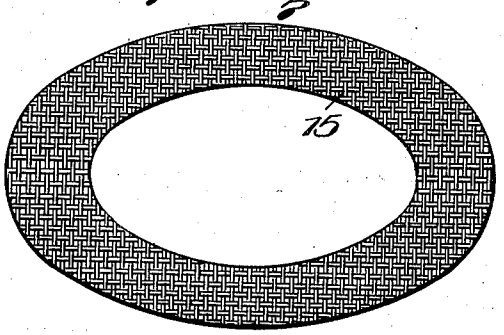


Fig. 4.

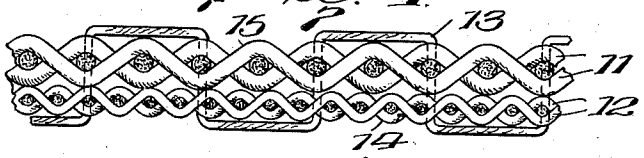
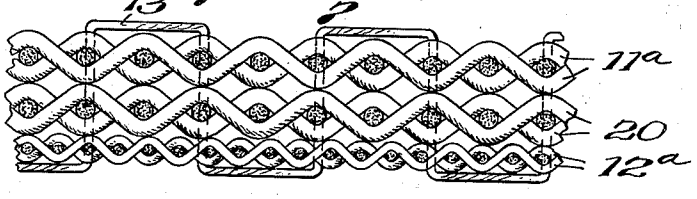


Fig. 5.



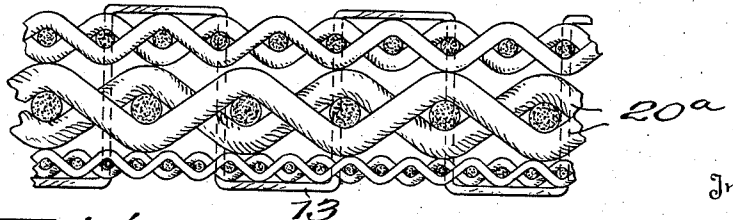


Fig. 6.

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UNITED STATES PATENT OFFICE

2,123,121

CORN PAD AND PLASTER

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Application April 15, 1935, Serial No. 16,528

13 Claims. (Cl. 128—153)

This invention is a pad or plaster for treating and removing corns, bunions, callous spots, and the like, and to protect the affected parts from pressure due to confinement of the foot of the wearer within a shoe, and/or while walking.

Heretofore one form of so-called corn and bunion pad or plaster has been constructed of a felt ring-like pad having a layer of adhesive on its under surface, by means of which the pad is caused to adhere to the skin of the wearer. On the top of the pad is a strip of adhesive tape, extended in opposite directions from the pad, so that the latter may be bound to a toe, or other portion of the foot. A bit of medicated salve carried by the adhesive tape is dropped inside of the felt ring, in such manner as to contact with the corn, or other affected part. This type of pad, however, is objectionable in that the heat of the foot softens the salve, causing it to ooze through the strip of adhesive tape, and to stick to the stocking of the wearer.

Another form of corn pad or plaster heretofore in use is constructed of a plurality of superposed layers of adhesive tape of ring-like form, and a superposed top layer of the same material covering the opening. This type of pad, however, is also objectionable, because the heat emanating from the wearer's foot softens the adhesive material, whereupon there is a relative slippage or "skidding" of the layers, exposing sticky surfaces, and transferring the softened sticky material to the stocking. This relative sliding of the layers also destroys the cavity which is provided to receive the corn, and to maintain the medicated material in position over the corn, thereby also destroying the protective shoulder which prevents the shoe of the wearer from pressing on the corn.

Another objectionable characteristic of pads or plasters of the character referred to is that the exposed surfaces of the coverings are more or less rough and harsh, and while in use, the friction is such as to frequently wear holes in the stocking of the wearer. In addition to this, such coverings are usually stiff and lacking in flexibility, to such an extent as to create discomfort while in use.

One of the objects of the present invention is to overcome the foregoing objections by providing a pad or plaster constructed of a single layer of fabric, provided with an impermeable top secured thereto in such manner that there will be no skidding or separation of layers to expose portions of the sticky adhesive, and so that the stocking of the wearer is completely protected from such injury as would result from contact with the soft, sticky adhesive material which otherwise might ooze through the top layer.

A further object is to provide an impermeable top of the character above referred to, the exposed surface of which will be smooth and pliable without stickiness, and of such a character that the friction upon the stocking during wear is reduced to a minimum, whereby wearing of holes in the stocking is prevented.

A further object of the invention is to provide a corn pad or plaster, the body of which is formed of a single piece of woven fabric provided with an adhesive coating on its underside, and with a top covering of impermeable material.

A further object of the invention is to provide a pad or plaster, such as above referred to, in which the material of the body possesses a characteristic softness, so that when the pad is subjected to pressure, the fabric is squeezed radially inward and outward, but the body of the pad does not skid or move with respect to the surface to which it is adhering.

An additional object of the invention is to provide a pad or plaster of the class mentioned, in which the body is formed of a woven material possessing inherent resiliency under compression, whereby the tendency to become hard under pressure is reduced to a minimum.

A further object is to provide a corn pad or plaster comprising a woven body so constructed and arranged that under pressure a protective fringe will be squeezed from the middle portion of the pad, to which will adhere any softened free adhesive which may be squeezed out of the pad, as well as any softened medicated material, and any moisture which might develop within the space enclosed by the pad.

Another object of the invention is to provide a corn pad or plaster in which the base or body is formed of a multi-woven material, i. e., one consisting of a single thickness fabric produced by means of a plurality of weaves, so that the lower surface of the pad, which contacts with the foot, is more finely woven than the upper surface to which the waterproof cover adheres, and an absorptive zone is provided between the two surfaces.

The invention will be hereinafter fully set forth and particularly pointed out in the claims.

In the accompanying drawing:

Figure 1 is a vertical cross sectional view illustrating a pad constructed in accordance with the invention, with a medicated disk in its operative position with respect thereto. Figure 2 is a bottom plan view of the woven pad body illustrating

the finely woven surface. Figure 3 is a top plan view of the woven pad body illustrating the more coarsely woven top surface. Figure 4 is a horizontal sectional view illustrating the multiwoven fabric from which the pad body is made. Figures 5 and 6 are similar views of modified fabrics.

Referring to the drawing, **10** designates a one-piece woven body or pad base provided with an opening **10a** therein. The base is constructed of ring-like form of any desired contour, an elliptical form being shown for purposes of illustration, but without intent to limit the invention to that particular shape. Said body may be made from any desired woven material characterized by any suitable form of weave capable of producing the characteristic softness, resiliency and absorptive qualities required for the purposes hereinafter discussed. It is preferred, however, to form the base or body **10** of a single integral piece of multi-woven fabric, such as illustrated in Figure 4. Referring more particularly to said Figure 4, the fabric is shown as having a woven top layer of relatively coarse fibers or yarns **11**, and a woven bottom layer of relatively fine fibers or yarns **12**. The two weaves may be joined into a unitary structure during fabrication in any well known manner, a tie yarn **13** being shown as illustrative of one method well understood in the weaving art. By this arrangement, the finished fabric is provided with a lower face **14** of finely woven material, as shown in Figure 2, and a top face **15** of coarsely woven material, as shown in Figure 3.

Attached to the coarsely woven upper face of the body **10**, in any desired manner, is an impervious covering of any preferred material, which possesses the necessary softness, smoothness and flexibility, and the impermeability required to protect the stocking of the wearer from soft sticky substances which would ooze through the covering if the covering were not constructed to prevent it. The impermeability of the cover must also be of such a character that the exposed surface thereof will not become soft or sticky due to contact with extraneous moisture, caused by bathing of the foot, for instance. Obviously a soggy or water-soaked surface would make it difficult to draw a stocking over the foot. For purposes of illustration and without intent to limit the invention thereto, the drawing discloses a sheet of rubber **16**, vulcanized to one surface of a finely woven cotton or other similar fabric **17**, the other surface of the covering fabric being cemented to the coarsely woven top face **15** of the body **10**, by means of any suitable adhesive, indicated at **18**, capable of maintaining the necessary union between the fabrics. The finely woven surface **14** is coated with an adhesive **19**. It will also be understood that the adhesives are absorbed by the edges of the fabric to a sufficient extent to prevent raveling of said edges.

If a fabric body of greater thickness than that produced by the fabric illustrated in Figure 4 is desired, the form of fabric illustrated in Figure 5 may be employed. Referring to said Figure 5, it will be observed that the fabric consists of the coarsely woven layer **11a** and the finely woven layer **12a** similar to the top and bottom layers illustrated in Figure 4. An intermediate woven layer **20** is interposed between the layers **11a** and **12a**, the intermediate layer preferably being about the same thickness as the layer **11a**. The three layers are bound together by a tie yarn **13**, in a manner already described in connection with Figure 4. This fabric provides a body which, being thicker and heavier than the body illustrated in Figure 4, is more adapted for heavier and rougher usage, while at the same time preserving the required resiliency and softness, in addition to the unitary sheet construction, which is an important factor in preventing side slippage or skidding. It will also be noted that the intermediate layer **20** provides a greater absorptive zone than is provided by the construction illustrated in Figure 4. If, however, it is desired to increase the resiliency of the woven material, as well as its softness and absorptive characteristics, the intermediate weave **20a** of Figure 6 may be substituted for that of Figure 4. It will be observed that the layer **20a** is more loosely woven from a coarser yarn than the layer **11a**, thereby providing an intermediate layer of much softer weave and one which, by reason of its openness, is more absorptive than the others. This coarser intermediate layer also provides a cushioning effect, and will readily absorb any extruded adhesive material due to the pressure upon the pad, and thereby protect the hosiery of the wearer from damage.

In practice, the pad or plaster may be used with or without the medicated disk **21**, which contains well known ingredients tending to attack and destroy corns and similar affections. Said disk also contains an adhesive by which it may be placed over and caused to adhere to the corn. Obviously, if the disk is to be used, it is applied to the affected part before placing the pad in position, and the relative proportions of the parts are such that the disk is adjacent to the intermediate absorptive zone of the pad, so that in the event of melting or flowing of the disk under heat and pressure incident to the use of the pad, the impermeable top of the pad will prevent the flowing material from working through the top of the pad, and said material will be readily absorbed by said absorptive zone. It is to be understood that the pad may be of any desired thickness, provided that it is of sufficient thickness to provide a shoulder around the opening sufficiently high to keep the shoe from pressing on the corn.

To apply the pad, the affected part should be first thoroughly cleansed and dried, so that when the adhesive **19** is pressed against the skin, it will adhere with sufficient tenacity to prevent slipping of the pad.

The advantages of the invention will be readily understood by those skilled in the art to which it belongs. For instance, the natural resiliency of the woven fabric resists compression to a sufficient extent to prevent the pad from being mashed into a hard mass, which will press into the flesh of the wearer. It will also prevent the breaking down and destruction of the protective shoulder of the pad which protects the corn against pressure by the shoe of the wearer. In addition to the foregoing, the natural flexibility of the body **10** allows it to readily conform to the contour of the affected parts being treated, and its inherent softness prevents discomfort while in use. Another advantage is that the impermeable cover maintains the moisture within the space enclosed by the pad and prevents any softened adhesive from the pad and the cover, or any softened material from the medicated disk from seeping through the top of the pad and contacting with the stocking of the wearer. Should any perspiration or body moisture and/or softened adhesive accumulate within the pad opening, it will be absorbed by the intermediate portion of the fabric lying between the top and

bottom surfaces thereof. In addition, the cover exposes a non-sticky, smooth and pliable surface which contacts with the stocking of the wearer in such manner as to permit the fabric of the stocking to freely slide over the pad, and to reduce the friction to such an extent that there is no danger of wearing a hole in the stocking.

Another advantage is that by making the fabric body of a single unitary piece of material, there is no chance for relative slippage or skidding, such as occurs with pads made up of a plurality of superposed layers, and a particular advantage in this respect is that the adhesive which attaches the waterproof cover to the pad contacts with the relatively coarsely woven fabric, so that it penetrates well into the fabric and thereby adheres with such a firm hold and with such tenacity that relative slippage of the waterproof cover with respect to the pad body is practically impossible.

Another advantage is that in all of the forms of the fabric disclosed, there is a finely woven surface for contacting with the flesh of the wearer, and a more coarsely woven surface is provided for receiving the adhesive by which the waterproof cover is attached. There is also an intermediate absorptive zone between the two surfaces, the purposes of which have been fully described. By the use of unitary pad bodies of the character herein described and claimed, the action of the acid perspirations on the adhesive is largely eliminated, and even where the adhesive may be softened, penetration to the hose is prevented by the impermeable covering as well as by the intermediate absorptive zone. It is to be understood that although the impermeable covering has been described for purposes of illustration as consisting of rubberized fabric, the invention is not limited in this particular.

This application is a continuation in part of application Serial No. 705,575, filed January 6, 1934.

Having thus explained the nature of the invention and described an operative manner of constructing and using the same, although without attempting to set forth all of the forms in which it may be made, or all of the forms of its use, what is claimed is:

1. A pad of the character described comprising a body portion consisting of a single piece of woven material so shaped as to provide a ring-like body encircling an open space, and an impermeable covering attached to the top face of said body in such manner as to extend over and completely cover said space, said ring-like body having a zone between its top and bottom surfaces which is softer than either of said surfaces.

2. A pad of the character described comprising a single layer of multi-woven fabric so shaped as to provide a ring-like body encircling an open space, and an impermeable covering attached to one face of said body in such manner as to extend over and completely cover said open space.

3. A pad of the character described comprising a single layer of multi-woven fabric constructed of two or more superposed connected plies and so shaped as to provide a ring-like body encircling an open space, the woven ply at one surface being finer than the woven ply at the other surface, and an impermeable covering attached to the coarser surface of said body in such manner as to extend over and completely cover said open space.

4. A pad of the character described comprising a single layer of multi-woven fabric formed of two or more superposed integrally connected plies, and so shaped as to provide a ring-like body encircling an open space, the woven ply at one surface being finer than the woven ply at the other surface, said multiply fabric having an absorptive zone between said surfaces and surrounding said open space, and an impermeable covering attached to one face of said body in such manner as to extend over and completely cover said open space.

5. A pad of the character described comprising a single layer of multi-woven fabric formed of two or more superposed integrally connected plies, the woven fabric at one surface being finer than the woven layer at the other surface, the fabric between said surfaces being softer than at either of said surfaces, said fabric being so shaped as to provide a ring-like body encircling an open space, and an impermeable covering attached to the exposed face of the coarser ply of said body in such manner as to extend over and completely cover said open space.

6. A pad of the character described comprising a single layer of multi-woven fabric formed of two or more superposed integrally connected woven plies, the ply at one surface being finer than the ply at the other surface, said fabric being so shaped as to provide a ring-like body encircling an open space, an adhesive coating carried by the finely woven surface, and a covering of impermeable material adhering to the more coarsely woven surface and so disposed as to extend over and completely cover said open space.

7. A pad of the character described comprising a single layer of multi-woven fabric so shaped as to provide a ring-like body encircling an open space, an adhesive coating carried by the under surface of said body, and a sheet of rubberized fabric adhering to the top surface of said body and so positioned as to extend over and completely cover said open space.

8. A pad of the character described comprising a body portion consisting of a single layer of woven material including two or more distinct woven plies integrally connected, one of said plies being coarsely woven and another ply finely woven, said material being so shaped as to provide a ring-like body encircling an open space, and a rubberized waterproof covering applied to the coarsely woven ply of the body in such manner as to extend over and completely cover said open space.

9. A corn pad comprising a cover and a unitary single-layer multi-woven body formed of a plurality of woven plies, one of which is adapted to provide a cushioning effect for the pad and another adapted to provide a gripping effect on said cover to prevent sliding of the cover relatively to the body, said body being of ring-like form encircling an open space, said cover extending over and completely covering said space.

10. A corn pad comprising a single layer of multi-woven fabric provided with three integrally connected woven plies, said fabric being so shaped as to provide a ring-like body encircling an open space, and a covering attached to the top face of said body in such manner as to extend over and completely cover said space.

11. A pad of the character described comprising a single layer of multi-woven fabric provided with three superposed integrally connected plies, the woven ply at one surface being finer than the woven ply at the other surface, said fabric being so shaped as to provide a ring-like body encircling

an open space, and a covering attached to the top face of said body in such manner as to extend over and completely cover said open space.

12. A pad of the character described comprising a single layer of multi-woven fabric provided with three superposed integrally connected woven plies, the intermediate ply of the fabric being softer than the other plies, said fabric being so shaped as to provide a ring-like body encircling an open space, and a covering attached to the top face of said body in such manner as to extend over and completely cover said open space.

13. A pad of the character described comprising a single layer of multi-woven fabric formed with three superposed integrally connected woven plies, the intermediate ply being of coarser, more loosely woven yarn than the other plies, said fabric being so shaped as to provide a ring-like body encircling an open space, and a covering attached to the top face of said body in such manner as to extend over and completely cover said open space.

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