SURGICAL PAD WITH DIGIT LOOP

Filed June 6, 1963

INVENTOR.

Johannes Neu

BY

ATTORNEYS
This invention relates to improvements in a surgical pad with a digit loop, and more particularly to a pad highly desirable for alleviating the aggravating effects of a bunion, tailor's bunion, Hallux Valgus, by positioning the device over the first or fifth metatarsal head as the case may be, although the device might equally as well be positioned on the top of the foot or beneath the natural arch of the foot to relieve corns, callosities, and other painful afflictions, all as will be apparent to one skilled in the art.

The purpose of a device of this character is to eliminate pressure and friction from wearing apparel such as an article of footwear on the affliction itself by the transfer of such pressure to healthy tissues surrounding the affliction, and thus relieve the user of the pain and aggravation of the affliction. At the same time the transference of pressure to the healthy tissue around the affliction tends to restore to some extent the adduction of the metatarsal head in the case of Hallux Valgus to its normal position, and similarly encourage ultimate normal positioning of other misshapen parts of the foot.

In the past, many and various forms of devices have been designed with the above purpose in mind. In some instances, such devices took the form of mechanical splints which were in effect harnessed to the foot and contained rigid means to forcefully hold a toe or the like in a fixed position. Such devices, while possibly aiding the affliction, nevertheless were extremely uncomfortable and objectionably expensive in and of themselves. In many other instances, various types of cushioning pads and the like have been employed. In most cases, however, such formerly known devices had an objectionably abrupt elevation or shoulder at the bounding edge, sufficient many times to cause irritation to healthy tissues surrounding an affliction by virtue of shoe pressure acting immediately upon such an abrupt elevation. A beveled edge or margin on such a pad did not solve that problem, because of the fact that the beveled edge would not yield materially to pressure and did not effect a gradual lessening of pressure toward the center of the pad.

With the foregoing in mind, it is an important object of the instant invention to provide a surgical pad of the character herein set forth which has a body part of cushioning material with a marginal structure of the same material but so arranged as to be more yieldable to shoe pressure than the inner part of the pad closer to the affliction.

Another important object of this invention is to provide a surgical cushioning pad highly desirable for the relief of bunions and other foot afflictions, and which has a body part of resilient cushioning material, which body part is provided with an annular groove in the bounding edge thereof to render the marginal portion of the body part more compressive than the remainder. It is also a feature of this invention to provide a surgical pad having a body part of cushioning material with an affliction receiving aperture therein, the aperture having partially a vertically wall and partially an outwardly flaring wall adjacent the side that contacts the body so that there can be no abrupt shoulder to irritate healthy tissue around the affliction in the vicinity of the aperture.

It is still a further object of this invention to provide a surgical pad of the character set forth herein which is simple in construction, long lived, and which more effectively eliminates pressure from wearing apparel and the aggravation of the same than pads of the same general type herefore used.

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 fragmentary illustration showing a pad embodying principles of the instant invention in operative position upon a human foot; FIGURE 2 is a perspective view of a pad also embodying principles of the instant invention, but of a slightly different construction than the pad of FIGURE 1; FIGURE 3 is a plan view of the pad of FIGURE 2 illustrating how the same is made; FIGURE 4 is a greatly enlarged vertical sectional view taken substantially as indicated by the line IV—IV of FIGURE 3, looking in the direction of the arrows; FIGURE 5 is an enlarged vertical sectional view taken substantially as indicated by the line V—V of FIGURE 3; and FIGURE 6 is a perspective view of a pad also embodying principles of the instant invention, but of a still different construction.

As shown on the drawing:

In the first illustrated embodiment of the instant invention, seen in FIGURE 1, there is a pad comprising a body part 1 made of cushioning material such as felt, sponge rubber, organic synthetic resin foam, such as vinyl or urethane foam, or other suitable resilient cushioning substances. In this instance, the body part 1 of the pad is a single piece of material and is provided with an affliction receiving aperture or opening 2 therein. This opening 2 has a straight wall on the side of the pad away from the body and has a flared wall on the side of the pad toward the body, as will more fully appear later herein in connection with the description of the second embodiment of the invention, all embodiments having the same form of opening.

The pad body 1 is provided with a marginal construction more responsive to compressive pressure than the remainder of the pad body although both the outer and inner faces of the pad body each comprise the same plane, and the pad body appears to be of equal thickness throughout. In the illustrated instance this marginal weakening of the pad body is accomplished by providing a groove 3 preferably V-shaped, in the bounding edge of the pad body, this groove 3 extending entirely around the pad body. The pad body may be molded with the groove therein, ground or milled to provide the groove, or in the case of foam material being used, such material might be saturated and frozen and then

...
the groove cut in any suitable manner after which the material may be permitted to thaw and the water removed therefrom.

The pad body is also preferably provided with a digit loop 4, the ends of which may be glued or equivalently secured to the body part inside the groove 3. This digit loop 4 may be of any suitable material, a stretchable elastic fabric or the equivalent being highly desirable for the purpose.

As seen in FIGURE 1, the pad is operatively positioned upon a human foot 5 with the digit 4 engaged over the large toe 6, the body of the pad then extends along the inner side of the foot, and an affliction on or adjacent the first metatarsal head will be received within the opening 2. The pad will eliminate shoe pressure from such an affliction and the pressure is gradually eliminated by virtue of the collapsible marginal portion of the pad caused by the provision of the groove 3. The shoe pressure will close or at least partially close the groove at various points around the pad body and such pressure will be gradually eased away from the foot, there being no aggravation or irritation caused by any abrupt edges on the pad body.

In FIGURES 2, 3, 4 and 5, I have illustrated a similar surgical pad having a body part made up of two initially separate pieces. In this instance, a composite body part 6 of the same shape and size material as that described in connection with FIGURE 1 may be readily and economically formed from two initially separate substantially half body parts 6a and 6b. These two body parts are connected by a tape or strap 7, preferably elastic, which ultimately forms a digit loop.

The body part 6a, as best seen in FIGURE 4, has an affliction receiving opening therein, the inner part 8 of which is straight walled, while the outer part 9 thereof is outwardly beveled or flared. The bounding edge of this body part 6a is also beveled as indicated at 10. The other body part 6b is provided with a straight walled affliction receiving opening 11 of the same size as the portion 8 in the body part 6a. The bounding edge of this body part 6b is also in the form of a bevel 12.

When the completed device is formed the part 6a is placed oppositely to the part 6b. That is, as seen in FIGURE 3, the wider face of the part 6a is outermost, while the wider face of the part 6b is innermost. The band or strap 7 has one end secured to the inside face of the part 6a, and its other end secured to the outside face of the part 6b, cementiously or in any other suitable manner. It is then a simple expedient to rotate the parts in a full revolution and superimpose in the overlap 15 of the ends of the band 7 forming the digit loop which will then be between the two body parts, and the smaller faces of the two body parts will be confronting each other. These smaller faces can then be cemented together to produce the pad as seen in FIGURE 2, and the beveled edges 10 and 12 cooperate to form a groove in the bounding edge of the resultant device, which groove functions in the same manner as the groove 3 in the structure of FIGURE 1.

As explained above, the groove formed by the bevels 10 and 12 provides a weakened or more compressive marginal portion around the pad body to gradually and comfortably transfer shoe pressure to the inner portion of the pad body. Also, the flared part 9 of the affliction receiving opening is disposed adjacent the body of the user around the affliction and the flare eliminates any discomfort that an abrupt edge might cause to the healthy tissue around the affliction and renders the entire pad much more comfortable and effective.

In FIGURE 6, I have shown a still different form of the invention wherein a complete pad body 13, provided with an affliction receiving opening 14 of the same character above described, and a groove 15 in the bounding edge may be provided as an integral structure and described in connection with FIGURE 1 or may be fabricated as above described in connection with FIGURES 2-5. The body 13, however, while identical in construction and operation with those previously described, is not provided with a digit loop attached directly to the body. In this instance, a flexible annulus 16 or soft leather or equivalent material is provided which has an opening at least in one side thereof, and the pad body is inserted half way through that opening so that the edge of the flexible annulus 16 around the opening is seated in the pad groove 15. A digit loop 17 is then provided on the flexible annulus 16 beyond one end of the pad body 13.

When put to use, the instant invention results in almost instantaneous relief from the discomforts of an affliction, and the device is long lived, may be laundered if desired, and does not require expert skill or attention for placing it properly in the vicinity of an affliction.

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. In a surgical pad for treating corns, callouses, bunions and the like, a body part of cushioning material having an opening therein, said body part having a peripheral groove in the bounding edge thereof, and a digit loop member attached to said body part in said groove and projecting therefrom to hold the pad on the body of a user.

2. In a surgical pad for treating corns, callouses, bunions and the like, a body part of cushioning material having an opening therein, said body part having a relatively V-shaped groove in the bounding edge thereof whereby to relieve pressure from apparel more gradually and eliminate abrupt edge contact, and a digit loop member attached to said pad in and projecting from said groove to hold the pad in place on the body of a user.

3. In a surgical pad for treating corns, callouses, bunions and the like, a pair of half body parts of cushioning material, each body part being in the form of an annulus defining an aperture therein, each body part having a narrow base face with an outwardly expanding bevel leading therefrom, the narrow base faces of said body parts being secured together to provide a complete body part having an annular groove in the outer edge thereof defined by said bevels, and a digit loop of flexible material which is substantially thinner than the cushioning material in either of said body parts and having its ends secured to the narrow base faces of said half body parts.

4. In a surgical pad for treating corns, callouses, bunions and the like, a pair of half body parts of cushioning material, each body part being in the form of an annulus defining an aperture therein, each body part having a narrow base face with an outwardly expanding bevel leading therefrom, the narrow base faces of said body parts being secured together to provide a complete body part having an annular groove in the outer edge thereof defined by said bevels, the aperture in one half body part having an inner straight wall and an outward beveled wall, the appliance in the other body part being defined by a straight wall, and means emanating from said groove to attach the surgical pad to the body of a user.

5. In a surgical pad for treating corns, callouses, bunions and the like,
a cushioning body part in the form of an annulus with an annular groove in the outer bounding edge thereof,
a flexible annulus of relatively thin material having an opening therein of an area substantially that of said body part at the bottom of said groove,
said body part being disposed in said flexible annulus with the opening defining edge of the flexible annulus seated in the groove of the body part, and
a digit-engaging loop on said flexible annulus and projecting laterally beyond said groove for retaining the pad on an area of a foot to be treated.

References Cited by the Examiner

UNITED STATES PATENTS

1,382,678 6/1921 Scholl .................. 128—153
1,892,804 1/1933 Pease .................. 128—112
2,503,056 4/1950 Lay .................. 128—153
3,088,461 5/1963 Levitt .................. 128—153

FOREIGN PATENTS

244,322 12/1925 Great Britain.

RICHARD A. GAUDET, Primary Examiner.