

Aug. 9, 1966

G. J. KIRCHNER ET AL

3,265,071

ORTHOPEDIC PADS

Filed April 30, 1964

2 Sheets-Sheet 1

FIG. 1

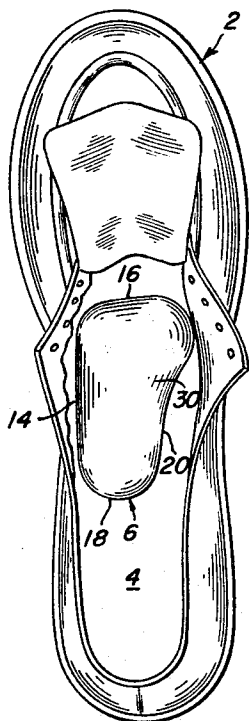


FIG. 2

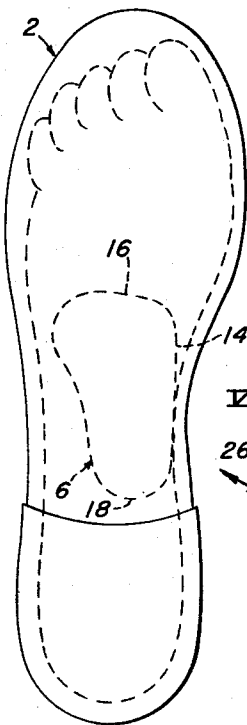


FIG. 3

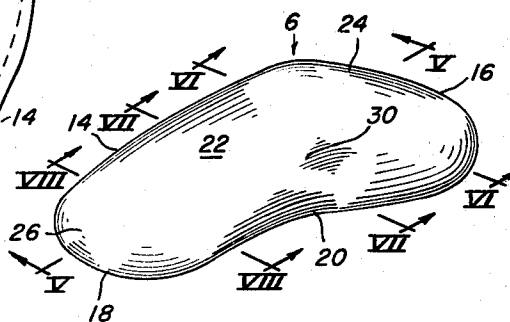


FIG. 4

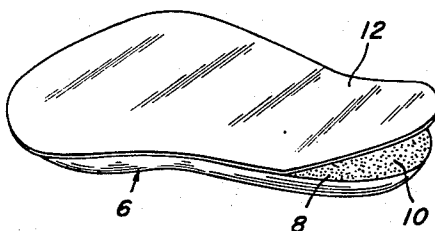


FIG. 5

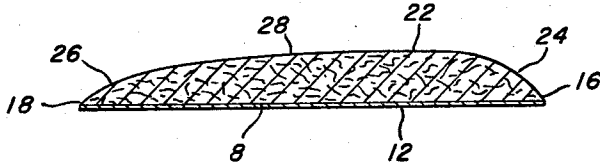


FIG. 6

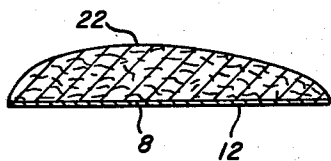


FIG. 7

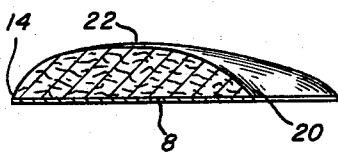
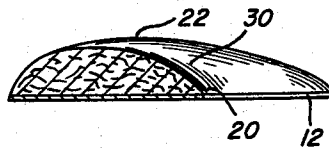


FIG. 8



INVENTORS
GEORGE J. KIRCHNER
EMIL D. W. HAUSER
By *Martin J. Carroll*
Attorney

Aug. 9, 1966

G. J. KIRCHNER ET AL

3,265,071

ORTHOPEDIC PADS

Filed April 30, 1964

2 Sheets-Sheet 2

FIG. 9

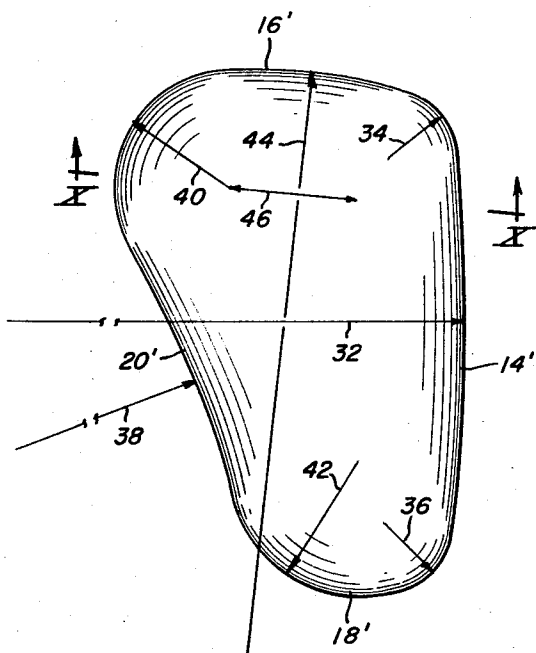


FIG. 10

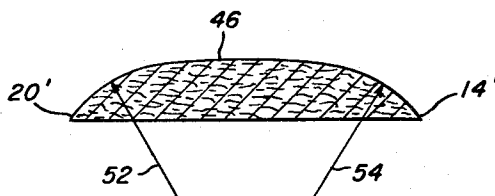
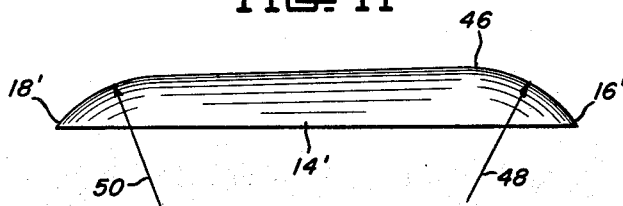


FIG. 11



INVENTORS
GEORGE J. KIRCHNER
EMIL D. W. HAUSER
By *Martin J. Carroll*
Attorney

1

3,265,071

ORTHOPEDIC PADS

George J. Kirchner, Pittsburgh, Pa., and Emil D. W. Hauser, Wilmette, Ill., assignors to Hapad, Incorporated, a corporation of Illinois

Filed Apr. 30, 1964, Ser. No. 363,926
9 Claims. (Cl. 128—586)

This invention relates to orthopedic pads and more particularly to such pads for use within a shoe at the instep. One common practice is to use one corrective pad under the long arch and another corrective pad under the metatarsal arch with one pad overlapping the other. The two piece pads are usually not uniform in thickness nor contour so that a great deal of hand trimming is required. Due to the excessive hand trimming these two piece pads are not a practical commercial product. Also the pads sometimes slip with respect to one another and the user cannot return the pads to their proper position. Thus, the user may wear the pads in his shoes in an improper manner so that actually it is uncomfortable and painful to wear them. Also, some pads are made of leather or other relatively noncompressible nonresilient material. This type of pad often provides only limited relief.

It is therefore an object of our invention to provide a resilient, compressible one piece orthopedic pad which will protect both the longitudinal and metatarsal arches.

Another object is to provide such a pad that may be made in various sizes and heights to provide relief for various conditions and sizes of feet.

Still another object is to provide such a pad which will remain where positioned in the shoe.

These and other objects will be more apparent after referring to the following specification and attached drawings, in which:

FIGURE 1 is a top plan view of a shoe with the pad of our invention positioned therein;

FIGURE 2 is a plan view of the shoe and pad of FIGURE 1 looking upwardly at the bottom of the shoe;

FIGURE 3 is a perspective view of the pad of our invention looking downwardly toward its top;

FIGURE 4 is a perspective view of the pad of our invention looking at the bottom thereof;

FIGURE 5 is a view taken on the line V—V of FIGURE 3;

FIGURE 6 is a view taken on the line VI—VI of FIGURE 3;

FIGURE 7 is a view taken on the line VII—VII of FIGURE 3;

FIGURE 8 is a view taken on the line VIII—VIII of FIGURE 3;

FIGURE 9 is a top plan view of a left hand pad;

FIGURE 10 is a view taken on the line X—X of FIGURE 9; and

FIGURE 11 is a view of the right side of the pad of FIGURE 9.

Referring more particularly to the drawings, reference numeral 2 indicates a shoe having an inner sole 4 upon which pad 6 of our invention rests. While a right hand shoe and pad are shown it will be understood that a pad of opposite hand will be provided for a left hand shoe.

The pad 6 has a flat generally L-shaped bottom surface 8 which has a layer of adhesive 10 thereon. In order to prevent the pads from sticking together or to other surfaces a protective strip 12 is provided over the adhesive. The strip 12 may be made of paper or any other suitable material. Side 14 of bottom surface 8 while made slightly convex for ease of manufacture is relatively straight for the majority of its length and could be perfectly straight. Forward end 16 of surface 8 is substantially wider than rearward end 18. Longitudinal side 20 of

2

surface 8 is concave. The corners of the bottom surface are all rounded as shown. Upper surface 22 of pad 6 is contoured with forward end 24 curving upwardly and rearwardly to a maximum thickness at a distance between 20 and 30% of its total length from the forward end. Rearward end 26 curves upwardly and forwardly. A relatively straight portion 28 connects the ends 24 and 26 adjacent longitudinal side 14. Top surface 30 adjacent the longitudinal side 20 is concave for between $\frac{1}{3}$ and $\frac{1}{2}$ of its length over the central part of the pad. The pad also curves upwardly along each longitudinal edge toward the opposite longitudinal edge.

In use, the strip 12 is pulled off and the pad 6 placed on sole 4 with the flat surface 8 downwardly and the longitudinal side 14 extending along the inside of the foot as shown in FIGURES 1 and 2. Thus, the higher portion of the pad including portion 28 supports the longitudinal arch and the remaining forward portion supports the metatarsal arch. Once positioned the pad is held in place by the glue.

The pad is made of a compressible resilient material such as felt. A soft felt is much preferred. Felt having a fiber content of 10% virgin wool, 48% reprocessed wool, 37% reused wool and 5% cotton is very satisfactory. Another suitable felt contains 5% viscose rayon fiber, 5% cotton, and 90% wool fiber made up of 10% virgin wool, 67% reprocessed wool and 13% reused wool and weights approximately 4 lbs. per sq. yd. in $\frac{1}{2}$ in. thicknesses.

The pad 6 may be made in various sizes depending upon the size of the shoe. Each size of pad may be used with several different sizes of shoes. High heeled shoes require a smaller size pad than low heeled shoes of the same size. The size of the pad may be varied by reducing the thickness thereof with the top contour otherwise being the same.

A particular pad that has proved to be satisfactory for the average size man's shoe is dimensioned in the following manner as shown in FIGURES 9, 10 and 11 which are drawn to full scale. The pad is 2 $\frac{1}{2}$ in. wide at its widest point and 4 in. long at its longest point. The longitudinal side 14' is obtained by a central radius 32 of 8 $\frac{1}{2}$ in., a forward radius 34 of $\frac{1}{2}$ in. and a rearward radius 36 of $\frac{1}{2}$ in. The longitudinal side 20' is obtained by a central radius 38 of 6 in., a forward radius 40 of $\frac{7}{8}$ in. and a rearward radius 42 of 1 in. The forward end 16' is formed by connecting the arcs of radii 34 and 40 by a radius 44 of 4 $\frac{3}{8}$ in. which has a center 1 in. in from the left side of the pad. Rearward end 18' is formed by radii 36 and 42. The high portion of the pad is indicated by line 46 and extends from a point $\frac{7}{8}$ in. from the forward end and $\frac{7}{8}$ in. from the left side to a point 1 in. from the forward end and $1\frac{1}{16}$ in. from the right side. The thickness of the pad at this line is .400 in. The forward end of the pad is obtained by a radius 48 of 1 in. with its arc extending to the high portion 46 at a point $\frac{7}{8}$ in. from the front edge of the pad. The rearward end of the pad is obtained by a radius 50 of 1 in. with its arc extending forwardly a distance of $\frac{7}{8}$ in. The thickness of the pad at this point is .370 in. The longitudinal sides of the pad are formed by radii 52 and 54 of 1 in. The construction is otherwise the same as the pad of FIGURES 1 to 8.

While two embodiments of our invention have been shown and described it will be apparent that other adaptations and modifications may be made without departing from the scope of the following claims.

We claim:

1. A resilient and compressible one-piece pad adapted to be placed in a shoe under the longitudinal and metatarsal arches of the foot, which comprises a flat generally L-shaped bottom surface adapted to contact the inner sole

of the shoe, one longitudinal side of said flat surface being relatively straight for the majority of its length and adapted to be positioned toward the inside of the foot, said surface having a substantial width for the majority of its length with the forward end of said surface being wider than the rearward end, the other longitudinal side of said flat surface being concave over the intermediate portion thereof, and a contoured upper surface, the forward end of said pad curving upwardly and rearwardly to a maximum thickness, the portion of the pad adjacent said one longitudinal side curving upwardly toward the other longitudinal side, the rearward portion of the pad curving upwardly and forwardly, the portion of the pad adjacent the other longitudinal side curving upwardly toward the said one longitudinal side, the top surface of the pad adjacent said other longitudinal side being concave over the central part thereof, the upper surface having a relatively straight portion adjacent said one longitudinal side sloping from the maximum thickness portion rearwardly and downwardly to the curved rearward portion.

2. A resilient and compressible one-piece pad according to claim 1 including an adhesive on said flat bottom surface, and a protective strip of material removably attached to said bottom surface by said adhesive.

3. A resilient pad according to claim 1 in which the material of the pad is a felt made predominately of wool.

4. A resilient and compressible one-piece pad adapted to be placed in a shoe under the longitudinal and metatarsal arches of the foot, which comprises a flat generally L-shaped bottom surface adapted to contact the inner sole of the shoe, one longitudinal side of said flat surface being relatively straight for the majority of its length and adapted to be positioned toward the inside of the foot, said surface having a substantial width for the majority of its length with the forward end of said surface being wider than the rearward end, the other longitudinal side of said flat surface being concave over the intermediate portion thereof, and a contoured upper surface, the forward end of said pad curving upwardly and rearwardly to a maximum thickness at a distance between 20 and 30% of its length from the forward end, the portion of the pad adjacent said one longitudinal side curving upwardly toward the other longitudinal side, the rearward portion of the pad curving upwardly and forwardly, the portion of the pad adjacent the other longitudinal side curving upwardly toward the said one longitudinal side, the top surface of the pad adjacent said other longitudinal side being concave for between $\frac{1}{3}$ and $\frac{1}{2}$ of its length over the central part thereof, the upper surface having a relatively straight portion adjacent said one longitudinal side sloping from the maximum thickness portion rear-

wardly and downwardly to the curved rearward portion.

5. A resilient one piece pad according to claim 4 including an adhesive on said flat bottom surface, and a protective strip of material removably attached to said bottom surface by said adhesive.

6. A resilient pad according to claim 4 in which the material of the pad is a felt made predominately of wool.

7. A resilient and compressible one-piece pad adapted to be placed in a shoe under the longitudinal and metatarsal arches of the foot, which comprises a flat generally L-shaped bottom surface adapted to contact the inner sole of the shoe, one longitudinal side of said flat surface being slightly convex for the majority of its length and adapted to be positioned toward the inside of the foot, said surface having a substantial width for the majority of its length with the forward end of said surface being wider than the rearward end, the other longitudinal side of said flat surface being concave over the intermediate portion thereof, the corners of said surface being arcuate, and a contoured upper surface, the forward end of said pad curving upwardly and rearwardly to a maximum thickness at a distance between 20 and 30% of its length from the forward end, the portion of the pad adjacent said one longitudinal side curving upwardly toward the other longitudinal side, the rearward portion of the pad curving upwardly and forwardly, the portion of the pad adjacent the other longitudinal side curving upwardly toward the said one longitudinal side, the top surface of the pad adjacent said other longitudinal side being concave for between $\frac{1}{3}$ and $\frac{1}{2}$ of its length over the central part thereof, the upper surface having a relatively straight portion adjacent said one longitudinal side sloping from the maximum thickness portion rearwardly and downwardly to the curved rearward portion.

8. A resilient one-piece pad according to claim 7 including an adhesive on said flat bottom surface, and a protective strip of material removably attached to said bottom surface by said adhesive.

9. A resilient pad according to claim 7 in which the material of the pad is a felt made predominately of wool.

References Cited by the Examiner

UNITED STATES PATENTS

1,757,904	5/1930	Free	128—595 X
2,084,455	6/1937	Reed	128—586 X

FOREIGN PATENTS

620,870	5/1961	Canada.
---------	--------	---------

RICHARD A. GAUDET, *Primary Examiner*.

DELBERT B. LOWE, SIMON BRODER, *Examiners*.