

Nov. 19, 1935.

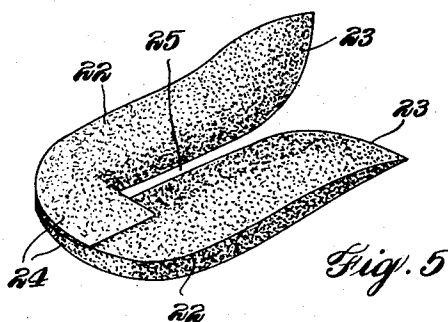
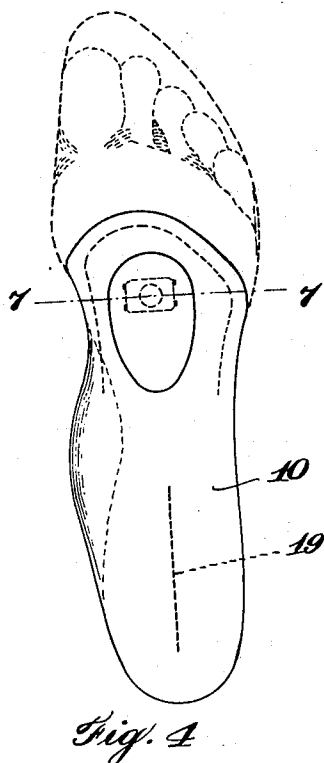
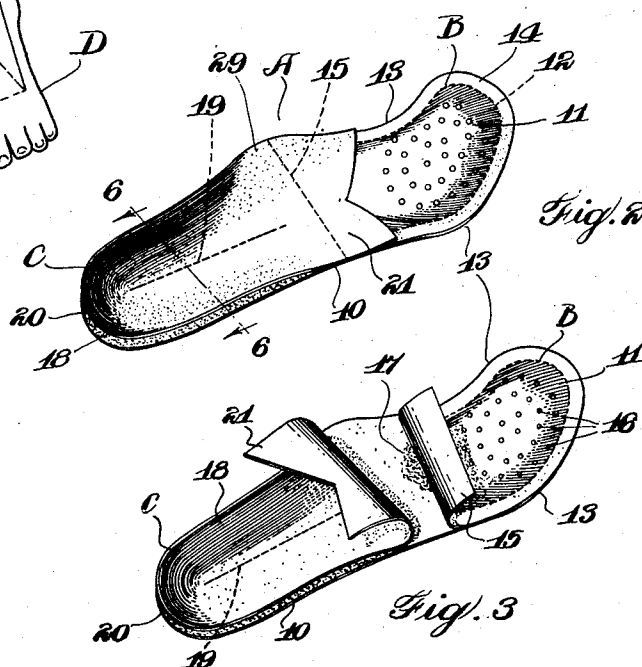
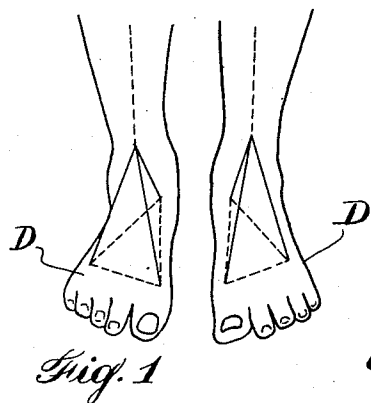
C. O. JOHNSON

2,021,729

EXUDING METATARSAL PAD AND HEEL CUP

Filed Sept. 26, 1932

2 Sheets-Sheet 1



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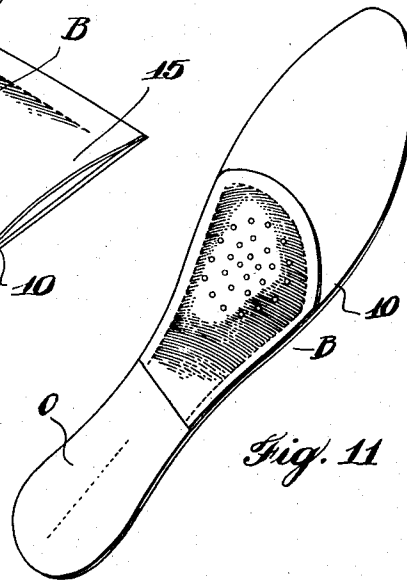
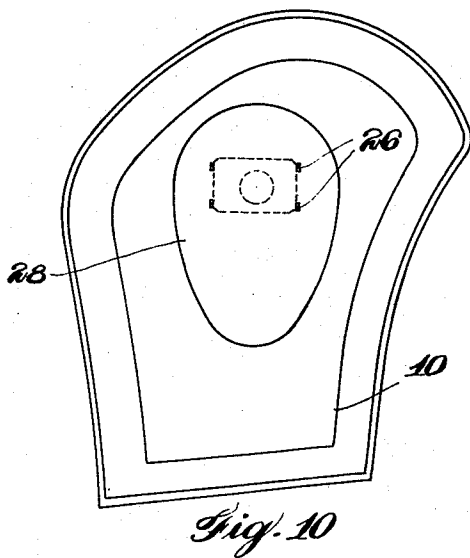
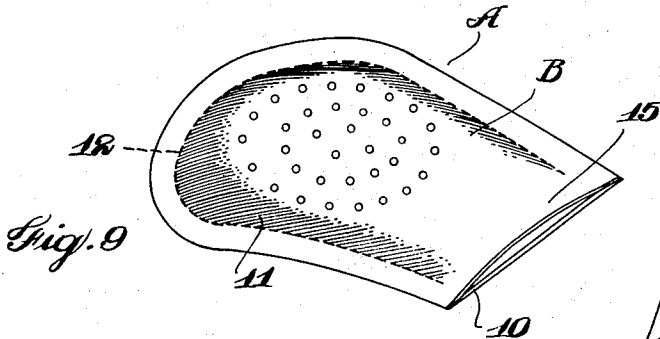
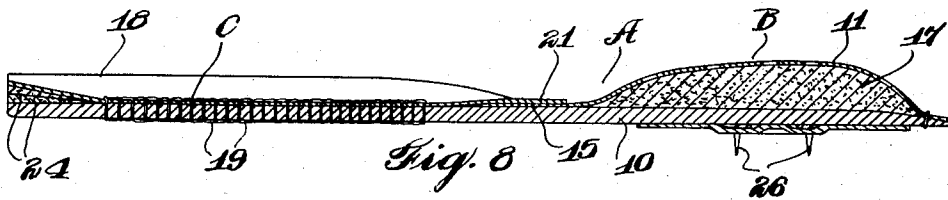
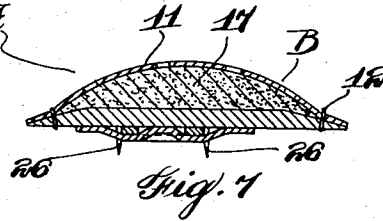
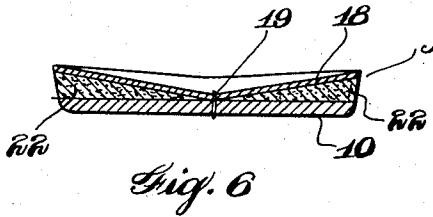
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EXUDING METATARSAL PAD AND HEEL CUP

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2 Sheets-Sheet 2



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EXUDING METATARSAL PAD AND
HEEL CUP

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6 Claims. (Cl. 36—71)

My exuding metatarsal pad is designed to provide a pad which may be used to exude powder or medicament to the metatarsal area of the foot in a shoe. The pad is of a construction so that it may be adjusted by more or less filling of a specially prepared wool, silk floss, or other material, so that the wearer can adjust the pad to the desired elevation.

The pad may be secured to the insole, being made a part thereof, or may be formed on a portion of a sock lining which will fit over the main insole of a shoe and is provided with anchoring means to anchor the same in adjusted position so as to be properly set in the shoe to cover the entire metatarsal area.

It is a feature to provide a metatarsal exuding pad, the padding of which elevates the metatarsal shafts in a manner to give a more even distribution of weight and release the pressure on the metatarsal heads of the foot, the perforations in the pad centralizing the powder or antiseptic carried in the pad, directly under the metatarsal arch or calloused portion of the foot. Thus the resiliency of the padding when being pressed upon the foot in the shoe acts similar to a bellows, forcing the secreted powder to exude, thus acting as a cooling agent under what may be considered as the "hot spot" of the foot. In this manner my pad may be employed to exude a powder or antiseptic directly under the metatarsal arch and the action of the foot acting to distribute the same to the different areas, including the top and toward the heel of the foot, rather than permitting the powder or antiseptic to be caused to shift to one end or the other of the shoe of the wearer as has been true heretofore. My metatarsal exuding pad has particular advantages in the treatment of foot troubles including that commonly known as "athlete's foot".

It seems to be well recognized, at least by the medical profession, that excessive sweat is due to general debility, nerve tension, or vascular disorders, and when it occurs in the feet, as it commonly does, it is principally due to a weakened muscular resistance caused by foot deformities or misalignment of the foot bones which impinge nerves and blood vessels which results in faulty circulation and in turn deprives the tissues of nourishment. This my metatarsal exuding pad is adapted to largely overcome and is designed with a suitable anchoring means which may be in the form of a member having one or more sharp prongs extending mainly from below the pad and which will engage into the main insole of the shoe to hold the pad and its connecting parts in oper-

ative position in the shoe so that it will remain where it is set. This is an advantage in my construction because no two people have the same dimensioned feet and a little adjustment one way or the other is readily apparent with this convenient form of anchoring the pad in position. My exuding metatarsal pad may be equally well used where it is attached to the insole or put into the shoe in any other suitable manner.

The heel cup structure as associated with my metatarsal pad is of primary importance by reason of its simple construction, being particularly adapted to be associated with the metatarsal pad to hold the foot centrally in alignment with the pad and keep the heel in proper position in relation to the pad so that the foot may be caused to properly operate over and around the metatarsal pad. The members forming the heel cup are readily removable, thus making it easy to replace the same and they may be made of any suitable material so as to form a soft cushion or shoulder around the heel and also giving a defined center channel by reason of their wedge-shaped nature, being held in place by the longitudinal stitching down the center of the heel flap and fitting around the same with the edges skived down and shaped to form the desired shape to the heel cup and interfitted together by overlapping at the rear ends beyond the stitching. The removable heel cup wedges may be formed in various degrees of length and thickness, in a straight or irregular manner to secure greater elevation in front of the os calcis or heel bone or either side.

In the drawings forming part of this specification:

Figure 1 is an anterior view of feet and legs, showing tripod formation and normal weight bearing points which are the points directly under the heel bone and the first and fifth metatarsal heads.

Figure 2 is a perspective view of my metatarsal exuding pad and heel cup.

Figure 3 is a perspective similar to Figure 2, showing the parts in a different position.

Figure 4 is a fanciful plan view, looking down on my metatarsal exuding pad and heel cup, showing the approximate outline of the foot.

Figure 5 is a perspective view of the removable heel cup wedges employed in my metatarsal exuding pad and heel cup.

Figure 6 is an enlarged section on the line 6—6 of Figure 2.

Figure 7 is an enlarged section on the line 7—7 of Figure 4.

Figure 8 is an enlarged longitudinal section through my metatarsal exuding pad and heel cup.

Figure 9 is a perspective view of another form of my metatarsal exuding pad.

5 Figure 10 is a bottom view of Figure 9.

Figure 11 is a perspective of a thin insole or sock lining, having my metatarsal exuding pad and heel flap pad which may be cemented into a shoe.

10 The simplest shaking of foot powder into shoes serves only the purpose of temporarily powdering the same because as a rule the powder simply settles into the heel or toe of the shoe and is ineffective to the foot. With my exuding metatarsal pad and heel cup it is possible to place 15 foot powder, which may be of an antiseptic character or medicated to treat the foot, centrally in the shoe or in relation to the foot being placed primarily under the metatarsal area so that as the foot operates in the shoe in walking, 20 the powder is carried automatically to all parts of the sole of the foot, thereby having a material advantage.

My exuding metatarsal pad and heel cup A is 25 adapted to be associated with the insole of a shoe and it may be in a form wherein it is provided with a thin flexible insole 10 of the desired shape, having formed on one end the pad B which has a covering portion 11 of a shape to extend under 30 virtually the entire metatarsal area, which cover is stitched at 12. The stitching 12 extends along the sides 13 and across the front end 14 of the metatarsal pad B with the rear end open having a free closing flap 15.

35 The cover 11 is formed with a series of holes 16 which are confined to the metatarsal area of the pad B and which operate to exude foot powder carried in the pad B.

The pad B may be stuffed with a filling of wool 40 or other fibrous material 17, if it is desired. The filler 17 may be adjusted by the wearer of the shoe in which the metatarsal pad A is placed so that more or less padding may be provided in the pad B. The pad may operate to merely confine 45 the foot powder if it is desired, without any filling such as 17, all of which is governed primarily by the wearer of the shoe in which the exuding pad A is worn.

The exuding pad A may be formed with a heel 50 cup portion C having a thin covering member 18 which may overlap the flap 15 of the pad B to close the pad B and permit the foot to slide freely over the covering 18 and over the pad B in inserting the foot in the shoe. The cover member 55 18 is of thin flexible material so as to conform readily to the sole of the foot, and the stitching 19 which extends centrally and longitudinally through the cover member 18 attaches the cover member to the insole 10. The stitching 19 is 60 spaced from the rear heel end 20 and from the free flap 21.

The heel cup C is concaved to the desired 65 amount by means of the heel cup wedges 22 which may be formed of soft flexible material of any suitable nature. The forward inner edge 23 is skived thin so as to taper away toward the arch and foot while the rear portions may be formed with overlapping wedge ends 24. It is apparent 70 that the wedge filler 22 may be made in a single piece extending around so as to fit under the cover 19 and formed with a longitudinal central slot 25 between the sides of the same so as to fit around the sewing 19. The filler wedge or wedges 22 may be replaced or removed or changed in 75 thickness at the outer edges of the same so as to

make a more or less concaved cup C as may be desired, which provides a heel cup of an adjustable nature so that it may be adapted to the wearer's desires.

The heel cup C acts with the pad B to hold the 5 heel in line with the pad and to position the foot D in proper relation to the metatarsal pad B to give the best results with the use of the same. In caring for the feet while it is desirable to give the proper padding to the metatarsal area of the 10 foot, it is equally important to keep the heel aligned and I accomplish this with my exuding metatarsal pad and heel cup A.

The heel cup wedges 22 are more clearly illustrated in section in Figure 6, showing the manner 15 in which they fit under the cover 18 and showing them in relation to the stitching 19. It is apparent that they may be of any desired shape and size.

The exuding pad A may be held on the forward 20 end by one or more of the sharp points 26, as illustrated in Figures 7 and 8, where these points are located under the pad B and act to pierce into the insole of the shoe to firmly hold the pad A in adjusted position to the same. 25

The longitudinal section of Figure 8 illustrates the manner in which the flaps 15 and 21 overlap 30 in use and shows the filling 17 in the pad B.

The exuding pad A may be in the form illustrated in Figures 9 and 10 where the pad portion 30 B is carried by a short insole 10 and the construction of the pad B being the same as heretofore described. In this construction the sharp points 26 which are attached by the thin member 28 to the bottom of the short insole 10, hold the pad 35 B on the insole of a shoe. If it is desired, a thin insole 10 of the character illustrated in Figure 11 may be employed upon which the metatarsal pad B is secured and this insole or sock lining which is of the shape of the regular insole of the shoe, 40 may be cemented into the shoe or affixed thereto as may be desired. The shoe may be built at the time of manufacture with my exuding metatarsal pad and heel cup constructed in the same if it is desired. The advantages are quite apparent 45 in the care of the feet. In the construction of the insole 10 in Figures 2 and 3, as well as Figure 4, an arch guard 29 is provided which is of a flexible nature and which fits up along the inside of the arch and assists in holding the pad 50 A in position in the shoe.

There has been considerable activity in treating the feet for what is commonly known as "athlete's foot". Under ordinary circumstances 55 with the regular insole of a shoe it is not easy to maintain a treatment or powder in the shoe for the foot, however, with my exuding pad I centralize the foot powder to permit the foot to work with a bellows-like action so that when the foot raises the arch acts to pull away from the 60 pad B, causing the powder therein to exude just below the metatarsal arch and then when the foot comes down against the pad in walking the powder is blown to all corners and parts of the sole of the foot, even forcing the powder between 65 the toes and back to the heel with just sufficient powder to most efficiently treat and care for the sole of the foot in the shoe. The powder can be replenished at any time and I have found my exuding pad to be very desirable 70 in the treatment of foot diseases, such as "athlete's foot" and other foot troubles. At the same time, I provide a metatarsal support in the pad B by the filler 17 which is regulated by the wearer as to the amount of filler to use. 75

It is important to restore to the feet foot balance according to the bone structure which forms a tripod as diagrammatically illustrated in Figure 1, and this is accomplished by my exuding metatarsal pad and heel cup A. The exuding pad carries the powder to the hot spot of the foot and instead of causing the feet to perspire due to general debility or vascular disorders, the foot is properly balanced according to the bone structure and is in natural position. Thus by using my exuding metatarsal pad and heel cup the foot may be easily cared for and the digital nerves and blood vessels in the metatarsal area will be free from impingement by the metatarsal bones, which is the dominating factor or cause of nerve tension, faulty circulation and defects such as foot neuralgia, bunions, callosities, metatarsalgia, etc., which commonly deprive the person of foot comfort.

Variations may be made to carry out the principles and purposes of the invention within the scope of the following claims without departing from the spirit and purpose or intent thereof.

I claim:

1. An exuding metatarsal pad and heel cup including, a supporting member adapted to be positioned in a shoe, a perforated pad adapted to cover the entire metatarsal area, and interfitting adjustable heel cup wedges adapted to form a longitudinal recess under the point of the heel to form a cup for the same, holding the heel in alignment with said pad.

2. A heel cup for a shoe including, a pair of wedge-shaped members adapted to interfit at the rear end of the same and skived off at their forward ends toward the shank of the shoe, and means for holding said heel cup wedges spaced apart longitudinally excepting at their interfitting parts at the rear thereof.

3. A heel cup for an insole or sock lining of a shoe including, a cover flap sewed longitudinally to the insole beginning at a space from the rear end of the shoe and extending toward the instep thereof, and a pair of wedge-shaped fillers of resilient material having overlapping ends at the rear and skived away at the front to form a heel cup on the insole of a shoe.

4. A heel cup for a shoe including, an insole or sock lining member, a cover flap extending over the heel and a portion of the shank of said insole member, stitching attaching said cover centrally of the insole or sock lining intermediate the ends thereof, and wedge-shaped filler means positioned under said cover flap being skived toward said stitching and at their forward ends toward the shank of the insole of the shoe.

5. An exuding metatarsal pad and heel cup including, a supporting member adapted to be positioned in a shoe, a perforated pad adapted to cover the entire metatarsal area, adjustable interfitting heel cup wedges adapted to form a longitudinal recess under the point of the heel to form a cup for the same, holding the heel in alignment with said pad, and a covering over said wedges secured to said supporting member, and extending over a portion of said pad.

6. An exuding metatarsal pad and heel cup including, a supporting member adapted to be positioned in a shoe, a perforated pad adapted to cover the entire metatarsal area, adjustable interfitting heel cup wedges adapted to form a longitudinal recess under the point of the heel to form a cup for the same, holding the heel in alignment with said pad, and a covering over said wedges secured to said supporting member.

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