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SHOE SOLES

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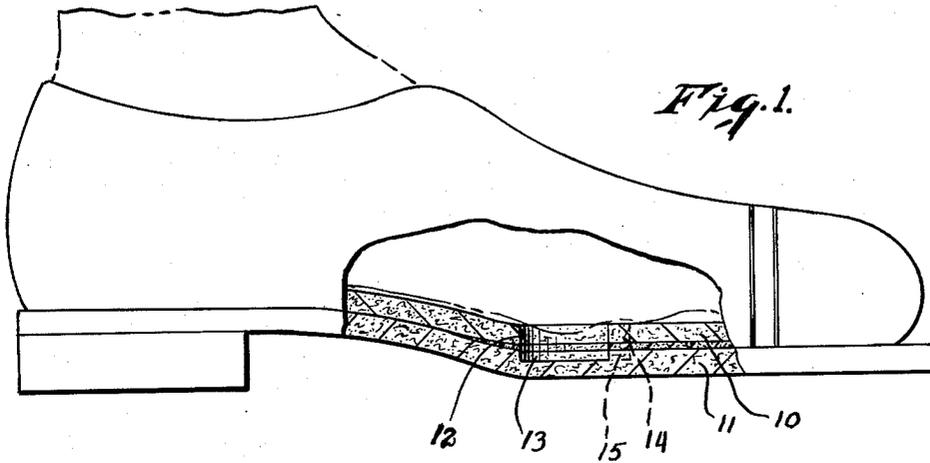


Fig. 1.

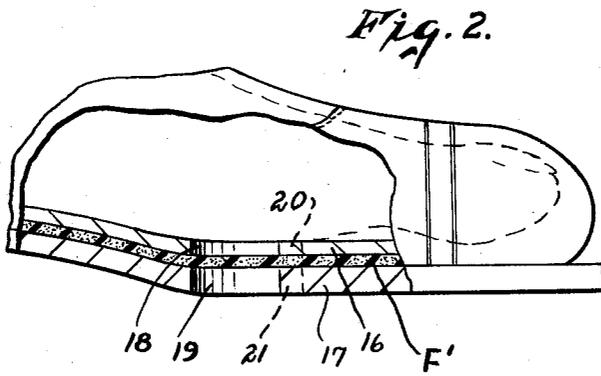


Fig. 2.

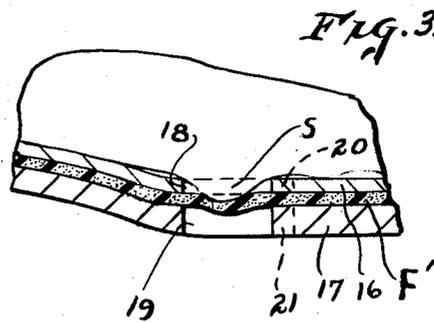


Fig. 3.

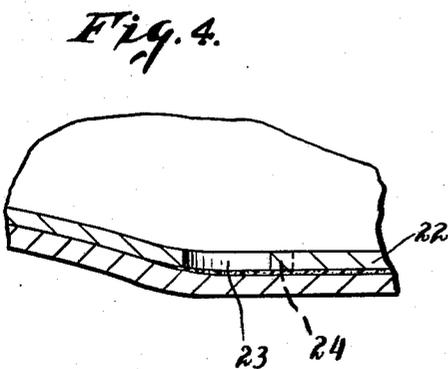


Fig. 4.

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SHOE SOLES

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1 Claim. (Cl. 128—586)

Generically my invention relates to shoe soles and particularly to relief soles designed for foot comfort.

Persons who because of occupational or other requirements, are on their feet for considerable periods of time often suffer from pain or discomfort caused by the body's weight pressing on the metatarsal bone sockets to which are jointed the first and fifth proximal phalanges in the region of the ball of the foot. These bear strain because their lowermost portions are in a plane lower than the sockets of the medially disposed sockets of the same bones. To relieve said pressure various expedients are utilized, such as pads attachable to the foot or devices worn inside the shoe, which eventually cause corns, callouses or bunions on other parts of the foot away from that part which the appurtenances were designed to relieve pressure.

A principal object of my invention is to provide a shoe sole to relieve pain or discomfort in the feet of men, women and children.

Another object is the provision of a shoe sole which can either be incorporated in shoes during the process of manufacturing them, or sold separately by shoe repair and orthopedic shoe shops and attached to shoes as a replacement item, at no more cost than the conventional repair job.

I have, after extensive experimentation to solve the problem, devised a shoe sole which positively relieves pressure on the first and fifth metatarsal bone sockets in the ball region of the foot by the provision of recesses or openings in the sole structure in the region below these sockets. This provides what in effect is a cradle to relieve pressure on these sockets and effectively levels the plane upon which all the metatarsal bone sockets will rest, with resulting beneficial effects.

Briefly described, my relief sole comprises a sole which has formed therein two round, cylindrical or oval-like openings in the ball region thereof below the portions of the upper of the shoe upon which the first and fifth metatarsal bone sockets bear or rest. The recesses may be formed on the inside of the outsole, they may be produced as shown in other ways in modifications of my invention as explained hereinafter, and the advantages of my relief sole will be manifest after the article possessing the features, properties and relation of elements is set forth in the following disclosure.

For a fuller understanding of the invention, reference should be made to the accompanying drawing, in which:

FIG. 1—a fragmentary sectional view of a modification.

FIG. 2—fragmentary section of a second modification.

FIG. 3—fragmentary section illustrating bone socket

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with deformation such as bunion bearing on recess of second modification.

FIG. 4—a third modification, sectional view.

FIG. 1 discloses an insole 10 and an outsole 11 provided with mating recesses 12 and 13, respectively; and recesses 14 and 15 which extend through the insole and partially into the outsole.

FIG. 2 shows a modification with insole 16 and outsole 17 formed with mating recesses 18 and 19; and recesses 20 and 21 separated by a foam rubber, or other resilient filler F¹ to prevent dirt, moisture, or other impediments from entering the interior of the shoe.

FIG. 3 is a view illustrating the fifth metatarsal bone socket S resting on the modified sole of FIG. 2, with a still further modification depicted in FIG. 4, and here insole 22 has recesses 23 and 24, and instead of an insole, I may have an insert provided with recesses which may be inserted in the shoe on top of the insole.

It is obvious that my relief sole can be fabricated at but an infinitesimal increase in cost over the conventional sole since no additional material is required, in fact less quantitatively is needed. It may be supplied to shoe repair and orthopedic shops and attached to shoes as part of a resoling operation or it may be built into the shoe during manufacture at the factory. The sole provides maximum comfort to the foot and its use positively obviates discomfort caused by pressure on the first and fifth metatarsal bone sockets in the conventional shoe sole.

Since certain changes can be made in the invention here shown for illustrative purposes, as for example, modifying the size, shape, or position of the recesses, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

A shoe structure having an upper, an insole having a pair of openings to accommodate the first and fifth metatarsal bones, a filler beneath the insole having openings in line with said first openings and an outsole attached to said insole having openings in line with said second openings and part way therethrough, whereby there are presented sockets for the first and fifth metatarsal bones, of such depth that they do not reach the bottoms of the openings of the outsole.

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