

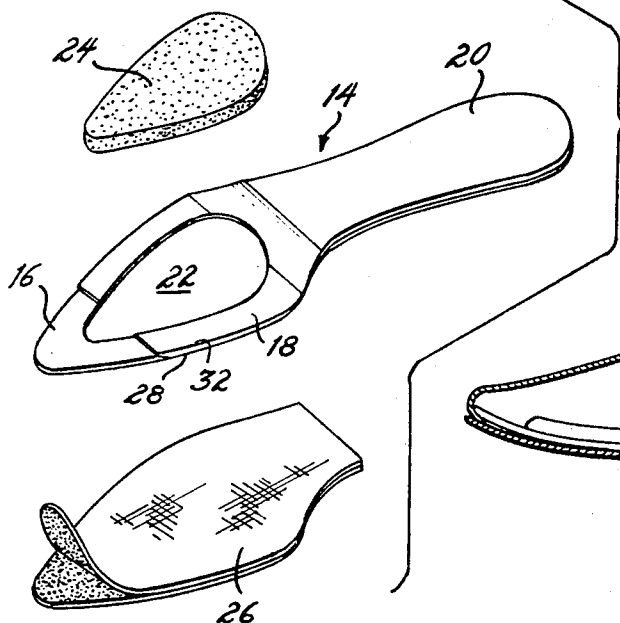
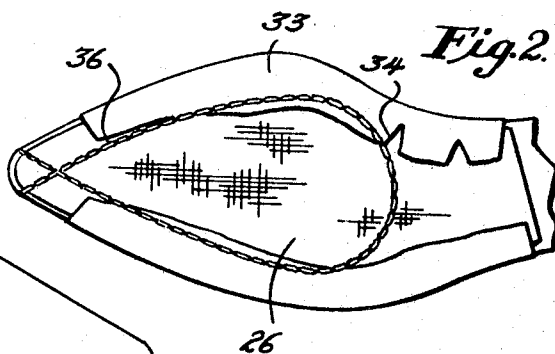
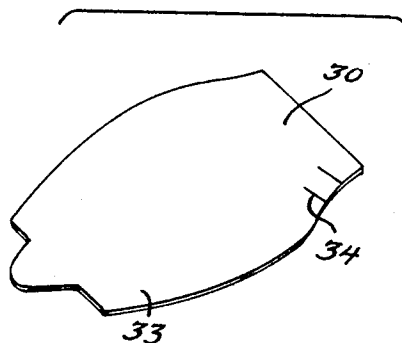
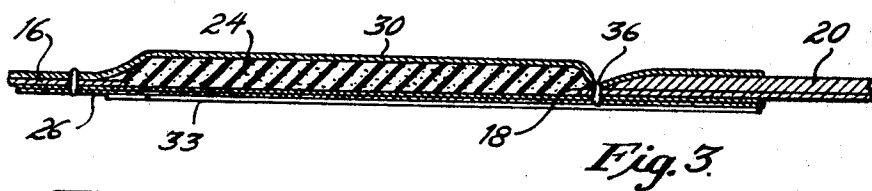
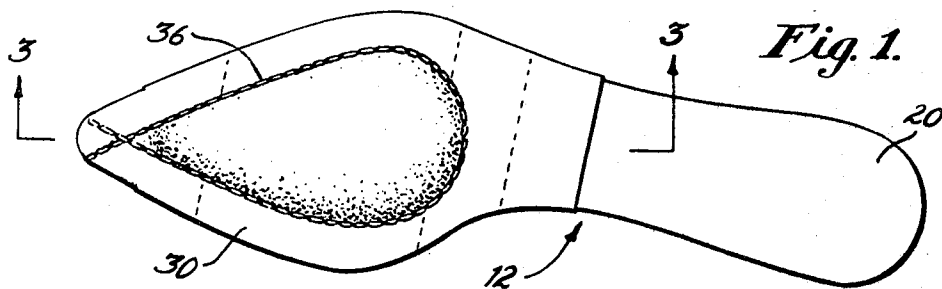
Nov. 26, 1968

F. J. DIAMANT
INSOLE CONSTRUCTION

3,412,487

Filed Oct. 11, 1965

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

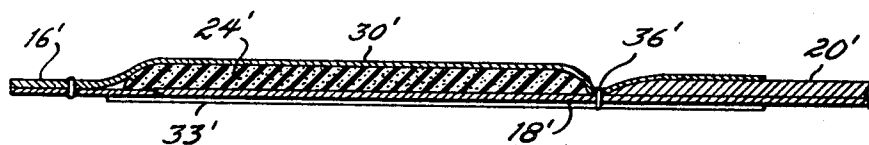
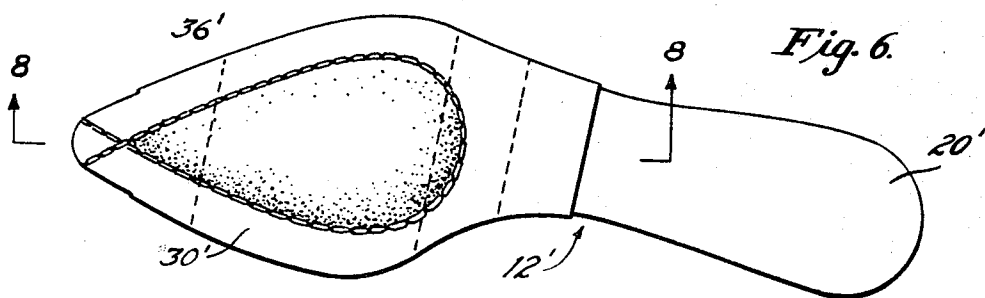


Fig. 8.

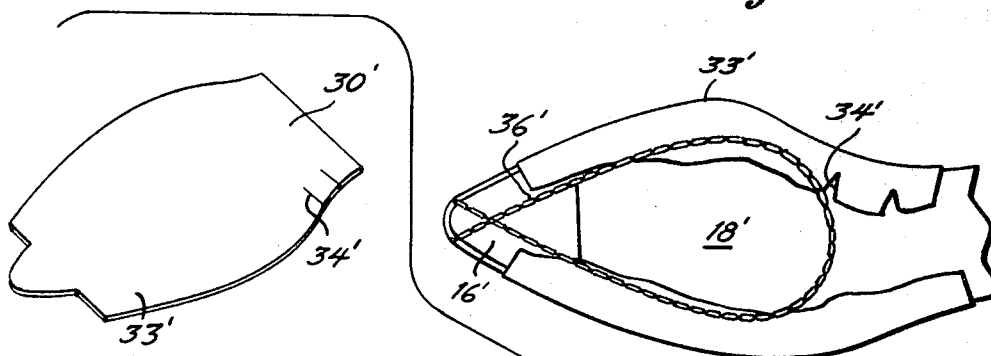


Fig. 7.

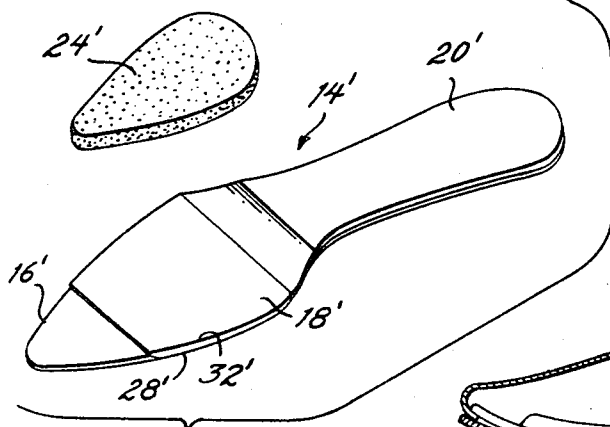


Fig. 9.

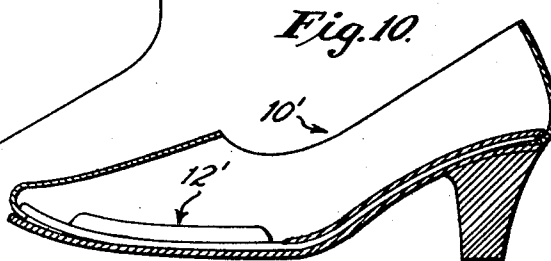


Fig. 10.

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3,412,487

INSOLE CONSTRUCTION

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Filed Oct. 11, 1965, Ser. No. 494,757
1 Claim. (Cl. 36-44)

ABSTRACT OF THE DISCLOSURE

An insole having a base member conforming generally to the shape of the sole of the foot, with the middle portion thereof being flexible and the front and rear portions thereof being relatively rigid; a resilient pad juxtaposed to the base member only at a position corresponding generally to the location of the ball of the foot, a flexible covering overlying the pad and a portion of both the upper and lower surfaces of the base member, a flexible covering on the lower surface of the base member, and joining means extending through the flexible coverings and base members for holding the resilient pad in position; and a method for making insoles of the aforesaid type.

This invention relates to an insole construction and a method for making the same. More particularly, this invention relates to a construction for a cushion type insole, and the method for making such an insole.

Insole constructions have previously been proposed in which a resilient or elastomeric insert is provided to cushion the sole of the shoe. In constructing such insoles, it is desirable that the insert be securely anchored to prevent shifting. Such shifting is apt to cause wearer discomfort, and thereby defeat the purpose of the resilient insert.

The present invention provides an insole construction which effectively prevents shifting of the resilient insert, and is economical and convenient to manufacture. In a preferred form of the present invention, slippage of the resilient insert or pad is prevented by placing the pad in an opening and retaining the pad in position by means of flexible members which overlie the opening. The pad is further retained by stitching through the flexible members as will be more fully seen below. Alternatively, the resilient insert or pad may be retained solely by stitching through a flexible member and the insole.

It is an object of the present invention to provide a novel construction for an insole.

It is another object of the present invention to provide a novel method for making an insole.

It is still another object of this invention to provide an insole construction which is easily made.

It is another object of this invention to provide an insole in which a resilient element is effectively retained in a fixed position with respect to a base member.

Other objects will appear hereinafter.

For the purpose of illustrating the invention, there is shown in the drawings a form which is presently preferred; it being understood, however, that this invention is not limited to the precise arrangements and instrumentalities shown.

FIGURE 1 is a top plan view of an insole made in accordance with a preferred embodiment of the present invention.

FIGURE 2 is a partial bottom plan view of an insole made in accordance with a preferred embodiment of the present invention.

FIGURE 3 is a longitudinal sectional view taken along the lines 3-3 in FIGURE 1.

FIGURE 4 is an exploded perspective view showing the construction of the novel insole made in accordance with this invention.

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FIGURE 5 is an elevation view, partially in section, showing the position of the novel insole.

FIGURE 6 is a top plan view of an alternative embodiment of an insole made in accordance with the present invention.

FIGURE 7 is a partial bottom plan view of the alternative embodiment.

FIGURE 8 is a longitudinal sectional view taken along the line 8-8 in FIGURE 6.

FIGURE 9 is an exploded perspective view showing the construction of the insole made in accordance with the alternative embodiment.

FIGURE 10 is an elevation view partially in section, showing the position of the alternative embodiment of the novel insole when placed in a shoe.

Referring to the drawing in detail, wherein like numerals indicate like elements, there is shown in FIGURE 1 an insole designated generally as 12.

As will be seen in FIGURE 4, the insole 12 in the preferred embodiment comprises a base member 14. The base member 14 is shown to be constructed in three pieces; a toe portion 16, a middle portion 18 and a heel portion 20. The base member 14 is preferably made of laminated paper board. The toe portion 16 and heel portion 20 are ideally relatively rigid. The middle portion 18 is made relatively flexible so as not to impede bending of the shoe.

It will be understood that a single piece or other construction known to those having ordinary skill in the art may be used so long as the respective portions have the desired degrees of rigidity. The base member 14 has a shape generally similar to that of the sole of a foot, and may include an opening 22, at a position generally conforming to the location of the ball of the foot.

A resilient pad or insert 24, which conforms in shape to the opening 22 is placed within the opening. The pad or insert may be made of any well known elastomeric material, of which foam rubber is but one example. When placed in the opening 22, the resilient pad or insert 24 is constrained from longitudinal or transverse movement by the adjacent portion of the base member 14.

As is shown more clearly in FIGURE 4, the pad or insert 24 is generally tear-drop shaped and has its narrow, relatively pointed end in juxtaposition to the toe portion 16. The rounded end of the resilient pad or insert 24 is juxtaposed to the middle portion 18. Thus, the bulk of the resilient pad or insert is adjacent the relatively flexible part of the insole 12 defined by the middle portion 18.

Flexible sheet member 26, which preferably is made from cloth, canvas, or other well known materials, such as plastic polymeric sheet, is secured to at least a portion of the lower surface 28 of the base member 14, and covers the opening 22.

A flexible cover member 30 overlies the upper surface 32 of the base member 14, and also the resilient pad or insert 24. The flexible cover member 30 is secured to the upper surface 32 of the base member 14, by adhesive or other means. Thus, the sheet member and the flexible cover member serve to restrict movement of the resilient pad or insert 24 in a vertical direction. The flexible cover member 30 may be made of leather, plastic polymeric material, or other soft, flexible insole lining material.

It is seen in FIGURE 4 that the sheet member 26 is made of two layers of fabric attached to each other by adhesion means. It should be understood that a single piece of fabric or other material may be used if desired.

The flexible cover member 30 comprises edge portions 33 which are turned or folded around the base member 14 and secured to its lower surface 28. The edge portions 33 include slits 34, which facilitate forming of the cover

member 30 to the shape of the base member 14. A row of stitching 36 passes through the flexible cover member 30 and sheet member 26 and forms a closed loop around the resilient pad or insert 24. Thus, it will be seen that the stitching further constrains the resilient pad or insert 24. It should be noted that the stitching need not form a continuous or closed loop, but it should, in any case, substantially enclose the resilient pad or insert. It should also be noted that means other than stitching, for example, heat sealing, particularly if the cover member 30 is a plastic polymeric material, may be used to equal advantage.

The novel insole may be constructed in the following manner: The resilient pad or insert 24 is placed in the opening 22 in the base member 14. The flexible sheet member 26 is secured to the bottom surface 28 of the base member 14. The flexible cover member 30 is then placed over the upper surface of the base member 14 in a position overlying the resilient pad or insert. The edge portions 33 of the cover member 30 are next wrapped around the base member 14. The cover member and the sheet member are then joined by the stitching 36. It is pointed out that if the cover member or the sheet member are made of plastic polymeric material, heat sealing rather than stitching may be used.

As will be seen more clearly in FIGURES 6 to 10, the novel insole may be constructed in an alternative manner. Elements corresponding to those of the preferred embodiment have been identified by like, primed numerals. Thus, only the differences need be pointed out.

As is seen in FIGURE 9, the base member 14' includes a toe portion 16', a middle portion 18' and a heel portion 20'. A resilient pad 24' is juxtaposed to the base member 14' in overlying relation thereto. As is evident from FIGURE 9, the resilient pad is of generally tear-drop shape, and has its relatively pointed end adjacent the toe portion 16', and its relatively broad, rounded end, in juxtaposition to the middle portion 18'.

A flexible cover member 30' overlies the upper surface 32' of the base member 14', and also the resilient pad 24'. The flexible cover member 30' is secured to the upper surface 32' of the base member 14' by adhesive or other means. Thus, the sheet member 30' serves to hold the resilient pad 24' against the base member 14'.

The edge portions 33' of the flexible cover member 30' may be turned or folded around the base member 14' and secured to its lower surface 28'. Means such as stitching 36', heat sealing, or the like is placed around the periphery of the resilient pad 24', and joins the cover member 30' and the base member 14'. As indicated above in connection with the preferred embodiment, the stitching, heat sealing, or the like may or may not form a continuous or closed loop, but should in any case substantially enclose the pad or insert.

Although the insole constructed in accordance with the alternative embodiment is not quite as soft as that of

the preferred structure, and does not benefit from the positive retention of the resilient pad or insert 24 in the opening 22, it nevertheless produces an insole superior to those heretofore known in the art. Also, as is readily apparent from the drawings, the structure of the alternative embodiment is somewhat simpler, and hence, easier to produce than the preferred structure.

As is shown in FIGURES 5 and 10, the novel insole construction is placed within the shoe in accordance with conventional practice. When the insole is so placed, the resilient pad or insert 24 is in such a position that the ball of the foot of the wearer rests upon it. As was indicated above, the novel construction prevents shifting of the resilient pad or insert.

The present invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof and, accordingly, reference should be made to the appended claims, rather than to the foregoing specification as indicating the scope of the invention.

I claim:

1. An insole comprising a base member having an upper and lower surface, and having a shape conforming generally to the shape of the sole of the foot, said base member having a relatively rigid toe portion, a relatively flexible middle portion, and a relatively rigid heel portion, a resilient pad juxtaposed to said base member only at a position corresponding generally to the location of the ball of the foot, said resilient pad being generally tear-drop shaped, the pointed end of said pad being juxtaposed to said relatively rigid toe portion of said base member and the rounded end of said pad being juxtaposed to the relatively flexible middle portion of said base member, a flexible cover overlying said pad and at least a portion of said upper surface and secured to said base member, a sheet member positioned on the lower surface of said base member, said flexible cover including edge portions folded around said base member and embracing a portion of said sheet member, and joining means between said cover and said sheet member around the periphery of said resilient pad at least substantially encircling said pad so that said pad and said edge portions are secured in their aforesaid positions.

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