

June 9, 1953

G. E. MUSEBECK

2,641,069

COMPOSITE INNERSOLE CONSTRUCTION

Filed May 7, 1951

2 Sheets-Sheet 1

Fig. 1.

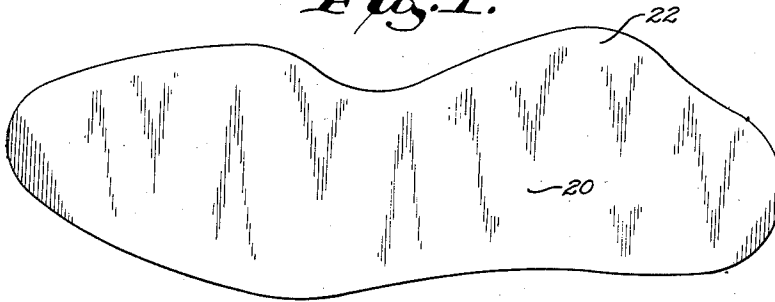


Fig. 2.

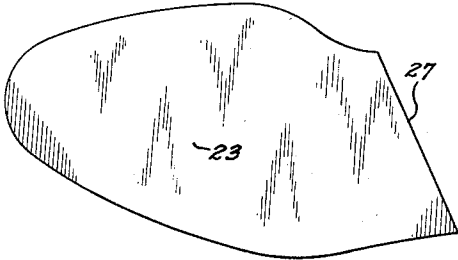


Fig. 3.

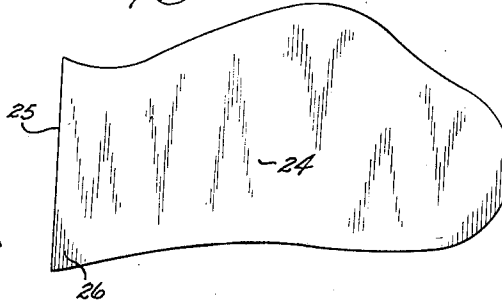


Fig. 5.

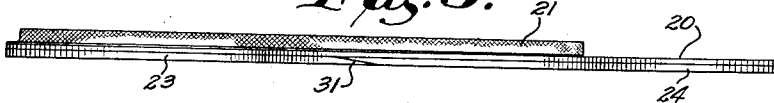


Fig. 4.

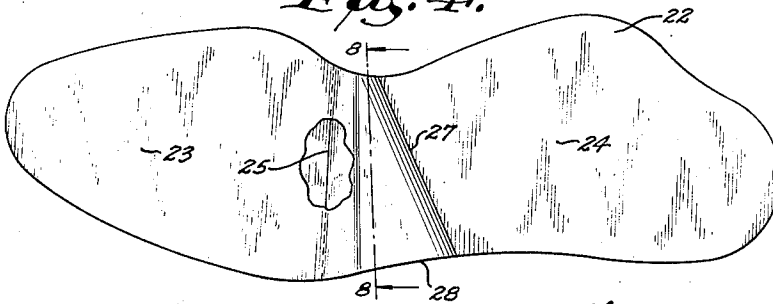


Fig. 6.

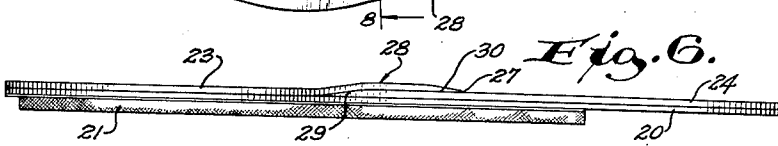


Fig. 7.



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Fig. 9.

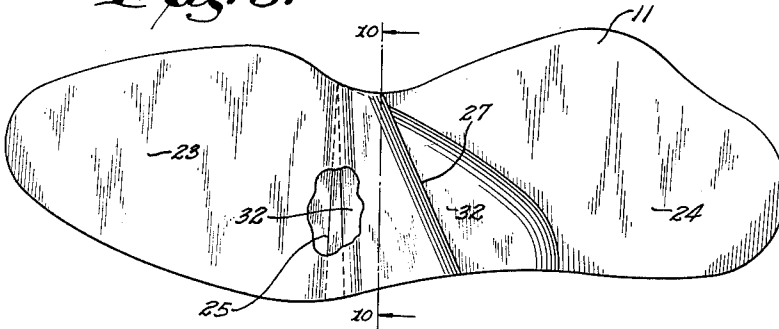


Fig. 10.

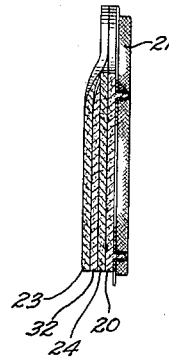


Fig. 11.

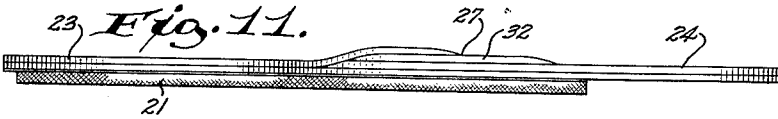


Fig. 12.

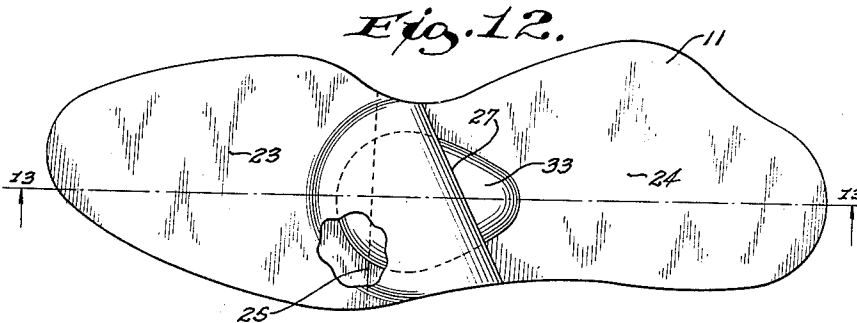


Fig. 13.

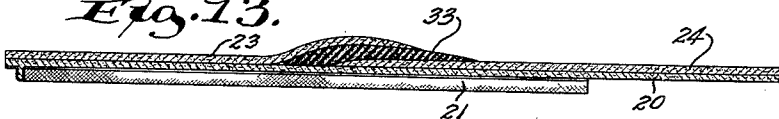


Fig. 14.

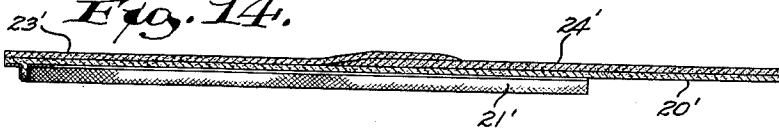
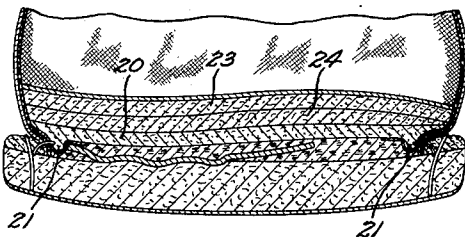


Fig. 8.



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UNITED STATES PATENT OFFICE

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COMPOSITE INNERSOLE CONSTRUCTION

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4 Claims. (Cl. 36-71)

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This invention relates to improvements in composite innersole constructions for shoes, and more particularly to innersoles which are designed for the prevention or correction of foot ailments.

In the construction of shoes it is generally desirable to provide for proper distribution of the weight of the body when the shoe is being worn. My prior Patents Nos. 2,014,628, 2,067,240, and 1,916,198 have provided effective means for correcting or preventing ankle pronation. While it is very important to prevent in-rolling of the foot, it is also important to prevent shoes from running over on the outer side of the shoe as such running over causes excessive wear, discomfort to the user, and damage to the foot. This problem is particularly serious in connection with that portion of the shoe which comes below the fifth metatarsal bone at the outer side of the ball of the foot.

It is therefore a general object of the present invention to provide additional support below the outer side of the ball of the foot to prevent running over of shoes on said side and to throw the weight toward the inside just enough to maintain a well balanced foot condition and to provide for an even distribution of weight.

A more specific object of the invention is to provide a composite innersole construction which comprises a full length lower layer and a two-part upper layer, the latter comprising a forepart and a backpart which overlap in a substantially triangular area to provide an extra thickness which is located to give additional support to the outer weight bearing part of the foot adjacent the fifth metatarsal bone.

A further object of the invention is to provide a construction as above described which makes it practical for corrective wedges or pads to be easily inserted by the manufacturer or retailer to suit abnormal or special foot conditions.

A further object of the invention is to provide an innersole construction which, because of the two-part upper layer, makes it possible to furnish alternative materials for either the forepart or backpart depending upon requirements. For example, the backpart of the upper layer of the innersole may be formed of felt or rubber to provide a special cushioning effect when such effect is desirable.

With the above and other objects in view, the invention consists of the improved innersole construction and all of its parts and combinations, as set forth in the claims, and all equivalents thereof.

In the accompanying drawings, illustrating several embodiments of the invention, in which the same reference numerals designate the same parts in all of the views:

Fig. 1 is a plan view of the lower layer of an innersole;

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Figs. 2 and 3 respectively illustrate plan views of the two parts which comprise the upper innersole layer;

Fig. 4 is a plan view illustrating how the parts of Figs. 2 and 3 are assembled on the layer of Fig. 1, part of the upper layer being broken away to show the material therebeneath;

Fig. 5 is a view looking at the inner edge of the assembly of Fig. 4;

Fig. 6 is a view looking at the outer edge of the assembly of Fig. 4;

Fig. 7 is a view showing the intermediate portion of Fig. 6 on an enlarged scale to better illustrate the overlapping parts;

Fig. 8 is a sectional view on an enlarged scale through a completed shoe taken approximately on the line 8-8 of Fig. 4, part of the shoe upper being broken away;

Fig. 9 is a view similar to Fig. 4 showing how an extra wedge has been inserted between the overlapping portions to meet special conditions;

Fig. 10 is a sectional view taken on the line 10-10 of Fig. 9;

Fig. 11 is an edge view looking at the outer side of the assembly of Fig. 9;

Fig. 12 is a view similar to Fig. 4 showing how a metatarsal pad may be inserted between the overlapping portions of the upper layer of the innersole;

Fig. 13 is a longitudinal sectional view taken approximately on the line 13-13 of Fig. 12; and

Fig. 14 is a longitudinal sectional view through an assembly of the type illustrated in Fig. 4, showing how one of the sections of the upper innersole layer may be formed of special material to suit special conditions.

Referring more particularly to the drawings, the numeral 20 designates the lower layer of the innersole, which layer may be formed of light leather or composition board. In addition, it may have an inseam stitch-receiving rib 21 as is common in welt constructions. This rib may be either formed on or attached to the underside of the layer 20 in any known manner. While it is desirable to have the innersole formed with an arch supporting extension 22, this is not essential as far as the features of the present invention are concerned, as the present invention has utility in shoes whether or not such an arch supporting extension is employed. The present invention, however, does cooperate effectively with an arch supporting extension in providing for proper weight distribution.

Cemented or otherwise suitably secured to the upper surface of the lower layer 20 is a two-part upper layer comprising a forepart 23 and a backpart 24. These parts are preferably formed of light leather. The forward edge 25 of the backpart 24 terminates at approximately the beginning of the curve under the ball of the foot as is illustrated in Fig. 4. The angle of the edge

25 is such that the corner portion 26 extends under the fifth metatarsal bone.

The forepart 23 of the upper layer of the innersole has its rearward edge 27 positioned to provide a substantially triangular overlap with the backpart 24. In Fig. 4 it may be seen that one side of this triangular overlap is formed by the edge 25, another side by the edge 27, and the third side by the outer edge portion 28 of the innersole.

The edge 25 is skived as at 29 and the edge 27 is skived as at 30. Due to this skiving the small amount of overlap 31 below the inner side of the foot produces no effective increase in the thickness of the innersole assembly on this edge of the shoe, as is clear from Fig. 5. However, due to the triangular shape of the overlap there is a relatively long overlapping area at the outer edge 28 which produces an increased thickness on the outer edge of the shoe as indicated in Figs. 4, 6 and 7, to give additional support to the outer weight bearing part of the foot adjacent and under the fifth metatarsal bone. This arrangement tends to prevent running over of the shoe on the outer side.

The construction shown in Fig. 4 serves to distribute the weight just enough to prevent running over of shoes of the average person. For unusual conditions, however, an additional wedge 32 of selected shape and thickness may be cemented in place between the overlapping portions in the manner illustrated in Figs. 9, 10 and 11. As is clear from Fig. 11, this will provide a substantially greater increase in the thickness of the innersole assembly below the outer side of the foot and will give additional support under the fifth metatarsal bone and under the outer weight bearing part of the foot.

The improved innersole construction also makes it very simple to insert and employ metatarsal pads. One type of pad 33 is illustrated in Figs. 12 and 13. This pad may be inserted and cemented between the overlapping portions of the upper layer of the innersole.

The present construction, wherein the upper layer of the innersole comprises two parts makes it entirely practical to substitute alternative materials for one or the other of said parts to suit special conditions. In Fig. 14, the forepart 23' of the innersole is formed of leather but the backpart 24' is formed of a cushioning material such as felt, rubber or cork, to suit special situations. Thus, a special cushioning effect under the arch and under the heel may be easily obtained. For other foot conditions it may be desirable to substitute cushioning materials for the forepart 23'.

In view of the above it is apparent that the improved innersole construction provides a simple method for insuring that there is proper weight distribution and for preventing running over of shoes on the outer side. It is also apparent that the two-part construction of the upper layer makes it possible for either the manufacturer or the retailer to quickly and securely insert special wedges or pads to suit special or abnormal foot conditions. In addition, it is clear that the improved innersole construction makes it practical for the manufacturer to utilize an alternative material such as a cushioning material for one or the other of the parts in the upper layer of the innersole whenever this is desirable.

Various changes and modifications may be made without departing from the spirit of the

invention, and all of such changes are contemplated, as may come within the scope of the claims.

What I claim as the invention is:

1. A composite innersole construction for shoes comprising a lower layer and an upper layer joined together, said upper layer comprising a forepart and a backpart and said parts overlapping in a substantially triangular area approximately midway of the length of the inner sole, a side of said triangular area being located adjacent the outer edge of the inner sole to provide an extra thickness adjacent said edge, said overlapping parts having complementary portions of reduced thickness which interfit to prevent any substantial increase in thickness at the opposite edge of the innersole.

2. A composite innersole construction for shoes comprising a lower layer and an upper layer joined together, said upper layer comprising a forepart and a backpart and said parts having edges which overlap in a substantially triangular area approximately midway of the length of the inner sole, two of the sides of said triangular area extending transversely of the innersole and the third side being defined by the outer edge of the innersole, said overlapping edges being skived and said skived edges interfitting at the inner edge of the innersole to prevent any substantial increase in thickness adjacent said edge.

3. A composite innersole construction for shoes comprising a lower layer and an upper layer joined together, said upper layer comprising a forepart and a backpart and said parts overlapping in a substantially triangular area approximately midway of a length of the inner sole, a side of said triangular area being located adjacent the outer edge of the inner sole to provide an extra thickness adjacent said edge, said overlapping parts having complementary portions of reduced thickness which interfit to prevent any substantial increase in thickness at the opposite edge of the innersole, one of said parts of the upper layer being formed of material having different foot supporting characteristics than the other part.

4. A composite innersole construction for shoes comprising a lower layer and an upper layer joined together, said upper layer comprising a forepart and a backpart and said parts overlapping in a substantially triangular area approximately midway of the length of the inner sole, a side of said triangular area being located adjacent the outer edge of the inner sole to provide an extra thickness adjacent said edge, said overlapping parts having complementary portions of reduced thickness which interfit to prevent any substantial increase in thickness at the opposite edge of the innersole, the backpart of said upper layer being formed of relatively resilient cushioning material.

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