April 11, 1967 W. A. BEISNER 3,313,048

CUSHION SHOE

Filed April 14, 1964

FIG. 1

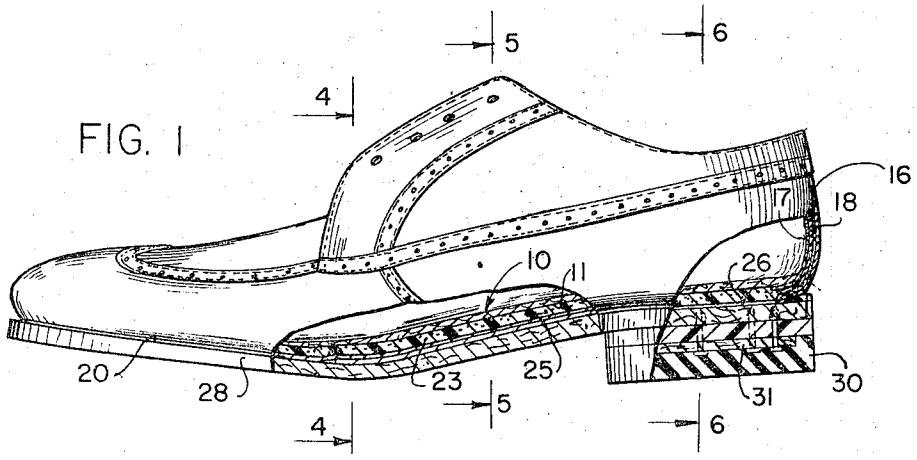


FIG. 2

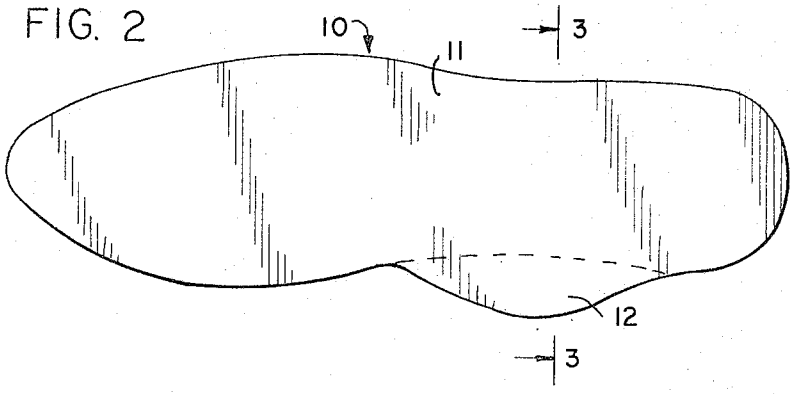




FIG. 3

FIG. 4

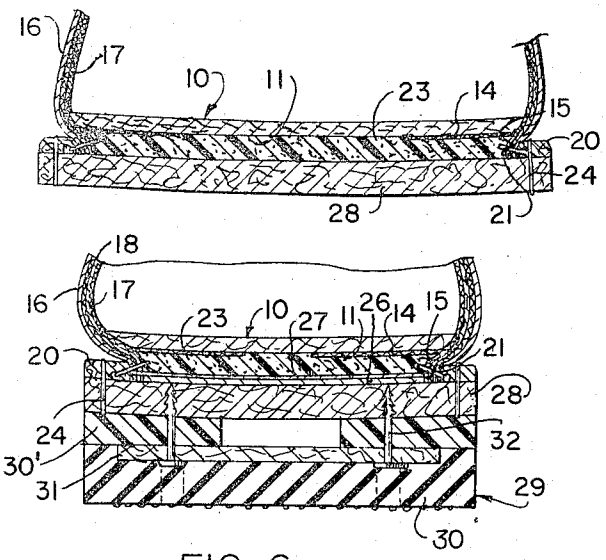
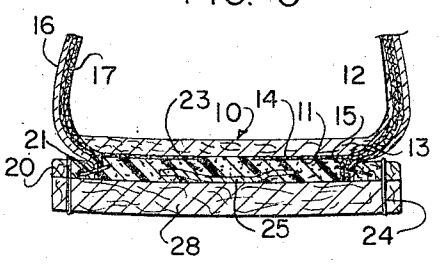


FIG. 6

FIG. 5



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CUSHION SHOE

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This invention relates to comfort and physical well-being, especially of the human foot.

The invention more particularly relates to an improved shoe having a combination of features adapted to promote enhanced comfort not only after the shoe is broken in but beginning with its initial wearing, whereby fatigue and disorder resulting from the wearer being on his feet for long periods of time will be minimized.

Footwear has been designed for many years with the object of comfort and durability, various features having been employed for such purpose. However, despite the advances that have been made and the recognition of the desirability of various features, the combining of the several features into a highly attractive, durable shoe having outstanding comfort characteristics has not heretofore been achieved to the desired extent.

Accordingly, it is an object of the present invention to provide a shoe of superior appearance and durability in which various features contributing to improved comfort are combined in a novel manner.

A further object is to produce a shoe of superior appearance having an insole adapted to conform more nearly to the sole of the foot including the arch, having improved cushioning of a character designed to remain in place instead of shifting over a period of time and and in which the heel is firmly secured without the possibility of any nails or portions thereof protruding.

These and other objects of the invention will become apparent from the following description in conjunction with the accompanying drawing, in which:

FIG. 1 is an elevation with a portion in section of a shoe made in accordance with the present invention;

FIG. 2, a plan view of the insole;

FIG. 3, a section on the line 3—3 of FIG. 2; and,

FIGS. 4, 5 and 6, enlarged sections on the lines 4—4, 5—5 and 6—6 of FIG. 1.

Briefly stated the shoe of the present invention includes a relatively thick, supple insole having an integral portion beveled and extending across and up into the arch portion, but not attached to such arch portion, a rib channel cemented around the bottom of the insole, a welt sewed through the upper and the rib around the entire periphery, the insole overlying the joint between the welt, the upper and the rib, thereby providing a continuous, smooth integral pad on which the foot rests, absent any lines of demarcation, sewing or nails, an air porous resilient cushion which breathes positioned within the boundaries of the rib, a metal shank positioned beneath the cushion, a plate positioned beneath the heel portion, the outsole positioned over the plate, the shank, the cushion and the periphery of the connected welt, upper and rib, said outsole sewed to said welt, and a heel having a core connected to the heel portion of the outsole by barbed nails which are driven in with the heads up to the core and the points penetrating the outsole and up to the plate, said plate preventing any identations in the heel which might cause discomfort to the wearer's heel.

With further reference to the drawing, the shoe in accordance with the present invention has a relatively thick, flexible bend leather insole **10**, having a bottom portion **11** and an arch portion or lateral extension **12** extending upwardly in free contacting relation with the adjacent wall of the shoe upper (FIG. 5). The insole is preferably relatively thick, the bottom portion about 4½ irons, and

the arch portion beveled and tapered to reduced thickness.

In manufacturing the shoe the bottom portion of the insole is coated with a permanent bond cement of the heat activated type. An angular rib **13** of thin flexible material, such as fabric, having a relatively wide inner side portion **14** and a relatively shorter downwardly extending or outer side portion **15** is attached with the use of heat to the bottom portion of the insole around its rim. The portion **14** of the rib extends inwardly of the insole a substantial distance such as one-half inch, whereas the portion **15** extends outwardly a much smaller distance such as one-eighth inch.

The insole is then tacked to the bottom of the last (not shown) and the upper **16**, the lining **17** and the counter **18** at the heel portion are temporarily tacked to the bottom of the insole. Then the upper is stretched over and pulled tight to the last and stapled to the rib. The heel and toe are formed and held in place by conventional means, the heel being sewed and the toe being secured by a monofilament wire (not shown).

A leather welt **20** is then attached by stitching **21** to the rib **13**, the welt extending around the entire shoe.

The tacks holding the insole to the last are removed and the shoe bottom is then trimmed to remove excess material and the seam is rubbed to flatten the bottom.

Then the bottom of the insole which is exposed is cemented and cushion **23** is placed in the cavity within the rib **13**, such cushion extending to cover the space within such rib and connected to the insole by the cement.

The cushion is of a resilient material such as foam rubber having minute air pockets so that it breathes. Due to the cementing of the insole bottom to the rib and to the cushion, it will be seen that the cushion is held in position with respect to the upper and the insole and cannot shift. In particular, it cannot move forward as occurs with cork fillers of the type commonly used.

An elongated stiffening shank **25** of outwardly flaired shallow channel section (FIG. 5), ordinarily of steel, is next positioned in the arch portion of the sole on the outer side of the cushion **23** with the outwardly flaired edge portions of the channel section substantially embedded therein. Then a plate **26** (see FIG. 6) is attached by cement over the nailing area of the heel seat portion of the shoe. The plate is of a relatively hard or rigid fiber of a character sufficient to resist the penetration of a nail. A layer of cork **27** may be positioned between the cushion **23** and the plate **26** at the heel seat.

The welt is then cemented and the outsole **28** is laid to the bottom of the shoe, after which surplus outsole and welting are trimmed and the outsole then further secured by stitches **24** to the welt around the entire shoe, thereby eliminating any nailing of the outsole to the shoe. After further shaping the heel structure **29** is attached.

The heel structure **29** (noting FIGS. 1 and 6) comprises a lower wear-resisting portion **30**, preferably of rubber, having a flat-bottomed recess in its upper surface extending over its major extent with a flat core member **31**, preferably formed of relatively hard wood, filling the recess and disposed flush with the top surface of the lower heel portion **30**. The upper heel portion which may also be of rubber and having a relatively large central aperture (FIG. 6) overlies and is in intimate contact with the upper surface of the lower heel portion **30** and its core **31**, the upper heel portion having bearing contact with the shoe outsole **28**. Heel **29** is connected by barbed nails **32** which are pushed through the rubber and driven through the flat core member **31** with their heads up to and prevented from further movement by the core **31**, the barbs penetrating and being imbedded in the outsole **28**. The nails **32** are of a length such that with their heads against the core member, as shown, their points just reach the plate **26** in order to provide maximum hold-

ing attachment to the outsole. The plate **26** resists any penetration from the nails which might produce a protrusion within the heel portion of the shoe upper. Accordingly, it is not necessary to provide for clinching the points of the nails as in conventional practice.

The shoe is then finished up in the conventional manner to provide an article of attractive appearance.

Accordingly, it will be seen that the insole of the shoe provides a cushion without any nails or sewing exposed and that the main portion of the bottom thereof is supported on a cushion attached thereto which breathes with the action of the foot, the shoe being welted around its entire periphery, eliminating any nails for attaching the sole and improving the apperance, the shoe being flexible due to the suppleness of the components including the insole, the cushion and the rib, and the heel being attached in such a manner that the nails cannot produce protuberances, whereby the entire sole of the foot is received in a conforming flexible insole without any nails, stitching, seams or overlapping of material. The extension or arch portion of the insole conforms to the arch of the foot but is not attached to the adjacent lining of the arch portion of the shoe, thereby permitting adjustment of the insole arch portion to the bottom of the foot.

It will be obvious to one skilled in the art that various changes may be made in the invention without departing from the spirit and scope thereof and therefore the invention is not limited by that which is illustrated in the drawing and described in the specification, but only as indicated in the accompanying claim.

What is claimed is:

A shoe having an upper including sole, arch, heel and counter portions and comprising in combination:

a pliable relatively thick insole of uniform thickness throughout its entirety extending the full length of the shoe and disposed in intimate peripheral contact with the lower extremity of said shoe upper,

said insole having an integral arch portion of outwardly graduated thickness extending therefrom intermediate its length and extending upwardly in contact engagement with the arch side wall portion of the shoe upper,

a relatively thin flexible rib member of angular section having one side portion which is of appreciably greater width than the other side portion thereof,

the relatively wide side portion of said angular rib being cemented to the bottom of said insole adjacent to and extending about the periphery of said insole with the relatively narrow side portion extending downwardly and away therefrom to form an enclosure of substantially uniform depth,

a welt intimately surrounding the entire lower boundary of said shoe upper and abreast of said narrow rib side portion and stitched thereto with the lower peripheral portion of upper positioned between said welt and rib portion in stitched relation therewith,

a resilient air-foam cushion cemented to said insole and of a size and thickness to substantially fill said enclosure,

an elongated rigidifying metallic shank member of an outwardly flared shallow channel section medially positioned in the underside surface of said resilient cushion along the arch portion of the shoe upper and with the outwardly flared portions of shank substantially embedded in said resilient cushion member,

a relatively thin layer of cork disposed in underlying relation to said heel portion of said shoe and in contact with said cushion member,

a relatively thin impervious and hard barrier member underlying said layer of cork,

an outer sole underlying said welt and the entire shoe upper including the heel portion thereof and connected by stitching and cement solely to said welt and the downwardly extending portion of said rib member,

a heel structure underlying the heel portion of the shoe upper and attached in seating relation to the heel portion of said outsole by driven headed fasteners,

said heel structure comprising a lower portion of rubber material having a relatively large recess in its upper surface and having a relatively rigid flat core member embedded therein and lying flush with the upper surface thereof,

said headed fasteners extending through said lower resilient portion and disposed with the heads thereof in contact with said core member,

an upper portion of said heel structure of similar rubber material being contactingly interposed between said shoe outsole and said lower heel portion and having a relatively large central aperture extending therethrough, and

said core member and said relatively thin and hard barrier member defining movement limiting means for said attaching headed fasteners in said heel structure and outsole, respectively.

References Cited by the Examiner

UNITED STATES PATENTS

1,717,583	6/1929	Roberts	36—35 X
1,726,057	8/1929	Cardamone	36—17
1,766,027	6/1930	Letchford	36—35
1,828,453	10/1931	Allen	36—17
1,942,001	1/1934	Rohn et al.	36—17
2,362,497	11/1944	Moore	36—17
2,387,029	10/1945	Kellman	36—17
2,480,689	8/1949	Allen	36—17
2,863,229	12/1958	Vachon	36—22
3,066,426	12/1962	Strickland	36—22

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