Dec. 5, 1933. W. KELLEY 1,938,393

BOOT OR SHOE

Filed Nov. 21, 1930

Fig. 1.

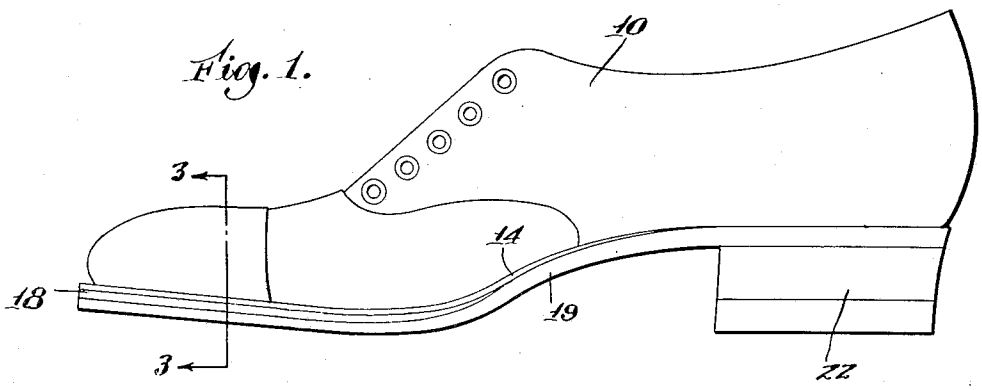


Fig. 2.

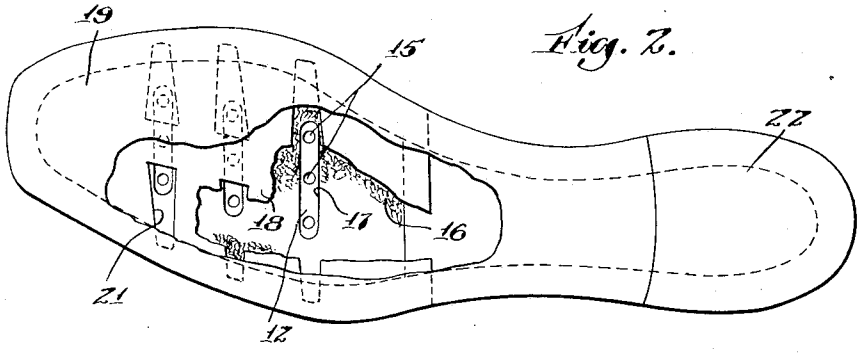
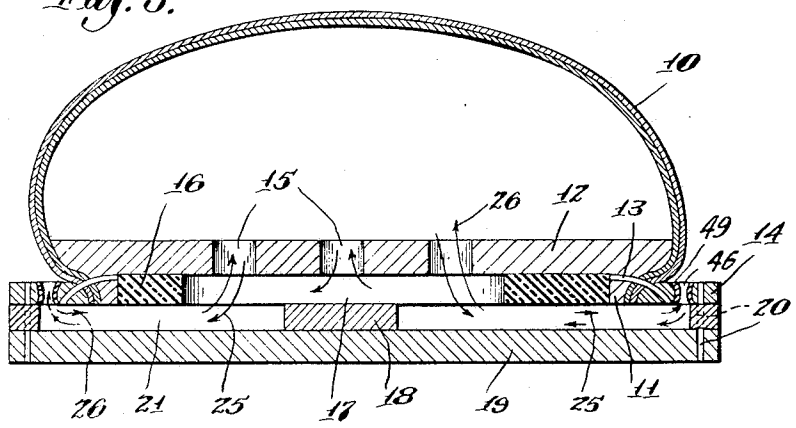


Fig. 3.



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BOOT OR SHOE

Wingate Kelley, Boston, Mass.

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Serial No. 497,248

3 Claims. (Cl. 36—3)

My present invention relates to boots and shoes, and more particularly to a novel and improved ventilated boot or shoe.

An important object of the present invention is the provision of a boot or shoe provided with means to effect a complete circulation of air to and around the foot of the wearer.

Another object of the invention resides in the provision of a ventilated boot or shoe which will be simple and economical to manufacture, and which will be possessed of all the advantages of strength, appearance, flexibility, and other characteristics of the type of shoe to which the invention is applied.

My novel shoes are primarily adapted for use by wearers who are constantly on their feet, and whose shoes, therefore, must be provided with a maximum of comfort and coolness. Such wearers are workers, both men and women, in factories, stores, and offices, whose duties require that they shall be constantly on their feet, with their shoes in contact with hard, dry, and warm floors.

My novel shoes are also adapted for out-of-door wear, on hard sidewalks, pavements, and the like. As a matter of fact, my novel shoes may be utilized for universal use, as there is nothing in the structure of the shoe to prevent the use of rubbers or other footwear protectors. My invention may also be incorporated in house slippers, if desired.

An important feature of the present invention resides in the provision of a resilient or cushioning filler layer, which is provided with air chambers or pockets therein.

The insole of the shoe is provided with spaced perforations, in register with the air pockets in the filler, and air passages are provided from the outside edge of the shoe, through perforations in the welt communicating with the air pockets in the said filler layer. These last named communicating air passages may be provided in a mid-sole or slip-sole, or may be provided by constructing recesses in the upper surface of the outsole. Thus, by reason of the presence of a cushioning filler layer, the alternate pressure and release of pressure by the foot of the wearer during the process of walking, provides an alternate compression and expansion of the filler layer and the air pockets therein, thus creating a bellows action, whereby the air will be forced outwardly from the shoe by the pressure of the foot of the wearer, and will be sucked inwardly into the shoe and around the foot of the wearer, upon the release of said pressure.

The cushioning filler layer will occupy the space normally filled by the usual shoe bottom filler, that is, the area defined by the sewing rib of the insole.

The resilient filler layer may be located in the forepart of the shoe only, or may extend the complete length of the shoe.

Other objects and features of the invention reside in the particular construction and arrangement of the parts of my novel boots and shoes, and the above and other objects and features of the invention, combinations of parts, details of construction, and advantages, will be hereinafter more fully pointed out, described and claimed.

Referring to the drawing, illustrating preferred embodiments of my invention,

Fig. 1 is a side elevation of a welt shoe constructed according to my present invention;

Fig. 2 is a bottom plan view, partly broken away, of the shoe illustrated in Fig. 1; and

Fig. 3 is a cross sectional view on the line 3—3 of Fig. 1.

Referring now to the drawing, for a particular description of the invention, and more particularly to Figs. 1, 2 and 3, wherein is illustrated a welt shoe, the invention in this instance comprises a shoe consisting of conventional upper materials 10, secured to the sewing rib 11 of an insole 12 by the usual inseam stitching 13, a welt 14 being secured to the upper materials 10 by said stitching 13. The insole 12 is provided with a plurality of perforations 15, which are preferably arranged in parallel rows, as clearly illustrated. Positioned below the insole 12, in the area defined by the sewing rib 11, and having a thickness equivalent or slightly greater than the depth of said sewing rib, is a bottom filler layer 16, provided with a plurality of air pockets or chambers 17, these pockets preferably extending transversely of the filler layer 16 and each pocket being in register with a row of perforations 15 in the insole. The filler layer 16 is preferably cemented in place to the under side of the insole, and said filler layer 16 is of a resilient or cushioning material, such as crepe rubber, which has the properties of considerable compression and expansion without affecting the qualities of the filler layer.

The welt 14 is provided with apertures 46 therethrough, eyelets 49 being utilized to reenforce these apertures, if desired. Thus, the air from the interior of the shoe will pass through the air passages 21 in the mid-sole 18 and to the outer air through the apertures 46 in the welt 14.

This will provide a shoe with an imperforate outer edge, a feature possessing many advantages, as will be readily apparent.

In the preferred form of the invention a mid-sole or slip-sole 18 is then applied to the thus far assembled shoe, this mid-sole or slip-sole 18 being cemented in place if desired. Subsequently the outsole 19 is applied, and the said outsole 19, mide-sole 18, and welt 14 are united by the usual through-and-through stitching 20. The mid-sole 18 is provided with a plurality of air passages 21, terminating short of the outer edge thereof and communicating with the air pockets 17.

When the shoe is worn, the alternate pressure and release of pressure by the foot of the wearer will effect an alternate compression and expansion of the filler layer 16, resulting in a forcing out of the air from the interior of the shoe in the direction of the arrows pointing outwardly, as 25, through the perforations 46 in the welt 14 and a drawing or sucking in of cool and fresh air in the direction of the arrows pointing inwardly, as 26.

Thus, a worker who is compelled to remain on his or her feet during the day is assured of constant ventilation and a constant influx of cool air and egress of heated air to and from the interior of the shoe as the pressure and release of pressure of the foot of the wearer in the shoe is repeated.

The advantages, efficiency, and benefits of my novel shoe will be instantly apparent to those skilled in this art.

I believe that the shoe illustrated and described in this application is novel, and have, therefore, claimed the same broadly in the present application.

While I have necessarily described my present invention somewhat in detail, it will be appreciated that I may vary the size, shape, and arrangement of parts, within reasonably wide limits without departing from the spirit of the invention.

My invention is further described and defined in the form of claims as follows:

1. In a boot or shoe of the kind described, upper materials, an insole, a welt having a plurality of perforations therethrough, and air conducting passages extending from the inner surface of the insole to the outside edge of the shoe and communicating with the perforations through said welt.

2. In a boot or shoe, upper materials, a welt, an insole, a mid-sole, and a filler of cushioning material positioned between the insole and mid-sole, said insole having a plurality of rows of perforations therein, said filler having a plurality of air pockets therein, said pockets being in register with said perforations, and said mid-sole having a plurality of air passages therein terminating short of the outer edge thereof and communicating with said air pockets, said welt having a plurality of perforations therethrough communicating with said air passages.

3. In a boot or shoe, upper materials, a welt, an insole, a mid-sole, a filler of cushioning material positioned between the insole and mid-sole, said insole having a plurality of perforations therethrough, said filler having air conducting passages in communication with said perforations, and said mid-sole having a plurality of air passages therein terminating short of the outer edge thereof and communicating with the passages in said filler, said welt having a plurality of perforations therethrough communicating with the air passages in said mid-sole.

WINGATE KELLEY.