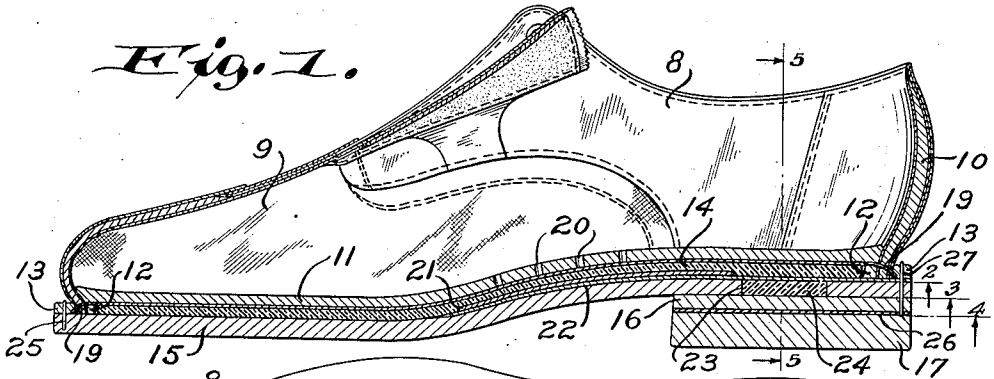
July 25, 1933. C. F. ROHN ET AL 1,919,862

SHOE

Filed Jan. 18, 1933

Fig. 1.



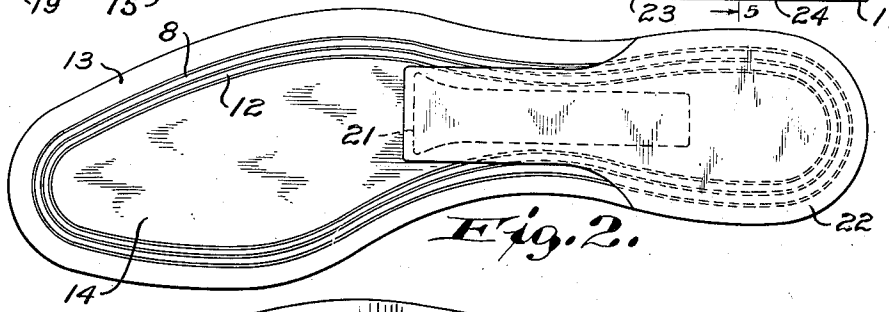


Fig. 2.

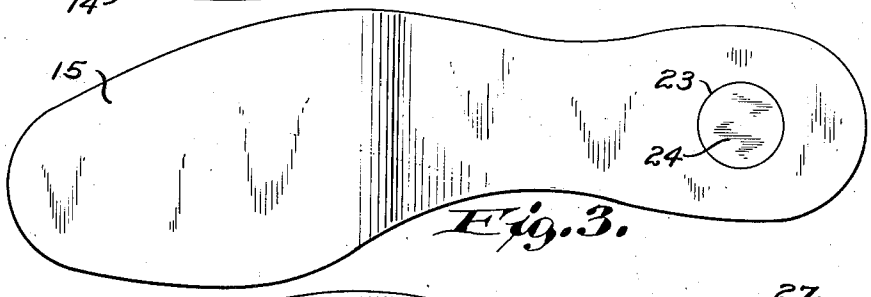


Fig. 3.

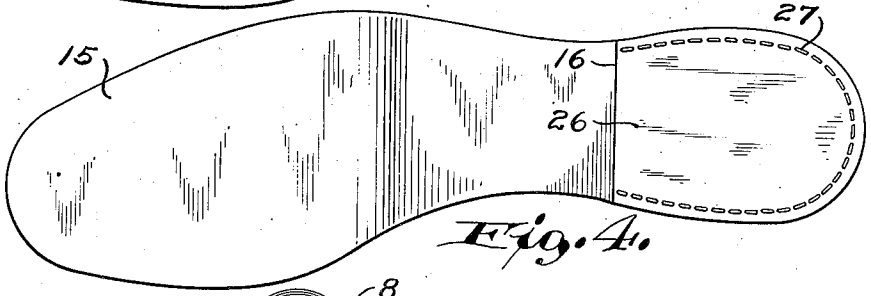


Fig. 4.

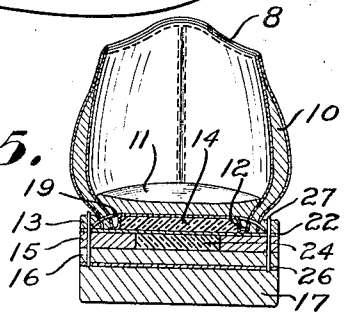


Fig. 5.

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UNITED STATES PATENT OFFICE

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SHOE

Application filed January 18, 1933. Serial No. 652,306.

The present invention relates in general to improvements in the art of manufacturing shoes, and relates more specifically to improvements in the construction of socalled Goodyear welt shoes.

Generally stated, an object of the invention is to provide a durable and comfortable shoe of the Goodyear welt type, which is devoid of nails and which may be manufactured at minimum cost.

A more specific object of the invention is to provide a new and useful cushion shoe structure which may be readily produced without undesirable change or enlargement in factory equipment, and which may be rapidly reproduced in quantity.

Another specific object of the invention is to provide a simple and strong heel construction for shoes of the Goodyear welt type, which is entirely nailless, and which is moreover soft and resilient to the tread.

A further specific object of the invention is to provide an improved shoe which will constantly retain its natural shape, and which is built up of a minimum number of relatively simple parts.

Still another specific object of the invention is to provide a new method of forming and of attaching a heel to a shoe by stitching and cementing, without danger of subsequent detachment of the heel.

These and other objects and advantages will be apparent from the following detailed description.

A clear conception of one embodiment of the invention and of the mode of constructing Goodyear welt shoes in accordance with the improvement, may be had by referring to the drawing accompanying and forming a part of this specification in which like reference characters designate the same or similar parts in the various views.

Fig. 1 is a central longitudinal section through one of the improved shoes, showing the details of the internal construction thereof;

Fig. 2 is a bottom view of the shoe partially assembled, the view being taken at the surface 2 of Fig. 1;

Fig. 3 is another bottom view of the shoe more completely assembled, the view being taken at the lower outsole surface 3 of Fig. 1;

Fig. 4 is still another bottom view of the shoe in a still more completed stage of assembly, the view being taken at the surface 4 of Fig. 1; and

Fig. 5 is a transverse section through the heel of the shoe, taken along the vertical line 5—5 of Fig. 1.

As previously indicated, the present invention is particularly advantageous when applied to a Goodyear welt type of shoe, of nailless construction, although some of the novel features may be more generally applicable to other types of footwear.

Referring especially to Figs. 1 and 5 of the drawing the improved shoe comprises in general an upper 8 having a lining 9 and a counter 10 of usual construction associated therewith; an insole 11 having a continuous integral downwardly projecting inseam flange or ridge 12; a welt 13 extending entirely around the lower portion of the upper 8 and around the insole 11; a resilient cushion pad 14 substantially filling the cavity in the lower portion of the insole 11 formed by the continuous ridge 12; an outsole 15 extending throughout the area beneath the welt 13, insole 11 and pad 14; and a heel structure consisting of heel base 16 and a lower heel 17 attached in superimposed relation to the rear portion of the outsole 15.

As above indicated, the upper 8, lining 9 and counter 10 are of ordinary construction, and these elements are firmly secured to the flange or inseam ridge 12 of the insole 11 and to the welt 13 by means of inseam stitching 19 which extends entirely around the shoe. The resilient cushioning pad 14 may be formed of any suitable springy material such as sponge rubber, and this pad may be of substantially uniform thickness sufficient to fill the cavity formed by the ridge 12 without projecting downwardly beyond the latter. In order to permit breathing of the rubber pad 14 and to thereby enhance the resiliency of the sole,

the insole 11 may be provided with one or more vent openings 20.

Directly beneath the cushion pad 14, is located a metal shank stiffener 21, and under this shank stiffener a transverse drum 22 formed of any soft sheet material such as upper leather, may be cemented. The drum 22 preferably completely covers the heel portion of the cushion pad 14 and welt 13, and also extends longitudinally of the shoe beneath the support 21 as shown in Figs. 1 and 2. The function of the drum 22 is to temporarily hold the cushion pad 14 and the arch support 21, and to subsequently provide a flexible support for the heel portion of the pad, simulating the head of a drum.

The outsole 15 is shown in detail in Figs. 1 and 3, and comprises a piece of sole leather or other suitable material having substantially uniform thickness, and being provided at its heel portion with an opening 23, which may be circular or any other desired form. Within this opening 23 is located an auxiliary cushioning pad 24 of sponge rubber or the like, the upper surface of which coacts directly with the drum 22 and the lower surface of which lies flush with the bottom surface of the outsole 15. The function of this auxiliary pad is to provide additional resiliency to the tread of a wearer, at the heel portion of the shoe by providing a double cushion or heel seat. The forward portion of the outsole, from one side of the heel breast to the other, may be attached to the welt 13 by the usual stitching 25, and the attachment of the heel portion will be later explained.

The heel base 16 may be formed of sole leather and has a thin binder 26 of relatively soft and porous material attached thereto as by cementing, and the upper surface of the base 16 is also preferably cemented to the adjacent lower surface of the outsole 15. The base 16 and binder 26 are additionally rigidly attached to the heel portion of the shoe, by stitching 27 passing through the binder 26, base 16, drum 22 and welt 13, and running around the heel from the breast on one side of the shoe to the heel breast on the opposite side. In some cases it may also be desirable to carry this stitching 27 inwardly up to the shank stiffener 21, along the forward portion of the heel. The lower heel 17 which may be formed of any suitable wear resisting material such as rubber or leather, is finally attached to the binder 26 by means of cement, and the binder functions to provide a perfect union between the parts by virtue of its porosity and adaptability to absorb and to retain the cement or glue.

During the manufacture of shoes in accordance with the present improvement, the upper 8, lining 9, insole 11 and welt 13, are first assembled and united by the inseam stitching 19, after which the cushion pad 14 may be inserted and cemented within the cavity formed by the ridge 12 of the insole. The support 21 and drum 22 may be next applied, the latter being cemented in place. The outsole 15 may then be sewed to the welt 13 by the stitching 25, after which the heel base 16 and binder 26 are cemented to the rear portion of the outsole 15 and subsequently permanently attached thereto and to the welt by the final stitching 27. To complete the shoe structure, the lower heel 17 is finally attached to the binder 26 by cementing or gluing, thus providing a final construction which is entirely devoid of nails.

From the foregoing description, it will be apparent that the present invention, besides providing a strong and durable shoe structure of the Goodyear welt type, which is entirely devoid of nails, also provides for ample cushioning of the entire sole. The cushioning pad 14 is relatively inexpensive and is effectively maintained in position by the inseam ridge 12 of the insole 11, and the additional cushioning at the heel portion afforded by the drum 22 and pad 24, greatly enhances the heel tread comfort. The cementing and stitching of the heel base 16 provides for rigid attachment thereof to the shoe, and the use of a binder 26 also provides simple and effective means for finally attaching the lower heel 17. The improved shoes by virtue of their simplicity, can be readily produced without extraordinary factory equipment and have proven extremely comfortable in actual use.

It should be understood that it is not desired to limit the invention to the exact details of shoe construction and assembly herein shown and described, for various modifications within the scope of the appended claims may occur to persons skilled in the art.

It is claimed and desired to secure by Letters Patent:

1. In a shoe, the combination with an insole, welt and outsole, of a sponge rubber cushion pad disposed in the outsole near the heel portion of the shoe beneath the insole, and a flexible drum spanning said pad and sewed to the heel portion of the welt.

2. In a shoe, an insole, an outsole coacting with said insole and having an opening therein, a resilient pad confined within said opening, and a flexible drum interposed between said insole and said pad.

3. In a shoe, an insole having a cushion pad associated therewith, an outsole having a cushion pad associated therewith, and a taut flexible drum interposed between said pads.

4. In a shoe, an insole having a cushion

pad associated therewith, an outsole having a cushion pad associated therewith, a welt extending around the heel portion of the shoe, and a drum interposed between said pads and sewed to said insole, outsole and welt.

5. In a shoe, the combination of an insole, welt and outsole, of a pair of superimposed cushion pads, a taut drum interposed between said pads, and a heel base coacting with the lower of said pads, said base, drum, outsole and insole all being sewed to said welt.

6. In a shoe, the combination of an insole, welt and outsole, of superimposed cushion pads associated with said insole and outsole respectively, a heel base sewed to said welt through said insole and outsole and having a binder therebeneath, and a heel cemented to said binder.

7. In a shoe, a cushioned insole, an outsole having a cushion beneath said insole, a drum spanning said outsole cushion, a heel base sewed to said outsole, and a heel cemented to said heel base.

8. In a shoe, an insole having a flexible heel portion, an upper cushion pad confined directly within the inseam ridge of said insole portion, an outsole extending beneath said upper pad, a member interposed between said outsole and said upper pad, a lower cushion pad coacting directly with said outsole beneath said upper pad, and a heel base cemented and sewed to said outsole beyond said pads.

9. In a shoe, the combination of an outsole, welt and insole having an inseam ridge extending around the heel portion, an upper sponge rubber cushion pad disposed entirely within said inseam ridge, a lower circular sponge rubber cushion pad disposed beneath the central portion of said upper pad and coacting with said outsole, and a member interposed between said outsole and said upper pad peripherally beyond said lower pad, said outsole and said member and said welt being connected by common stitching.

In testimony whereof, we affix our signatures.

CHESTER F. ROHN.
FRANKLYN A. ROHN.