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SHOE

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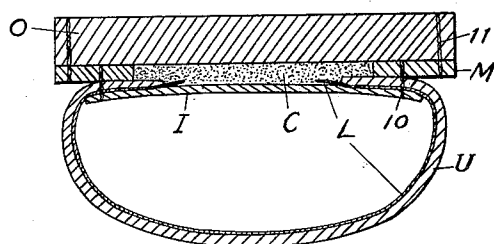


Fig. 1

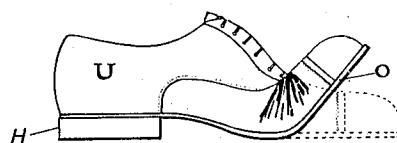


Fig. 2.

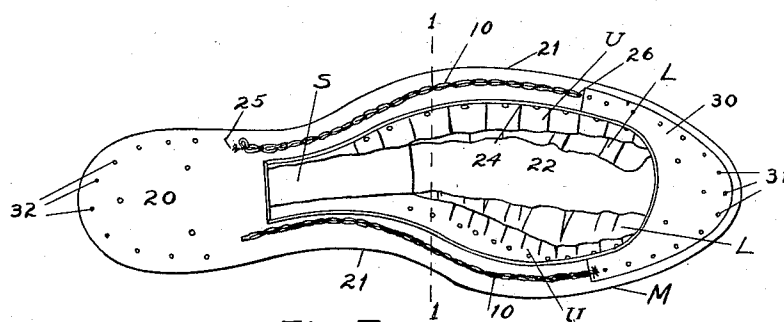


Fig. 3.

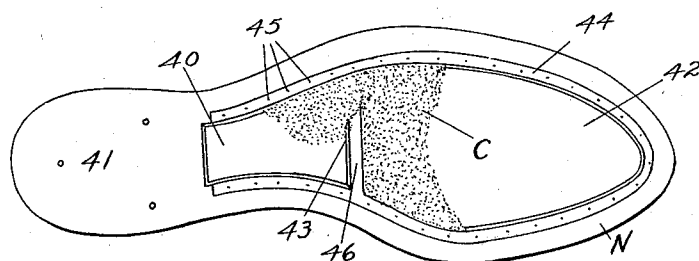


Fig. 4

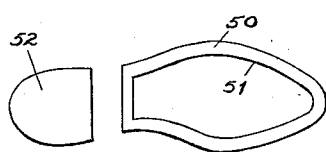


Fig. 5.

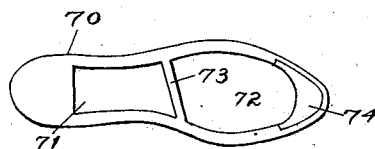


Fig. 7.



Fig. 6.

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SHOE

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This invention relates to shoes. Its purpose is to provide a shoe of which the sole will be flexible and which will have the general appearance of a Goodyear welt shoe but which is made substantially by the process and machinery of a McKay shoe.

It has the further advantage that the shoe will not squeak.

We are aware that shoes are now made with an upper, an in-sole and a middle sole or what is sometimes called a doubler or slip-sole fastened together by through and through stitching, the edges of the middle sole extending out clear of the upper, and an out-sole fastened by sewing to the edge of this middle-sole.

Our invention consists broadly in cutting out a certain part of the middle sole and preferably filling this with a plastic pliable filling.

This middle sole is a flat piece of leather as distinguished from a welt which is a long strip bent around to the shape of part of the foot.

Its shape substantially conforms to the shape of that part of the outer sole which is in front of the heel, and it is so cut out as to leave an opening or hole, the side edges of which are substantially equidistant, or parallel from its outer edges at all points down to the heel portion. It may or may not extend around the heel.

The principal feature is the hole cut out at the position occupied by the ball of the foot.

In the drawings, Fig. 1 is a cross section of a complete shoe made according to our process viewed as on a line such as 1—1 of Fig. 3, except that the shoe is complete.

Fig. 2 is an elevation of a shoe of our construction with the toe part bent upward to show its flexibility.

Fig. 3 is a view from the bottom of a shoe in process of manufacture after our middle sole has been sewed on and before the composition has been applied.

Fig. 4 is a view similar to Fig. 3 showing a shoe with a slightly modified type of our middle sole nailed instead of sewed in position, and with the cut out part filled with composition.

Fig. 5 is a bottom view of another modified type of our middle sole.

Fig. 6 is a bottom view of still another modified type of our middle sole.

Fig. 7 is a bottom view of still another modified type of our middle sole.

In the drawings U represents the upper, H the heel and O the outer sole of a shoe of our construction.

I represents the inner sole and M the middle sole of our construction while L represents the lining of the upper and S the shank of wood or metal.

In the preferred form of our middle sole, shown especially in Fig. 3, we cut out the part 22 in such manner that the outer edge 24 of the cut-out and the outer edge 21 of the forward part of the sole will be substantially parallel so that the part 21 can guide the sewing machine guide which directs the needle for stitching 10 which may be of the usual McKay chain stitch type or any other type.

In such shoes, the stitching usually extends from a point such as 25 just in front of the heel to a point 26 about where the curve of the toe begins, while around the toe portion the sole is nailed in position by nails such as 31.

As we may wish to use a relatively cheap and poor grade of leather for our middle sole M, we prefer to fasten around the toe by gluing or cementing a canvas or cloth reinforcing strip 30.

As shown in Fig. 4, we may use a middle sole N with a heel part 41 and cut out part 42 and 40, between which is a bridge piece or cross piece 43. We find this cross piece keeps the sole from distortion and we locate it preferably just across the end of shank S at a point where it will not be directly under the bones at the ball of the foot.

In this case we use a reinforcing strip 44 which extends all the way around except the heel as this sole N is shown as attached to the inner sole and upper by nails 45. The cross piece 43 may also be reinforced by canvas 46. After the upper, in-sole and the middle sole are attached a plastic pliable composition filler such as C is so spread as to fill the cut-out part of the middle sole and the outer sole is then attached to the middle sole.

preferably by sewing 11, near the outer edge thereof.

As shown in Fig. 5 the heel 52 of our middle sole 50 which is cut out at 51 may be separate from the rest of the middle sole.

As shown in Fig. 6, we may use a middle sole 60 in which the cut out part 61 is only where bones at the ball of the foot will rest, or in fact the cut out part may be in any place and of any size to suit different types of shoes.

As shown in Fig. 7, we find a good construction is a middle sole 70, cut out at 71 and 72 leaving a diagonal cross piece 73 which follows parallel to and behind the bones at the ball of the foot where the foot and shoe naturally bend.

74 is a canvas or cloth reinforcement around the toe, where the nails go.

The filler C is of a well known plastic and pliable type which is extensively used in Goodyear welt shoes and is softened by the heat of the foot, as a result of which it conforms to the shape thereof. It remains plastic and pliable, and fills the cut out space so accurately that there is no slipping whereby squeaking is caused. This combination of the cut out middle sole and the plastic pliable filling thus allows a pliable shoe, which will not squeak, to be made on a McKay through and through stitching machine.

We claim:

1. A boot or shoe comprising an upper, an in-sole and a cut-out middle sole reinforced at the toe, fastened together by through and through stitching at the sides and by nails at the reinforced toe, an outer sole fastened by through and through stitching to the edge of the middle sole, and pliable filling in the cut-out part of the middle sole.

2. A boot or shoe comprising an upper, an in-sole and a reinforced cut-out middle sole fastened together by through and through stitching, an outer sole fastened by stitching to the edge of the middle sole, and plastic pliable filling in the cut-out part of the middle sole.

3. A boot or shoe comprising an upper, an insole inside the upper and a cut-out middle sole outside the upper and formed of one piece of material substantially the size of the outer sole and having a complete heel part and having its forward part so cut out that its periphery is continuous and unbroken whereby the cut-out part is entirely enclosed, the heel part being fastened to the upper and inner sole by nails and the part in front of the heel being fastened to the inner sole and the upper by through and through stitching, a plastic pliable filling in the cut-out part of the middle sole, and an outer sole attached by through and through stitching to the edge of the middle sole outside the upper.

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