June 6, 1933. V. SILVESTRI 1,913,173

SHOE CONSTRUCTION

Filed May 24, 1930

FIG. 1

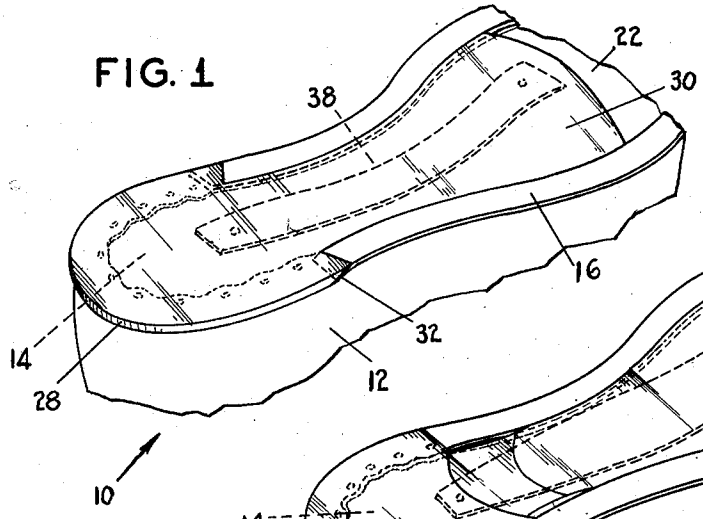


FIG. 2

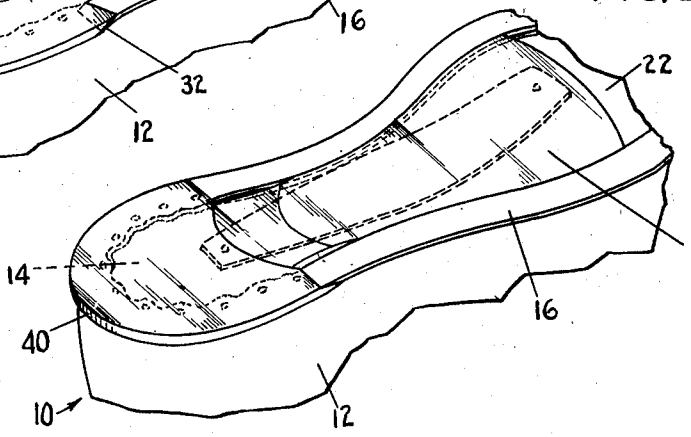


FIG. 3

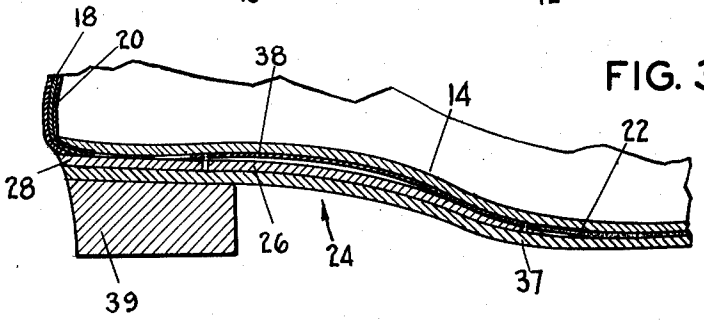


FIG 4

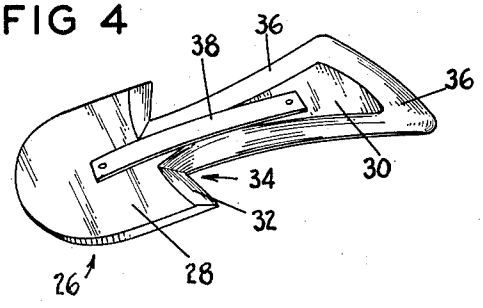
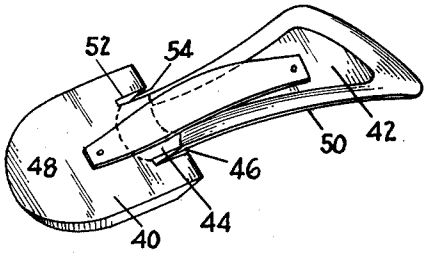


FIG. 5



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UNITED STATES PATENT OFFICE

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SHOE CONSTRUCTION

Application filed May 24, 1930. Serial No. 455,282.

This invention relates to shoe construction.

In the construction of shoes in which the so-called "welt" is provided for retaining the sole in properly assembled relation, the application of stiffened or reinforced construction to that portion of the shoe which is bridged over between the heel and the sole and is commonly known as the shank has, I believe, been uncommon. In those few cases where a reinforced shank has been constructed, there has been lacking complete success. An individual member, carrying the reinforcing piece or brace, was, in no manner, connected with a suitable base for anchoring the reinforcing piece in position to secure the necessary cantilever action and yet to retain the piece against any sideplay or other movement.

Due to the fact that the sole was fastened to the welt and to the heel portion as a unit, it was necessary that the reinforcing member should be carried upon an individual piece of leather or the like which was positioned within the recess formed between the secured upper and the welt. Such leather piece did not have any secure anchorage to any fixed base, such as the heel portion of the shoe, and was merely retained in position by the resistance of the turned under upper and the inner edges of the welt.

It is an object of this invention to provide a reinforced shank member for use in the construction of welted shoes to stiffen the shank of such shoes in order to prevent the break-down of that portion of the shoe known as the shank, such reinforcing member being anchored against any substantial movement sideways and being substantially rigid. For this purpose a single piece of leather, or similar material, or, in proper cases, a plurality of pieces of leather, united each to each so as to form a substantially integral member, is shaped to conform to the final contour of the heel of the shoe and to have a portion extending therefrom substantially conforming to the final shaping of the inner edges of the welting of the shoe,

To this is attached, in any suitable manner, a metallic or like rigid piece having elastic properties, one end of which is preferably secured to that portion of the member which conforms to the heel of the shoe, and the other end of the piece being anchored to the extending portion of the member. The point of anchorage on the heel section is important as a substantial portion of the piece should be within the confines of the heel section to be firmly held between such section and the insole when the final assembly is completed. The metallic piece is substantially bowed at the central portion or otherwise given sufficient strength and resilient properties to prevent the excessive bending thereof, yet assuring the natural return of the parts to their normal condition after they have, at any time, been biased out of position. In this manner, there is secured a member which may be anchored together with the heel portions of the shoe and thereby be retained against any side movement relative thereto and also relative to the body of the shoe, and which gives to the shank portion of the shoe sufficient rigidity and resiliency to resist the break-down of that portion of the shoe.

Due to the fact that the heel portion of the member is of substantially the same extent as the heel proper of the shoe, the spreading of the heel and of the counter upon which, in the so-called "low-cut" shoes, reliance is had to retain the shoe upon the foot of the wearer, is resisted. This result is attained by the construction above set forth in which a substantially continuous surface of substantially the same characteristics throughout is presented by the member substantially throughout the entire bearing surface of the heel and the counter. In the old form of construction, due to the fact that the side edges of the stiffening member did not extend, in any manner, to the vicinity of the edges of the heel and to the bounds of the counter, the weight of the body, brought to bear on these portions which were provided with practically no backing, would break down the shank and the counter with resultant damage both to the wearing properties and to the appearance of the shoe.

It is a further object of this invention to provide means whereby the manufacture of

shoes is simplified, made more economical and efficient, and the resultant product is of the same or substantially better quality than the products formerly produced, while having the appearance of the highest grade product.

Other objects of this invention will be apparent from the drawing and from the description thereof, or will be specifically indicated therein.

The invention is not intended to be restricted to the construction and arrangement of parts herein shown and described, nor to the various details thereof, as the same may be modified in various particulars without departing from the spirit and scope of the invention, as defined by the claims, some practical embodiments of which have been herein illustrated and described without attempting to show all the various forms and modifications in which the invention might be embodied.

On the drawing, wherein is disclosed a preferred embodiment of the invention, Fig. 1 is a perspective view of a shoe, the sole and heel of said shoe being removed to disclose the manner of assembly of the parts embodying my invention thereinto. Fig. 2 is a view similar to Fig. 1 with a modified form of my invention applied to the shoe. Fig. 3 is a longitudinal sectional view of a portion of the shoes of Figures 1 and 2. Fig. 4 is a perspective view of a detail of my invention. Fig. 5 is a view similar to Fig. 4 of a modified form of said detail.

A shoe 10 having the conventional construction of upper 12, insole 14, welt 16, counter 18 and lining 20 is shown on the drawing. In this construction, the upper and lining are seen to have been formed around the counter, which preferably is molded to the form of the foot, such upper and lining being tacked or otherwise secured to the insole with which the counter is assembled. Along the sole and shank portions of the upper, the upper, the lining and the welt are received together on the outer portion of the insole and are secured thereto by sewing or like method.

By this construction there is provided a substantial depression bounded by the insole on the bottom and the inner edges of the upper and welt at the side portions thereof. At the heel end of the insole, the lining and the upper are generally of such thinness that the cavity they form is inappreciable, so that the condition of shoe, formed up to this point, is substantially flat at the heel region.

Before the sole is applied to the welt and assembled with the heel portion of the shoe, it has become customary to fill the sole portion of the cavity 22, just described, with some waterproofing material, such as ground cork mixed with some suitable tar or pitch product having substantial waterproofing qualities and sufficient adhesive properties to hold in properly associated relation the cork mixed therein and the other portions of the shoe with which it comes in contact. At the shank portion 24 of the shoe, which is substantially at the instep of the foot and, therefore, the position mostly desired to be protected against the ordinary dangers of breakdown, means are provided to give rigidity to this portion.

In the construction herein shown, a member 26 is used and is seen to consist of a heel section 28 and a shank section 30, substantially integral with each other. The member is preferably made of leather or some similar material and is preferably formed from one piece of such material so that the sections above noted will, at all times, be retained rigidly relatively each other.

It will be noted that the heel section 28 is of substantially the same extent as that of the counter around which the upper is formed and of the insole at the heel portion of the shoe, while the shank section 30 at the heel end thereof is of substantially the same width as the distance between the secured welts, such shank section following closely the shaping between such welts. The edges 32 at point 34 of the junction of the heel and the shank section 30 of the member 26 are preferably skived to permit the ready and neat assembly of the member with the heel and shank portion of the insole and with the counter. The skived edges 32 permit the positioning of the member with the heel section thereof slightly overlapping the skived ends of the welt, thus, when assembled, providing an appearance of uniform thickness substantially continuously around the body of the shoe. Skiving the edges 36 of the shank section permits the latter to fit smoothly into the cavity 22 and also opens up the porous portions of the leather to the action of the adhesive properties of the filling material deposited in such cavity, which then serves further to assure the retention of the member in position in the cavity.

A strap 38, preferably of spring steel, has the ends thereof anchored to the member in such manner that the length of the strap between the anchor points is slightly greater than that of the length of leather lying between the anchor points. Since the strap will be positioned next to the insole and between the insole and member 26, pressure, as finally applied to the strap when the weight of the body of the wearer is transmitted thereto, will tend to distend the same and will thereby attain the result of assuring that the shank section 30 will be retained rigid.

The surface of the member 26 which faces the insole and other portions of the shoe with which it is assembled is preferably the smooth outer hard skin of the leather so that the latter skin will be positioned directly in

contact with the counter and the other portions of the heel of the shoe. This skin has well-known properties of substantial rigidity in comparison with the other portions of the leather, and the manner of positioning described assures that the counter and associated portions of the shoe will be restrained substantially against any spreading, due to the solid backing thus provided. In the final assembly operation, the heel portion of the member will be nailed, together with the heel portion of the sole 37 and the heel 39 of the shoe, to the insole and counter, with which these elements will then be firmly anchored.

It is possible to construct the two sections of similar or distinctly different materials, such as two distinct portions of leather. In such case, the edges of the two sections, at their junction sector, would require supplementary skived surfaces or the like to permit the joining, by gluing or the like, of the sections into a substantially integral member without the production of any decided non-uniformity in the thickness of the material at such junction sector.

In the modification shown in Fig. 5, the heel section 40 and the shank section 42 are made of separate portions of leather or similar material, and the adjacent portions 44 and 46 of the sections, which are finally to be united, are skived in such manner that the hard outer layer 48 of the heel portion will finally be on the reverse side from that of the hard outer layer 50 of the shank portion. By this arrangement, the soft, absorbent side of the leather is presented at the shank portion to coact with the adhesive filling material, and the hard outer surface will be located at the heel portion in such manner that the proper coaction with the counter will be obtained as set forth above.

In the modification of Fig. 5, notches 52 are extended back through the heel portion substantially at the side edges of the shank portion and are adapted to receive therewithin the inseam formed by the junction of the insole, the welt and the upper. The skived edges 54 of the extending portions of the heel section are positioned in such manner that they may overlie when the shoe is being worn, the skived ends of the welt, as appears in Fig. 2, and thus provide a substantially continuous thickness extending around the shoe.

Since the member 26 and the strap 38 may easily be fitted and assembled externally of the shoe form and the entire unit fixed to the shoe by one operation combining the fixing of the heel end of the sole form to the counter and insole, a number of distinct steps are eliminated from the operation of manufacture when the principles herein taught are utilized.

Likewise, due to the rigidity resulting from the firmly anchored shank portion, a product results which compares favorably with the custom made shoe in form and appearance, such product continuing to retain its form after it has been put to the test of use.

As it appears that many changes could be made in the construction and process herein involved, and many widely different embodiments of the invention designed without departing from the scope of the invention, as defined in the accompanying claims, the matter set forth by the above description is intended for interpretation as illustrative only of operative embodiments of the invention and not in a limiting sense.

I claim:

1. In shoe construction, an insole, an upper, a counter and a welt, secured together to provide a shoe form, the welt and the upper forming a boundary for a cavity ceiled by said insole, substantially the entire sole portion of said cavity being filled with an adhesive waterproofing material, and a member secured to, and externally of said upper, counter and insole for stiffening the latter at the shank portion thereof, said member having an end extending and substantially filling the shank end of said cavity to the break-line, and being anchored at the heel end of said insole, and said waterproofing material sealing the extending end of said member in said cavity.

2. In shoe construction, an insole, an upper, a counter and a welt, secured together to provide a shoe form, the welt and the upper forming a boundary for a cavity ceiled by said insole, and a member secured to said upper, counter and insole for stiffening the latter at the shank portion thereof, said member having an extending end substantially filling the shank end of said cavity and being anchored at the heel end of said insole, said extending end being of less width than said heel portion by substantially the width of the welt, the edges of said member between said heel portion and said extending end being tapered to produce a smooth, strong joint with the ends of the welt, and the edges of said extending end being skived to set smoothly between the soles.

3. In shoe construction, an insole, an upper, a counter and a welt, secured together to provide a shoe form, the welt and the upper forming a boundary for a cavity ceiled by said insole, and a member secured to said upper, counter and insole for stiffening the latter at the shank portion thereof, said member having an extending end substantially filling the shank end of said cavity and being anchored at the heel end of said insole, said extending end being of less width than said heel portion by substantially the width of the welt, and the edges of said member between said heel portion and said extend-

ing end being tapered to produce a smooth, strong joint with the ends of the welt.

4. In shoe construction, an insole, an upper, a counter and a welt, secured together to provide a shoe form, the welt and the upper forming a boundary for a cavity ceiled by said insole, and a member secured to, and externally of said upper, counter and insole for stiffening the latter at the shank portion thereof, said member having an end extending, and substantially filling the shank end of said cavity, to the break-line, and being anchored at the heel end of said insole.

5. In combination, an upper, a counter, an insole and a welt, said upper and counter being assembled with, to define a shoe form extending from one face of, said insole, a substantially flexible member applied to the opposite face of said insole so that pressure from said insole, and the inturned edges of the upper and counter will be directly borne by said member, said member having a hard face and a soft face, the hard face being disposed adjacent to said insole, said welt being secured to said insole and defining a recess upon said opposite face, said member having a portion extending into said recess substantially to the break-line, and a stiff, resilient member applied to said member and secured thereto at a plurality of points, one of which is within the area defined by said counter.

6. In combination, an upper, a counter, an insole and a welt, said upper and counter being assembled with, to define a shoe form extending from one face of, said insole, a substantially flexible member applied to the opposite face of said insole so that pressure from said insole, and the inturned edges of the upper and counter will be directly borne by said member, said member having a hard face and a soft face, the hard face being disposed adjacent to said insole, said welt being secured to said insole and defining a recess upon said opposite face, adhesive material deposited in said recess, said member having a portion extending beyond said counter and into said recess substantially to the break-line, and a stiff, resilient member applied to said member and secured thereto at a plurality of points, one of which is within the area defined by said counter, the soft face of said member being in contact with said material.

In testimony whereof he has affixed his signature.

VINCENT SILVESTRI.