Dec. 22, 1959 E. A. OTT ET AL 2,917,841

PLASTIC HEEL BASES FOR SHOES

Original Filed March 19, 1954

Fig. 1.

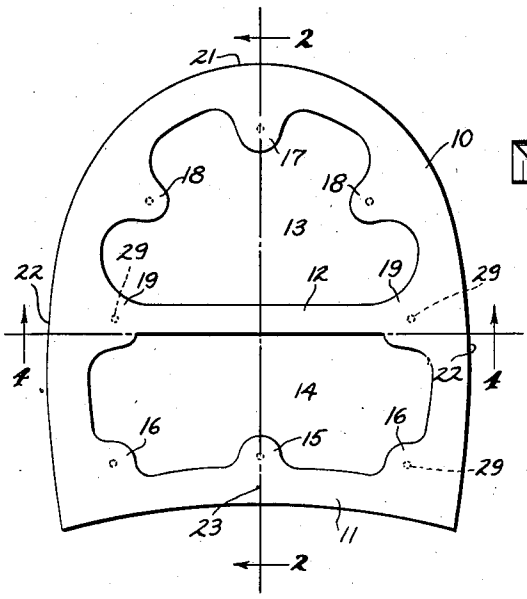


Fig. 2.

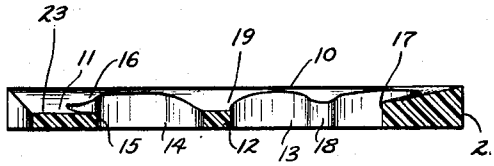
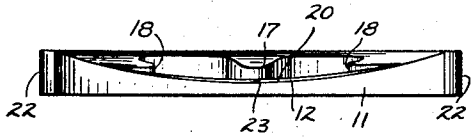
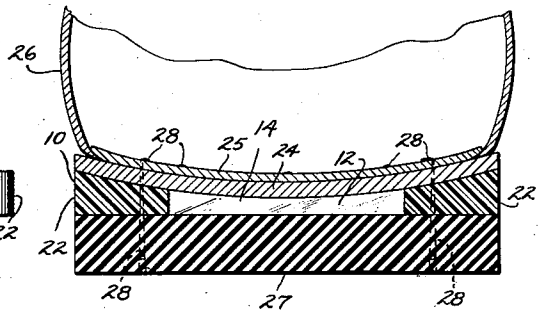


Fig. 4.

Fig. 3.





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PLASTIC HEEL BASES FOR SHOES

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Continuation of application Serial No. 417,246, March 19, 1954. This application July 9, 1958, Serial No. 748,561

4 Claims. (Cl. 36—35)

This invention relates to improvements in plastic heel bases for shoes and more particularly to a heel construction which includes a novel heel base, and is a continuation of my co-pending application, Serial No. 417,246, filed March 19, 1954.

In the manufacture of shoes it is common practice to build up a heel base from a plurality of plies of leather and to position said heel base below the heel portion of the outsole, the heel proper such as a rubber heel being below said heel base, and there being nails extending through the heel base and into the outsole and insole to secure the heel proper in position. The underside of the outsole, at the heel portion of the shoe is usually downwardly convexed, and this makes it necessary for the heel base to be formed to fit this contour. All of these steps consume considerable time in the manufacture of shoes.

It is a general object of the present invention to provide an improved heel construction which greatly simplifies the manufacture of shoes, reduces the weight at the heel portion, and improves the strength.

A further object of the invention is to provide an improved heel construction which includes a one-piece molded heel base, preferably formed of plastic, which is of skeleton form to include interior openings, the rim of said heel base having protrusions which project into said openings and are located to receive nails therethrough during assembly, and the upper side of the heel base being dished to fit the contour of the underside of the outsole.

A more specific object of the invention is to provide a heel construction as above described therein the heel base includes a molded rim, together with a transverse web connecting opposite portions of said rim to divide the open interior into a plurality of chambers, there being nail receiving protrusions on said rim which project into said chambers.

A further object of the invention is to provide, as a new article of manufacture, a one-piece molded heel base preferably formed of plastic.

A still further object of the invention is to provide a heel construction which is relatively inexpensive, which is neat in appearance, and which is otherwise well adapted for the purpose described.

With the above and other objects in view, the invention consists of the improved heel construction and all of its parts and combinations as set forth in the claims, and all equivalents thereof.

In the accompanying drawing, illustrating one complete embodiment of the preferred form of the invention, in which the same reference numerals designate the same parts in all of the views:

Fig. 1 is a top view of the improved heel base alone;

Fig. 2 is a sectional view taken along the line 2—2 of Fig. 1;

Fig. 3 is a front edge view; and

Fig. 4 is a fragmentary sectional view through the heel portion of a shoe to illustrate the improved heel construction, the view being generally along the line 4—4 of Fig. 1.

Referring more particularly to the drawing, the improved heel base is formed of a suitable moldable material such as plastic having the necessary properties for this particular use. It may be formed of an acrylic plastic such as methyl methacrylate. It may also be formed of polystyrene or any other suitable plastic material.

The heel base proper includes a rim portion **10**, which in plan view has the outline of the heel of a shoe as shown in Fig. 1. The rim **10** includes a U-shaped portion forming the sides and rear, and a front portion **11**. There is also a web **12** which divides the open interior into chambers **13** and **14**. Thus, the heel base is generally of skeleton form.

The rim is formed with a plurality of protrusions which project into the openings **13** and **14**, as shown in Fig. 1. One protrusion **15** is located intermediate the length of the front **11** of the rim. Spanning the front corners of the chamber **14** are protrusions **16**. At the rear of the heel base is a protrusion **17** which is generally pointing toward the protrusion **15**, and there are oppositely disposed side protrusions **18** which project obliquely into the chamber **13**. Between the ends of the web **12** and the adjacent side portions of the rim are protrusions **19**.

The upper side of the heel base is generally dished, it being concave in a transverse direction as indicated at **20** in Fig. 3, and also being dished in longitudinal section, as shown in Fig. 2, the rim being of full thickness at the rear **21** and at the side edges **22** but being concavely tapered to a point of minimum thickness at **23**, midway of the length of the front rim portion **11**. The underside of the heel base is flat, as shown.

The dished upper surface shown in Figs. 2 and 3 conforms to the contour of the underside of the outsole **24** at the heel portion of the shoe, as is clear from Fig. 4. In this figure the numeral **25** designates the innersole, the numeral **26** the upper, and the numeral **27** a rubber heel. The assembly is completed by driving nails **28** through the openings which are customarily provided in a rubber heel, and through the protrusions **15**, **16**, **17**, **18** and **19** of the heel base and through the outsole and insole, said nails being clinched on the inside of the shoe in the usual manner. The dotted openings **29** indicate the approximate place where the nails will pass through the heel base.

With the above arrangement it is apparent that the assembly of the heel portion of a shoe is expedited by the use of the present invention, as it is unnecessary to shape leather heel base sections to fit the heel portion of the outsole. It is also apparent that the weight of the heel portion of the shoe is generally decreased due to the skeleton structure of the heel base. At the same time, due to the novel features of the present invention, the heel base is very strong, being strengthened by the web **12**, the protrusions **15** to **19** providing ample stock for the reception of the nails. The rim portion of the heel base has ample width so that its margin may be trimmed if necessary. It is obvious that the protrusions may be spaced differently to meet the varying conditions in particular shoe designs.

Various other changes and modifications may be made without departing from the spirit of the invention, and all of such changes are contemplated, as may come within the scope of the claims.

What we claim is:

1. As a new article of manufacture a one-piece skeleton heel base of plastic material which is hard and which includes a rim portion having sides and having a front part and a rear part, said heel base having the major portion of its interior area within said rim formed with openings which render the article light in weight and

which extend through the entire thickness of the heel base, a relatively narrow straight transverse web intermediate the length of the heel base connecting opposite sides of said rim, said rear part of the rim having a nail receiving protrusion projecting into said interior area substantially on the longitudinal center line of the heel base, there being other nail receiving protrusions projecting into the interior area from the sides of the rim and merging with the ends of said transverse web.

2. As a new article of manufacture a one-piece skeleton heel base of plastic material which is hard and which includes a rim portion having sides and having a front part and a rear part, said heel base having the major portion of its interior area within said rim formed with openings which render the article light in weight and which extend through the entire thickness of the heel base, a relatively narrow web connecting opposite portions of said rim, said rear part of the rim having a nail receiving protrusion projecting into said interior area substantially on the longitudinal center line of the heel base, there being other nail receiving protrusions projecting into the interior area from the sides of the rim and merging with the ends of said web.

3. As a new article of manufacture a one-piece skeleton heel base of plastic material which is hard and which includes a rim portion having sides and having a front part and a rear part, said heel base having the major portion of its interior area within said rim formed with openings which render the article light in weight and

which extend through the entire thickness of the heel base, a relatively narrow web connecting opposite portions of said rim, said rear part of the rim having a nail receiving protrusion projecting into said interior area, there being other nail receiving protrusions projecting into the interior area from the sides of the rim and merging with the ends of said web.

4. As a new article of manufacture a one-piece skeleton heel base of plastic material which is hard and which includes a rim portion having sides and having a front part and a rear part, said heel base having the major portion of its interior area within said rim formed with openings which render the article light in weight and which extend through the entire thickness of the heel base, a relatively narrow web connecting opposite portions of said rim, said rear part of the rim having a nail receiving protrusion projecting into said interior area, and there being other nail receiving protrusions projecting into the interior area from the rim and merging with the ends of said web.

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