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SHOE CONSTRUCTION WITH MOLDED RIGID REAR SOLE PART

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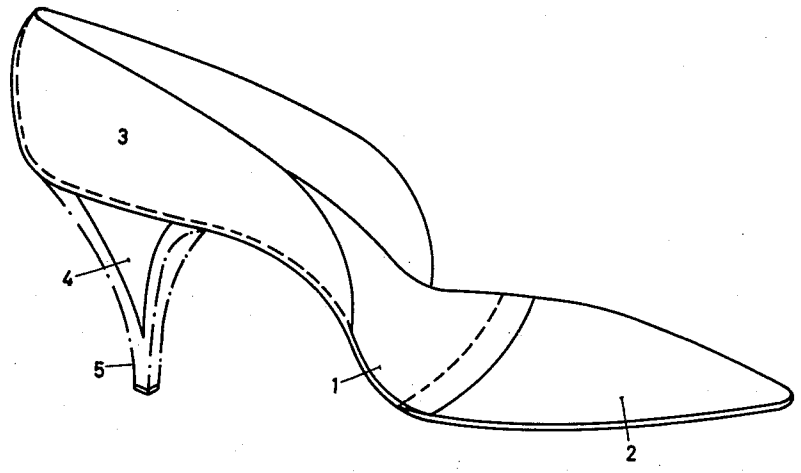


Fig. 1

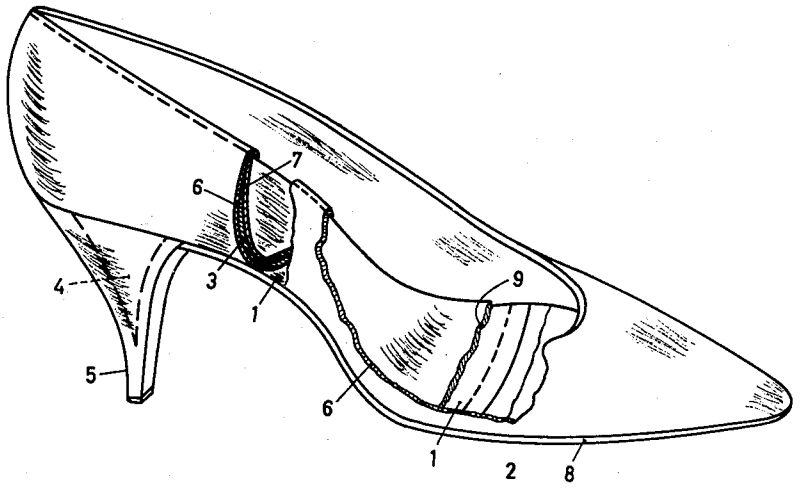


Fig. 2

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SHOE CONSTRUCTION WITH MOLDED RIGID REAR SOLE PART

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The invention relates to the formation and manufacture of shoes of all kinds in particular ladies shoes with high heels. As is known a good shoe of the usual construction consists of a whole series of individual parts and its manufacture requires a plurality of working processes. This is especially the case in the region of the heel and shank which must be particularly accurately worked and which are subjected to heavy stressing in particular in shoes with high heels. In the usual method of manufacture the insole and shank are fixed to a last, then the cut upper, already provided with lining stitched thereto, is drawn over the last after insertion of a counter stiffener, and finally the edge of the upper is pulled over and lasted onto the insole. The construction of the shoe shank is important and this must, especially in ladies shoes, be done so as to be shape retaining. For this purpose the insole is provided with a shank support and an outsole and heel is then connected thereto. The manufacture of the shoe requires great care to obtain a good fit, in particular in the heel seat portion and the shank part.

One object of the invention is to dispense with a number of parts and thus also to dispense with a number of working procedures in the manufacture of a shoe, but, nevertheless, to produce a shoe which is stable and adapted to the foot. This is attained by the use of a solid, rigid rear insole part which is preferably molded from plastic and over which the upper is drawn and stuck to the underside of the insole. This rear insole part suitably extends up into the region of the arch of the foot and an insole front part of leather or other suitable flexible material is connected in any suitable manner, for instance by cementing to the rear insole part.

In addition a counter stiffener is advantageously fixed to the rear insole part at the same time and this stiffener is then inserted between the lining and the leather of the prepared upper, whereupon the upper is lasted to the insole and fixed by adhesives to the underside of the rear insole part.

In this way a separate shank support is dispensed with and also the manufacture of the shoe, at least as regards the heel seating and shank portion of the shoe is considerably simplified. The front part of the shoe upper is cemented in the usual manner to the front insole part and the outsole is cemented to the insole parts as the case may be with the insertion in between of a middle sole and the heel is fixed in any desired manner. The solid rigid rear insole part can be made completely true to the last so that the faults arising hitherto in the manufacture of shoes are obviated and a hundred percent accuracy of manufacture is attained. A further advantage is that the solid rear insole part can be molded exactly to the shape of the foot for orthopedic shoes so that a subsequent insertion of orthopedic inserts and the like is superfluous. Such inserts as a rule change after a time their shape due to the stress produced by weight which is not the case with soles molded from synthetic plastic material.

One advantage of the shoe according to the invention consists in the fact that the overlasting margin of the upper which is cemented to the bottom face of the solid rear insole part can be kept very narrow, that is, about

half a centimeter wide compared with the hitherto necessary width of 16–18 mm. This narrow overlasting margin is only possible by the omission of the hitherto existing parts and means a substantial saving of leather.

A further feature of the invention is that the counter stiffener may be made integrally with the solid, rigid rear insole part, and the rear insole part and stiffener may be molded from synthetic plastic material in one piece, whereby the stiffener is drawn advantageously comparatively far forward as far as up to or into the region or the shank part of the sole. This construction according to the invention is considerably advantageous as a separate stiffener and fixing of same on the solid rear insole part is unnecessary. This is a saving both in cost and work. The extension of the stiffener into the region of the shank of the shoe has also the advantage that the shoe is and remains extremely rigid.

A further feature of the invention consists in considerably simplifying the attachment of the heel. This is effected by molding on the underside of the rear insole part a projection, which may be pyramid-shaped and on which the heel provided with a corresponding recess is simply placed and if desired glued.

The shoe consists therefore practically of a framework of the rear insole part with the stiffener integrally molded from synthetic plastic material and extended forwardly by a leather front insole part and a heel pyramid molded to the rear insole part, the upper connected to the framework, the outsole connected to the insole parts and the heel—which likewise may be of synthetic plastic material—connected to the pyramid by the use of an adhesive. This construction according to the invention is extremely simple and dispenses with many parts and working procedures. In spite of this, the shoe is stable and rigid and is suitable even as an orthopedic shoe as the synthetic material sole can be molded exactly to the shape of the foot. A further simplification can be attained if on the synthetic material sole a finished heel is molded on so that a subsequent application of a heel to the projection is likewise dispensed with.

One embodiment of the shoe according to the invention is illustrated in the accompanying drawing in which,

FIGURE 1 is a perspective view of the framework part of the shoe consisting of the insole, stiffener, and heel projection and,

FIGURE 2 is a perspective partly cut away view of the finished shoe.

According to the invention the shoe consists of a framework which is formed by a solid, rigid rear insole part 1 of synthetic material, which extends from the heel region forwardly to the shank of the shoe and to which is connected a front part 2 of the insole made of leather. The insole part 1 is provided with a counter stiffener 3 molded thereon and drawn far forward and with a projection 4 molded to insole part 1 projecting from the bottom face thereof for receiving the heel 5. The framework consists therefore of the insole part 1, the stiffener 3 and the projection 4 and this framework is molded or diecast in one piece. Over this framework is drawn the upper prepared in known manner and consisting of the leather upper 6 and the lining 7, that is, the stiffener 3 is placed between the leather upper 6 and lining 7 and after the lasting the leather upper is connected onto the underside of the insole parts 1, 2. Then only the outsole 8 need to be connected to the insole parts and the heel 5 fixed to the spike or pyramid shaped projection 4 by using an adhesive, whereupon the shoe is practically finished. In addition a sock lining 9 may be provided.

The invention extends not only to the embodiment illustrated but quite generally also to the use of a solid, rigid rear insole without cast on stiffener 3 and projection

4. Most advantageous however is the construction shown or a construction in which, instead of the projection 4, the finished heel is molded on the insole part 1 at the same time so that over the framework only the upper need be drawn and connected and the outsole applied.

What I claim is:

1. In a shoe construction, in combination, a substantially rigid supporting structure including a rigid rear insole portion extending forwardly to the region of the shank, a substantially rigid stiffener portion extending upwardly from a peripheral edge of said rear insole portion, and a substantially rigid elongated projection projecting downwardly from said rear insole portion; and a heel formed with a cavity in the upper face thereof into which said substantially rigid elongated projection fits, said heel being firmly connected to said projection with the latter received in said cavity so that said heel is thereby also firmly connected to said substantially rigid insole portion and the substantially rigid stiffener portion of said substantially rigid supporting structure.

2. A shoe construction as defined in claim 1, in which said projection is of substantially pyramidical shape and

in which said cavity matches said pyramidcal shape of said elongated projections.

3. A shoe construction as defined in claim 1, in which said rigid rear insole portion, said rigid stiffener portion, said rigid elongated projection and said heel are all formed from substantially rigid plastic material.

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