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HEEL WITH DETACHABLE LIFT

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Fig. 1

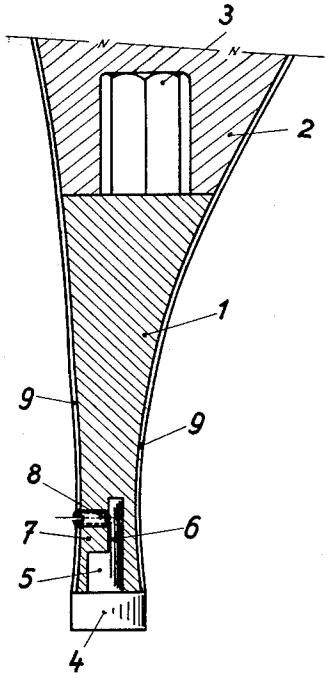


Fig. 2

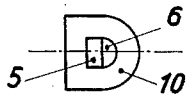
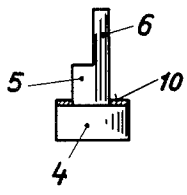


Fig. 3



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HEEL WITH DETACHABLE LIFT

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This invention relates to heels, having detachable or interchangeable heel lifts, for ladies' shoes, and more especially to high heels of the pointed type. Since the heel lift is subject to rapid wear, especially in narrow pointed heels, owing to its high specific loading, numerous devices are known to enable the heel lift to be changed. To this end, the heel lift has been provided with a projection in the form of a shank, which fits in a corresponding duct-like recess in the heel. In these circumstances, the shank carrying the heel lift is fastened in the heel in various ways. For example, a shank made of metal has been slit in its longitudinal direction, in order to obtain a clamping effect by means of the resilience of the slit parts of the shank. Moreover, a pin or a screw has been passed transversely through the front of the heel, so that the end acts on the resilient tongues formed by the end of the shank or penetrates into a transverse bore in the shank.

In very high and narrow heels, in which the lower end of the heel frequently has a thickness of only five millimetres, there is a danger that the small wall thickness of the heel lift surrounding the recess for the heel lift shank may not be sufficient, even in the case of a metal construction, to receive and locate a pin or even a screw securely.

The object of the invention is to provide a reliable fastening for an interchangeable heel lift of ladies' shoe heels which is suitable for narrow heels as described above and to make the fastening such that the wearer of the shoe is herself able, without difficulty, to carry out the exchange of heel lifts. According to the invention, to this end, the heel lift consists of synthetic material, especially a thermoplastic unbreakable synthetic substance such as polyamide, and is equipped with a non-circular projection in the form of a shank which at its end, on its side facing the breast face of the heel, is formed with a step so as to recede transversely to its longitudinal axis, and that a stepped recess shaped to correspond to the shank is provided in the end of the heel and above the said step a screw-threaded bore is provided in the breast face of the heel to accommodate a grub screw, the tip of which presses on the end face of the reduced shank end.

The shank is advantageously constructed integrally with the heel lift and its breast face is bounded by plane surfaces while in other respects it may have an approximately semi-cylindrical surface.

The non-circular part of the shank directly adjoining the heel lift forms a reliable means of preventing rotation of the heel lift on the heel. In these circumstances, this part need have only approximately the same height as the heel lift. The adjoining reduced part of the shank and, correspondingly, the recess in the heel may recede from the breast face of the heel by approximately one half to two thirds of the diameter of the base of the shank. The reduced end of the shank then forms, as it were, only a tongue or a lug which is clamped fast in the heel by a transversely disposed grub screw. In consequence of the step in the shank, the wall of the heel is of correspondingly thicker construction in relation to the end of the shank, so that the grub screw receives sufficiently long thread guidance. This is of considerable importance for the durability of the interchangeable connection of the heel lift because heretofore, especially in the case of very thin heels, there was no adequate guidance for a clamping screw. A further advantage is that the end of the grub screw does not pass through a transverse bore in the shank but acts as a pressure element on the breast face of the shank and clamps the same fast in the recess in the heel. This ensures a dependable fastening of the heel lift on the heel, particularly since the end of the grub screw presses somewhat into the elastic synthetic material of which the heel lift and the shank consist. Moreover, the disadvantages entailed by the passage of the screw through a transverse bore in the shank are avoided. In fact, in practice it is very difficult to adapt the vertical position of the transverse bore in the shank exactly to the vertical position of the screw in the heel. Moreover, in the case of a screw passing through the shank, relatively considerable forces are transmitted, during walking, to a screw passing through the shank, in consequence of the varying load on the heel lift so that the screw is loosened to a relatively considerable degree in its thread.

The interchangeable heel lift comprises essentially three parts, namely the heel lift proper (or top lift) on the underside of the heel, the non-circular part of the shank engaging in a corresponding recess in the heel, and finally the reduced tongue-like shank end, into the flat front side of which the end of the clamping screw presses.

The invention will be described further, by way of example, with reference to the accompanying drawing showing one practical embodiment thereof, and wherein:

FIG. 1 is a vertical section through the lower part of a very thin heel of a ladies' shoe, which is shown on an enlarged scale of approximately 2:1,

FIG. 2 is a plan view, and

FIG. 3 is a part-sectional side view of the interchangeable heel lift of the heel of FIG. 1.

As shown in FIG. 1, a heel for a ladies' shoe is formed in two parts, namely an upper body part **2** conventionally made of wood and a lower body part **1** conventionally made of metal, for example die-cast aluminum, these two parts being secured together by a hexagonal tenon **3** integral with the lower body part **2**. The heel is conventionally covered by a layer **9** of leather or other suitable material.

A recess or blind hole is provided in the lower free end of the lower body part **1** which is of substantially uniform overall cross-section, and this recess serves for location of a removable heel lift **4** on the heel. Such a removable heel lift is shown in plan and elevation respectively in FIGS. 2 and 3 and comprises the heel lift proper or top lift **4** having a perpendicular shank **5** projecting therefrom. The shank **5** is non-circular in cross-section and is reduced in thickness to provide, at its upper end, a contiguous but narrower tongue part **6**, the reduction in thickness being abrupt so as to provide a step thereat.

On their respective sides facing the shoe toe or the breast face of the heel, the shank **5** and its tongue **6** are bounded by plane vertical surfaces, while in all other respects the shank **5** is semi-cylindrical, so that a cross-section thereof may be regarded as being D-shaped.

The recess in the lower body part **1** of the heel is shaped complementary to the shank **5** and its tongue **6** of the heel lift **4**, which latter may, advantageously, be integrally formed from a suitable synthetic material, for example an unbreakable thermoplastic synthetic material, such as a polyamide, having a small degree of elasticity. The recess is, therefore, correspondingly stepped so that the recess is surrounded at its extreme lower end by a very narrow wall thickness, whilst immediately above this it has a considerably thickened wall part **7**.

This wall part 7 is provided with a threaded bore for a grub screw 8 which serves to engage the tongue 6 and thereby retain the heel lift 4 in position on the heel.

As can be seen clearly in FIG. 1, the heel lift 4 is externally dimensioned so as to lie flush with the heel covering layer 9, so that the heel lift 4 is slightly larger in size than the corresponding dimensions of the lower end of the heel part 1.

FIGS. 2 and 3 show an optional pressure plate 10 which has been omitted from FIG. 1. This pressure plate 10 (which is shown in cross-section in FIG. 3) is of metal and is shaped to fit snugly around the shank 5 and to conform to the perimetral contour of the heel lift 4, so that its outer edge lies flush with the outer surface of the covering layer 9 and the outer surface of the heel lift 4. This pressure plate 10 serves to distribute the pressure of the heel upon the heel lift 4 over the whole of the surface of the latter, so preventing the lower end of the body part 1 from biting into the heel lift 4.

It will be noted that, in the illustrated embodiment, the thick part of the shank 5 is of length just very slightly greater than the thickness of the heel lift 4. The tongue 6 is approximately one-half to one-third of the thickness of the rest of the shank 5, and the tongue is approximately twice the length of the rest of the shank 5.

What I claim is:

1. In a shoe heel construction having a free elongated end portion of substantially uniform overall cross-section, a longitudinally-extending recess formed in the lower end of the heel, said recess comprising a first and second portion of different cross-sectional dimensions,

said first portion having a larger cross-section than said second portion to provide a horizontal shoulder portion therebetween, a heel lift on said end portion and longitudinally projecting therefrom, an elongated shank member attached to said heel lift and shaped to conform to said recess and be received therein, said shank member having a first and second section, said first section having a larger cross section than said second section to provide a step portion, said sections dimensionally conforming to the said portions whereby said shank member is tightly received in said recess, and said step abuts said shoulder.

2. In a shoe heel construction as set forth in claim 1, wherein said recess is non-circular in cross-section.

3. In a shoe heel construction as set forth in claim 1, comprising in addition, a fastening member extending transversely through said end portion and engaging said elongated shank member.

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