

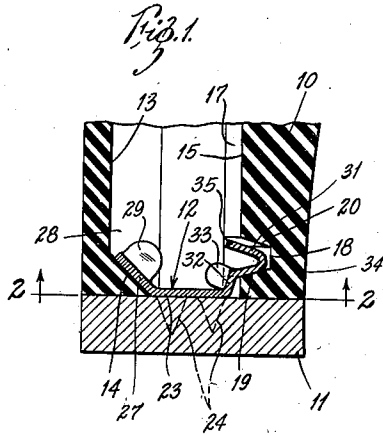
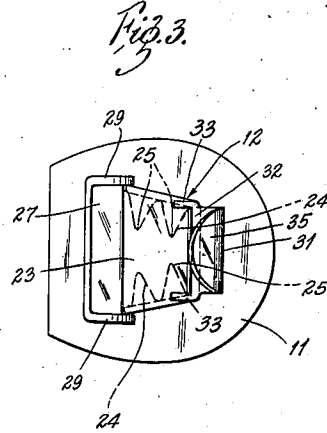
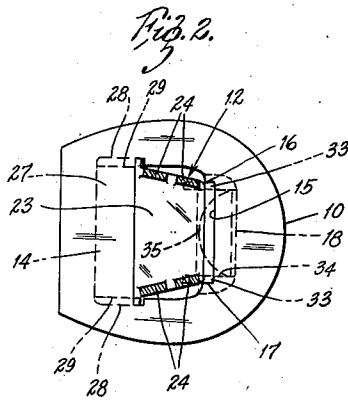
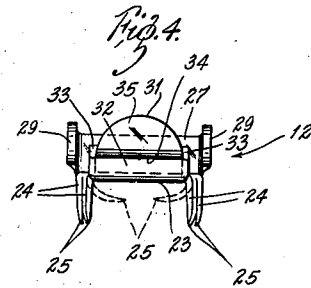
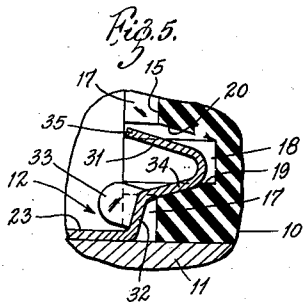
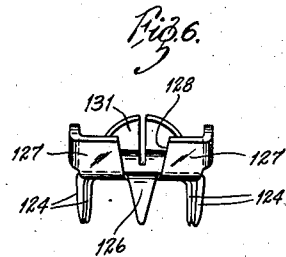
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L. E. SAUER ET AL

2,279,894

HEEL CONSTRUCTION

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HEEL CONSTRUCTION

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Application February 24, 1940, Serial No. 320,544

6 Claims. (Cl. 36—42)

The present invention relates to attachment means, and particularly to means for attaching a heel tap or top lift to a heel.

It is, of course, obvious that the same sort of attachment could be used for attaching a heel to a shoe, and could be used in other similar connections.

The invention contemplates the forming of a shoe heel bottom in such wise as to receive and clamp a clip or plug projecting upwardly from the heel top lift. The clip is provided with a portion at one end, preferably the front, engaging with a corresponding portion of the heel in such wise that force applied from the top lift through the clip to the heel produces a tight seating of the top lift and its clip, and in which there is a point of application of such pressure close to the upper surface of the top lift. The opposite end is designed so that should wear or tear or other action produce any room for lost motion in the attaching means, such lost motion will automatically be taken up and a tight engagement at all times ensured.

The invention provides means for preventing twisting of the top lift relative to the heel and also means to reduce wear caused by twisting forces.

In the drawing:

Fig. 1 is a longitudinal sectional view of the bottom of a shoe heel with the top lift and the present attaching means;

Fig. 2 is a horizontal section looking upwardly from the line 2—2 of Fig. 1;

Fig. 3 is a top view of the top lift with the clip thereon;

Fig. 4 is a rear view of the clip;

Fig. 5 is a front view of a slightly modified form of clip; and,

Fig. 6 is a fragmentary section enlarged from Fig. 1.

A shoe heel 10 has a top lift 11 attached thereto by a clip, generally indicated at 12. The heel member may be made of plastic material, such as disclosed in the Pearson, et al. application, Serial No. 234,202 of which case this is in part a division. The walls are somewhat resilient though only resistingly so. An opening 13 extends from the bottom of the heel. The lower part of the front of the wall around this opening slopes inwardly and downwardly to the bottom of the heel member 10, as shown at 14. The angle of this slope may be 45° or some other suitable angle. The hole 13 preferably conforms generally to the outer shape of the heel member. At the back of this hole, there is an indented part 15 provided

ing side edges 16 and 17 for a purpose to be described. A short distance above the bottom wall of the heel member and at the back thereof, there is a notch 18 having a sloping bottom wall 19 and a sloping top wall 20.

The clip 12 on the top lift 11 has a main portion 23 that is secured to the upper surface of the top lift by several prongs 24 that are formed integrally with the body portion 23 but turned downwardly therefrom. The tips 25 of the prongs are curved preferably inwardly though they could be curved outwardly so that when they are driven into the top lift 11, they deflect the prongs inwardly toward a horizontal position as shown in dotted lines in Fig. 4, thus effectively clamping the clip 12 to the top lift.

From the front edge of the body portion 23 of the clip 12, there extends upwardly and forwardly an angular portion 27, the angle of which corresponds to the angle of the wall portion 14 of the heel member 10. This portion 27 extends to the lateral limits of the front portion of the opening 13 which lateral limits are square, as shown in Fig. 2. At the sides of the angular portion 27 are wings 29 engaging the walls 28 over a considerable surface. These wings engage snugly against the walls 28 and when sprung slightly outwardly, so that they are in compression when inserted into the heel, produce a greater resistance against twisting of the top lift. This twisting action, in the absence of the wings, might cause the edges of the portion 27 gradually to cut into the material of the walls 28 of the heel member 10.

At the back of the clip 12 an engagement member 31 extends. It includes a front portion 32 that rises more or less vertically and which is disposed to extend between the side walls 16 and 17 of the indentation 15. Wings 33 may be provided on opposite lateral edges of the riser portion 32 to engage against the walls 16 and 17 in a manner such as that provided by the wings 29 on the front portion 27.

From the upper part of the riser part 32, there extends backwardly and somewhat upwardly a portion 34 at an angle substantially that of the notch wall 19. It will be seen that the riser portion 32 is normally disposed in front of the back wall of the indentation 15. This riser portion also terminates in bearing or engaging portion 34 slightly below the forward edge of the wall 19.

At the back of the bearing portion 34, the portion 31 turns upwardly at a point spaced from the back wall of the notch 18. It then turns

outwardly and upwardly at 35, the portion 35 being disposed a distance below the top wall 20 of the notch 18.

In use the wall 27 is engaged over the wall 14 of the heel member as nearly as may be. The upper surface 35 of the rear member 31 of the clip 12 will then engage the back part of the bottom of the indentation 15. Pressure applied to the back of the top lift 11 will be transmitted to the point of engagement between the clip wall 35 and the heel member. The wall 35 slopes upwardly and inwardly so that the applied force pushes the back member 31 of the clip forward by a wedging action until the back of the wall 35 rides within the indentation 15. Further upward pressure causes the member 35 to ride up the indentation 15 until it snaps into the notch 18. It is wedged into this notch by virtue of the slope of the wall 19. The inherent spring of the clip causes the front portion 27 and the back portion 31 to spread apart as far as possible, which causes a snug engagement between the member 27 and the wall 14 and the member 34 with the wall 19. As noted, the riser wall 32 does not move back into engagement with the back wall of the indentation 15.

Upon application of walking pressure to the bottom of the top lift 11, such pressure is transmitted through the clip by its front wall 27 to the heel member 10. The wedge-like action of the front portion 14 causes this force merely to produce a more snug engagement between the top lift and the heel. Furthermore, the lever arm of the resistance to this force is low so that it does not have a large leverage acting against the springiness of the member 27.

Should there be a rearward displacement of the top lift 11, the spreading resiliency of the clip will cause the back member 31 to move backward further and engage at a new relationship within the notch 18, preserving the tight clamping action of the clip. If there is any displacement upwardly of the clip, as by pressure applied to the bottom of the top lift, this upward movement will again be accommodated by the spreading action of the clip and the wedging effect will be maintained.

In the modification of Fig. 5, the front wall 127 is divided by a notch 128 and the front prong 126 is provided to cooperate with the regular prongs 124. The back member 131 is slotted also. The splitting of the members 127 and 131 provides for somewhat greater resiliency, both longitudinally and laterally.

The wings 29 or 33 may be omitted but are preferably present in both forms. It will be observed that the several elements of this clip can be readily stamped out of a piece of flat metal. In the insertion of the clip into the heel, there is preferably present not only a resiliency of the clip itself, but some yielding resiliency of the wall of the heel member 10. If this heel member is of plastic material, such resiliency may be obtained by the disclosed design, since plastic material does not take a permanent set by the disclosed deformation.

What is claimed is:

1. A member and a heel element, and interengaging means between the two, said means including an opening and means engaging in the opening, said opening having a sloping surface extending upwardly and outwardly from the common surface between the member and element, the engaging means having an element extending from said common surface into the opening 75

spaced from the wall around the opening, and an upper portion on the element overhanging into engagement with the sloping surface, and said engaging means element being urged against said sloping surface.

2. A member and a heel element adapted for attachment at a common surface, and interengaging means between the two, said means including an opening in one having a surface sloping upwardly and outwardly from the common surface, and an element extending into said opening from the common surface, said element having a first portion spaced from the surface, a second portion overhanging into engagement with the surface, and a third portion attached to the second, and extending upwardly and inwardly therefrom, and said interengaging means normally urging said second portion against said sloping surface, the third portion assisting in the installation of the heel element onto the member.

3. A member and a heel element therefor adapted for attachment at a common surface and interengaging means therefor, the interengaging means including an opening in one extending from the common surface, and a clip on the other extending into said opening, the opening having a part with side walls, and an end wall, forming a notch, the clip extending in said part of the opening, spaced from the said end wall and engaging the side walls to resist twisting, and having an overhanging part engaging in the notch whereby the member and element may be engaged.

4. A member and a heel element adapted for attachment at a common surface, and interengaging means between the two including an opening in one having side walls, and a flat clip on the other extending from said surface into the opening, said clip having overturned wings engaging over a substantial area with the side walls to distribute twisting forces.

5. An attaching clip for securing shoe members together wherein one member has an opening with opposite overhanging walls, said clip comprising a body member formed of sheet metal or like material, said body member having a first end portion extending upwardly and outwardly therefrom, and a second end portion opposite the first end portion, said second end portion extending upwardly and outwardly to provide a springable wall adapted for yielding movement substantially about the junction of the second end portion with body member for insertion of the clip into said opening by yielding of said member, and securing of the clip on said overhanging walls.

6. A member and a heel element adapted for attachment at a common surface, and interengaging means between the two, said means including an opening in one having a surface sloping upwardly and outwardly from the common surface, and an element extending into said opening from the common surface, said element having a first portion spaced from the surface, a second portion overhanging into engagement with the surface, and a third portion attached to the second, and extending upwardly and inwardly therefrom, and said interengaging means normally urging said second portion against said sloping surface, the third portion assisting in the installation of the heel element onto the member, said third portion being spaced from the walls of the opening when the element is in place.

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