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SHOE LAST WITH INTERCHANGEABLE HEEL PLATE

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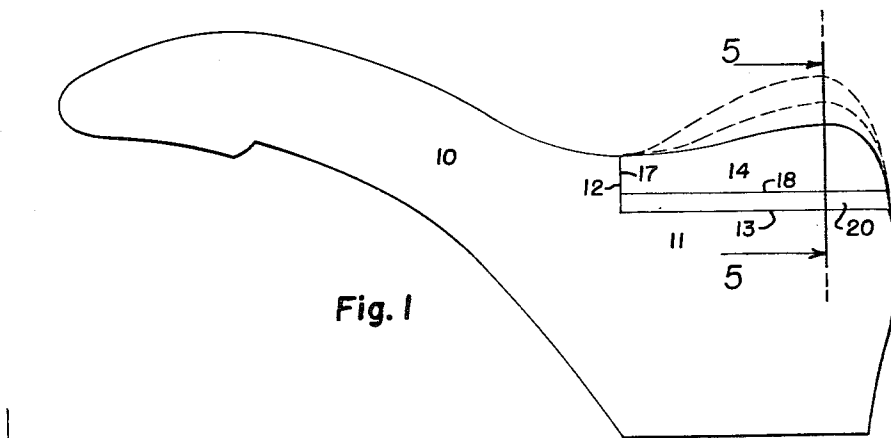


Fig. 1

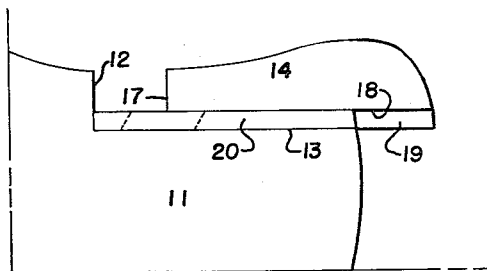


Fig. 4

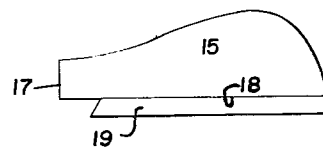


Fig. 2

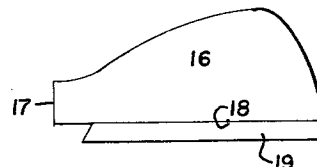


Fig. 3

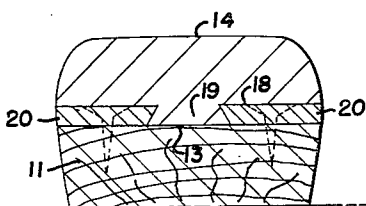


Fig. 5

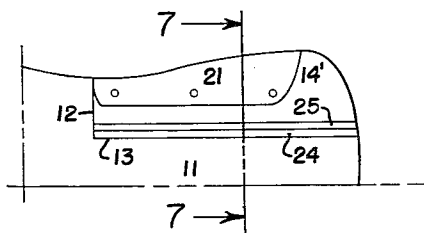


Fig.6

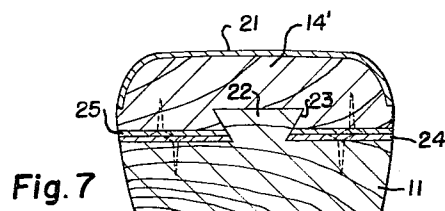


Fig. 7

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SHOE LAST WITH INTERCHANGEABLE HEEL PLATE

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11 Claims. (Cl. 12—133)

This invention relates to lasts of the general type conventionally utilized in the production of shoes for human wear, and has as a primary object to provide a novel and improved shoe last construction selectively adaptable to the production of shoes of differing heel heights on any particular last unit.

A further object of the invention is to provide a novel and improved shoe last adapted for conventional use in the production of shoes and characterized by unique means selectively applicable to the production of shoes of differing heel heights on any particular last unit.

A further object of the invention is to provide a novel and improved shoe last adapted for conventional use in the production of shoes of differing heel heights with facility and economy.

A further object of the invention is to provide a novel and improved shoe last characterized by interchangeable heel plate portions selectively applicable to condition the last for the production of shoes of differing heel heights.

A further object of the invention is to provide a novel and improved combination of a detachable and interchangeable heel plate portion in and with a shoe last.

A further object of the invention is to provide a novel and improved organization of interchangeable heel plate portions applicable to conventional types and constructions of shoe lasts.

A further object of the invention is to provide a shoe last organization characterized by interchangeable heel plate portions adapting the last to the production of shoes of differing heel heights that is simple and inexpensive of construction, susceptible of wide diversity as to last size, type, style and conformation, facile and convenient of practical use, expediently variable as to structural detail, and positive and efficient in attainment of the ends for which designed.

With the foregoing and other objects in view, my invention consists in the construction, arrangement, and operative combination of elements as hereinafter set forth, pointed out in my claims, and illustrated by the accompanying drawing, in which—

Figure 1 is a side elevation of a typical conventional shoe last as conditioned in one expedient manner to give practical effect to the principles of the invention, broken lines in the view representing alternative heel plate outlines attainable through interchange of heel plate portions characterizing the invention.

Figure 2 is a side elevation of a heel plate portion employable in substitution for that shown in place in Figure 1.

Figure 3 is a side elevation of yet another heel plate portion employable in substitution for that shown in place in Figure 1.

Figure 4 is a fragmentary, detail elevation of the heel portion of the last according to Figure 1 with the heel plate portion thereof slightly shifted on its seat, as in the removal or replacement of the same relative to the last.

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Figure 5 is a fragmentary, detail, transverse section taken substantially on the indicated line 5—5 of Figure 1.

Figure 6 is a fragmentary, detail elevation of the heel portion of the last according to Figure 1 illustrating an alternative heel plate portion construction and mounting within the contemplation of the invention.

Figure 7 is a fragmentary, detail, transverse section taken substantially on the indicated line 7—7 of Figure 6.

In the production of shoes for human wear, elements of the shoe are partially assembled on and formed over a shaping block, or last, contoured to fit within and to determine the size and ultimate conformation of the shoe. Adapted for firm support with the sole portion thereof uppermost, conventional shoe lasts may be variously organized as substantially rigid block units, collapsible assemblies, or otherwise, in a range of individual sizes and specific forms appropriate to accomplish the desired ultimate production of shoes. The number of conventional lasts required for shoe production in an adequate range of sizes and in any significant diversity of form and style is consequently large and an important factor of production expense aggravated by the requirement for a separate last for each different heel height to be supplied in a given shoe size and form, hence the instant invention is directed to the provision in operative association with conventional shoe lasts of detachable heel plate portions interchangeable to adapt the associated last for the production of shoes of differing heel heights without recourse to the usual supplementary lasts, thus very much facilitating the operations and reducing the expense of such production.

In the drawing, the numeral 10 designates a conventional shoe last represented as of rigid block unit form and typifying any particular size, shape, and construction of a shoe last having a heel portion 11 wherewith the improvement hereinafter described may be operatively associated. In accordance with and to give effect to the principles of the invention, the heel portion 11 of the last 10 is formed with, or worked to provide, an angular recess, or notch, opening upwardly, and through both sides and the heel end, of said portion 11, which recess, or notch, is limited and defined by a transverse end plane 12 intersecting and terminating the sole contour of the last at the zone of maximum sole concavity longitudinally of the last, and hence on the line of junction between the forward margin of the shoe heel and the shoe outsole, in a disposition perpendicular to the support plane common to the ground-engaging sole and heel elements of the shoe produced on the last. The end plane 12 of the recess, or notch, extends inwardly of the last heel portion 11 and away from the sole contour of the last a distance sufficient to fully intersect the rounded side margins through which the sole and heel contours of the conventional last merge laterally into the last sides, and terminates at and in right-angular relation with a seat plane 13 extending thence rearwardly of the last parallel to the shoe support plane above identified in intersecting relation with the side and rear surfaces of the last heel portion 11.

The recess, or notch, defined by the perpendicularly-intersecting planes 12 and 13 is provided for the reception and detachable retention of heel plate blocks 14, 15, and 16 is selectively-interchangeable cooperation and completing relation with the last 10 and the heel portion 11 thereof. The separate heel plate blocks 14, 15, and 16 cooperable with a given notched last are alike in respect to an end wall 17 on each adapted to abut and marginally conform with the end plane 12 of the recess, or notch, and a base plane 18 adapted to slidably engage against and marginally conform with the seat plane 13 of the recess, or notch, whereby each of said heel plate blocks is conditioned to separately engage in marginal conformity

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within, and to fill, the recess, or notch, interrupting the heel portion 11 of the last, and said heel plate blocks differ only as to inclination and longitudinal contour of their respective surfaces opposed to the base plane 13 exposed when the blocks are in place on the last for coaction with the heel portion of a shoe being worked thereon. As represented by the drawing, the heel plate block 14 is of least thickness perpendicular to its base plane 18 and is finished to an inclination and longitudinal contour of its exposed surface appropriate to shape and position the heel portion of a shoe relative to the sole portion thereof for attachment to and coaction with a heel of considerable height; the heel plate block 16 is of greatest thickness perpendicular to its base plane 18 and is finished to an inclination and longitudinal contour of its exposed surface appropriate to shape and position the heel portion of a shoe for attachment to and coaction with a heel of minimum height, as indicated by the upper broken line in Figure 1; and the heel plate block 15 is of a thickness intermediate that of the blocks 14 and 16 for correlation of its exposed surface with the last in a manner suited to the shaping of a shoe heel portion for attachment to and coaction with a heel of medium height, as indicated by the lower broken line in Figure 1.

Any expedient means may be availed of for interchangeably associating the heel plate blocks in position of practical use on the last 10, the arrangement illustrated and hereinafter described serving to hold the heel plate block to the last against lateral and angular displacement relative thereto, and against separation therefrom in a direction perpendicular to the seat plane 13, while accommodating separatory shift of the block longitudinally and rearwardly of the last in a direction opposed to the confining tension of a shoe in position on the last. When, as is commonly the case, the last 10 is formed of wood, or analogous materials subject to deformation in use, and the heel plate blocks are of hard metal effective to turn and clinch the points of nails and tacks driven against their exposed surfaces, it is practical to form the several said blocks with an integral rib 19 outstanding from and centrally and longitudinally along the base plane 18 thereof in a spacing at one end inwardly of the associated block end 17, and to bevel the opposite sides and inner end of such rib at a convergence inwardly of the associated block adapted for sliding coaction with correspondingly beveled margins and the inner end of a slot centrally and longitudinally of, and opening rearwardly through, a flat metal plate 20 overlying and secured to the seat plane 13 of the recess, or notch, in marginal conformity therewith in a thickness equalling the projection of the rib 19 outwardly from the base plane 18 of the associated block. Organized as shown and described, the plate 20 protects the base plane 13 against deformations incident to use of the last and cooperates with the rib 19 of a heel plate block to complete a dovetail joint interlocking the block to the last in a manner facilitating removal of the block through simple shift thereof longitudinally and rearwardly of the last when no shoe is in place thereon, thus providing for rapid and convenient interchange of heel plate blocks relative to the last.

Alternative to and in analogy with the foregoing, Figures 6 and 7 typify arrangements for the interchangeable association of heel plate blocks formed from deformable material with the recessed heel portion 11 of the last. When the heel portion of the last, or the heel plate block of the present invention, is of material penetrable or deformable by nails or tacks, use requirements of the facility are met through the provision of a hard metal plate 21 smoothly overlying the exposed surface of the heel portion, and such construction is within the contemplation of the invention to turn and clinch the points of fasteners driven against the exposed surface of a heel plate block in use position on the last. To slidably associate a heel plate block 14' of deformable material in filling relation

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with the recess, or notch, of the last, an integral, beveled rib 22, essentially equivalent to the rib 19, may be formed to upstand from and centrally and longitudinally of the seat plane 13 of the recess, or notch, for coaction in the manner above described with a complementary beveled slot 23 longitudinally and centrally intersecting the base plane 18 of the block to open through the rearward end of the latter, and the areas of said seat and base planes at the sides of said rib and slot adapted for slidable interengagement are desirably faced with hard metal plates 24 and 25, respectively, secured to their associated elements in a manner to protect the latter against deformations incident to use of the last.

As should be manifest, the provision of the recess, or notch, in the heel portion 11 of a conventional last in interchangeable association with heel plate blocks of a varying thickness and contour marginally conformable with the last surfaces interrupted by the recess, or notch, adapts the full range of conventional shoe lasts for the production on each thereof of shoes differing as to heel height, all without alteration of the arch and sole contour established by the last, without significant variation in the customary techniques of shoe production, and with notable economy of equipment.

Since changes, variations, and modifications in the particular form, construction, and arrangement of the elements shown and described may be had without departing from the spirit of my invention, I wish to be understood as being limited solely by the scope of the appended claims, rather than by any details of the illustrative showing and foregoing description.

I claim as my invention:

1. A shoe last having a heel portion formed with a laterally and rearwardly opening notch interrupting the sole area thereof, and a heel plate block slidably shiftable relative to and interchangeably engaged within and to fill said notch.

2. A shoe last having a heel portion formed with a laterally and rearwardly opening, angular notch interrupting the sole area thereof, and a heel plate block conformably registrable with the last areas intersected by said notch slidably shiftable relative to and interchangeably engaged within and to fill the latter.

3. A shoe last having a heel portion formed with a laterally and rearwardly opening, angular notch interrupting the sole area thereof, a heel plate block conformably registrable with the last areas intersected by said notch slidably shiftable relative to and interchangeably engaged within and to fill the latter, and a contoured sole area on said heel block complementing that of the last.

4. A shoe last having a heel portion formed with a laterally and rearwardly opening notch interrupting the sole area thereof, a heel plate block interchangeably engaged within and to fill said notch, and means slidably intercoupling said heel portion and block for separatory shift of the latter longitudinally and rearwardly of the last.

5. A shoe last having a heel portion formed with a laterally and rearwardly opening, angular notch interrupting the sole area thereof, a heel plate block conformably registrable with the last areas intersected by said notch interchangeably engaged within and to fill the latter, and means slidably intercoupling said heel portion and block for separatory shift of the latter longitudinally and rearwardly of the last.

6. A shoe last having a heel portion formed with a laterally and rearwardly opening, angular notch interrupting the sole area thereof, a heel plate block conformably registrable with the last areas intersected by said notch interchangeably engaged within and to fill the latter, a contoured sole area on said heel block complementing that of the last, and means slidably intercoupling said heel portion and block for separatory shift of the latter longitudinally and rearwardly of the last.

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7. In a shoe last having a heel portion, means adapting the last for the production thereon of shoes of different heel heights, said means comprising a notch interrupting the sole area of said heel portion formed in said last to open laterally and rearwardly thereof, and a heel plate block of appropriate thickness slidably shiftable relative to and interchangeably engageable within and to fill said notch.

8. The organization according to claim 7, wherein said notch laterally and rearwardly intersects the last heel portion from a plane transversely of and through the last sole area at the zone of maximum concavity thereof.

9. The organization according to claim 7, wherein said block is conformably registerable with the last areas intersected by said notch when in seated relation therewith.

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10. The organization according to claim 7, wherein said heel block is contoured to a sole area complementary to that of the last.

11. The organization according to claim 7, wherein said notch and heel plate block are adapted for sliding coaction in a direction longitudinal of the last.

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