Dec. 31, 1929. P. J. WENTWORTH 1,741,747

PROCESS OF MAKING SHOES

Filed Nov. 18, 1926

Fig. 1

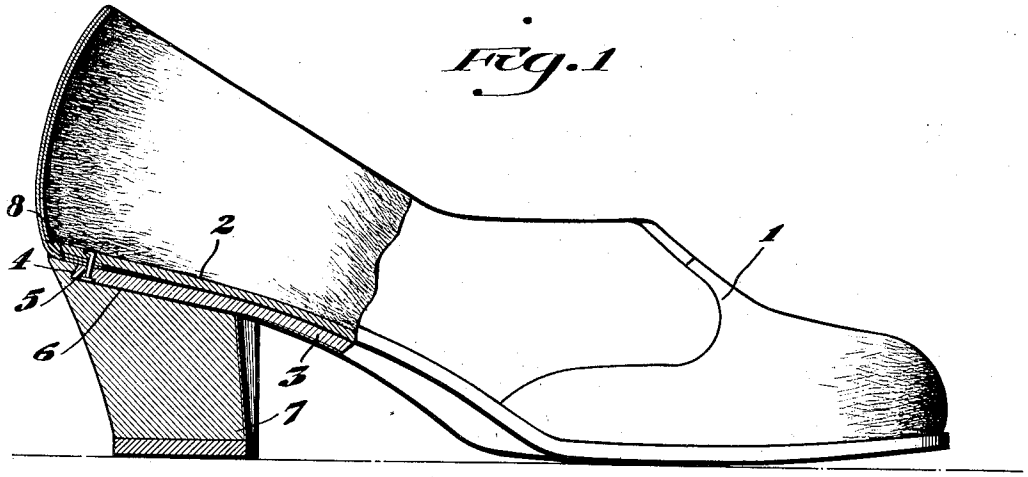
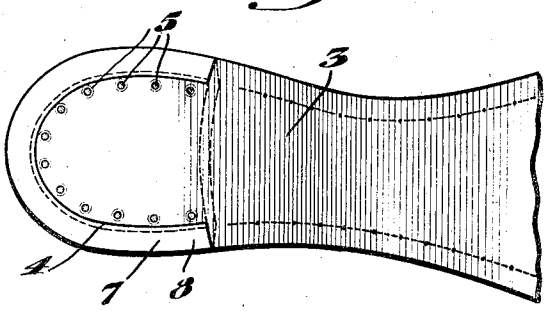


Fig. 2



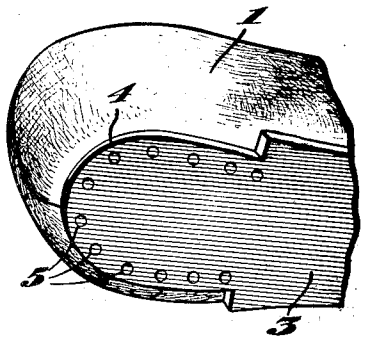


Fig. 3

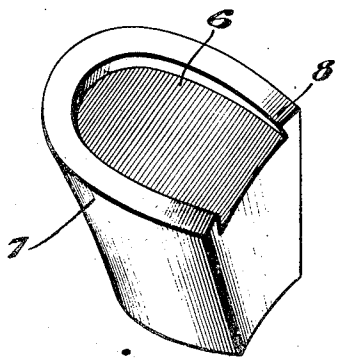


Fig. 4

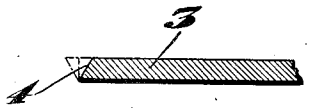


Fig. 5

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Patented Dec. 31, 1929 1,741,747

UNITED STATES PATENT OFFICE

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PROCESS OF MAKING SHOES

Application filed November 18, 1926. Serial No. 149,234.

The invention relates to an improvement in shoes and particularly to the structure of a joint for connecting a solid or integrally formed heel, as a wood heel, to the heel seat of the upper or to a heel portion of the outer sole and to the structure of the heel for keying the same in position or place and to the method of making the shoe to provide for keying the heel to the heel seat or heel portion of the outer sole.

An object of the invention relates to the method of rigidly securing a wooden or like solid heel to the heel seat of the shoe upper by securing the heel portion of the outer sole with tacks disposed in a row following the heel outline of the upper, trimming the heel portion of the outer sole marginally for a socket engagement into the heel and forming its edge to interlock with the socket wall of the heel marginally securing the heel to the shoe.

Another object of the invention is to provide a shoe having a heel interlockingly engaged with the heel portion of the outer sole, the heel portion of the outer sole being of full sole material thickness and socketed into the heel.

Another object of the invention is to provide a shoe heel with a socket in its head portion for securing the same rigidly to the heel seat of the heel.

Further advantages and features of the invention will be more fully set forth in a description of the accompanying drawings, in which:

Figure 1 is a side elevation of a shoe with the rear or heel portion thereof containing the invention shown in section.

Figure 2 is a plan view of the heel and heel portion of the outer sole with the shoe upper and insole removed, and a row of tacks or fasteners securing the outer sole, heel seat margin of the upper, and inner sole shown in section.

Figure 3 is a perspective view of the heel portion of the shoe before the heel is applied.

Figure 4 is a perspective view of the improved heel.

Figure 5 is a central section of the heel portion of the outer sole, illustrating in dotted lines, several different ways in which the edge of the material can be cut.

In the prevailing use of high heels, principally for ladies' shoes, the employment of wooden heels either covered or otherwise surface finished is very predominant as they provide a solid heel comparatively light in weight, which can be readily machined to the desired style and design, and smoothly surface finished by covering or lacquer coating the exposed surfaces. The solid wooden heel also provides for securely mounting a base lift of leather or other material for wearing purposes, but difficulty has been encountered in substantially securing the heel in place to the shoe or heel seat of the upper, and particularly about its heel seat margin.

Usually on account of the curvature of the heel, particularly in French heels, it necessitates considerable under cutting from the upper edge of the heel to give it the desired curvature. This is very weakening to its seat margin, and reduction in its depth along its outline from the heel breast rearwardly preventing the use of metallic fasteners or tacks, which cannot be driven into the heel along its margin without splitting the wood. Consequently, the custom prevails to drive nails or screws centrally into the heel through the inner sole and outer sole and rely upon an adhesive for securing the margin to the heel. The adhesive does not provide a permanent or secure fastening, the heel being readily pulled from the leather seat when the shoe is worn so that all the lateral strains to which the heel is subjected is exerted upon the central fastening means, which under the increased leverage of a high heel soon loosens, destroying the intactness of the heel, whereupon the heel is readily kicked off.

With the present invention a very substantial marginal anchorage of the heel to the outer sole is obtained. The outer sole for its entire heel area is of its full sole thickness and imbedded into the heel and in turn marginally secured by tacks or other fasteners to the lasted margin of the upper and counter, and to the inner sole when an inner sole is employed, aside from any other central fasteners which may be additionally in-

cluded, although not necessarily disclosed herein.

Further, the edge of the heel can be brought very snugly against the upper providing a finish very desirable for high quality shoes. The use of the shoe sole thickness at the heel, enables the use of a thinner or lighter weight insole, as the insole is not required to provide the necessary foundation of securing the heel. With a lighter insole a more flexible shoe is obtained with no reduction to the stability of the shoe at the shank or heel portion thereof over the older methods of making shoes.

Referring to the drawings, 1 indicates a shoe upper which at the heel portion may include a stiffening counter, 2 an inner sole, and 3 an outer sole. Any of the various methods employed in shoe making may be practiced for securing the outer sole, inner sole and upper from the shank portion forwardly, the type of shoe herein illustrated representing a McKay method, which, however, is immaterial to the present invention, the invention being only concerned with the shoe heel structure and method of applying the same. The shoe shown incorporates an insole, but the invention is equally applicable in shoes without insoles.

The upper in lasting, has its seat edge marginally turned over the insole as is common in lasting shoes, and may be secured thereto in any approved manner. The outer sole is cut to reduce its heel area and offset its edge, but of appropriate heel design outline following the outline of the heel seat of the shoe as shown in Figure 3. The edge 4 may be cut or trimmed so as to present a dove-tail formation, thus inclining the edge inwardly, as indicated in the full lines, Figure 5, or it may be cut with a square edge or inclined or tapered outwardly as shown in dotted lines in said figure. This reduced heel portion of the outer sole is of the full material thickness of the outer sole, and is not reduced by skiving or champering as now generally practiced to form a rounded or concave heel seat.

The sole for the outline of the heel is marginally secured to the upper and insole by a row or line of tacks or other equivalent fasteners 5, which aside from securing the heel portion of the outer sole to the upper, provides a reinforcement for the bounding edge. In practice it is preferred that such row of tacks be applied before the heel portion is cut to its appropriate heel outline and offsetting its edge from the heel breast line. The tacks in the process of trimming forming a guide so that the trimming substantially corresponds to the outline of the tacks, or to the outline of the heel portion of the shoe. The mechanism and method of trimming forms the subject matter of a separate application Serial No. 155,520 filed Dec. 17, 1926, so that no further elaboration thereof is made herein.

As illustrated in Figure 4, the upper surface or face of the wooden heel 7 is routed out or recessed to provide a socket 6 with the wall surfaces of the socket inclined or corresponding to the edge configuration of the outer sole so as to interlock therewith when the heel is applied upon the sole, marginally anchoring or securing the heel to the outer sole, and which is additionally secured by an adhesive. The outer sole is therefore imbedded into the heel to a substantial depth as may be required to bring the edge of the heel snugly against the upper.

The margin 8 is finished to correspond to the surface of the heel seat against which it contacts.

The dove-tailed form of socket offers a very secure joint or connection and with the engaged parts of a relative dimension necessitating pressure to join the same it will be recognized that a very secure union can be obtained without the use of an adhesive.

The edge wall of the socket being formed with a routing tool ordinarily produces a somewhat roughened surface which is of an advantage when an adhesive is employed as it fills the cavities between the adjacent surfaces of the joined parts and which when hardened serves as a wedge for holding the parts intact. This also relieves the necessity of cutting the parts to an accurate mating fit.

Having described my invention, I claim:

The method of securing a wooden heel to a shoe consisting in providing the top side of the heel with a socket marginally within and of the heel outline, open to the heel breast side, securing the heel portion of an outer sole of full sole thickness to the inner sole and lasted edges of the upper by a row of tacks set in a line corresponding to the outline of the heel portion of the shoe, trimming the heel portion of the outer sole about said line of tacks to an outline corresponding to the socket and to the heel portion of the upper, and engaging and securing said heel portion of the outer sole into said heel socket.

In witness whereof, I hereunto subscribe my name.

PEARL J. WENTWORTH.