Nov. 1, 1927. 1,647,525

J. A. KELLY ET AL

PROCESS OF APPLYING HEELS TO SHOES

Filed March 10, 1925

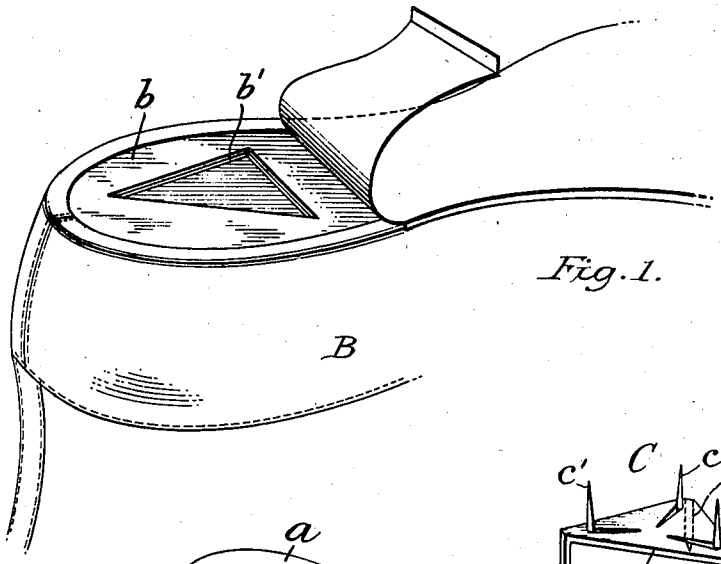


Fig. 1.

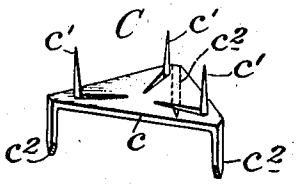


Fig. 4.

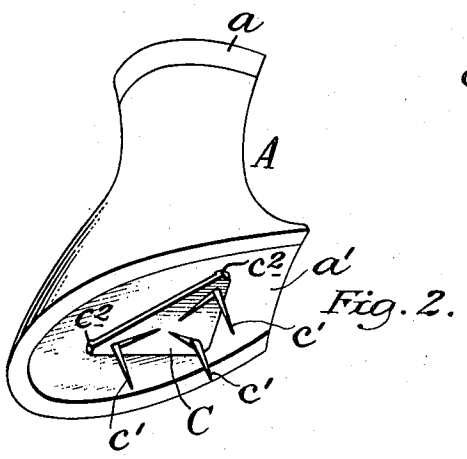


Fig. 2.

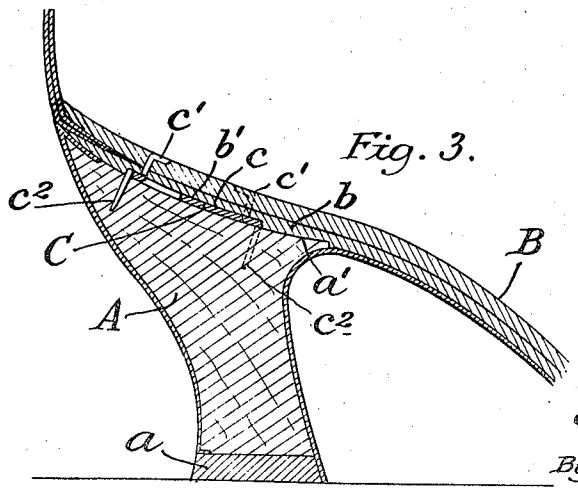


Fig. 3.

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UNITED STATES PATENT OFFICE.

JOHN A. KELLY AND JOHN F. KELLY, OF BROOKLYN, NEW YORK.

PROCESS OF APPLYING HEELS TO SHOES.

Application filed March 10, 1925. Serial No. 14,374.

This invention is a process of uniting a heel to a shoe for the purpose of securing a permanent union between the heel and the shoe and to facilitate such attachment by simplifying the operations and ultimately attaining economy in the procedure.

The heel itself is of that variety known in the trade as a prepared unitary article of a desired form, such as a wooden or molded heel of a particular configuration and finish, i. e. a "Louis 14th" heel; but it is to be understood that this reference to a heel of a particular variety is only illustrative of the invention, and such reference is not to be understood as limiting the invention to the utilization of a particular form of heel.

Our invention embodies a mode of procedure, as well as the article itself, wherein the heel, a fastening means, and the shoe are assembled into the desired relation, and the union is effected by the application of forcible pressure to the heel and the shoe, as a result of which the components (heel and shoe) are by pressure forced into intimate physical contact and the fastening means are upset and clenched by a single operation, and thus the heel is so firmly attached that it cannot be dislodged in the ordinary service of the shoe.

According to the invention, the heel seat of the shoe is provided with a depression by a molding operation, and the heel itself is provided with a metal fastening in the form of a flat plate having prongs, said fastener plate corresponding to the depression of the heel seat. The heel with the metal fastener and the shoe with the depression are assembled in the required positions relatively to each other, and thereafter pressure is applied forcibly to the heel and to the shoe so as to press the heel into intimate physical contact with the shoe and to force the prongs of the metal fastener through the material of the heel seat and finally to clench or upset said prongs on the inner face of the shoe.

Other functions and advantages of the invention will appear from the following description taken in connection with the drawings, wherein—

Figure 1 is a perspective view of a portion of a shoe with the depression molded in the exposed face of the heel seat.

Figure 2 is a perspective view of the heel prior to its assemblage with the shoe.

Figure 3 is a sectional view of the attached heel and the shoe.

Figure 4 is a perspective view of one form of metal fastener.

The heel A is of any desired form and material. It is shown as a prepared article, composed usually of wood with a lift a and a depressed face a'. The heel is usually the so-called "French" or "Spanish" heel having a tapering form in the body with an expanded upper portion, but the size, shape and material may be changed as desired.

The shoe B is provided as usual with a heel seat b; in this instance, said heel seat is provided with a countersink or depression b' of a desirable shape and size. As shown, the heel seat is constituted by a composition filler to attain a desired level, and in the filler is the countersink b' which is produced by the operation of an appropriate die. The countersink or depression b' is shown as triangular, and the depth thereof is equal substantially to the thickness of the plate c which forms the body portion of the metal fastener C.

Said fastener comprises the flat metal plate c, a plurality of prongs c' extending in one direction from the plate, and desirably other prongs c^2 extend in an opposite direction from the plate. The plate c corresponds in shape and dimensions to the countersink b' in the heel seat, whereas the thickness of plate c corresponds substantially to the depth of the countersink. The prongs c' are formed by cutting or punching the metal of the plate and bending the prongs at substantially a right angle, whereas the other prongs c^2 are provided at the several corners of the plate. The metal fastener C is positioned within the depressed face a' of the heel, said fastener being fixedly attached to the heel by forcing the prongs c^2 into the material of the heel, although the fastener may be attached to the heel by any other appropriate means.

The fastener having been attached securely to the heel in the procedure employed for preparing the materials for assemblage in a shoe factory, and the countersink having been formed by the die acting against the material of the heel seat b, the shoe and the heel are assembled for the expanded face a' of the heel to cover the heel seat b, with the fastener C opposite to or within the countersink b'. Pressure is now applied to the heel and to the shoe by suitable mechanical appliances, and by such pressure the heel is forced into intimate physical contact with

the shoe over the entire area of the heel seat, and at the same time the plate c of the metal fastener is forced into the countersink b', so as to bring the metal plate into a flush relation with the surface of the heel seat, and also at the same time the prongs c' of the metal fastener are forced through the material of the heel seat and the ends of such prongs are upset and clenched against the inner face of the shoe, see Figure 3.

Prior to the application of pressure to the heel, it may be desirable to apply to the surface a' of the heel, or to the surface of the heel seat b, a suitable adhesive, and under the compressive force applied to the heel and the shoe, this adhesive is spread uniformly over the opposing faces a' b of the heel and the heel seat, so as to effect an intimate union of the heel to the shoe.

The countersink in the heel seat is desirable for the reason that it affords a guide for the assemblage of the heel with the attached metal fastener in accurate relation or with precision to the heel seat, and said countersink receives the plate of the metal fastener upon the union of the heel to the shoe, with the result that the plate and its prongs reduce the strain on the adhesive attachment of the heel to the shoe and minimize the lateral displacement of the heel to the shoe, and effectively prevents the undesirable and common separation of the rear edge of the heel from the shoe which is so objectionable in shoes with ordinary "French" or "Spanish" heels. In some instances, however, the countersink may be omitted and the plate of the metal fastener embedded in the heel seat by the pressure employed for the attachment of the heel. Again holes may be provided in the heel seat b opening into the countersink for the reception of the prongs c', but these holes may or may not be used, hence we have not deemed it necessary to illustrate the same.

Having thus fully described the invention, what we claim as new and desire to secure by Letters Patent is:

1. In the art of making shoes, the process which consists in countersinking a cavity in the heel seat of a shoe upper and within the boundary lines of said heel seat, attaching a metal plate to the inner surface of a heel, said plate being provided with prongs and said plate conforming in shape and thickness to the cavity aforesaid, assembling the heel relatively to the heel seat and with the metal plate in register with the cavity, and forcibly pressing together the heel seat and the heel, whereby the surfaces conform one to the other and the metal plate is forced under pressure into the cavity, the prongs of said metal plate being forced into and clenched against the heel seat, to effect the permanent union of heel and heel seat and to preclude displacement of the rear edge of the heel with relation to the corresponding edge of the heel seat.

2. In the art of making shoes, the process of attaching a heel to a heel seat of a shoe upper which consists in preforming a cavity in the under surface of the heel seat, affixing a pronged plate to a heel, assembling the heel relatively to the heel seat with the pronged plate in register with the cavity, and applying pressure to the heel seat and the heel for effecting a relative movement between heel seat and heel, whereby the heel seat and heel are conformed on their meeting surfaces, the pronged plate is countersunk in the cavity, and the prongs are clenched against the heel seat.

3. In the art of making shoes, the process which consists in fixedly attaching a metal fastener to a heel, applying an adhesive to the opposing face or faces of the heel and the heel seat of a shoe, bringing the heel and the shoe into intimate physical contact with each other by the application of pressure and concurrently therewith embedding the metal fastener into the heel seat and spreading the adhesive over the opposing faces of the heel and the heel seat.

4. In the art of making shoes, the process which consists in countersinking a cavity in the heel seat of a shoe, attaching a metal fastener to a heel, assembling the heel and the shoe for the metal fastener to register with the countersink cavity, and applying pressure to the heel and the shoe.

5. In the art of making shoes, the process which consists in countersinking a cavity in the heel seat of a shoe, attaching to a heel a metal fastener provided with prongs, assembling the heel and the shoe for the fastener to register with the cavity, applying pressure to the heel and the shoe, and concurrently therewith clenching the prongs within the shoe.

In testimony whereof we have hereto signed our names this 9th day of March, 1925.

JOHN A. KELLY.
JOHN F. KELLY.