M. L. DODGE.

METHOD OF MAKING TURN SHOES.

APPLICATION FILED DEC. 22, 1919. RENEWED AUG. 15, 1922.

1,430,157. Patented Sept. 26, 1922.

Fig. 1.

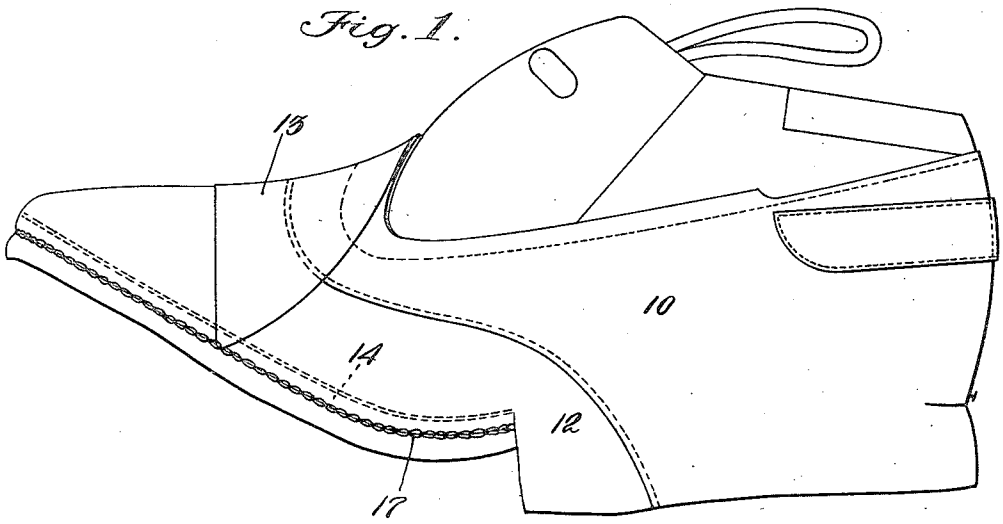


Fig. 2.

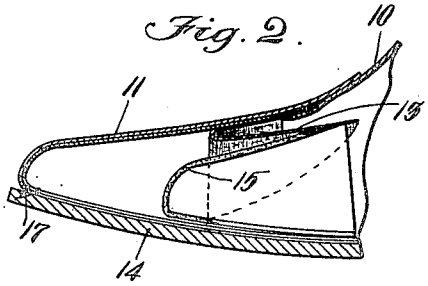


Fig. 3.

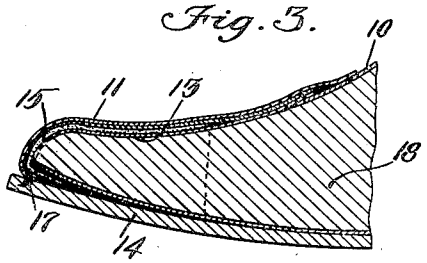
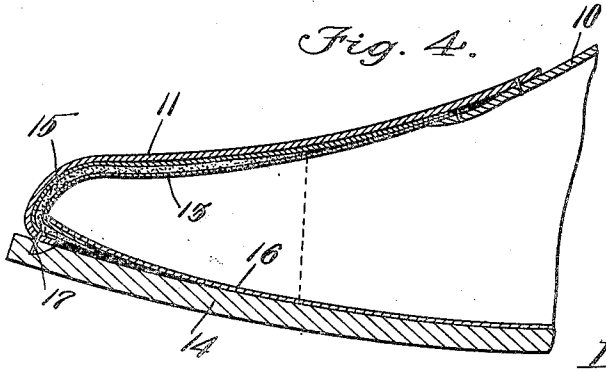


Fig. 4.



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UNITED STATES PATENT OFFICE.

MILTON L. DODGE, OF NEWBURYPORT, MASSACHUSETTS.

METHOD OF MAKING TURN SHOES.

Application filed December 22, 1919, Serial No. 346,543. Renewed August 15, 1922. Serial No. 582,069.

To all whom it may concern:

Be it known that I, MILTON L. DODGE, a citizen of the United States, residing at Newburyport, in the county of Essex and State of Massachusetts, have invented new and useful Improvements in Methods of Making Turn Shoes, of which the following is a specification.

This invention relates to the art of manufacturing turn shoes, and has for its object the provision of a shapely shoe, as well as a reduction in the time required for the complete manufacture thereof. More particularly the object of the invention is to provide a method or process of manufacture by which in the making of turned shoes, a toe box may be employed which is made of such material that it may be initially moulded to approximately the shape desired, inserted in place, then softened and moulded into the final shape desired and at the same time caused to adhere to the walls of the toe without other adhesive than that used as a stiffening agent.

On the drawings,—

Figure 1 shows a turn shoe at one stage in the process of lasting with the lining for the toe box turned back.

Figure 2 shows a section of the toe of the shoe after the lasting operation is completed and the shoe turned and illustrating the toe box in one stage of being inserted into the toe.

Figure 3 shows the lining in place and the last inserted to give the toe box its final shape.

Figure 4 shows the completed article with a filler in the bottom of the shoe.

In order to accomplish the objects named above, the toe box blank is made of fibrous material such as felt, and may be saturated with a stiffening agent which can be softened by a moderate degree of heat. I preferably use for this purpose such hydrocarbons as asphalt, gums or resins, which are hard when cold but which may be softened by the application of a moderate degree of heat. In forming the toe box of this material, I take a blank of the required shape, soften it by heat sufficiently to permit of its being readily moulded. I then mould the blank into approximately the shape desired and insert the box in its initial form into the toe of the shoe, after the shoe has been turned. A last is then inserted in the shoe, and I then heat the box again so as to soften the stiffening material and so that it will be moulded to the final or desired shape by the toe end of the last.

In course of this second heating and shaping the stiffening agent is caused to exude more or less from the felt and forms an adhesive binder whereby the toe box is caused to adhere to the leather of the toe and to the lining. The box is permitted to cool and set.

Describing the process in connection with the accompanying drawings; the upper 10, the toe cap 11, the lining 12, and the sole 14 are assembled in the usual manner of making turned shoes. In stitching the upper to the sole in lasting the shoe, the toe end 13 of the lining is folded back as shown in Figure 1, and the rest of the lining is stitched in to the sole along with the upper as shown at 17, after this operation is completed, the shoe is turned right side out with the toe lining still in its turned back position.

The toe box 15 which has been previously shaped in its initial form is then inserted in place and the toe lining 13 inserted within the toe box. After the last 18 has been inserted the toe box is then heated to a moderate degree and softened and given its final shape. The box is then allowed to harden in this shape, the last removed and a filler 16 inserted in the completed shoe.

So far as I am aware no turned shoe has been made in which the toe box has been initially formed to an approximate shape of material, which may be softened at a moderate degree of heat, and then moulded into the precise shape after being inserted into place in the toe. The advantage and facility of making a toe box after this manner is readily apparent and the advantage of moulding to form after insertion, greatly facilitates the finishing of the shoe.

While I have described a stiffened box which may be softened by heat, it is evident that a stiffening agent may be employed which is softened by the use of a suitable solvent, such for example, as pyroxylin celluloid, shellac or their equivalents, which may be softened by immersion in alcohol. In such case the moulded box may be treated with the solvent immediately before it is inserted in the toe of the shoe, or after it has been properly located in the shoe.

Having thus explained the nature of my said invention and described a way of making and using the same, although without

attempting to set forth all of the forms in which it may be made or all of the modes of its use, what I claim is:

1. The method of making a turned shoe, which consists of taking a blank of flexible material treated with a stiffening agent adapted to be softened, shaping it into approximately the shape desired, locating the same in the toe of the shoe, softening the stiffening agent, shaping the box upon a last of the desired shape inserted into the shoe, and allowing the box to harden and then withdrawing the last.

2. The method of making turned shoes which consists in stitching the upper to the sole, turning the shoe right side out, forming a toe box from a fibrous blank stiffened with an agent which is adapted to be softened, moulding the toe box to approximately the shape desired, inserting the same into the toe of the shoe, softening the stiffening agent and moulding the box to the shape desired upon a last of the proper shape inserted into the shoe and cementing the box to the upper and sole by allowing the box to harden and then withdrawing the last.

3. The method of making turn shoes comprising stitching the upper and the lining to the sole, the toe lining being turned back and unattached, turning the shoe, the toe lining remaining turned back, forming a toe box from material which softens under a moderate degree of heat, heating the same and forming to approximately the shape desired, inserting it into the toe of the shoe, turning the toe lining into the box and heating the box again sufficiently to soften it and shaping the toe box in place upon a last of the shape desired.

4. The method of making turn shoes comprising stitching the upper and lining to the sole with the toe lining turned back and unattached, turning the shoe right side out, inserting into the toe of the shoe an initially moulded box of fibrous material stiffened with an agent adapted to be softened, turning the toe lining into the toe box, softening the stiffening agent and causing it to exude from the fibrous material, moulding the toe box to the shape desired by a last inserted in the shoe and thereby causing the exuded stiffening agent to adhere to the upper and lining of the shoe to retain the box in place, allowing the toe box and its stiffening agent to set and to harden, and then withdrawing the last.

5. The method of making turn shoes comprising stitching the upper and lining to the sole with the toe lining turned back and unattached, turning the shoe, heating a blank of fibrous material impregnated with a stiffening agent fusible at a moderate temperature, shaping the blank into a toe box of approximately the form desired, inserting the box so shaped into the toe of the shoe, heating sufficiently to soften the stiffening agent and to cause it to exude from the fibrous material and adhere to the shoe lining and upper, and shaping the toe box to the form desired about a last inserted for the purpose, allowing the toe box to harden and withdrawing the last.

6. The method of making a turned shoe which consists in inserting into the stitched shoe a previously molded blank of material containing an adhesive stiffening agent, and locating said blank within the shoe, and then heating and softening the adhesive agent and causing it to adhere to the upper and lining of the shoe so as to retain said blank in place.

In testimony whereof I have affixed my signature.

MILTON L. DODGE.