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E. E. WINKLEY

METHOD OF MAKING SHOE BOTTOMS

Original Filed May 11, 1916

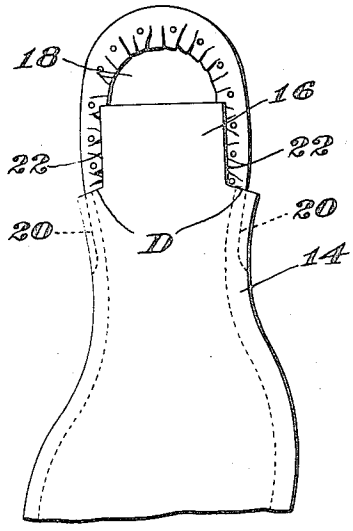


Fig. 2

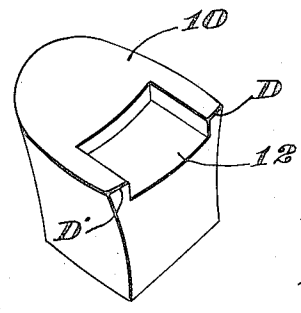


Fig. 1

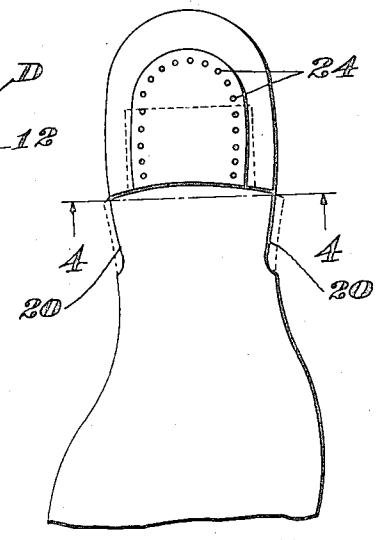
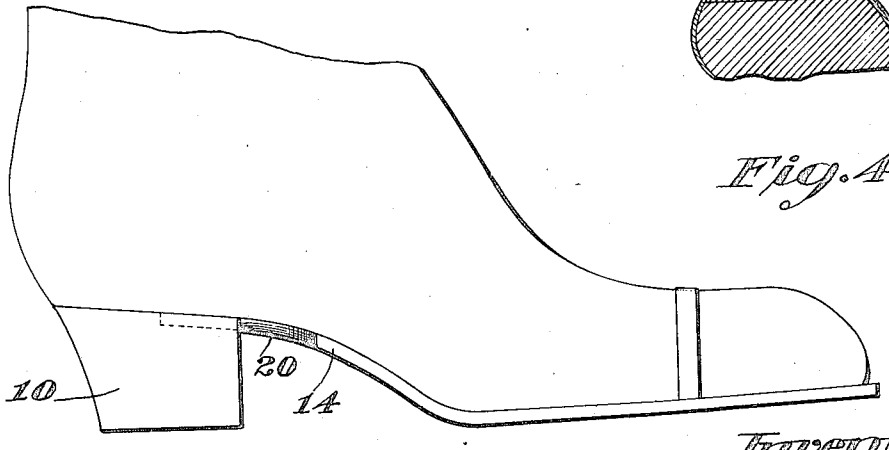


Fig. 3

Fig. 5



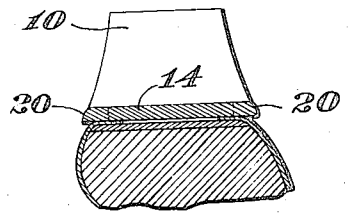


Fig. 4

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UNITED STATES PATENT OFFICE.

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METHOD OF MAKING SHOE BOTTOMS.

Original application filed May 11, 1916, Serial No. 96,781. Divided and this application filed April 7, 1920. Serial No. 371,917.

To all whom it may concern:

Be it known that I, ERASTUS E. WINKLEY, a citizen of the United States, residing at Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Methods of Making Shoe Bottoms; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to methods of making shoe bottoms, and it has special reference to methods of manufacturing products of this character comprising attached outsoles and heels.

Customarily, the shank-edge trimming operation is performed on a shoe after the heel has been secured in place, by means of a rotary trimming-cutter, and, in order to bring the trimming-cuts up to the breast of the heel, it is necessary to perform subsequently what is known as a "heel-jointing" operation, by which the trimming of the shank-edges is completed either by hand or by a special machine for that purpose. This heel-jointing is necessary both because the ordinary rotary trimming-cutter cannot work up into the angle between the sole and the breast of the heel, and because the shank must be trimmed at its rear extremity, in order to produce a good joint and a neat finish, with reference to the finished surfaces of the heel.

One of the objects of the present invention is to devise a simple, inexpensive and expeditious method of making shoe bottoms which shall produce an accurate registry of the heels and outsoles without the necessity of the usual heel-jointing operation. More specifically, it is an object of the invention to provide a method in accordance with which the shank-edges of the outsole are trimmed and beveled to final size and form prior to the application of the heel, and in which the heel is also trimmed to final size and form prior to its application and attachment to the outsole, whereby the shank-edges of the outsole and the lateral surfaces of the heel fit together and accurately register the one with the other so that the usual heel-jointing operation is eliminated.

In practicing this invention in its preferred form, a recessed heel and a short-outsole having a tongue extension to fit with the recess of the heel are employed. The heel is made to final size and form with a recess of predetermined size definitely located thereon and, if desired, the heel may be completely finished and polished. The short outsole, after being attached to the shoe, is trimmed and beveled at the shank to the width of the breast end of the heel and to final size and form and, in some instances, the edge-setting and finishing of the shank-edges is also accomplished before the heel is applied.

In order that the shank-edges of the outsole shall accurately coincide or register with the lateral surfaces of the heel at the juncture of the outsole and heel, the edge trimming-cuts are so gaged as to location and depth that, instead of being determined either by the skill of the operator or by reference to the crease of the shoe, they are prescribed and determined with relation to the orginal outline of the outsole or portion of the heel-end of the outsole, and preferably with relation to a tongue or extension at the rear extremity of the shank, which is preliminarily cut to final size to exactly fit within the heel recess. The shank of the sole is thus trimmed to the exact width of the breast end of the heel. Having prepared the recessed heel and short outsole in the manner and form above described, the heel is positioned on the shoe with the tongue extension fitting closely within the recess of the heel. Thus, the shank-edges of the outsole, having been trimmed and beveled to the proper width and with relation to the tongue and to the location of the recess of the heel, will accurately match or coincide with the lateral surfaces of the heel, giving a smooth joint, without the usual heel-jointing operation.

In applicant's Letters Patent of the United States No. 1,372,058, dated March 22, 1921, of which this application is a division, the method constituting the subject matter of the present application, as well as a machine for automatically performing the shank-edge trimming and beveling operation is disclosed, and the machine is fully illustrated and claimed.

Although, for illustrative purposes, the

present method is described in connection with a shoe-bottom comprising a recessed heel and short outsole having a particular form of tongue extension, those skilled in the art will readily understand that, in its broader aspects, the invention is independent of any peculiarities of size, form and configuration of the component elements of the shoe-bottom, and the method may be practiced advantageously upon recessed heels and short outsoles of various shapes and forms, as well as upon ordinary heels and outsoles of the usual characteristics.

The present invention consists of the method of making shoe bottoms, the preferred manner of practicing which is hereinafter fully described and defined in the appended claims.

The invention will be most readily understood by reference to the accompanying drawing illustrating the preferred manner of carrying out the proposed method, in which:—

Figure 1 is a perspective view of a finally shaped heel; Fig. 2 is a bottom plan view of a lasted shoe to which an untrimmed short outsole has been attached; Fig. 3 is a bottom plan view of a shoe provided with a short outsole that is trimmed and beveled at its shank-edges to register with a heel of final size and form which is suitably attached to the heel-seat of the shoe; Fig. 4 is a sectional view taken on the line 4—4 of Fig. 3 and showing particularly the bevel of the shank-edges of the outsole; and Fig. 5 is a view in side elevation of the shoe shown in Fig. 3.

In accordance with the preferred method of practicing the invention, a heel 10 (Fig. 1) having a definitely located shallow heel-seat recess 12 of predetermined dimensions is trimmed and shaped to final size and form, at least so far as the lateral surfaces are concerned. If desirable, the various usual finishing operations may also be performed upon the heel so as to produce a completely finished and polished heel, ready for attachment to a shoe and requiring no further finishing treatment.

Fig. 2 illustrates a lasted shoe provided with an untrimmed short outsole 14 which has been suitably and permanently attached to the shoe in a definite position with respect to a tongue or projecting portion 16 which extends from the rear extremity of the shank portion of the sole and which lies adjacent and covers a greater or less portion of the heel-seat 18 of the shoe. This tongue 16 is preliminarily cut to its final size and form which corresponds with that of the prepared recess 12 in the heel so that an exact fit, the one within the other, shall be ensured.

The shank-edges 20 of the outsole are then trimmed and preferably beveled to the form indicated in dotted lines in Figs. 2 and 3, in such manner that the rear extremities of the trimming-cuts shall leave the shank-portion of the sole, at its rear extremity, with a contour or outline having an exact relation to the width and location of the tongue 16, and also to the width of the heel 10 across its breast, so that when the previously shaped, and possibly finished, heel is placed on the shoe with the tongue 16 tightly fitting within the recess 12, the lateral surfaces of the heel shall be exactly contiguous and in accurate registry with the trimmed shank-edges of the outsole.

The trimming cuts are located with respect to the side edges 22 of the tongue 16 and at distances D therefrom which exactly correspond to the distances D' from the edges of the heel recess 12 to the lateral surfaces of the heel at the breast end thereof. These trimming cuts may be gaged and produced conveniently by a shank-edge trimming machine such as shown and described in detail in the said patent No. 1,372,058 hereinbefore referred to, although the present invention is independent of the means utilized to effect the trimming and beveling of the shank-edges.

In some instances, it may be found expedient and desirable to perform the usual edge-setting and edge-finishing operations upon the shank-edges at this stage in the process, although these operations may be deferred until later.

Having thus prepared the heel 10 and the outsole 14, the heel is definitely positioned on the shoe by locating the heel recess 12 over and in close fitting relation to the tongue 16, after which the heel is attached to the shoe by a row of nails 24 (Fig. 3) in the usual manner.

In carrying out this method of manufacture or assembly of a shoe bottom, it is clear that the lateral surfaces of the heel at the breast must necessarily coincide or match exactly with the trimmed shank-edges of the outsole, so that no further trimming operations adjacent the heel breast are required. It will be observed that the operation on the outsole thus far has been confined to its shank edges only, for, as shown in Figs. 3 and 5, the forepart of the outsole is still untrimmed and requires trimming and finishing at some later stage in making the shoe. Whatever finishing operations as may be necessary may now conveniently be performed upon the heel or the outsole, or both, as the case may be, in order to give the shoe bottom its ultimate finish and polish. In this way, a shoe bottom is produced in a simple and expeditious manner which obviates the usual heel-jointing operation and which results in perfect registry of the heel and outsole. Furthermore, this method renders it possible and feasible to manufacture and utilize heels that are made "off the

shoe" to final size and form and which, if desired, may be completely finished for subsequent attachment to the shoe. The novel characteristics of heels made off the shoe, and certain novel methods of making such heels, will be found fully described and claimed in my co-pending applications for Letters Patent of the United States, Serial Nos. 213,681 and 213,682, filed January 25, 1918, and renewed June 20, 1923.

Although the invention has been set forth as including a more or less definite sequence of steps, those skilled in the art will readily understand that omissions and variations of some of the steps may be made within the spirit and scope of the invention and, therefore, only such limitations should be imposed as are indicated in the appended claims.

Having thus described the invention and the preferred mode of practicing the same, that which is claimed as new is:—

1. The method of making shoe bottoms comprising an out-sole and an attached heel which includes separately shaping the heel and the shank edges only of the outsole to final size and form, and subsequently shaping the forepart of the outsole and attaching said heel to said outsole.

2. The method of making shoe bottoms comprising an outsole and attached heel which includes finally shaping the breast end of the heel, finally trimming the shank-edges only of the outsole to the width of the breast of the heel, so that the breast portions of the heel and sole will accurately coincide, and subsequently completing the shaping of the outsole and attaching the heel.

3. The method of making shoe bottoms comprising a heel and an outsole having a portion of its heel-seat end of final size and form, which includes shaping the heel to final size and form, trimming the shank-edges of the outsole to the width of the breast of the heel, said trimming being determined with relation to that portion of the heel-seat end of the outsole of final size and form, and subsequently attaching said heel to said outsole.

4. The method of making shoe bottoms comprising a heel and a short outsole having an untrimmed forepart and a heel seat of final width which includes shaping the heel to final size and form, trimming the shank-edges of the outsole to reduce the breast width to the width of the breast of the heel, and subsequently attaching said heel to said outsole to produce a shoe bottom in which the heel and outsole accurately register and the adjoining edges thereof require no further trimming when the forepart is trimmed.

5. The method of making shoe bottoms comprising a heel and a short outsole which includes finishing the heel, trimming and beveling the shank-edges of the outsole to final form, and subsequently attaching the finished heel to said outsole.

6. The method of making shoe bottoms comprising a heel and attached outsole which includes making a heel of final size and form provided with a heel-seat recess at its breast end, making an outsole having an untrimmed forepart and a heel-seat of reduced width to fit in said heel-seat recess, trimming the shank edges of said outsole to the width of the heel at its breast, and attaching said heel to said outsole.

7. The method of making shoe bottoms comprising a heel and a short outsole which includes making a heel of final size and form provided with a definitely located heel-seat recess at its breast end, making a short outsole having a tongue extension at its shank end of final size and form and of dimensions corresponding to those of the heel recess, attaching said outsole to a lasted shoe in definite position relative to said tongue, trimming the shank-edges of the outsole to the width of heel at its breast and with relation to said tongue and said heel recess, and attaching said heel to the shoe with the tongue fitting within the heel recess.

8. That step in a method of making shoe bottoms comprising a heel and outsole, which consists in trimming the shank-edges of the outsole to final size and form prior to the attachment of the heel.

ERASTUS E. WINKLEY.