ABSTRACT OF THE DISCLOSURE

A sewing form for use in hand sewing together a strip vamp and a toe plug off a conventional shoe last. The sewing form has a generally pediform body with a toe plug receiving surface, a vamp receiving surface, and, preferably, a sewing bevel to facilitate the hand sewing operation. The two surfaces are angularly disposed to receive a toe plug and a strip vamp respectively, with the sewing edges thereof in abutting and untensioned relationship. A shoe upper is produced by mounting the upper elements on the respective receiving surfaces of the form and manually sewing the abutting sewing edges together.

BACKGROUND OF THE INVENTION

Experience has shown that there is a decided consumer preference for "moccasin" type shoes in which a toe plug is hand sewn to a vamp. At the present time, the hand sewing operation is performed with the plug and vamp mounted on the shoe last itself. This arrangement requires the U-shaped configuration of the vamps currently employed in the shoe industry to make "moccasins." In order to produce hand-sewn "moccasins" from U-shaped vamps, the vamp must be set up on a relatively wide bottom last and then tackled in position on the smaller upper area of the last. The toe plug is then nailed or tackled to the last so that its sewing edge is approximated to the sewing edge of the vamp. The mounting tacks must be placed in close proximity to the sewing edges of the vamp and toe plug to accomplish proper mating. The repeated tackling of the upper elements to a relatively small surface area of the last significantly reduces the useful life of the last. Furthermore, since the last has a compound surface, the vamp and toe plug frequently must be wetted before mounting to obtain elasticity for mounting. This procedure is time consuming and therefore expensive in terms of the overall shoe making process.

The entire sewing operation requires the use of costly skilled labor. The operation takes a relatively long time because the nails must be pulled and the vamp edges must frequently be trimmed as the hand sewing progresses. The tight fit of the upper elements to the last and the compound surface of the last further hinder sewing progress because the sewing edges are presented at a difficult sewing angle and no room is provided for the passage of the sewing needle and awl. The tensioning of the upper elements often causes the seam on the side of the upper first sewn to be higher than the seam on the other side.

These problems can be obviated by the use of the "strip vamp" moccasin construction disclosed in our co-pending U.S. patent application Ser. No. 698,884, filed Dec. 12, 1967, for "Locked Shoe Construction and Process for Same," and Ser. No. 760,227, filed Sept. 17, 1968, for "Beveled Core Shoe Construction and Process for Same." The disclosures of these applications are hereby incorporated by reference and are made a part of this application. The use of strip vamps enables the hand sewing operation to be performed before the upper is drafted onto the last, and the sewing form of the present invention greatly facilitates this operation.

SUMMARY OF THE INVENTION

In accordance with our invention, the toe plug and vamp of the upper for a "moccasin" are hand sewn on a sewing form. The top of the sewing form has a generally flat toe plug receiving surface and a convenient sewing angle, and is provided downward from the throat area of the form, and the sides of the form define a generally flat, partially slayed vamp receiving surface. The form is normally provided with a conventional metal-sleeved spindle hole for mounting.

In operation, a strip vamp, preferably with its backseam closed, is mounted on the vamp receiving surface of the form and a toe plug is mounted on the plug receiving surface so that the beveled sewing edges of the vamp and plug are mated in abutting and untensioned relationship. The mated sewing edges are then hand sewn together to form an upper which may be subsequently processed to form a completed shoe.

The use of this novel sewing form facilitates rapid hand sewing. The plug and vamp need not be wetted because these upper elements can easily conform to the surfaces of the sewing form in a dry state. The upper elements can be rapidly mounted on the form by spring clips, a double-faced, pressure sensitive adhesive tape, or by nailing the lower portion of the strip vamp to the lower portion of the vamp receiving surface. These mounting means do not damage the operative portions of the sewing form. Furthermore, the regular conformation of the form and the provision of a sewing bevel facilitate sewing so that labor less skilled than that previously required can be used. The elimination of nail pulling and vamp trimming during the sewing operation and the use of less skilled labor results in lower sewing costs and more rapid production.

The form can be rapidly produced and does not require the strength of a last. Unlike lasts, the form requires no hinging means.

Although this invention resulted from our solution to a problem arising in the preparation of hand sewn moccasin type uppers, it should be appreciated that the invention can be advantageously used in the manufacture of uppers for other types of shoes in which fancy stitching on the forepart of the upper is desirable.

The use of several of these inexpensive sewing forms to prepare uppers for further processing on a single last increases shoe production because the last is freed from lengthy sewing operations, thereby increasing the productivity rate for a given number of lasts or decreasing the number of lasts required for any given rate.

It is accordingly a general object of this invention to provide a method of and a sewing form for sewing shoe uppers which significantly reduce the production time and cost of hand sewn moccasin type uppers.

It is another object of this invention to provide a sewing form which can be inexpensively manufactured and is longevous.

It is a further object of this invention to provide a sewing form upon which a toe plug and a strip vamp can be rapidly mounted without wetting the upper elements or nailing them to the form along their sewing edges.

A still further object of the invention is to provide a sewing form which presents the mated sewing edges of the vamp and toe plug mounted thereon in abutting and untensioned relationship at a convenient sewing angle and which is provided with a sewing bevel to facilitate sewing.

Other objects and features and many of the attendant advantages of the invention will become more apparent
as reference is made to the following detailed description when considered together with the accompanying drawings wherein:

FIG. 3 is a plan view of a sewing form according to the invention;

FIG. 2 is a view in side elevation of the sewing form shown in FIG. 1;

FIG. 3 is a plan view of the strip vamp used in the preferred embodiment of the invention;

FIG. 4 is a diagram showing the plug used in the preferred embodiment of the invention;

FIG. 5 is a view in side elevation of an upper sub-assembly mounted on a sewing form and partially sewn; and

FIG. 6 is a view in cross section of FIG. 5 taken along line 6-6.

Turning now to the drawings, and particularly to FIGS. 1 and 2 thereof, there is shown in plan view and side elevation respectively a sewing form constructed in accordance with the present invention and indicated generally by the reference numeral 10. The sewing form has a generally pediform configuration with a toe portion and a heel portion, generally designated by the reference numerals 12 and 14, respectively. In order to provide a reference for the subsequent discussion of the sewing form 10, a center line 16 has been shown in FIG. 1 running between the toe portion 15 and the heel portion 14. Hereinafter, the center line 16 shall be referred to as the longitudinal axis of the sewing form and any axis perpendicular thereto shall be referred to as a lateral axis.

The sewing form 10 has a toe plug receiving surface 18 which slopes gradually and concavely downward in the longitudinal direction from the top surface of the form. It can be seen from an inspection of FIGS. 1 and 2 that the toe plug receiving surface 18 is curved in the longitudinal direction but flat in the lateral direction. Since the sewing form 10 is to be used in conjunction with a strip vamp 20 and a toe plug 22 shown in FIGS. 3, 4 and 5, respectively, the shape of the form is dictated to a certain extent by the shape of the strip vamp and toe plug. For example, the longitudinal curvature of the toe plug receiving surface 18 corresponds approximately to the curvature of a sewing edge 21 on the strip vamp, when the vamp is assembled on the sewing form as shown in FIG. 5. Similarly, the longitudinal and lateral dimensions of the toe plug receiving surface 18 correspond approximately to the dimensions of the toe plug 22.

The sides of the sewing form 10 define a vamp receiving surface 24 that is shaped to conform to the surface of a selected vamp, such as vamp 20, when the beveled sewing edge 21 of the vamp is mated with a corresponding beveled sewing edge 23 of the mating toe plug 22. In order to hand sew the vamp and toe plug illustrated in FIGS. 3, 4 and 5, we have found that the angular disposition of the vamp receiving surface 24 at the toe line 12a of the form should be approximately 115° from the horizontal. The angular disposition should then gradually decrease as the vamp receiving surface 24 progresses away from the toe line 12a until the surface 24 becomes substantially vertical at the ball area 12b. The vertical disposition of the vamp receiving surface 24 continues back from the ball area 12b to the heel portion 14 of the sewing form.

In order to facilitate the sewing of the toe plug 22 to the strip vamp 20, a sewing bevel 26 is preferably provided around at least a portion of the periphery defined by the intersection of the toe plug receiving surface 18 and the vamp receiving surface 24. The sewing bevel 26 slopes approximately 45° from the vertical as best illustrated in the cross-sectional view of FIG. 6. Although the dimensions of the sewing bevel 26 are not critical, we have found that the bevel should be approximately % inch at the toe line 12a and should gradually widen to % inch along the sides for optimum results.

In order to position and properly hold the sewing form
20 and the toe plug 22. These upper elements can then be directly mounted on the sewing form. This mounting procedure eliminates the need for cementing the sewing edges 21 and 23 of the upper elements before they are mounted. In lieu of the double-faced pressure sensitive adhesive tape or in addition thereto, the lower edges of the strip vamp 20 in the upper subassembly 36 can be secured to the sewing form by means of spring clips (not shown).

The toe plug receiving surface 18 and the vamp receiving surface 24 are angularly disposed at angles varying from 115° at the toe line 12a to 90° rearward of the ball area 12b as best illustrated in FIGS. 4 and 5. This configuration causes the sewing edges 21 and 23 to be presented to the sew at a convenient angle while the strip vamp 20 and the toe plug 22 remain in an un tensioned state.

After mounting the upper subassembly 36 on the sewing form 10, the mated sewing edges 21 and 23 of the upper elements are hand sewn. The sewer does not have to pull any tacks or trim the vamp 20 as he progresses. Looking at FIG. 6, it can be appreciated that the sewing bevel 26 greatly facilitates the sewing operation by providing a sufficient sewing space 40 through which the sewing needles can pass between the strip vamp 20 and toe plug 22. If the upper elements in the subassembly 36 are not provided with prepunched thread holes, an awl can also pass through the sewing space 40. A number of stitches can be used to sew the toe plug 22 to the vamp 20. By way of illustration, a locked stitch 42 is shown in FIG. 5 securing the toe plug tab 34 to the strip vamp 20. The sewing operation is completed by the operator stitching around the mated edges to permanently secure the upper elements. Since the upper elements are not tensioned during sewing, a uniform seam is produced around the upper.

The physical parameters of the sewing form 10 can be varied to accommodate different toe plugs and vamps. For instance, separate left and right shoe sewing forms can be employed. However, we prefer that the sewing form be symmetrical about the center line 16 so that uppers for both left and right shoes can be sewn on a single form. The overall longitudinal dimension of the sewing form 10 should be less than the length of the smallest closed strip vamp 20 desired to be sewn, and the lateral dimensions of the toe plug receiving surface 18 should approximate those of the smallest toe plug 22 to be sewn on the form. An overall height of approximately three and one-half inches has been found to be practical for most shoe sizes. However, to be able to sew uppers for a wide range of shoe sizes, it is desirable to use three different sized sewing forms having comparable varying longitudinal and lateral dimensions for small, medium and large uppers.

What we claim is:

1. A sewing form for use in the production of shoe uppers in which a sewing edge of a toe plug is sewn to a corresponding sewing edge of a strip vamp, said form comprising an elongated body having a toe portion which is substantially symmetrical about a longitudinal centerline, said toe portion having a toe plug receiving surface on the top of said toe portion disposed substantially symmetrically about said centerline and a vamp receiving surface on the sides of said toe portion, said surfaces being disposed at discrete angles to each other, said angular disposition being selected so as to receive said toe plug and strip vamp, respectively, with the sewing edges thereof in abutting and tensioned relationship.

2. The sewing form set forth in claim 1 which is further characterized by said angular disposition of said surfaces being approximately 115° at the toe line of said form and said angular disposition being gradually reduced at points progressively remote from said toe line until said angular disposition becomes approximately 90° at the ball area of said form.

3. The sewing form set forth in claim 1 which is further characterized by a sewing bevel provided around at least part of the periphery defined by the intersection of said plug receiving surface and said vamp receiving surface.

4. The sewing form set forth in claim 1 in which said toe plug receiving surface is provided with a preselected longitudinal curvature, said curvature substantially conforming to the curve defined by the sewing edge of said vamp when the vamp is positioned on said vamp receiving surface.

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PATRICK D. LAWSON, Primary Examiner
UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION


Inventor(s) Charles F. Batchelder and Jerome A. Rubico

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 4, line 10, "190°" should be

-- "119°" --

November 3, 1970

(SEAL)

Attest:

Edward M. Fletcher, Jr.
Attesting Officer

WILLIAM E. SCHUYLER, JR.
Commissioner of Patents