May 22, 1956 F. MACCARONE 2,746,176

SLIP LASTED SHOE WITH A THREE SECTION INSOLE

Filed Oct. 22, 1953 4 Sheets-Sheet 1

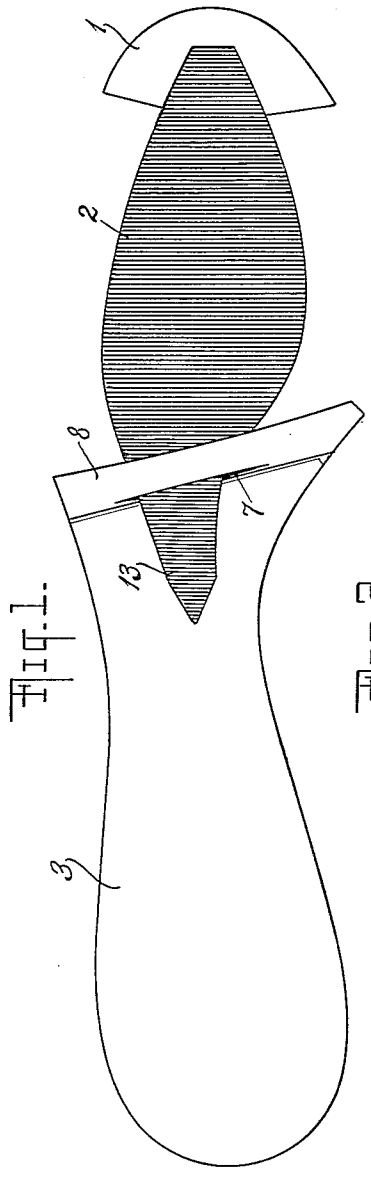


Fig. 1.

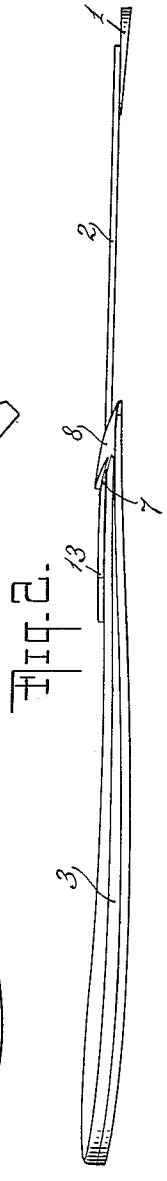


Fig. 2.

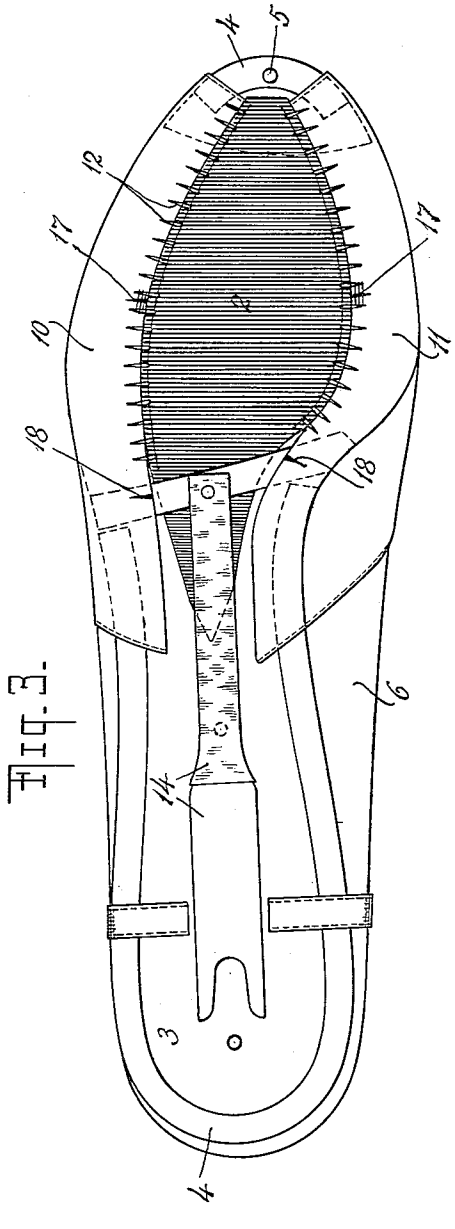


Fig. 3.

INVENTOR.
FRED MACCARONE
BY
Klein & Hart
ATTORNEYS

May 22, 1956 F. MACCARONE 2,746,176

SLIP LASTED SHOE WITH A THREE SECTION INSOLE

Filed Oct. 22, 1953 4 Sheets-Sheet 2

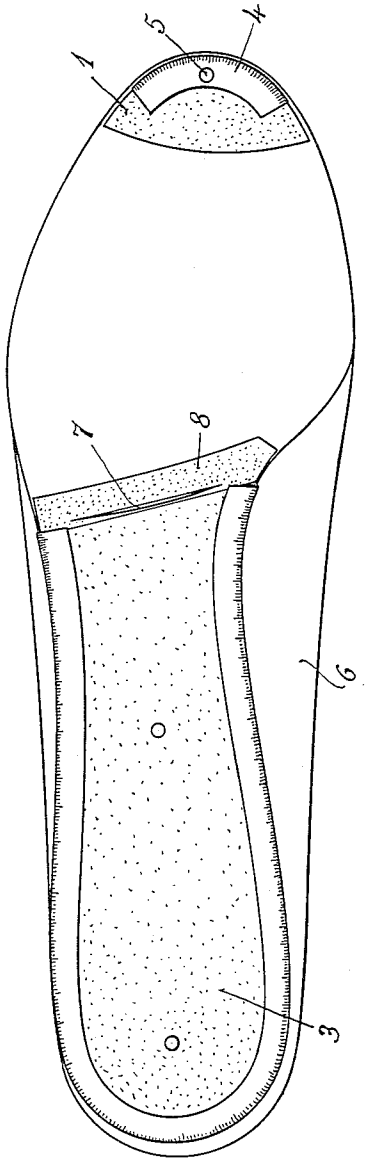


Fig. 4.

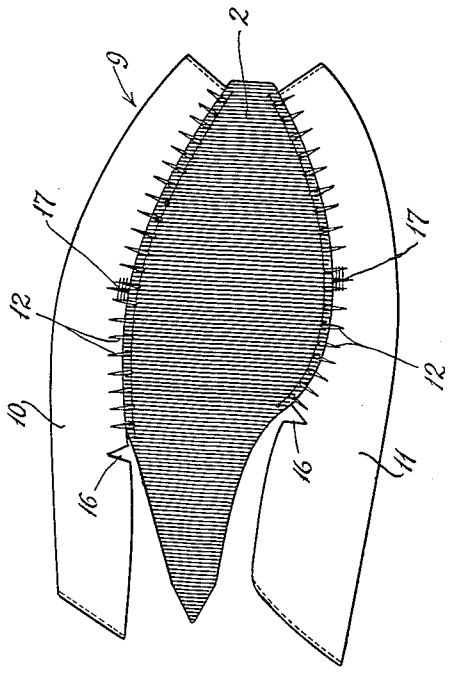


Fig. 5.

INVENTOR.
FRED MACCARONE
BY Klein & Hart
ATTORNEYS

May 22, 1956 F. MACCARONE 2,746,176

SLIP LASTED SHOE WITH A THREE SECTION INSOLE

Filed Oct. 22, 1953 4 Sheets-Sheet 3

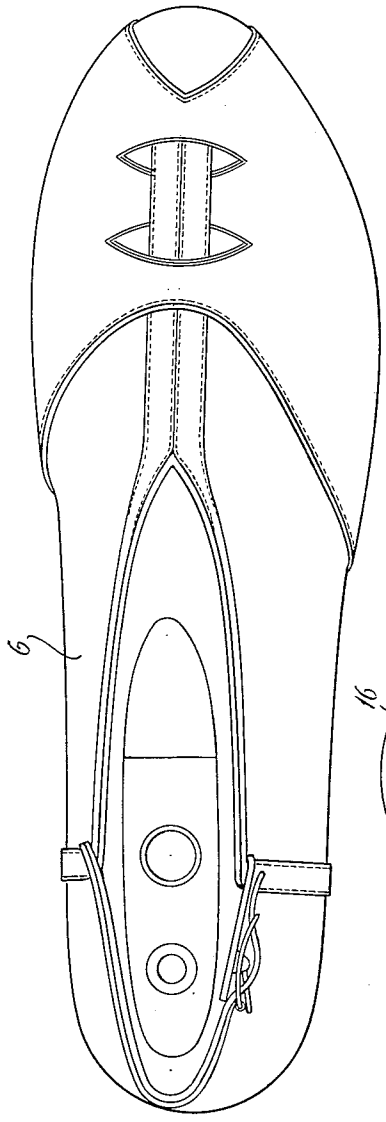


FIG. 6.

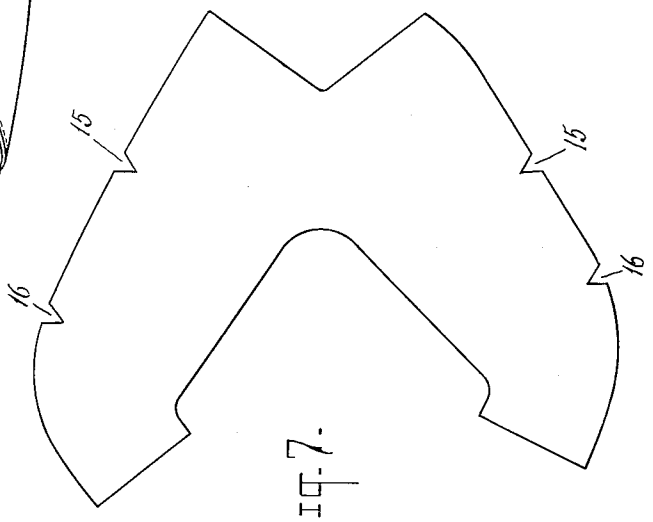


FIG. 7.

INVENTOR.
FRED MACCARONE
BY Klein & Hart
ATTORNEYS

May 22, 1956 F. MACCARONE 2,746,176

SLIP LASTED SHOE WITH A THREE SECTION INSOLE

Filed Oct. 22, 1953 4 Sheets-Sheet 4

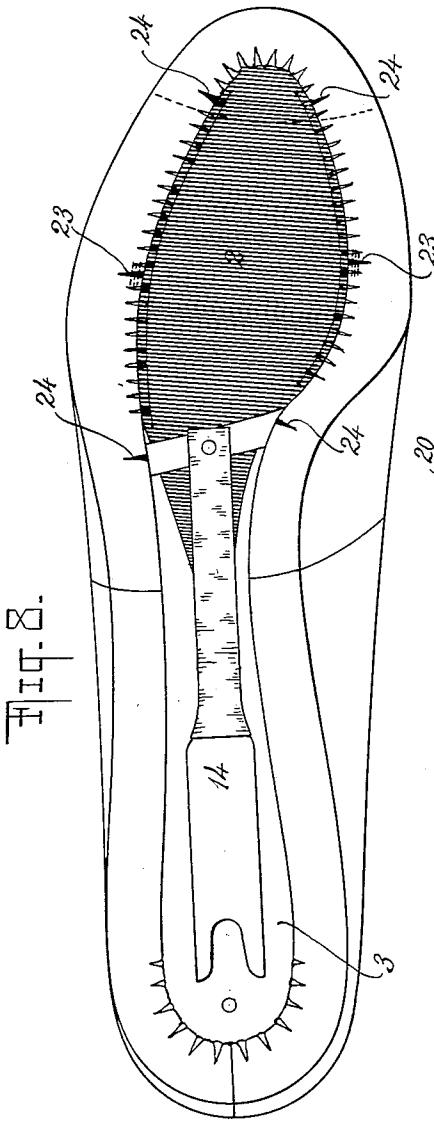


FIG. 5.

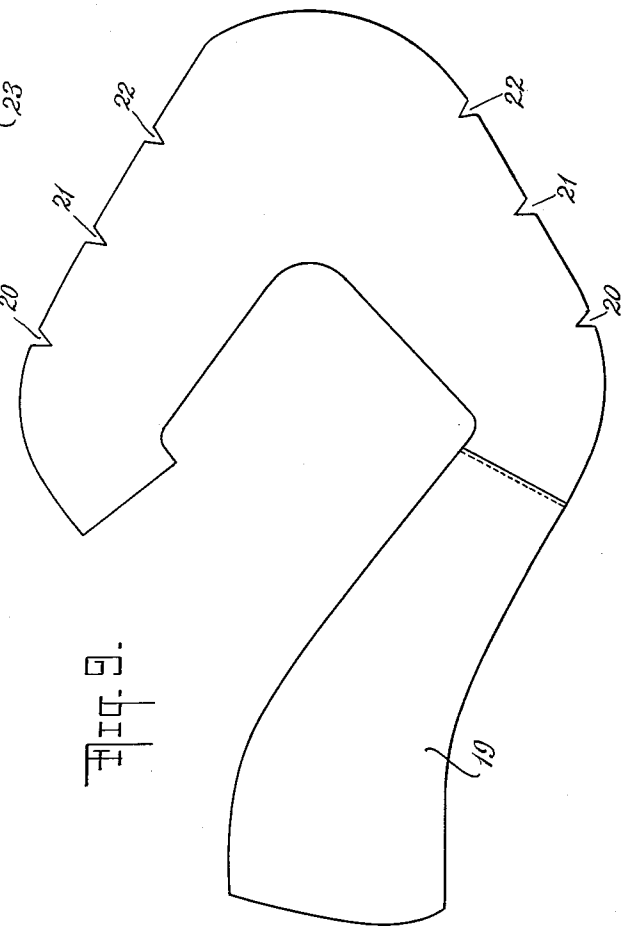


FIG. 6.

INVENTOR.
FRED MACCARONE
BY Klein & Hart
ATTORNEYS

United States Patent Office

2,746,176

Patented May 22, 1956

2,746,176

SLIP LASTED SHOE WITH A THREE SECTION INSOLE

Fred Maccarone, Brooklyn, N. Y.

Application October 22, 1953, Serial No. 387,641

3 Claims. (Cl. 36—12)

This invention relates to shoes and process of making same, and, in certain aspects thereof, relates to improvements upon the shoes and processes of making the same disclosed in my copending application Serial No. 351,933 filed April 29, 1953.

An extensive demand exists for shoes and like articles of footwear which have flexibility across the sole and many suggestions have been advanced for the purpose of increasing such flexibility. There has also been a tendency to restrict the operations carried out in the manufacture of shoes to machinery rather than depending upon the skill of the shoemaker working at the bench.

The object of this invention is to produce shoes and like articles of footwear such as open toe and back and closed shoes, pumps, and related footwear, which have great flexibility in the sole and which because of the simplicity of the parts and their assembly can be readily formed by machinery or by a class of labor now available for shoemaking by mechanical operations rather than by skilled or first class shoemakers. To a large extent standard shoemaking equipment, with which most shoe factories are now provided, may be largely used and, in fact, the major portions of the shoe parts as now produced are utilized without changes. The invention also has a degree of flexibility which permits a number of consecutive shoe sizes to be made by the utilization of this invention.

In the drawings, Fig. 1 represents an assembly of a toe piece, a center piece, and a shoe shank in their relation when built into a shoe;

Fig. 2 a longitudinal side view of Fig. 1;

Fig. 3 an assembly of a shoe last, the parts shown in Fig. 1, and the shoe upper;

Fig. 4 a view of the underside of a shoe last with the shank and toe piece of Fig. 1 attached thereto;

Fig. 5 a plan view of the center piece of Fig. 1 assembled with the lasting allowance of the upper;

Fig. 6 a top view of a finished shoe;

Fig. 7 a top view of a blank which is converted to form the vamp or upper of the shoe;

Fig. 8 the same view as Fig. 3 showing a closed toe shoe and a full back;

Fig. 9 a top view of a blank of a closed shoe which is converted to form the vamp and upper of the shoe with one half of the back of a full shoe secured thereto.

The invention is illustrated in connection with an open toe and a closed toe shoe of a 4B size and the proportions in the drawing are substantially equal to the actual shoes and their parts.

The toe piece 1, the centerpiece 2, and the shank 3, can all be stamped in quantities to the desired size and contour required for the particular size and style of shoe which is to be made. A last of the standard type, representing the size of shoe to be made and for which the parts are cut, is utilized as a form on which to build the shoe. A toe piece 1, which may be provided with the section of binding 4 in making open shoes, is secured

with tacks 5 to the uderside of the last 6 and in its proper relation to the toe portion of the last to form a shoe of the desired size (as illustrated size 4B). The shank 3 which has a standard configuration, which may also be provided with a binding 4 for an open shank and back, is provided near its forward edge with a slit 7 thereby forming a strap 8 which remains integral with the shank body and is secured to the last by the tacks 5. The prepared upper or vamp 9, cut in the usual manner, for the size shoe being made (4B) has secured to the edges of the lasting allowance 10—11 a section of elastic material, with the elastic thread running crosswise, forming the center piece 2. The center piece 2 is cut to a width so that it will be put under tension when assembled with the last. The difference in the crosswise dimensions of the center piece to the shoe size should be sufficient that when these parts are assembled on the last 6 and the last is driven home into the upper, the resilient material will be under tension, drawing on the lasting allowances, on both sides of the upper, to draw them into their proper position with respect to the last; a stretch of about a quarter of an inch has been found to be sufficient when the center piece is positioned on the last. The side edges of the center piece 2 is stitched in its proper position to the side edges of the vamp or upper 9 with over-edge stitches 12, with the abutting side edges of the center piece and lasting allowances lying edge to edge and in flat relation (as shown in Fig. 5) in contradistinction to overlapping. It will be observed that the combination of the lasting allowances and the center piece are a unit and that they have the general contour of that portion of the last which lies between the inner edges of the toe piece and the shank. The combined vamp and center piece are then drawn into position over the last as shown in Fig. 3, the upper portion of the vamp having been initially cut to fit the last 6, the lasting allowance readily assuming its proper position on the last, the center piece 2 stretching and being put under tension to permit the lasting allowance to be drawn into position on the last and when in position to keep it under tension. The forward portion of the lasting allowance will overlap the toe piece, and in an open shoe (Fig. 3), will expose to view the bound edge of the toe piece. The unit formed by the vamp, allowances and center piece can be manipulated, by the shoemaker, while on the last to orient the unit with respect to the toe piece. The end of the center piece nearest the shank is provided with a tongue 13 which is passed under the strap 8 and through the slit 7 when the vamp and the center piece are positioned on the last. The shoemaker can grasp the tongue 13 and draw upon it which tends to assist in positioning the vamp and center piece on the last. The relative positions of the toe piece 1, center piece 2, and shank 3, are illustrated in Fig. 1 and these same parts together with the lasting allowance and the vamp are illustrated in Fig. 3 positioned on the last 6. The shoemaker, when the parts are assembled on the last, will then apply one of the standard quick drying adhesives or cements, used in the shoemaking industry, to the lasting allowance where it engages the toe piece 1 and will also apply such adhesive to the underside of the tongue 13 to adhere it to the shank. A staple may be used to secure the tongue, strap and shank together instead of using adhesive or cement. The shoemaker will then apply the steel shank 14 in its usual place, preferably securing it at the forward edge through the strap 8 and tongue 13 by any known means. The shoe is then ready to receive in the usual manner the usual outsole and heel, the tacks 5 being withdrawn before the outsole and heel are applied. The sole when attached to the shoe by the standard adhesives, cements or otherwise fixes the parts in the shoe in the

same relation as they were formed on the last. The shoe may also be provided with a lining.

The tension of the center piece is uniform and continuous along the edges of the lasting allowance. This tension therefore acts along the entire line of the lasting allowance on both sides and not only takes up slack in the lasting allowance but also pulls the upper uniformly tight on the last.

The elastic material, from which the center piece **2** is formed, is an elastic material which has the capacity of being stretched by the application of manual pull and is preferably of the woven fabric type, having elastic threads incorporated therein during manufacture, which fabric can be stretched by manual pull and will return to its original contracted condition when released. Such a fabric is extensively used in the industries in making garments with elastic sections or gores and is known as elastic fabric with one way stretch. Such one way stretch fabric may be illustrated by the widely known "Lastex" elastic fabrics.

The center piece **2**, although cut to accommodate and fit a 4B size shoe, may be used at least in the two next larger sizes—4½B and 5B, the elasticity of the center piece being sufficient to exert the required tension on the lasting allowances of the two larger sizes, the only requirement being that the center piece stretch to a slightly larger extent.

It is to be observed that the center piece **2** does not extend from side edge to side edge of the last. It is in fact slightly shorter than the distance between the edges of the lasting allowances when on the last. The latter distance should be about one-eighth of an inch on each side of the center piece, which will require the center piece to stretch when the last is inserted and forced home into the combined vamp or upper and center piece. The center piece and allowance are in edge to edge relation, lying flat and substantially in the same plane. This arrangement not only eliminates excess thickness but makes possible the elimination of objectionable gathers and pleats and causes the tension of the center piece to be exerted on the side edges of the lasting allowance drawing them towards each other and exerting a pull on the vamp proper tending to keep it smooth.

It is further to be observed that whereas the toe piece and shank are fixed to the last, which is a replica of the shoe to be made in size and shape, the unit forming the vamp or upper and the center piece are limp and unstiffened when united and consequently can be molded or drawn to the shape of the last when the last is inserted into the unit. The parts of the unit can be manipulated or adjusted by the shoemaker to obtain a proper relation of the unit parts to the last and to the toe piece and shank.

Inasmuch as the unit of center piece and vamp or upper are initially free and unattached or secured to the toe piece or shank, the manipulation of the unit by the shoemaker is entirely free and, as he manipulates the vamp, upper, center piece and last, the center piece automatically readjusts the tension on the vamp, upper, allowances, and center piece.

Such parts are held, as so manipulated and adjusted, by the tension of the center piece. In fact, these parts are finally established in their permanent positions when the outer sole is secured to the lasting allowance.

In the course of the manufacture of shoes as heretofore practiced, the lasting allowance when it is applied to the last must be conformed to the curvature it is to take by taking up the excess material in small folds or pleats. The pleats cause an unevenness which the shoemaker must eliminate as well as possible by flattening the pleats. The elimination of the pleats requires considerable skill and has been the source of annoyance to shoemakers. In order to overcome these objections the vamp and its lasting allowance is cut to the configuration shown in Fig. 7 when making an open toe shoe. Two V-shaped cutouts **15—15** and **16—16** are made in the outer edges of the lasting allowance as shown in Fig. 7. These cutouts at their mouths are about ¼ of an inch wide and 5/16 of an inch deep. The two forward V-shaped cutouts **15—15** have their bordering edges brought together into abutting relation and stitched together as shown at **17** in Fig. 5. These stitches are made before the center piece **2** is attached to the lasting allowance. After the vamp and the center piece are drawn over the last the edges defining the V-shaped cutouts **16—16** are brought together into abutting relation, tacked to the shank and then cemented to the shank. The material eliminated by the V-shaped cutouts **15—16** is sufficient to eliminate the pleats or gatherings, above referred to, and with the tension of the center piece is sufficient to produce a smooth lasting allowance free of gathers or pleats.

When the lasting allowances **10—11** and the center piece **2** are united to form the unit shown in Fig. 5, it is preferred that the edges of the center piece and of the lasting allowance, which are to be stitched together, are laid in overlapping relation and then the over-edge stitching applied. When the stitching is completed the edges can be pulled into abutting relation as shown in Fig. 5 in order that there should be no overlap of these edges but rather that the lasting allowance and the center piece lie in the same plane. The elasticity or resiliency of the center piece permits such parts to be drawn in abutting relation, particularly if the tension on the over-edge sewing machine is not too great.

This invention is also illustrated in connection with a closed toe and full back shoe in Fig. 8. The vamp of a closed toe shoe (the size as shown is 4B) is made as shown in Fig. 9, with two back portions, only one **(19)** of which is shown in Fig. 9. The vamp in this instance is provided with three sets of V-shaped cutouts **20—20**, **21—21**, and **22—22**. The V-shaped cutouts **20—20** and **21—21** correspond to **16—16**, **15—15**, respectively, of Fig. 7 and the cutouts **22—22** are required to eliminate gathers because of the style and added material in the closed toe shoe in contradistinction to the open toe shoe of Fig. 3. The V-shaped cutouts **21—21** are stitched together before the center piece **2** is inserted as shown at **23** in Fig. 8. The operation of making the shoe is the same as heretofore explained.

The edges of the material forming the V-shaped cutouts **20—20** and **22—22** are brought together, as shown at **24**, by hand while the shoe is on the last and tacked in such relation to the last; the shoemaker then applies cement to the cutouts adhering them to the underlying toe piece and shank.

The number and arrangement of the V-shaped cutouts are illustrated in connection with shoes of 4B size of the styles and patterns shown. As the pattern may change, the shoemaker may determine to increase the number of cutouts depending upon his judgment of the amount of excess material to be eliminated.

The V-shaped cutouts will not eliminate the gathers of a closed toe shoe, this being taken care of by the bed lasting machine.

When the blank of the upper is cut as shown in Figs. 7 and 9, the lines along the cutouts **15**, **16**, **20**, **21** and **22** are straight whereas the edges of the center piece are cut on a curve or arc to approximately the curve or arc of the last. Consequently, when these edges are brought together, there is an excess of material in the lasting allowance, which ordinarily forms the objectionable gatherings or pleats. By forming the V-cutouts **15**, **16**, **20**, **21** and **22** the excess material is eliminated and when the edges forming the V-cutouts are abutted and secured together, as heretofore described, the outer lines of the lasting allowances are shortened and conform more generally with the curvature or arc of the center piece.

In this specification and in the claims the words "shoe" and "shoemaking" are intended to refer and include not

only shoes per se but also open and closed toe and back shoes, pumps and related types of footwear.

I claim:

1. A shoe having a bottom unit having a toe piece, a rear part member provided with a generally transverse slit adjacent to its forward extremity, a center piece substantially narrower than the toe piece and the rear part member, the forward extremtiy of the center piece underlying the toe piece and the rearward extremity of the center piece overlying that portion of the rear part member forward of the slit, extending through the slit, and underlying that portion of the rear part member rearward of the slit.

2. A shoe comprising a fitted upper member having a lasting allowance, a center piece narrower than the shoe bottom, the forward portion of the lasting margin of the upper being secured to the center piece in edge-to-edge relation, a toe piece overlying the forward extremity of the forepart member, and a rear part member slitted transversely immediately inside its forward end, the rear portion of the center piece being drawn through said slit and the rear part of the lasting allowance underlying the margin of the rear part member.

3. In a shoe, a fitted upper member having a lasting allowance, an elastic girth stretcher narrower than the shoe bottom secured to the forward portion of the lasting allowance in edge-to-edge relation, and a rear part member having a transverse slit adjacent to its forward extremity, the rear portion of the girth stretcher overlying

that portion of the rear part member forward of the slit, extending through the slit, and underlying that portion of the rear part member rearward of the slit, the rear part of the lasting allowance underlying and secured to the margin of the rear part member.

References Cited in the file of this patent

UNITED STATES PATENTS

204,785	Ballou	June 11, 1878
254,966	Hawkes	Mar. 14, 1882
1,784,806	Fried	Dec. 9, 1930
2,135,170	Cavanagh	Nov. 1, 1938
2,185,993	Haskell	Jan. 2, 1940
2,312,124	Rosenzweig	Feb. 23, 1943
2,361,511	Stritter	Oct. 31, 1944
2,373,264	Russell	Apr. 10, 1945
2,414,204	Kamborian	Jan. 14, 1947
2,428,210	Forslund	Sept. 30, 1947
2,451,570	Lyness	Oct. 19, 1948
2,466,637	Carson	Apr. 5, 1948
2,485,114	Sanchioni	Oct. 18, 1949
2,492,782	Caltabiano et al.	Dec. 27, 1949
2,696,683	Ciaio	Dec. 14, 1954

FOREIGN PATENTS

2,425	Great Britain	1898
320,127	Germany	Apr. 14, 1920
493,544	Belgium	Feb. 15, 1950