

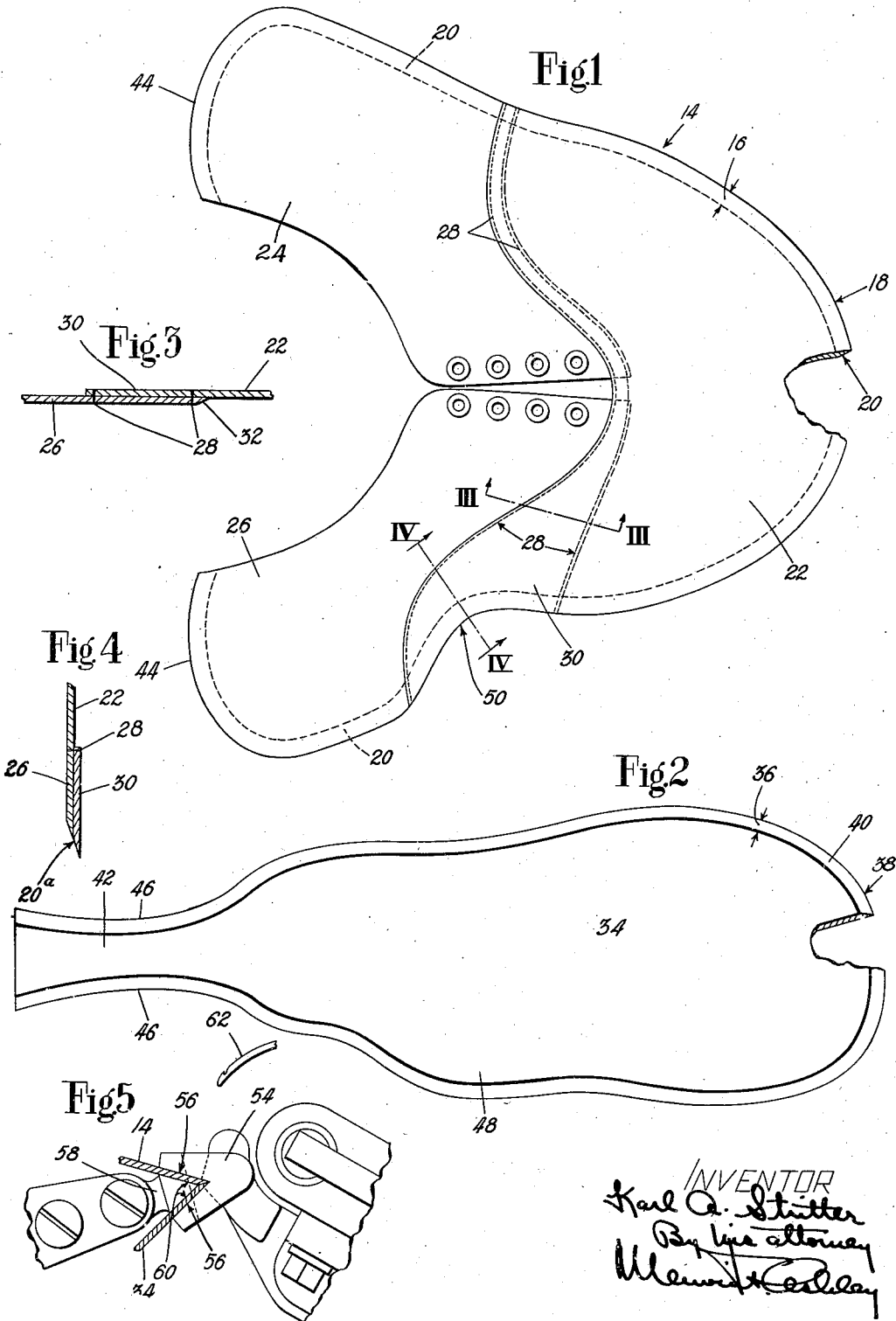
Feb. 12, 1946.

K. A. STRITTER
SHOE

2,394,725

Filed April 10, 1942

2 Sheets-Sheet 1



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Feb. 12, 1946.

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2 Sheets-Sheet 2

Fig. 6

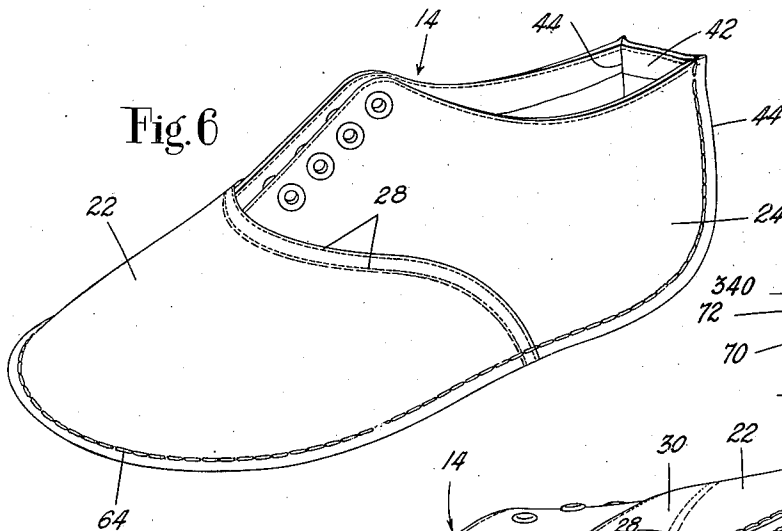


Fig. 13

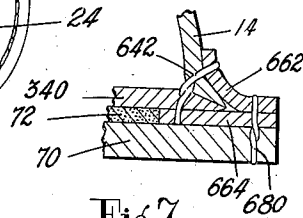


Fig. 7

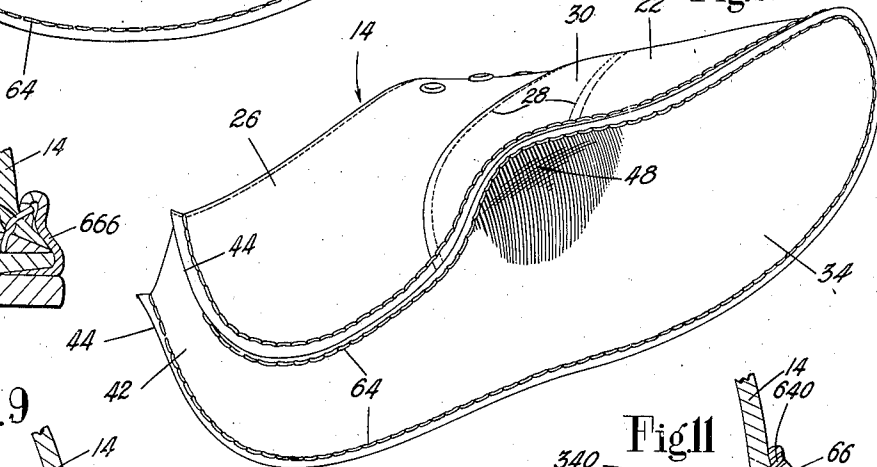


Fig. 14

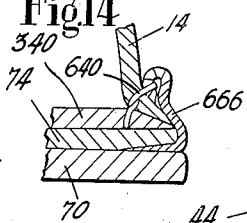


Fig. 9

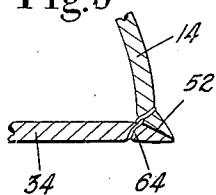


Fig. 11

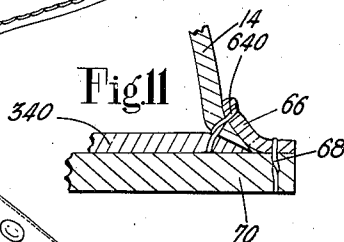


Fig. 8

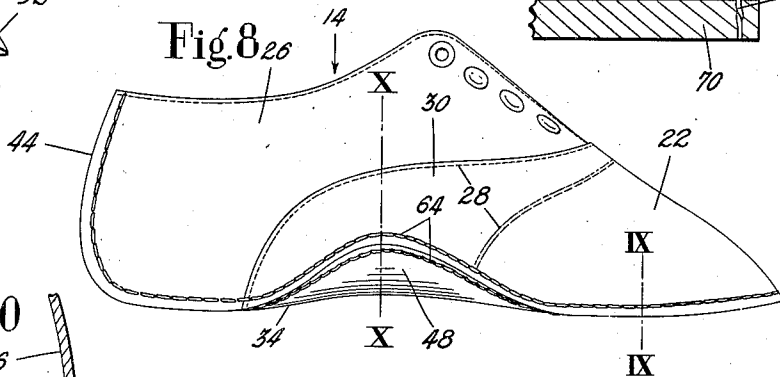


Fig. 10

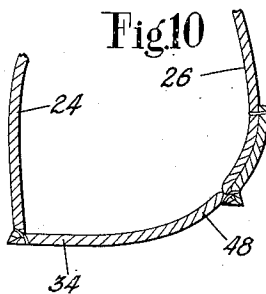
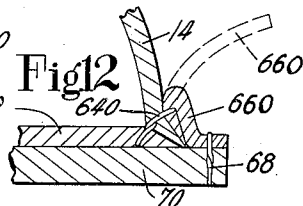


Fig. 12



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2,394,725

SHOE

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Application April 10, 1942, Serial No. 438,480

10 Claims. (Cl. 36-8.5)

This invention relates to improvements in shoes and methods of making the same and is herein illustrated with particular reference to its application to the manufacture of children's single-sole shoes.

One object of the invention is to provide a flexible and well fitting shoe which is simple in construction and inexpensive to manufacture and which is of a neat and finished appearance not usually characteristic of inexpensive shoes.

With this object in view I have produced a shoe comprising an upper and a single sole so fitted and secured together as to enhance the flexibility and improve the fitting and wearing qualities of the shoe and to impart a distinctive finished appearance to the edge of the shoe bottom. In making the shoe both the upper and the sole are cut to size plus a narrow margin providing an allowance for a sole attaching seam, the seam margin of each part is beveled to a thin edge, and the parts are assembled and cemented together off the last with their beveled surfaces in superposed relation and their thin edges in alignment to form a feather edge joint between the upper and the sole at the outside of the shoe. Thereafter the superposed margins of the upper and the sole are sewn together by a line of stitches spaced inwardly from the feather edge. As herein illustrated, the sole has a rearward extension or tongue which is bent upwardly and constitutes the only upper element in the extreme rear portion of the shoe. The lateral margins of the tongue are beveled, as are the margins of the main portion of the sole, and are secured by cement and stitches to the rear margins of the quarter portions of the upper which are similarly beveled, the cement securing together the thin edges of the tongue and upper to provide feather edge joints like that between the upper and the sole body and the stitches forming continuations of the seam which unites the upper and the sole body. The sole is preferably provided also with a lateral extension or wing at the inner side of its shank portion and this wing is secured directly to the upper by the stitches of the sole attaching seam, the upper being cut with a re-entrant edge contour in this locality which is complementary to the salient edge contour of the wing. Thus, when the wing is stitched to the upper, the wing will be offset upwardly into position to conform to and support the arched portion at the inner side of the foot. If desired, a welt may be secured to the upper by the stitches of the sole attaching seam and a second sole may

be attached to the welt to constitute the tread portion of the shoe.

The invention will be explained with reference to the accompanying drawings, in which

Fig. 1 is a plan view of the upper and Fig. 2 is a plan view of the sole of my improved shoe showing the parts as they appear before being assembled;

Fig. 3 is a fragmentary sectional view taken along the line III—III of Fig. 1;

Fig. 4 is a fragmentary sectional view taken along the line IV—IV of Fig. 1;

Fig. 5 is a side elevational view of a portion of a sewing machine which may be employed for sewing the upper of the shoe to the sole, the view showing in cross-section a portion of a shoe which is being operated upon;

Fig. 6 is a perspective view of the completed shoe showing the side which is to cover the outer side of the foot;

Fig. 7 is a perspective view of the shoe showing the bottom of the shoe and the side which is to cover the inner side of the foot;

Fig. 8 is a side elevation of the shoe showing the shoe viewed from the same side as in Fig. 7;

Fig. 9 is a detailed cross-sectional view on an enlarged scale taken along the line IX—IX of Fig. 8;

Fig. 10 is a fragmentary sectional view of the shoe taken along the line X—X of Fig. 8; and

Figs. 11 to 14, inclusive, are sectional views similar to Fig. 9 but showing modified constructions.

As shown in Fig. 1 of the drawings, the upper 14 is cut to foot covering size plus a marginal allowance 16 for a seam by which the upper is to be secured to the sole and the marginal allowance is beveled to a thin or feather edge 18. Advantageously, the upper is cut from soft upper leather of substantial thickness having a finished grain surface at one side and inasmuch as the grain surface is to be outermost in the shoe the thin edging operation is preferably carried out so that the beveled face 20 produced thereby will be located at the flesh side of the upper which is to face inwardly in the shoe. The upper may be in one piece, that is, with integral vamp and quarter portions or, as shown, it may comprise a vamp 22 and a two-part quarter consisting of the parts 24 and 26, these parts being assembled so that the rear margins of the vamp overlies the forward margins of the quarter parts, and the overlying parts being secured together by lines of stitching 28. As illustrated, the portion 30 of

the vamp 22 which is to overlie the inner side of the instep of the foot extends rearwardly a greater distance than the portion which is to overlie the outer side of the instep and the portion or extension 30 of the vamp overlaps the quarter part 26 for a substantial distance so that the upper in this locality comprises two plies or layers of upper material (see Fig. 3) adapting it to afford greater protection and increased support for the foot. Advantageously, the margins of the vamp and quarter parts which constitute the seam allowance are beveled after these parts are assembled and stitched together and thus in the two-ply portion where the vamp extension 30 is located the beveled margin will appear as indicated at 20a in Fig. 4. Also the forward margins of the quarter parts 24 and 26 are beveled as indicated at 32 in Fig. 3 to insure that there will be no abrupt shoulder or ridge formed on the inside of the upper in this part of the shoe to cause discomfort to the foot.

The sole 34 may be made of any suitable material but in the case of children's or infants' shoes particularly it may be found desirable to make the sole of upper leather of substantially the same quality and thickness as the upper. The sole 34 is cut to a size coextensive with that of the bottom of the foot plus a seam allowance 36 corresponding in width to the seam allowance 16 of the upper and the allowance 36 is beveled to a thin or feather edge 38 at the grain side of the sole which is to face outwardly in the shoe so as to constitute the tread surface of the sole. A beveled face 40 is thus provided at the upper or flesh side of the sole for engagement with the beveled flesh face 20 of the upper, when the upper and the sole are assembled.

The illustrated sole 34 is formed with a rearward extension or tongue 42 which is adapted to be turned upwardly and secured to the rear edges 44, 44 of the quarter, as best shown in Fig. 7, to constitute the rear extremity of the upper. To accommodate the tongue 42 the quarter or back parts 24 and 26 of the upper are cut shorter than they otherwise would be and, as shown, their rear edges are of salient curvature and the lateral edges of the tongue 42 are of re-entrant curvature and complementary to the curvatures of the rear edges 44 of the upper.

The illustrated sole 34 is also formed with a lateral extension or wing 48 at the inner side of its shank portion which is to be offset upwardly to conform to the concavity of the foot in this region. The edge contour of the outsole extension or wing 48 is convex and in order to accommodate the salient curvature of the outsole wing 48 the corresponding portion of the upper 14 is cut to provide a re-entrant edge curvature, as indicated at 50 in Fig. 1.

The upper and the sole are to be assembled off the last and prior to their assembly an adhesive, such as rubber cement, is applied to their beveled marginal faces. These parts are then assembled with their beveled faces in engagement and with the thin edge of the upper accurately aligned with the thin edge of the sole and the engaged portions are pressed together so that they adhere to one another and a cement joint 52 is formed between them (see Fig. 9). Inasmuch as the cement extends to the outer extremities of the joined parts, the thin edges thereof are intimately engaged in their previously aligned relation so that a sealed feather edge joint is provided at the outside of the shoe. In the two-ply portion of the upper the beveled face 20a of

the vamp extension 30 is also cemented to the adjacent surface of the quarter part 26 so that a single thin edge is formed in this part of the upper as well as in the single ply portions thereof.

The beveled margins of the sole and the upper are stitched together while the shoe is still off the last. In order to preserve the finished feather edge character of the cement joint between the upper and the sole, the stitching of these parts may advantageously be accomplished by the use of a sewing machine such as that disclosed in United States Letters Patent No. 1,975,914, granted October 9, 1934, upon application of Fred Ashworth, such a machine being provided with means for interiorly and exteriorly supporting the shoe while the stitching operation is being performed.

As shown in Fig. 5, such a machine comprises a work support 54 having work-engaging surfaces 56 angularly disposed with relation to each other and extending in the direction of work feed, a presser member 58 having corresponding angularly disposed work-engaging surfaces 60 cooperating with the surfaces of the work support 54 to support both interiorly and exteriorly the marginal portions of the upper 14 and the sole 34, and stitch-forming and feeding devices including a curved hook needle 62 constructed and arranged to form a lockstitch seam 64 (Fig. 9) the stitches of which extend through the marginal portions of the upper and the sole substantially at right angles to the engaged beveled faces thereof. For an understanding of further particulars in regard to the construction and mode of operation of the working parts of the machine reference may be had to the above-identified patent. The work-supporting devices as shown in Fig. 5 are adapted for use in operating upon a shoe having a one-piece upper. If an upper comprising overlapping vamp and quarter parts such, for example, as that herein shown is to be employed, provision may be made for relative yielding movement of the work support 54 and the presser member 58 or portions thereof to accommodate the increased thickness of the work in the overlapping portions of the upper parts. The work is manipulated as it is being fed through the machine so that the seam 64 will secure the upper to the sole not only throughout the entire length of the body portion of the sole but also along both lateral margins of the tongue 42 so that the latter will constitute part of the upper in the extreme rear portion of the shoe. As shown, the stitches of the seam 64 extend through the marginal portions of the sole and the upper substantially at the shoulders or inner extremities of the beveled faces on these parts.

Inasmuch as the wing or lateral extension 48 of the sole is stitched to the re-entrant marginal portion of the upper the sole extension will be securely and permanently held in the upwardly offset position best indicated in Figs. 7 and 8 wherein it is shaped to conform closely to the curvature or hollow of the bottom of the foot in the inner shank portion of the shoe and thus when the shoe is on the foot the wing 48 will be adapted to hug the foot and thus to function as an arch support. Inasmuch as the portion of the upper to which the sole extension 48 is secured is preferably of two-ply construction comprising a vamp layer and a quarter layer, additional strength of upper material is provided in the region immediately above the wing of the sole thereby insuring better protection and support for that portion of the foot.

At the back of the shoe the stitching of the tongue 42 to the rear margins of the quarter serves to stiffen the back part of the upper sufficiently to insure that its shape will be retained without the use of a conventional counter stiffener or other reinforcing means. Because of the above-described complementary curvatures of the joined edges of the tongue and the quarter parts, the back part of the upper is shaped so that it will conform readily to the shape of the heel portion of the foot and a distinctive ornamental appearance is imparted to the shoe. It is to be noted also that the absence of a central back seam and the absence of ridges inside of the shoe where the seams between the upper and the tongue of the sole are located tend to make the shoe comfortable.

The illustrated shoe is of exceptionally simple construction and is inexpensive to manufacture inasmuch as no lasting operations are performed and no machine operations are involved after the upper has been prepared except that of sewing the upper to the sole. The assembling and securing together of the feather edges of the upper and the sole with these edges in alignment and the adjacent beveled faces in superimposed relation results in the formation of a feather edge joint between these parts at the outside of the shoe which imparts a distinctive and neat appearance to the shoe. The sole attaching stitches, being located near the inner extremities of the beveled portions, extend through the full thickness of the upper and the sole and provide for a secure and permanent attachment of the sole to the upper. The presence of cement between the upper and sole margins outwardly of the sole attaching stitches extending to the outer edges of the sole and upper margins seals the joint and insures against separation or peeling of the thin outer edges of these margins and provides, in effect, a single feather edge between the upper and the sole entirely around the bottom of the shoe as well as at the back of the upper where the tongue of the sole is secured to the rear margins of the quarter parts of the upper. It will be noted that since the feather edges on both the sole and the upper are formed by beveling at the flesh sides of those parts there will be no flesh portion of either part exposed at the joint between the parts but the grain surface of the sole will meet the grain surface of the upper at the joint, thus producing a finished appearance which adds substantially to the neatness and attractiveness of the shoe.

While my invention has been described above in its application to the manufacture of single-sole shoes, it is useful also in the manufacture of shoes having inner and outer soles. In making such shoes the innersole may be prepared and attached to the upper in the same manner as that already described in connection with the making of a single-sole shoe, the innersole 340 (Fig. 11) having its margin beveled to a thin edge and secured to the similarly beveled lower margin of the upper 14 by a lockstitch seam 640 the stitches of which extend also through the inner margin of a welt 66 the outer margin of which is secured by through-and-through stitches 68 to an outer or tread sole 70. As indicated in Fig. 11, the welt may be applied so that initially it will extend widthwise beyond the feather edge of the attached margins of the sole and the upper or, as indicated in Fig. 12, a welt 660 may be applied so that initially it will extend widthwise inwardly instead of outwardly with respect

to the attaching seam 640, as indicated in dotted lines in that figure. Thereafter, the welt 660 is folded back on its attached inner margin to cover the latter. The welt 660 extends outwardly beyond its folded portion and its outer margin is secured by stitches 68 to the tread sole 70.

As shown in Fig. 13, two welts 662 and 664 may be employed, the welt 662 overlying the outer surface of the beveled margin of the upper as in the construction illustrated by Fig. 11 and being secured to the upper 14 by stitches 642 which secure the beveled margins of the upper and the innersole 340 together, and the welt 664 underlying the innersole 340 and being secured thereto by the stitches 642. Both welts 662 and 664 extend outwardly beyond the joined edges of the upper and the innersole and are secured to one another and to an outer sole 70 by stitches 680. A layer of yielding filler material 72 is located between the inner and outer soles inwardly of the welt 664 thereby providing a cushion for the foot.

Fig. 14 illustrates a further modified construction in which the upper 14, the innersole 340 and a welt 666 are formed, assembled and secured together by stitches 640 as in the construction shown in Fig. 12. In the shoe illustrated by Fig. 14, however, a middle or platform sole 74 underlies the innersole and is preferably secured to the latter by means of cement and the welt 666 covers the edge of the middle sole 74 as well as the joint between the upper and the inner sole and the lower margin of the welt extends inwardly to overlie the lower marginal surface of the middle sole. An outer sole 70 is secured, as by means of cement, to the middle sole 74 and to the inwardly extending margin of the welt. The welt 666 thus constitutes an edge binding for the middle or platform sole.

In each of the several alternative forms of construction above described the beveled feather edge joint between the attached margins of the upper and the innersole enables the welt to overlie the latter smoothly and without having an objectionable ridged or stepped formation imparted to it such as would render the shoe decidedly less attractive from the style standpoint and thus a substantial contribution is made to the simplicity and general neatness of appearance of the shoe.

Having described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. A shoe comprising an upper having spaced rear edges, and a sole having a tongue extending from the rear end of its body portion upwardly between said spaced rear edges of the upper to the upper edge of the latter, said tongue having each of its lateral edges cut in the form of a re-entrant curve and said upper having its spaced rear edges cut in the form of salient curves complementary to the curvature of the respective lateral edges of said tongue to accommodate the latter, the lower edge of said upper being secured to the edge of the body portion of the sole and the spaced rear edges of said upper being secured to the lateral edges of said tongue by a single stitched seam extending from the upper end of one lateral margin of said tongue downwardly to the body portion of the sole and around the sole to the opposite lateral margin of said tongue and upwardly to the upper end of said margin.

2. A shoe comprising a sole having a wing extending laterally from its inside shank portion and having a salient edge curvature, an upper comprising vamp and quarter members which are

overlapped to provide two layers of upper material in the region above said wing, each of said layers being substantially coextensive in length with said wing, the lower edges of said overlapped upper members having re-entrant contours complementary to the edge contour of said wing, and means for securing the lower edge portions of the upper to the sole.

3. A shoe comprising a sole having a salient curve in its edge at its inside shank portion forming a lateral extension or wing, the margin of the sole including the margin of said extension being beveled to a thin edge at the tread side of the sole, and an upper comprising a vamp and a quarter member which overlap one another in the region directly above said sole extension substantially throughout the length of said extension, said vamp and said quarter member having their lower margins beveled each to a thin edge at its outer side and the lower margins of said vamp and said quarter member being stitched to the margin of the sole with the beveled faces of said vamp and said quarter member in contact with the beveled face of the sole in locations forwardly and rearwardly of said sole extension and with the beveled margin of the innermost of said overlapping quarter and vamp parts interposed between the beveled margins of the sole and the outermost of said overlapping parts whereby an arched formation is imparted to said sole extension adapting it to hug the bottom of the foot and a feather edge joint is formed between the upper and the sole at the outside of the shoe.

4. A shoe comprising an innersole having a marginal beveled face forming a feather edge at its outer side, an upper having a beveled face forming a feather edge at the outer side of its lower margin, said innersole and said upper having their beveled faces in contact and united by a seam the stitches of which extend substantially at right angles to said faces thereby providing a feather edge joint between the upper and the sole, a welt secured to the upper and the innersole by said stitches, and an outer sole secured to said welt.

5. A shoe comprising an innersole having a marginal beveled face forming a feather edge at its outer side, an upper having a beveled face forming a feather edge at the outer side of its lower margin, said sole and said upper having their beveled faces in contact and united by a seam the stitches of which extend substantially at right angles to said faces thereby providing a feather edge joint between the upper and the sole, a welt secured to the upper and the innersole by said stitches, the inner edge of said welt being located below said stitches and the portion of the welt outwardly of said stitches being folded downwardly over the stitched portion to cover said stitches and said joint and extending outwardly beyond said feather edge, and an outer sole secured to said outwardly extending portion of said welt.

6. A shoe comprising an innersole having a marginal beveled face forming a feather edge at its outer side, an upper having a beveled face forming a feather edge at the outer side of its lower margin, said innersole and said upper being assembled with their beveled faces in contact and their feather edges in alignment, a welt overlying the outer surface of the beveled margin of said upper and extending outwardly beyond the feather edge thereof, a second welt

underlying the lower surface of the beveled margin of said innersole and extending outwardly beyond the feather edge thereof, stitches securing said beveled upper and innersole margins together and securing said welts to said margins, an outer sole, stitches securing together the outwardly extending margins of said welts and securing said outer sole to said welts, and yielding filler material between said innersole and said outer sole inwardly of said second welt for cushioning the bottom of the shoe.

7. A shoe comprising an innersole having a marginal beveled face forming a feather edge at its outer side, an upper having a beveled face forming a feather edge at the outer side of its lower margin, said innersole and said upper being assembled with their beveled faces in contact and said feather edges in alignment, a middle sole, a welt overlying the outer surface of the beveled margin of said upper and extending outwardly beyond the feather edge thereof, said welt covering the edge of said middle sole and having an intumed margin secured to the lower marginal face of said middle sole, stitches securing said beveled upper and innersole margins together and securing said welt to said margins, and an outer sole secured to said middle sole and to the intumed margin of said welt.

8. A shoe comprising an innersole having a marginal beveled face forming a feather edge at its outer side, an upper having a beveled face forming a feather edge at the outer side of its lower margin, said innersole and said upper being assembled with their beveled faces in contact and said feather edges in alignment and being united by a seam the stitches of which extend substantially at right angles to said faces thereby providing a feather edge joint between the upper and the innersole, a middle sole, a welt having a marginal portion secured to the upper and the innersole by said stitches, the edge of said marginal portion of the welt being located below said stitches and the welt being folded downwardly over the stitched portion to cover said stitches and said joint, said welt covering also the edge of said middle sole and having an intumed margin secured to the lower marginal face of the middle sole, and an outer sole secured to said middle sole and to said intumed margin of the welt.

9. That improvement in shoemaking which consists in cutting an upper to foot covering size plus only an allowance for a seam for attaching the upper to a sole, cutting a sole to a size coextensive with that of the bottom of a foot plus only an allowance for said seam, beveling to a feather edge the margin of the sole and the lower margin of the upper, securing together the beveled margins of the sole and the upper off the last by means of cement thereby providing a tightly sealed joint between said parts and forming a feather edge at the outer extremity of said joint, and thereafter sewing the upper to the sole off the last while supporting the shoe interiorly and exteriorly so as to preserve the feather edge formation of said joint and while positioning the shoe relatively to the sewing instrumentalities so that the stitches will pass through the shoe parts approximately at the inner edge of said joint.

10. That improvement in shoemaking which consists in cutting an upper to foot covering size plus only an allowance for a seam for at-

taching the upper to a sole, cutting a sole to a size coextensive with that of the bottom of a foot plus only an allowance for said seam, beveling to a feather edge the margin of the sole and the lower margin of the upper, assembling the sole and the upper off the last with their beveled faces opposed thereby forming a feather

5 edge at the outer extremities of said faces, assembling a welt with the opposed portions of the upper and the sole, and securing said parts together by a stitched seam while supporting the shoe interiorly and exteriorly so as to preserve said feather edge.

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