

Jan. 26, 1937.

E. J. RAY

2,068,706

METHOD OF MAKING SHOES

Filed May 13, 1933

2 Sheets-Sheet 1

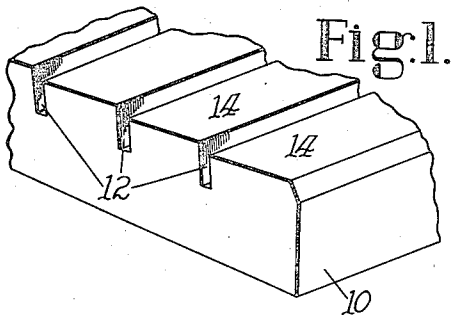


Fig. 1.

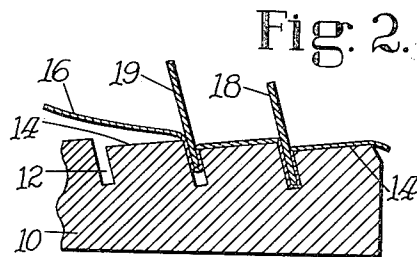


Fig. 2.

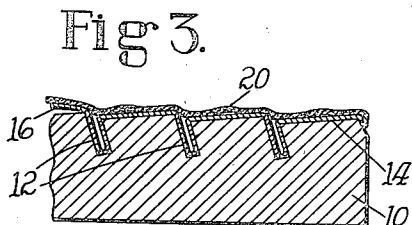


Fig. 3.

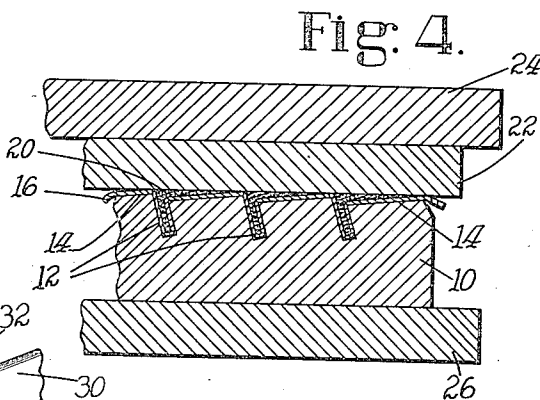


Fig. 4.

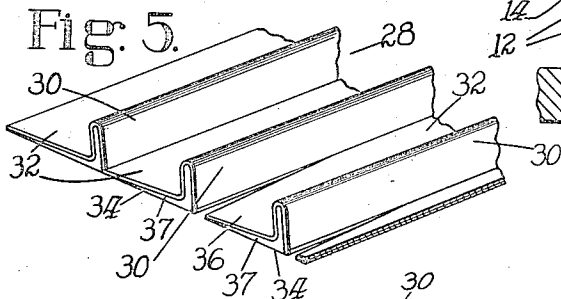


Fig. 5.

Fig. 6.

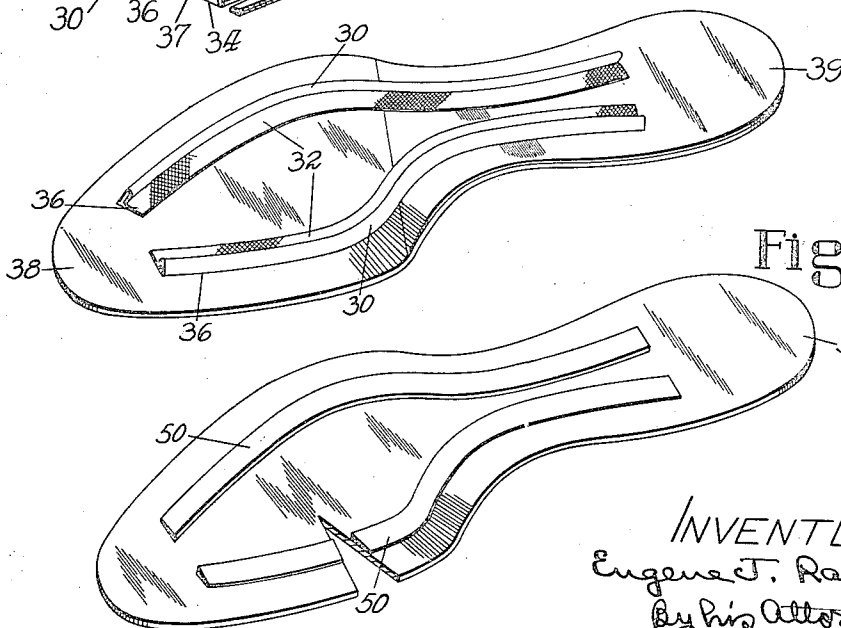


Fig. 7.

INVENTOR.
Eugene J. Ray
By his Attorney,
Harlow M. Davis

Jan. 26, 1937.

E. J. RAY

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2 Sheets-Sheet 2

Fig. 8.

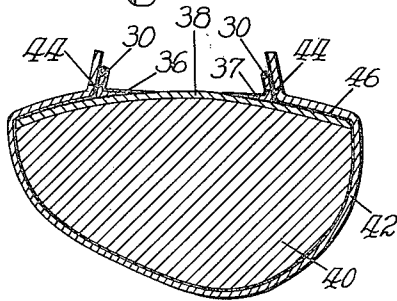


Fig. 9.

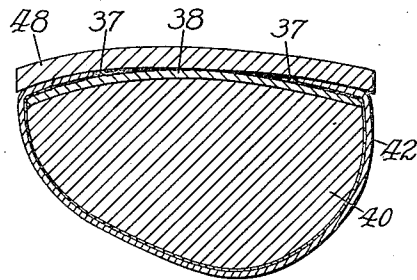


Fig. 10.

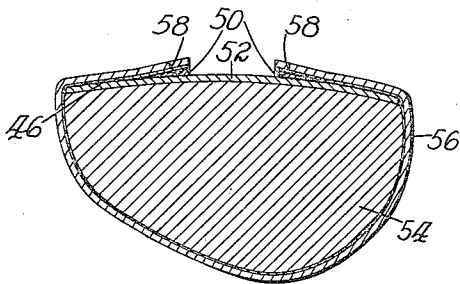


Fig. 12.

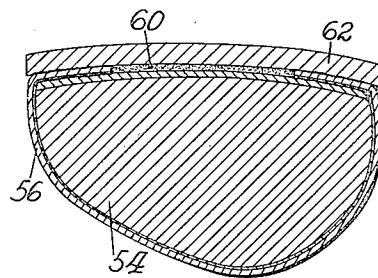
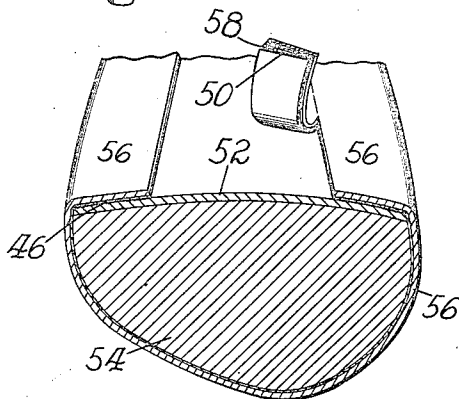


Fig. 11.



INVENTOR.

Eugene T. Ray
By his Attorney,
Harlow M. Davis

UNITED STATES PATENT OFFICE

2,068,706

METHOD OF MAKING SHOES

Eugene J. Ray, Beverly, Mass., assignor to United Shoe Machinery Corporation, Paterson, N. J., a corporation of New Jersey

Application May 13, 1933, Serial No. 670,907

32 Claims. (Cl. 12-142)

This invention relates to insoles and to methods of making shoes and insoles for shoes. The invention is illustrated herein with reference to the manufacture of shoes in which the uppers are secured in overlapped relation to sole members by cement.

A method of making shoes having uppers secured in overlapped position by cement is disclosed in Letters Patent of the United States No. 1,932,545, granted October 31, 1933, upon an application filed in the name of George Goddu. In accordance with the method illustrated in the patent mentioned, an insole having an upstanding shoulder or lip is assembled with an upper on a last, the upper is pulled over, and water-dispersed rubber cement is applied to the marginal portions of the upper and insole. While the cement is still fresh, the upper at each side of the shoe is worked over the edge of the insole and is secured in lasted relation thereto by metallic fastenings such as staples which are driven through the margin of the upper and the lip of the insole and are clinched against the inner face of the lip. After the cement has set, the upstanding lip and the marginal portions of the upper are trimmed off, the trimming cut usually being made below the line of staples and flush with the overlapped portion of the upper so that the staples will be removed from the finished shoe. As illustrated in the patent referred to, the trimming cut at the shank portion of the shoe may be located below the line of staples in the manner described or it may be located above the staples so that the latter will be left in the shank portion of the shoe to assist in holding the upper in lasted relation to the insole.

Objects of the invention are to provide improved insoles for use in the manufacture of shoes having uppers secured in lasted position by cement, to provide improved insole strips to which a shoe upper may be secured to hold it temporarily in lasted relation to the insole, and to provide an improved method of making shoes in which the improved insoles of the present invention are utilized.

With these objects in view and in accordance with a feature of the invention there is provided an improved insole having secured to each side of its outer face an upper attaching strip comprising a tapered or wedge-shaped base portion and an inclined lip projecting from said base portion. The lip of the insole strip provides a means by which a shoe upper may be temporarily secured or anchored in lasted relation to the insole by metal fastenings, for example, staples, during

the setting of the cement by which the upper is permanently attached to the insole. As illustrated herein, the improved strip is composed of flexible material such as rubber composition made of scrap crepe rubber mixed with fibre and the rib or lip extends upwardly from one edge of the wedge-shaped base portion. The lip is so positioned relatively to the base portion of the strip that when the latter is applied to the outer face of an insole the lip will be inclined inwardly relatively to the margin of the insole, thereby facilitating the attachment of the shoe upper to the lip. The strip is reinforced with fabric material such as canvas or duck, which is vulcanized to the upper side of the strip and covers both sides of the lip, thereby strengthening the lip and providing a surface more suitable than rubber for the staple-inserting means, for example an anvil, to slide against.

The materials of the strip are vulcanized together in the form of a single sheet having a series of inclined parallel lips extending across one surface thereof and the individual strips are formed by severing them from the sheet, each cut extending along the base of one of the lips.

The strips are attached to the outer face of an insole, in accordance with one aspect of the invention, by cutting each strip into lengths appropriate for the insole to be prepared and applying rubber cement to the under side of the strip. The strips are then positioned on the outer face of a relatively thin flexible insole, each strip being spaced inwardly from the edge of the insole a sufficient distance to leave a marginal area to which the shoe upper can be cemented. Preferably, and as illustrated, the insole strips will extend from about the tip line to the heel breast line to provide an upstanding lip at those portions of the shoe where the side lasting operation is performed.

After a shoe upper has been stapled to the ribs of the attaching strips and the cement between the upper and margins of the insole has set, a trimming operation may be performed to remove the insole lips and upstanding marginal portions of the upper. The trimming cut will usually extend inside the line of staples to remove the latter with the lips and edges of the upper, although the cut may, if desired, be omitted or made outside the staples at the shank portion of the shoe so that the staples will be left in the shoe to assist in holding the upper in lasted position. The cuts will extend above the wedge-shaped base portions of the strips so that these portions may, if desired, be left attached

to the face of the insole to serve as filler pieces. This aspect of the method is especially useful in shoes having transversely convex bottoms since the portions of the strips which remain on the insole will, in many instances, fill up the depressions or hollows at the opposite sides of the shoe bottom adjacent to the edges of the upper, and thus even up the bottom surface of the shoe so that no filler piece will be required prior to the attachment of the outsole.

In accordance with another aspect of the method, a substantially wedge-shaped upper attaching strip may be secured to the insole, this strip, as herein illustrated, being flat across its upper surface and tapering toward the edge of the insole so that no substantial shoulder or ridge will be formed at the inner edge of the feather portion of the insole. The wedge-shaped strip may be utilized when an upper is to be secured in lasted relation to the insole by curved staples which pass into the material of the strip without penetrating the body of the insole. Since the strip tapers toward the edge of the insole, the upper will lie flat against the insole margin, thereby insuring that a solid attachment of the upper to the insole will be obtained. The staples are inserted in the portion of the strip which is located farthest from the insole margin, this portion preferably being of sufficient thickness to permit the curved legs of the staples to extend into the material of the strip without passing completely therethrough. In trimming the overlaid margins of the upper the trimming cut is preferably made along the outer edge of the strip, thereby separating the upper and strip so that the latter may be pulled away from the insole together with the trimmed portions of the upper which are stapled to the strip. In this way the excess upper material, the attaching strip and the staples are removed from the shoe bottom, thereby leaving the insole with only the shoe upper cemented to its marginal portions.

The above and other features and aspects of the invention will appear more fully from the following detailed description when read in connection with the accompanying drawings and will be pointed out in the appended claims.

In the drawings,

Fig. 1 is a perspective view of a portion of the lower platen of the vulcanizing press which is utilized in practicing the present method;

Fig. 2 is a sectional view of the platen shown in Fig. 1 with a strip of fabric material being pressed into its inclined grooves;

Fig. 3 is a sectional view of the platen after the fabric has been formed in the grooves and a layer of rubber composition has been deposited upon the fabric;

Fig. 4 shows the upper platen being pressed against the lower platen to force the rubber material into the grooves;

Fig. 5 shows the fabric-covered rubber sheet after it has been removed from the vulcanizing press, inverted, and in the process of being cut into strips;

Fig. 6 is a perspective view of an insole after the ribbed strips have been attached to its outer face from about the tip line to the heel-breast line, the insole being reinforced rearwardly of the ball line with fibre;

Fig. 7 is a perspective view of an all leather insole having cemented to each side of its outer face a wedge-shaped insole strip;

Fig. 8 is a cross-sectional view of a shoe

mounted on a last having a transversely convex bottom, the insole having attached to its outer face upper-attaching strips with inwardly inclined lips to which the upper is secured by staples;

Fig. 9 is a view of the shoe shown in Fig. 8 after the upstanding portions of the upper and lip have been trimmed away and an outsole has been cemented to the shoe bottom;

Fig. 10 is a cross-sectional view of a shoe mounted on a last having a transversely convex bottom, the insole having secured to its outer face wedge-shaped strips to which the upper is secured by curved staples;

Fig. 11 shows the shoe of Fig. 10 after a trimming operation has been performed along the outer edge of the wedge-shaped strip, the view illustrating how the strip and the trimmed portion of the upper are pulled away from the outer face of the insole; and

Fig. 12 is a cross-sectional view of the shoe after bottom filler has been added to the shoe bottom and an outsole has been cemented there-to.

In practicing the method of the present invention as illustrated herein there is provided a vulcanizing press comprising a lower mold or platen 10, preferably of steel, having formed therein a series of parallel slots or grooves 12 which are located approximately three-eighths of an inch apart. The grooves are preferably a quarter of an inch deep and about half as wide and extend across the full width of the platen. As shown in Fig. 2, the grooves are not vertical but are inclined at an angle relatively to the lower horizontal surface of the platen. The upper surfaces of the areas of the platen which extend between the grooves 12, indicated by the numerals 14, are also inclined at an angle relatively to the horizontal, each of these surfaces being so positioned with respect to the groove at its left, as viewed in Fig. 2, that it forms an angle of approximately eighty-five degrees with such groove. By this arrangement each groove 12 will be positioned at a slightly acute angle relatively to the inclined surface 14 which is located at its right.

A sheet of fabric material 16, consisting of light canvas, duck, or a similar material, is laid upon the grooved surface of the platen 10 and the material is then pressed into the grooves 12 by means of suitable hand tools such, for example, as a pair of elongated blades 18 and 19 (Fig. 2) provided with handles (not shown) and arranged to be inserted alternately into successive grooves until the fabric material has been completely tucked therein. In performing this operation the tool last used should be left in its groove until after the first tool has been withdrawn from the groove behind and inserted in the groove ahead of the first-mentioned groove, thus insuring that the fabric material will be held firmly in place by one tool while the other tool is being withdrawn from the rear groove and inserted in the groove ahead.

After the sheet of fabric material 16 has been completely formed to the shapes of the grooves in the platen 10, a layer of rubber composition 20 in a soft plastic condition is spread over the fabric material. This rubber composition is preferably composed of scrap crepe rubber mixed with fibre although it may be composed of any analogous rubber composition which is capable of being molded into any desired shape and which will form a relatively rigid mass upon the ap-

plication of sufficient heat, for example, upon being vulcanized.

An upper platen, which cooperates with the lower platen 10 and which forms the other member of the vulcanizing press, is now brought down against the layer of rubber composition 20, the platen 22 comprising a rectangular plate (Fig. 4) having a substantially flat bottom surface for engagement with the rubber composition. The platen 22 is pressed forcibly against the lower platen and both members are heated to a suitable vulcanizing temperature, the pressure being supplied, for example, by means of a pressing device of any well-known type, illustrated herein as a pair of presser plates 24 and 26. The heat and pressure thus applied will cause the rubber composition to enter the grooves 12 and the areas between the grooves, thereby filling the folds in the fabric material which lie in the grooves and in the spaces formed by the inclined surfaces 14 between the grooves. When sufficient heat and pressure have been applied, the fabric material and rubber become vulcanized together to form a continuous sheet 28 of rubber reinforced on one side with fabric material, the upper and lower surfaces of the sheet taking the shapes of the corresponding surfaces of the platens.

The platens are next separated and the rubber sheet 28 is removed therefrom. Fig. 5 shows the sheet removed from the vulcanizing press and inverted so that the portions which were located in the grooves now project upwardly in the form of upstanding ribs or lips 30. It will be noted in Fig. 5 that the lips 30 are inclined toward the intermediate portions of the sheet which connect the lips, these portions being indicated by the numeral 32. Owing to the peculiar formation of the lower platen 10, the upper surface of each of these intermediate portions 32 is inclined downwardly away from the lip 30 which is located at its forward edge, as viewed in Fig. 5. The lower surface 34 of the sheet 28 is perfectly flat so that it forms with each inclined surface 32 a tapered or wedge-shaped intermediate portion 37, the lips 30 being located at the thick sides of the wedge-shaped portions. As shown in Fig. 5 both sides of the upstanding lips or ribs 30 are reinforced with fabric material which is vulcanized to the sheet, whereas the under side 34 of the sheet has no fabric covering.

After the ribbed sheet 28 has been removed from the vulcanizing press the next step is to cut it into strips suitable for attachment to an insole. This may be accomplished by means of a rotary cutter of any well-known type or it may, if desired, be performed by hand, for example, with a knife or shears. The strips are formed by cutting along the base of each lip 30 at the side which is adjacent to the thin edge of the wedge-shaped intermediate portion, as shown in Fig. 5, thereby separating the sheet into a plurality of strips 36 each having an upwardly extending lip 30 at one edge which is inclined toward the upper surface of a laterally extending wedge-shaped base portion 32, the base portion terminating approximately three-eighths of an inch laterally of the lip. As stated, the upper side of the strip, and both sides of the lip are reinforced with fabric material vulcanized to the rubber, while the under side of the strip is composed of rubber composition, thereby providing a suitable surface for receiving rubber cement.

The strips 36 are now ready to be attached to the outer face of an insole. Accordingly, an insole 38, which is to be used in a shoe having its

upper secured in lasted relation by cement, is selected and two sections are cut from a severed strip 36, these sections being cut into lengths which will extend approximately from the tip line to the heel breast line of the selected insole. The insole 38, illustrated in Fig. 6, comprises a relatively thin body portion, preferably of leather, reinforced rearwardly of the ball line with a thin layer of fibre 39 which is cemented to the outer face of the insole. By reinforcing the shank and heel portions of the insole with a layer of fibre the insole can be tempered and molded to the shape of a last bottom and will retain such shape after the molding operation has been performed. It is to be understood, however, that the present method is not limited to the use of insoles reinforced with fibre but may be utilized with other types of insoles, for example, insoles reinforced with materials other than fibre, or insoles formed wholly of leather or fibre.

The under surface of each strip 36 is now coated with rubber cement by which the strip is to be secured to the insole. The strips are then placed upon the outer face of the insole in such a position that their forward ends will coincide substantially with the tip line, each strip being spaced inwardly from the edge of the insole margin a distance corresponding approximately to the width of the feather portion of the insole, as shown in Fig. 6. The sides of the strips which have the lips 30 projecting therefrom are located nearest the insole margins and the wedge-shaped base portions 32 extend inwardly from these margins. Fig. 6 illustrates how the insole will appear after the ribbed strips have been cemented along each margin of its outer face from about the tip line to the heel-breast line. The insole 38 is now attached in the usual manner to a last 40 (Fig. 8) having a transversely convex bottom and an upper 42 is assembled on the last and pulled over, thus preparing the shoe for the lasting operation.

A type of shoe in which the insole of the present invention is especially adapted for use is one in which the lasting of the upper at the sides of the shank and forepart of the shoe is performed in the manner set forth in Patent No. 1,932,545, previously referred to. Briefly, the lasting operations consist in applying cement to the margins of the insole and the shoe upper, working the upper over the edges of the insole into lasted position against the insole lip, and inserting metal fastenings such as staples through the upper and lip to hold the upper in lasted relation to the insole while the cement is setting. Fig. 8 shows a transverse section of the shoe after the margins of the insole and upper have been coated with cement, indicated by the numeral 46, and the upper has been worked over the edge of the insole and secured in lasted position against the lip 30 by means of staples 44.

As set forth in the patent referred to, the working of the upper 42 into lasted position against the insole lip 30, and the inserting of staples 44 through the upper and lip to hold the upper in lasted position while the cement is setting, may be performed, for example, by a machine of the type disclosed in United States Letters Patent No. 1,796,451, granted March 17, 1931, upon the application of George Goddu. The toe portion of the shoe may be lasted by employing end embracing wipers of the type utilized in the well-known bed-lasting machine, these wipers acting to wipe the upper materials over

the edge of the insole at the toe end thereof and into lasted position against the feather portion of the insole. When the wipers have wiped the toe portion of the upper against the feather portion of the insole, the upper may be temporarily secured in lasted position while the cement is setting by any suitable means such, for example, as a binding wire or a toe binder of any well-known construction. After the cement has set, the means utilized for securing the upper temporarily in lasted position is removed, thus completing the lasting operation at the toe end of the shoe. The heel portion of the shoe may be lasted in the usual manner in the bed lasting machine by wiping the upper over the heel end of the insole and securing it thereto by driven fastenings which are clinched against a metal plate at the heel end of the last.

After the toe, side and heel portions of the upper 42 have been secured in lasted relation to the insole as described, a trimming operation is performed to remove the upstanding portions of the upper and insole lip which project from the opposite sides of the insole and to remove the excess upper material at the toe end of the shoe. The trimming operation at the toe end of the shoe rearwardly to the tip line may be performed in any convenient manner, for example, by raising the excess material away from the face of the insole and cutting it off by hand with the aid of a knife or shears. The trimming cut from the tip line to the ball line is usually made in the plane of the exposed face of the overlapped portions of the upper materials 42 which overlie the margin of the insole, so that the cut will pass below the line of staples 44 and thus remove the staples with the upstanding portions of the upper material and insole lip. At the shank portion of the shoe it is sometimes desirable to trim the upstanding portions of the upper and lip in a plane just above the line of staples so that the latter will remain permanently in the shoe, thereby providing additional means for securing the upper to the insole at this portion of the shoe. Moreover, by trimming above the line of staples at the shank portion of the shoe a space or recess will be provided between the bases of the lips in which a steel shank piece or stiffener may be conveniently located. If the staples are to be left in the shank portion of the shoe to hold the upper in lasted relation to the insole, the cement can be omitted if desired.

One of the advantages resulting from the use of the illustrated insole in the manufacture of shoes by the method outlined above is that after the trimming operation has been performed at the forepart and shank portions of the shoe, there will remain cemented to the outer face of the insole, from about the tip line to the heel-breast line, the wedge-shaped base portions 37 of the insole strips 36. These wedge-shaped base portions will then serve as filler pieces to fill in the hollows or depressions which, in shoes having transversely curved bottoms, are left at the inner edges of the upper after the upstanding portions of the upper and lip at the sides of the shoe have been trimmed away. Except in cases where a relatively thick insole is used which may be reduced at its marginal or feather portion an amount equal to the thickness of the upper materials and thereby prevent the formation of hollows or depressions at the inner sides of the lips after the trimming operation, (which, of course, cannot be done with a thin flexible insole), the depressions remaining at the inner sides of the

lips after the trimming operation generally require the addition of a filler piece in order to provide a more even surface on the bottom of the shoe for the reception of an outsole. The addition of a filler piece, however, adds to the thickness of the shoe bottom and reduces proportionately the flexibility of the shoe. A thin flexible insole, such as that disclosed by the present invention, having cemented to each side of its upper face an upper attaching strip provided with a lip for temporarily holding the upper in lasted position and having a wedge-shaped base portion which will remain cemented to the insole and thus serve as a filler piece to fill in the hollow or depression left between the edge of the upper and the outer face of the insole after the upstanding portions of the upper and lip have been trimmed away, tends to produce a fairly even surface on a shoe having a transversely convex bottom, thus rendering the shoe bottom suitable to receive the outsole without the addition of an extra filler piece. In this way the danger of increasing the thickness of the shoe bottom and thereby reducing the flexibility of the shoe is eliminated. Fig. 9 shows the shoe after the trimming operation has been performed, the overlapped margins of the upper roughened to receive the sole-attaching cement, and an outsole 48 laid on the shoe bottom and permanently attached thereto by cement. It will be seen in Fig. 9 that the transverse convexity of the bottom of the last 40 is such that, after the upstanding portions of the lip 30 and upper materials 42 have been trimmed away, the wedge-shaped base portions 37 of the strips 36 which remain on the outer face of the insole will fill in the hollows adjacent to the inner edges of the upper 42 and thus produce a substantially even surface against which the outsole 48 can easily be laid without the addition of an extra filler piece.

Fig. 7 illustrates a modification of the present method of making insoles in which a pair of insole strips 50 are cemented to the outer face of a leather insole 52 at predetermined distances inwardly of its margins, the strips 50 being substantially wedge-shaped in transverse section and extending from about the tip line to the heel-breast line of the insole. The wedge-shaped strips shown in Fig. 7 may be made of a rubber composition composed of scrap crepe rubber mixed with fibre the same as the ribbed strips 36, or they may, if desired, be made of leather, canvas or some other suitable material. Since strips composed of vulcanized rubber are more flexible than those made of leather, fibre or canvas, and will therefore conform more readily to the curvatures of the longitudinal margins of an insole, they may be preferable for some types of insoles rather than strips made of leather or similar materials. The rubber composition can be vulcanized in the form of a single sheet between the platens 10 and 22 of the vulcanizing press, the grooves 12 in the lower platen 10, however, being first plugged up so that no ribs will be formed on the lower side of the sheet. A layer of fabric material, such as canvas or duck, should be laid upon the platen 10 before the rubber composition is placed thereon so that the rubber sheet will be reinforced on one side with fabric material. After the canvas has been vulcanized to the rubber, the sheet can be removed and cut into substantially wedge-shaped strips 50 suitable for attachment to an insole. Each strip 50 is then cut into lengths which will ex-

tend substantially from the tip line to the heel-breast line of a selected insole and the strip positioned on the insole with its thick edge farthest from the insole margin so that the upper surface of the strip will taper downwardly as it approaches the feather portion of the insole, thereby preventing the formation of a substantial shoulder or ridge at the inner edge of the insole margin.

The insole illustrated in Fig. 7 is adapted for use in a shoe in which the upper is secured in lasted position against the inclined upper surface of the tapered strip by curved staples which extend through only a portion of the strip, the staples having legs which pass downwardly through the upper and into the strip and then curve upwardly to be anchored in the material of the strip without passing completely there-through. Fig. 10 illustrates in transverse section a shoe mounted on a last 54 and having its upper 56 secured in lasted relation to the insole 52 against the top faces of the insole strips 50 by curved staples 58. A machine for securing the shoe upper in lasted relation to the insole by curved staples is fully shown and described in United States Letters Patent No. 1,815,295 granted July 21, 1931 upon an application filed in the name of George Goddu. Since the wedge-shaped strips 50 taper toward the margins of the insole, the upper will lie close to the surface of the insole after it has been wiped over and temporarily secured to the inclined surface of the strip 50, thereby insuring that a solid attachment of the upper to the insole will be obtained when the cement has set. The inner portions of the wedge-shaped strips, into which the staples 58 are inserted, are thick enough to permit the curved legs of the staples to be embedded therein without penetrating the surface of the insole 52.

When an insole embodying the modification of the invention disclosed in Fig. 7 is employed it is not necessary to trim the overlapped marginal portions of the upper since the upper materials will lie substantially flat against the upper surface of the insole strip. A trimming operation should be performed, however, if the upper materials extend beyond the inner edge of the strip, although such a condition will seldom occur because of the relatively wide area covered by the strip inwardly of the feather portion of the insole. The trimming cut, if made, may extend inside of or above the line of staples 58 in order to remove only the extreme marginal portions of the upper and thus leave the staples in the shoe bottom to assist in holding the upper in lasted position, or the cut may, if desired, be made at, or in the vicinity of, the outer edge of the strip 50, as shown in Fig. 11, so that the strip will be separated entirely from the overlapped portion of the upper and may subsequently be pulled away from the outer face of the insole together with the trimmed portions of the upper, thereby removing the staples and leaving only the overlapped portions of the upper cemented to the outer face of the insole. After the trimming operation has been performed the portion of the shoe bottom extending between the trimmed margins of the upper may be filled with bottom filler 60 (Fig. 12) to level up the shoe bottom and a shank piece (not shown) may be located in the usual manner at the shank portion of the shoe. The overlapped marginal portions of the upper are then roughened in the usual manner to provide a suitable surface for receiving pyroxylin cement and an outsole 62 is laid on the shoe bottom and

permanently attached thereto by cement. Fig. 12 shows the shoe in cross section after the insole strips have been pulled away from the outer face of the insole, bottom filler applied to the shoe bottom, and the outsole 62 permanently cemented to the shoe bottom. The outsole may, of course, be attached to the shoe in some other manner, if desired, without affecting the flexibility of the shoe. For example, the last may be removed from the shoe and the outsole, upper and insole secured together by through-and-through stitches, preferably lockstitches, which are located in a stitch-receiving channel formed in the outsole and are concealed by the flap of the channel.

The disclosed method of making strips for insoles is not claimed herein since it forms the subject-matter of Patent No. 2,010,827, granted August 13, 1935 on an application filed as a division of the present application.

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

1. An insole for use in the manufacture of shoes having secured to its outer face upper-attaching strips of elastic material to which a shoe upper may be secured to hold the upper temporarily in lasted relation to the insole, said strips being reinforced with a non-elastic material.

2. An insole for use in the manufacture of shoes having attached to its outer face in spaced relation to the edges thereof elastic upper attaching strips for holding a shoe upper temporarily in lasted relation to the insole, said strips being reinforced on one side with a non-elastic material and tapering widthwise of the insole.

3. An insole for use in the manufacture of shoes having cemented along each margin of its outer face, from about the tip line to the heel-breast line an upper-attaching strip which is secured to the insole across the full width of the strip and is substantially wedge-shaped in cross section and tapers toward the margin of the insole.

4. An insole for use in the manufacture of shoes having secured to its outer face in spaced relation to its opposite edges upper-attaching strips of rubber composition reinforced with fabric material, said strips being substantially wedge-shaped widthwise so that each strip tapers transversely of the outer face of the insole.

5. An insole for use in the manufacture of shoes having upper-attaching strips secured thereon lengthwise of its outer face and in spaced relation to the edges of the insole, thereby providing an anchorage for metal fastenings which secure a shoe upper in lasted relation to the insole, said strips being composed of rubber composition reinforced with fabric material and tapering transversely of the insole.

6. An insole for use in the manufacture of shoes having secured to its outer face inwardly of each margin a fabric reinforced rubber strip provided with an inclined lip and a wedge-shaped base portion which tapers laterally of the lip.

7. An insole for use in the manufacture of shoes having upper-attaching strips secured to the opposite margins of its outer face, each of said strips being composed of an elastic composition reinforced with fabric material and having an upwardly and inwardly inclined lip extending from a base portion which projects inwardly from the lip, the upper surface of said base portion being disposed at a sharply acute angle to the outer face of the insole.

8. An insole for use in the manufacture of shoes having secured to each margin of its outer face, from about the tip line to the heel-breast line, a strip adapted to hold a shoe upper temporarily in lasted relation to the insole, said strip having a tapered body portion of rubber composition provided at its outer edge with an upwardly projecting rubber rib, said body portion and rib being reinforced on their exposed surfaces with fabric material.

9. An insole for use in the manufacture of shoes having rubber strips attached to the opposite margins of its outer face from about the tip line to the heel-breast line, each of said strips being reinforced with fabric material and being adapted temporarily to hold a shoe upper in lasted position, said strips having laterally tapered base portions and inclined ribs projecting upwardly from those sides of the base portions which are nearer the edges of the insole.

10. An insole for use in the manufacture of shoes having secured along the marginal portions of its outer face, from about the tip line to the heel-breast line, upper-attaching strips of rubber composition, each of said strips having a base portion which tapers inwardly relatively to the edge of the insole and a lip projecting upwardly and inwardly from said tapered base portion, said lip being reinforced with fabric material.

11. An insole for use in the manufacture of shoes having attached to its outer face along each margin an upper-attaching strip of rubber composition which extends from about the tip line to the heel-breast line, said strip having a wedge-shaped base portion tapering inwardly from the margin of the insole and an upwardly projecting lip at one edge of said base portion, said lip being inclined inwardly toward the upper surface of the base and being reinforced on both sides with fabric material.

12. An insole for use in the manufacture of shoes having cemented thereto at each side of its outer face an upper-attaching strip of rubber composition reinforced with fabric, said strip having a lip projecting substantially at right angles from the upper side of a wedge-shaped base portion which extends inwardly from the lip.

13. An insole for use in the manufacture of shoes having secured to its outer face, in spaced relation from the edge thereof, an upper attaching strip composed of vulcanized rubber reinforced with fabric material, said strip having an upwardly and inwardly inclined lip projecting from a beveled base portion which tapers inwardly from the lip and has a lower surface of rubber attached to the insole by cement.

14. An insole for use in the manufacture of shoes comprising a body portion of leather reinforced with fibre, said insole having attached to its outer face adjacent to the feather portions of the insole upper attaching strips of rubber composition reinforced with fabric material, each of said strips having an upwardly and inwardly inclined lip extending from a wedge-shaped base portion which tapers inwardly from the inner edge of the feather portion so that the upper surface of said base portion will join the outer face of the insole without forming a substantial ridge.

15. An insole for use in the manufacture of shoes comprising a thin flexible body portion of leather reinforced rearwardly of the ball line with fibre, said insole having cemented to its outer face, from about the tip line to the heel-breast

line and adjacent to the margins of the insole, upper-attaching strips of rubber composition reinforced on their exposed surfaces with fabric material, said strips each having an upwardly and inwardly inclined lip projecting from the thick side of a wedge-shaped base portion which extends inwardly from the margin of the insole.

16. An insole for use in cement-lasted shoes in which staples are employed temporarily to secure the uppers in lasted relation to the insoles, comprising a thin leather body portion reinforced on its outer face with fibre cemented to the shank and heel portions thereof, said insole also having cemented to its outer face upper-attaching strips of vulcanized rubber composition reinforced on their exposed surfaces with fabric material, said strips being located in spaced relation to the edges of the insole and extending substantially from the tip line to the heel-breast line and each strip having an upwardly and inwardly inclined lip projecting from a wedge-shaped base portion which tapers inwardly from the inner edge of the insole margin, said lip being reinforced on both sides with fabric material to strengthen the lip and to provide a suitable surface at the inner side of the lip along which a stapling anvil may slip during the lasting operation.

17. An insole for use in the manufacture of shoes having an upper-attaching strip of rubber composition reinforced with fabric material attached to its outer face, said strip being wedge-shaped in cross section and having an upper surface against which a shoe upper may be temporarily secured in lasted relation to the insole by metal fastenings.

18. An insole for use in the manufacture of shoes having secured to its outer face, in spaced relation to its margins and extending from about the tip line to the heel-breast line, wedge-shaped strips of rubber reinforced on their upper surfaces with fabric material, the thin edge of each strip being located adjacent to the margin of insole so that a shoe upper can be temporarily secured to the strip without leaving a space between the upper and the insole margin.

19. An insole for use in the manufacture of shoes having cemented to its outer face, in spaced relation to its edges and extending lengthwise of the insole from about the tip line to the heel-breast line, wedge-shaped strips of rubber reinforced on their exposed surfaces with fabric material, the thick portions of said wedge-shaped strips being located farthest from the insole margins so that a shoe upper can be secured to the strips by staples to hold it temporarily in lasted relation to the insole without having the staples penetrate the body portion of the insole.

20. An insole for use in the manufacture of shoes in which uppers are secured in lasted position by cement, said insole having cemented to its outer face from about the tip line to the heel-breast line a pair of wedge-shaped upper-attaching strips of rubber composition reinforced on their uppersides with fabric material, each strip being approximately equal in width to the adjacent feather portion of the insole and having its outer edge coinciding substantially with the inner edge of said feather portion.

21. A triangular strip adapted for attachment to the outer face of an insole to provide anchorage for upper-securing metallic fastenings, two surfaces of said strip being relatively wide and being located at a sharply acute angle to each other and the third surface being relatively narrow and being located substantially at right

angles to one of said wide surfaces, the narrow surface and one of the wide surfaces being composed of fabric material and the other wide surface being composed of rubber to facilitate its attachment by cement to the outer face of an insole.

22. An upper-attaching strip for an insole, said strip having a two-ply base portion and an inclined lip projecting upwardly from one edge of said base portion, said lip comprising three thicknesses of material widthwise of the strip.

23. An insole strip for holding an upper in lasted relation to an insole, said strip being composed of rubber composition reinforced with fabric material and having at one edge an upwardly extending lip inclined toward the upper face of a wedge-shaped base portion.

24. An upper-attaching strip for an insole, said strip being composed of vulcanized rubber reinforced on its exposed surfaces with fabric material and having an upwardly extending lip supported by a base portion which tapers laterally of the lip.

25. A flexible insole strip of rubber adapted to be secured to the outer face of an insole adjacent to its margin to provide material to which a shoe upper may be temporarily secured in lasted relation to the insole, said strip having an upwardly projecting lip which slants inwardly from one edge of the strip and having a beveled base portion extending laterally of the lip, the lip and the upper surface of the base portion being reinforced with fabric material.

26. An insole strip which is wedge-shaped in cross section and is composed of vulcanized rubber reinforced on its exposed surfaces with fabric material, said strip being approximately equal in width to the feather portion of a relatively thin insole and being about as thick as said insole at the thickest part of the strip.

27. That improvement in methods of making shoes in which uppers are secured in lasted relation to insoles by cement, which consists in removably securing upper-attaching strips to the outer face of an insole, assembling the insole with a shoe upper on a last, working the upper over the edge of the insole into lasted position against the exposed surfaces of the attaching strips, inserting metal fastenings through the upper and into the strips to hold the upper in lasted relation to the insole while the cement is setting, severing the upper along the outer edges of the strips, and pulling off the strips and severed portions of the upper, thereby removing the strips, fastenings, and trimmed portions of the upper from the outer face of the insole.

28. That improvement in methods of making shoes in which shoe uppers are secured in lasted relation to insoles by cement, which consists in cementing an upper-attaching strip to the outer face of a thin flexible insole adjacent to its margin, coating the marginal portions of the insole and of a shoe upper with cement, assembling the insole and upper on a last and working the upper into lasted position against the exposed surface of said attaching strip, inserting curved staples through the margin of the upper and into the strip to hold the upper in lasted relation to the insole while the cement is setting, trimming the upper along the outer edge of the attaching

strip, and pulling off the strip with the trimmed margin of the upper stapled thereto, thereby removing said margin, strip, and staples from the bottom surface of the shoe.

29. That improvement in methods of making shoes in which uppers are secured in lasted relation to insoles by cement, which consists in cementing a substantially wedge-shaped strip of rubber composition reinforced with fabric material to the outer face of a thin flexible insole, the thin edge of said wedge-shaped strip being located adjacent to the inner edge of the feather portion of said insole, coating the margins of the insole and of a shoe upper with cement, assembling the insole and upper on a last and working the upper into lasted position against the exposed surface of said strip, inserting staples through the upper and into the thick portion of the wedge-shaped strip to hold the upper temporarily in lasted position while the cement is setting, said staples having legs which curve in the material of the strip without penetrating the body of the insole, trimming the margin of the upper along the thin edge of the strip, and pulling off the strip and trimmed margin of the upper, thereby removing the strip, staples, and upper material from the outer face of the insole.

30. A shoe including an insole, a heel and shank reinforcement secured to the heel and shank portion of the insole, a separate strip of material secured against the outer face of the insole and against the shank portion of said heel and shank stiffener, an upper turned over the marginal edge of said insole, the edge of said upper abutting against said strip and secured to the insole around the external margin thereof, and an outsole laid on and secured to the insole.

31. The method of making shoes which comprises supplying an insole of a size to fit the bottom of a last, said insole having a shank piece applied to its under side and a strip extending from the heel portion of the insole around the margin of the shank and forepart of the shoe to form a lasting shoulder, assembling and pulling over an upper on said last and side-lasting the lasting margin of the upper against said shoulder, adhesively securing the margin of the upper with the margin of the insole, and then trimming off the lasting edge of the upper and of the strip forming the lasting shoulder.

32. In a method of making shoes the steps of providing an insole having a separate upstanding strip united thereto around at least a portion thereof and spaced from the edge thereof to define a margin, drawing an upper over said insole with the overhanging edges of said upper lying upon the margin of the insole and against the upstanding part of the strip, uniting said upper to said insole along the margin of the insole outside the strip, joining the contiguous margins of said upper to the upstanding part of the strip to maintain the upper in position until its union to the insole becomes fixed, and then trimming off the upstanding contiguous margins of the strip and upper leaving the united part of the upper and insole unaffected.

EUGENE J. RAY.