

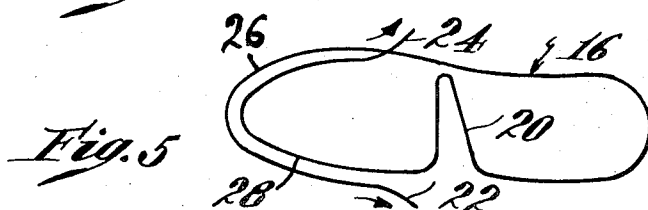
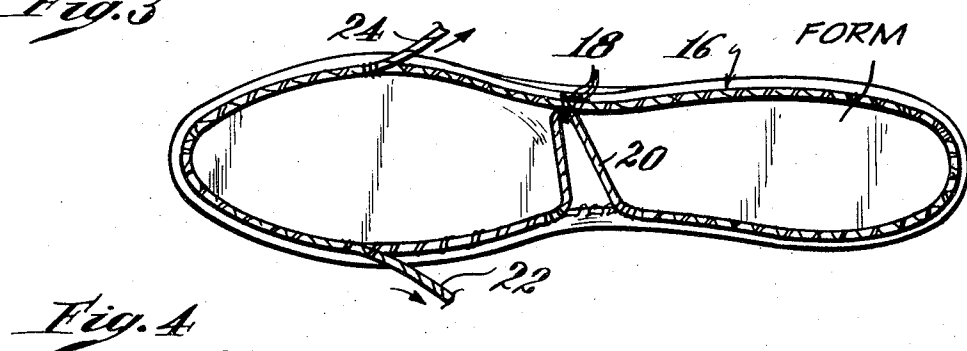
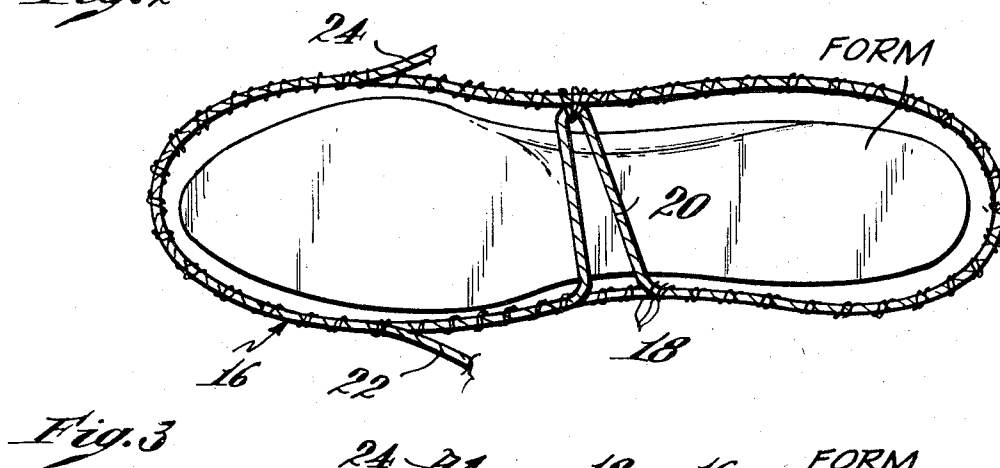
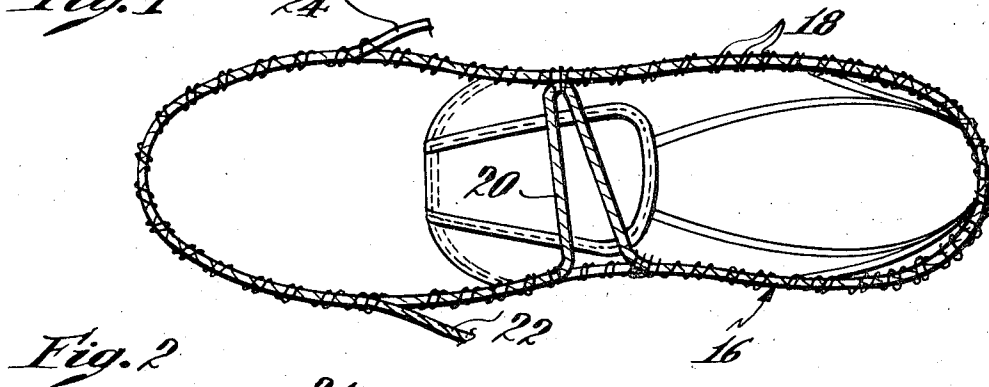
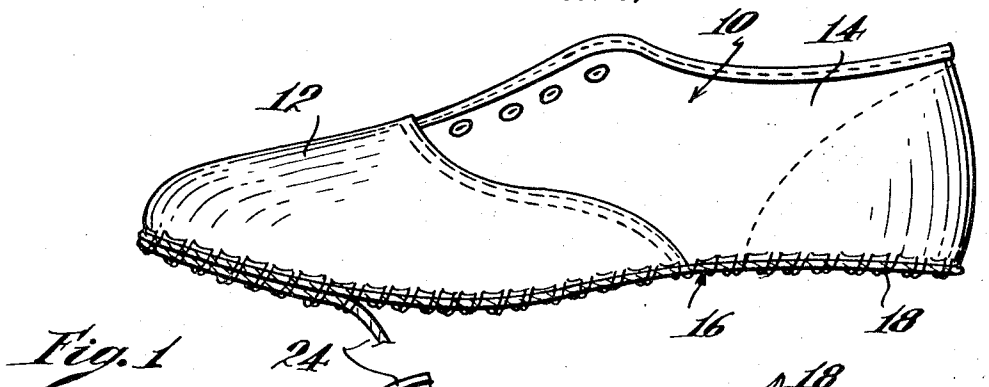
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STRING LASTING

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STRING LASTING

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3 Claims

ABSTRACT OF THE DISCLOSURE

An upper having a string loosely bound to the edge of its lasting margin to enable shortening the edge by pulling on the ends of the string to effect lasting of the upper to a shoe form, and a loop extending across the upper from one side to the other at substantially the shank to effect drawing the sides of the upper at the shank toward each other.

BACKGROUND OF THE INVENTION

String lasting has long been used in the art of shoe manufacture, particularly in the manufacture of shoes provided with rubber or composition bottoms where an insole is not necessarily used. The string is bound to the edge of the lasting margin and usually makes an entire loop about the bottom so that by pulling on the ends of the string the lasting margin may be shortened and drawn inwardly over the bottom of the shoe form, which is for this type of shoe making a metal form. String lasting is effective along the sides and ends of the last where the curvature is convex; however, along portions which are concave, such as the shank, the edge bridges the curvature rather than being drawn snugly into engagement with the metal of the form. To insure a snug fit at the shank sharp pins are fixed to the bottom of the form in the area of the shank at both sides and after the lasting string is drawn tight, the upper at the shank is manually drawn inwardly against the bottom and impaled on the pins. The necessity for performing this extra operation of pulling the upper snugly in about the shank is time consuming and the necessity of providing the pins on the bottom of the form increases the cost thereof and increases their maintenance since the pins can easily be mutilated or broken so that the form must be replaced or repaired.

The objects of this invention are accordingly to provide for string lasting an upper to a shoe form without having to employ lasting pins at the shank thereby to expedite production and eliminate the extra manufacturing and maintenance costs of the forms themselves.

SUMMARY

As herein illustrated, the improved string lasting is accomplished by means of the combination with a closed upper of a string bound to the edge of the lasting margin by overedge stitching so that it is free to be pulled to shorten said edge; characterized in that a loop of the string is drawn from one side across the open bottom to the other side at the shank and bound at said other side by said overedge stitching so that pulling the ends of the string to shorten the peripheral edge also pulls the edges at the opposite sides of the shank toward each other into engagement with the surface of the form at the shank. The invention also contemplates a method of applying the string which comprises binding the string to the marginal edge of the upper by starting at one side and laying the string around the toe to the opposite side, from thence around the heel to the one side and from thence around the toe again to said opposite side to a point substantially opposite the starting point at the one side. During the course of laying the string about the opposite side, a loop

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of the string at the shank is pulled from the opposite side to the one side and secured to said one side by means of the binding.

The invention will now be described in greater detail with reference to the accompanying drawings wherein:

FIG. 1 is a side view of a closed upper showing the lasting string bound along the edge of the lasting margin;

FIG. 2 is a bottom view of FIG. 1;

FIG. 3 is a bottom view of the upper mounted on a shoe form showing the lasting string bound along the edge of the lasting margin prior to pulling the string to draw the upper against the bottom of the form;

FIG. 4 is a view corresponding to FIG. 3 showing the lasting margin pulled in over the bottom of the form with the portions of the upper at the shank drawn inwardly into snug engagement with the arch in accordance with this invention; and

FIG. 5 diagrammatically shows the course of the lasting string as it is laid about the edge of the lasting margin.

Referring to the drawings, FIG. 1 shows a conventional upper 10 comprising a forepart 12 and quarters 14 joined to form what is commonly known as a "circular or closed upper." The upper assembly is, of course, open at the top and bottom and when it is to be used in the manufacture of a shoe having a rubber or composition bottom applied by vulcanization or injection molding, it is customary to omit an insole and to string-last the lasting margin of the upper directly to the last or shoe form used in the bottom-forming operation.

String lasting is not a new way of applying the upper snugly to the bottom of the form. Customarily a string for this purpose is loosely bound to the edge of the lasting margin by means of overedge stitching, the upper is then placed on the shoe form and the opposite ends of the string are pulled to gather the lasting margin in over the bottom of the form and then tied together to hold the lasting margin constricted. Constriction of the lasting margin by this means is entirely satisfactory along the outwardly convex portions of the shoe form but ineffective along the inwardly concave portions as, for example, the shank at opposite sides, since the upper at these portions bridges rather than follows the concave surface of the shoe form. To rectify this situation it is customary to fix sharp pins in the bottom of the form in this area and after the lasting margin has been drawn tight pulling the portions of the lasting margin at the shank inwardly and impaling them upon the pins. This invention provides for effecting constriction of the lasting margin at the shank without the use of such pins. To accomplish this, in accordance with this invention, a lasting string 16 (FIG. 1) is bound to the edge of the lasting margin by overedge stitching 18, so that the string is free to be pulled to shorten the edge and while shortening the edge to pull the opposite sides of the shank toward each other and to this end is disposed about the bottom with a portion 20 intermediate its ends drawn in the form of a loop 20 across the open bottom from one side to the other and loosely bound by the binding at the other side. The two free ends 22, 24 of the string, by means of which it is drawn tight, are located at opposite sides of the upper as shown in FIGS. 1 to 5, inclusive.

The string 16 is laid about the edge of the lasting margin as diagrammatically shown in FIG. 5, with its two free ends 22 and 24 located at opposite sides substantially at the shank, with the portions of the string intermediate the ends 22, 24 extending from the end 24 once about the entire edge to approximately the end 22 forming a substantially continuous loop 28 about the entire edge, then transversely across the upper from the end 22 to the other side, through one or more loops 20 of the binding and back to the end 22, and then in the same direction around the end of the shoe to form a second

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substantially continuous loop 26 at the forepart which terminates at the end 22.

The loops 26 and 28 are laid about the lasting edge substantially in superposed relation with the aid of a sewing machine and in accordance with the method of applying the string the operation is commenced with the end 24 by turning the upper so that a course is laid along that side toward the toe, from thence around the toe and rearwardly toward the heel, from thence about the heel and forwardly toward the toe and when reaching the end 24 substantially at the shank drawing the loop 20 from the opposite side toward the one side so as to bind it as the string is laid along this side, from thence forwardly about the toe again and then rearwardly from the toe to the end 22.

In practice the sewing machine is stopped momentarily while laying the course of the string along the side of the shoe where the end 24 is located to enable the operator to draw the loop 20 across and include it in the binding. Optionally, the operator may stop the machine while laying the course along the side where the end 22 is located to draw the loop across and while holding it continue the binding operation until the opposite side is reached and then bind the loop.

FIGS. 1 and 2 show the upper with the lasting string applied thereto prior to mounting the upper on the form for the bottom-forming operation. FIG. 3 shows the upper slipped onto the form with the loop 20 crossing the bottom of the form substantially at the shank. Having placed the upper on the form the ends 22, 24 of the string are grasped and pulled in the direction of the arrows, that is, from the toe toward the heel end and in consequence the loops 26 and 28 are shortened. Shortening the loops 26 and 28 constricts the edge about the bottom of the form and simultaneously shortens the loop 20 which draws the margin of the upper at opposite sides of the shank toward each other, conforming it to the curvature of the shank as shown in FIG. 4.

While a single loop is shown for drawing the sides at the shank together it is within the scope of the invention to employ more than one loop if it is found desirable. Moreover, it is optional whether the loop is drawn from one side to the other or from the other side to the one.

The application of the lasting string in the aforesaid manner can be accomplished in the stitching room without substantially affecting normal production therefrom and provides a rapid and effective way for drawing the upper snugly to the bottom of the form for the bottom forming operation whether it be by compression or injection molding.

It should be understood that the present disclosure is for the purpose of illustration only and that this inven-

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tion includes all modifications and equivalents falling within the scope of the appended claims.

I claim:

1. The combination with a closed upper of a string bound to the edge of the lasting margin by overedge stitching so that said string is free to be pulled to shorten said edge; characterized in that the two ends of the string are located at opposite sides of the upper and the portion intermediate said ends extends from one end at one side once about the entire edge to approximately said one end, across the upper from said one side to the other, through a loop of the binding at said one side, back across to the one side and then in the same direction around the end of the upper to the end of the string at the other side.

2. The method of preparing a closed upper for string lasting comprising loosely binding a string to the marginal edge of the upper starting at one side and extending therefrom around the toe to the opposite side, thence around the heel to the one side, from thence around the toe again to said opposite side to a point substantially opposite the starting point at the one side, and during the course of laying the string about the edge pulling a loop of the string at the shank from the opposite side to the one side and securing the loop end to said one side by means of said binding.

3. The method comprising loosely binding a length of string about the marginal edge of the upper by laying a first course commencing at one side substantially midway between the heel and toe around an end of the upper, from thence around the opposite side and around the other end of the upper, from thence back to the starting point and from thence once again around said one end of the upper to said other side to a point substantially opposite said starting point, and while laying the course along the one side during the first traverse thereof pulling a loop of the string from the other side at the shank across the open bottom to the one side and binding the end of the loop to said one side.

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PATRICK D. LAWSON, Primary Examiner

U.S. Cl. X.R.

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