June 17, 1952 C. HANDS 2,601,136

INSOLE AND METHOD OF MAKING SAME

Filed June 28, 1949 2 SHEETS—SHEET 1

Fig. 1

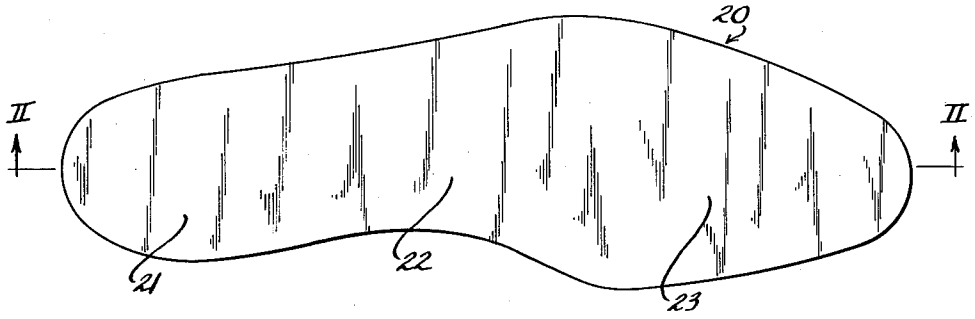


Fig. 2



Fig. 3

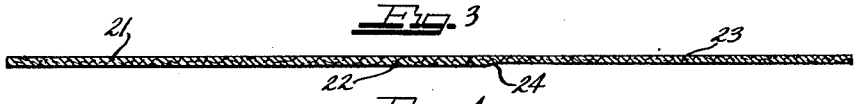


Fig. 4

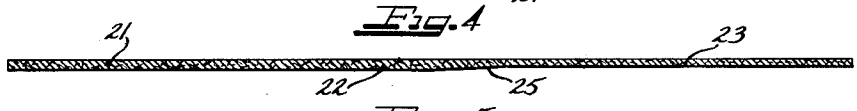


Fig. 5

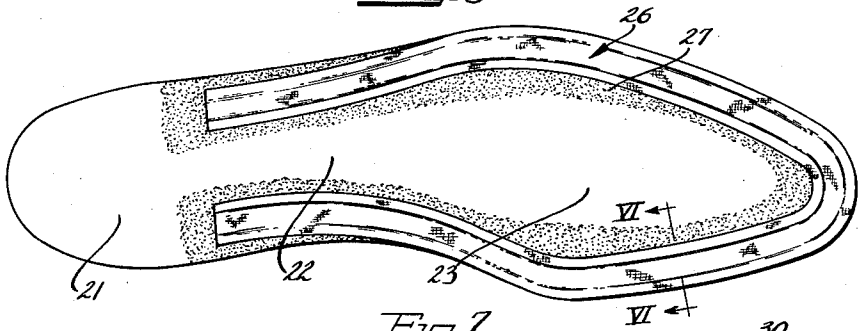
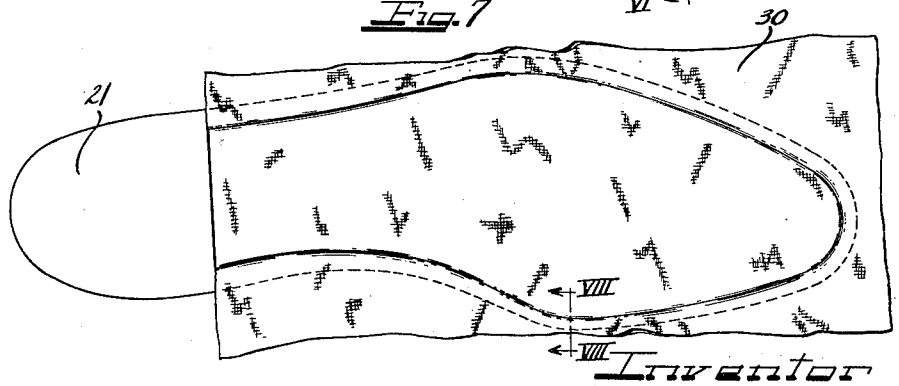


Fig. 7



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Fig. 6

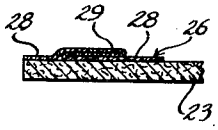


Fig. 8

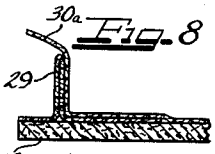


Fig. 10

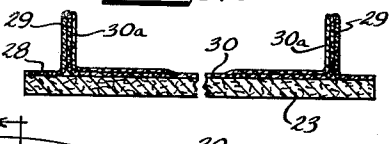


Fig. 9

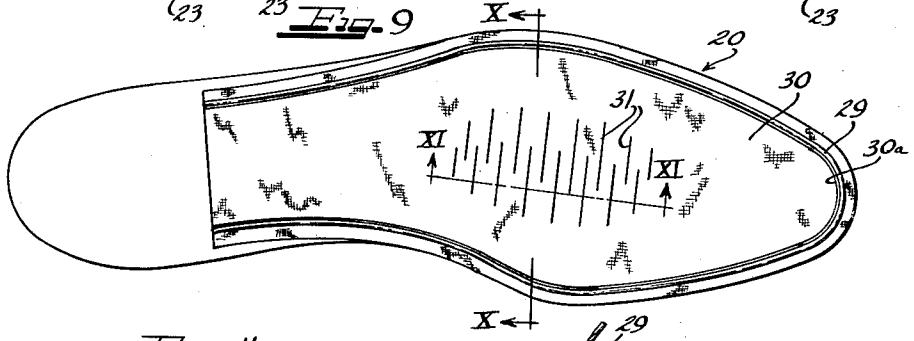


Fig. 11



Fig. 13

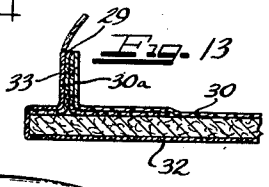


Fig. 12

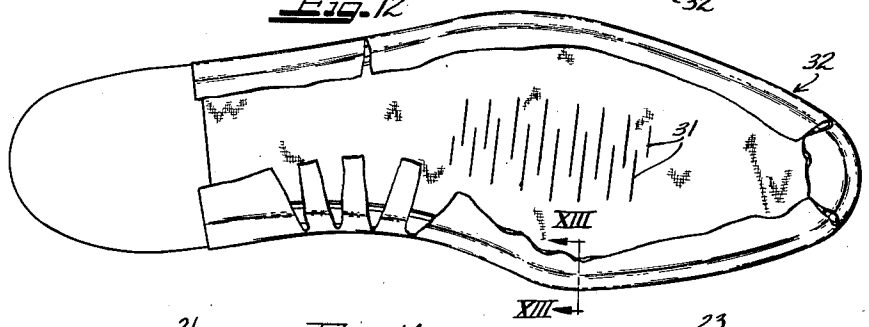


Fig. 14

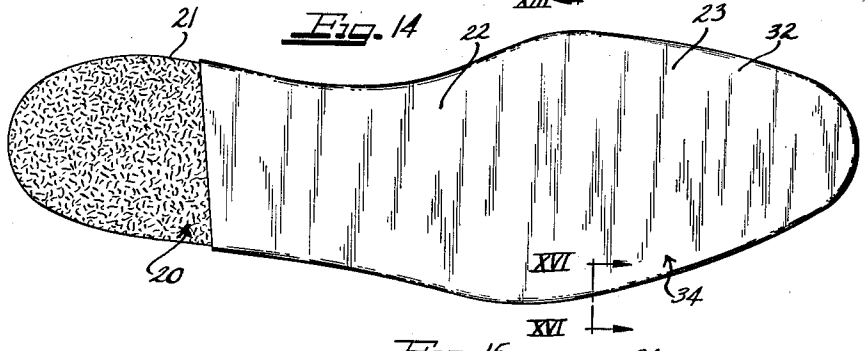
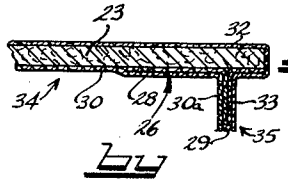


Fig. 15



Fig. 16



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UNITED STATES PATENT OFFICE

2,601,136

INSOLE AND METHOD OF MAKING SAME

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Application June 28, 1949, Serial No. 101,698

3 Claims. (Cl. 36—22)

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The present invention relates to a shoe insole and to methods of making the same. More particularly, the invention pertains to an insole of enhanced flexibility, having a depending multi-thickness marginal sewing rib secured to the insole proper, and to a method of making insoles without the necessity of channeling, splitting or otherwise deforming the insole proper.

In the manufacture of welted shoes, it is necessary to provide the shoe insole with a depending marginal sewing rib, so that the insole may be sewed to the welt and the shoe upper by means of a single stitching operation. The depending marginal flange is typically provided by performing an outer marginal channeling operation and an inner marginal channeling operation to provide a pair of adjacent flaps formed integrally with the insole proper, the flaps being subsequently deformed from the plane of the insole and secured together to form the desired sewing rib. The sewing rib is thus formed of a pair of coextensive leather layers which extend around the margin of the shank and the forepart of the insole, and it will be appreciated that these depending leather layers, being formed integrally with the insole, contribute materially to the initial stiffness of the insole.

The present invention now provides an insole in which the depending marginal sewing rib is formed of a plurality of layers of cloth which are secured to the undersurface of the inner sole, as by means of a suitable adhesive, and folded to form a multi-thickness depending rib. The leather facing or finishing layer which is applied to the upper surface of the insole proper to form the finished surface thereof cooperates with the multi-thickness fabric rib to provide the complete sewing rib of the finished insole. The insole proper is thus of substantially uniform transverse thickness and the enhanced flexibility of the improved insole, due to the elimination of the integrally formed leather layers, will be appreciated.

The method of the present invention completely eliminates the heretofore necessary channeling of the insole proper. Thus, the present method includes the steps of applying a folded fabric strip to marginal portions of the shank and forepart of the insole proper, the deforming of a portion of the strip from the plane of the insole proper to provide a depending multi-thickness rib, the application of a canvas covering layer to that portion of the undersurface of the insole proper bounded by the previously applied tape, the application of the leather finishing layer to the upper surface of the insole proper, and the securing of the finishing layer and the fabric cover to opposing sides of the depending tape rib to define therewith the finished multi-thickness sewing rib.

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It is, therefore, an important object of the present invention to provide an improved shoe insole including an insole proper of substantially uniform transverse thickness and a depending marginal sewing rib applied to the insole and secured thereto by suitable means.

Another important object of the present invention is to provide an improved method of making a shoe insole by the securing of a folded fabric tape to marginal portions of the shank and forepart of the insole proper to provide a marginal sewing rib, the method eliminating completely the splitting or channeling of marginal portions of the insole proper.

It is a further important object of the present invention to provide a shoe insole having an insole proper of substantially uniform transverse thickness and a depending sewing rib formed of a plurality of layers of fabric secured to marginal portions of the shank and forepart of the insole to provide an improved insole of enhanced flexibility.

Yet a further important object of the present invention is to provide a method for the making of a shoe insole including the steps of applying to the undersurface of the insole proper a folded fabric tape having an integrally formed, multi-thickness dependent sewing rib, applying to that portion of the undersurface of the insole bounded by the tape a fabric covering having its edge portions secured to the dependent tape rib, and applying a facing leather layer to the upper surface of the insole, the facing layer also having edge portions cooperating with the fabric rib to aid in defining the sewing rib.

Other and further important objects of the present invention will be apparent from the disclosures in the specification and the accompanying drawings.

On the drawings:

Figure 1 is a plan elevational view of an insole blank or insole proper as initially formed;

Figure 2 is a sectional view taken along the plane II—II of Fig. 1;

Figure 3 is a view similar to Fig. 2 showing the reduction of the thickness of the forepart of the insole proper;

Figure 4 is a view similar to Fig. 3 showing the beveling of the sharply reduced portion of Fig. 3;

Figure 5 is a bottom plan elevational view sim-

ilar to Fig. 1 showing a tape applied to the shank and forepart portions of the insole proper;

Figure 6 is a sectional view taken along the plane VI—VI of Fig. 5;

Figure 7 is a bottom plan view showing the application of the fabric covering to the partially finished insole of Fig. 5 with the fabric rib being deformed from the plane of the insole proper;

Figure 8 is a sectional view taken along the plane VIII—VIII of Figure 7;

Figure 9 is a bottom plan view similar to Fig. 7 showing the trimming of the fabric cover and the partially finished depending rib formed by the tape and the fabric cover;

Figure 10 is a broken, sectional view taken along the plane X—X of Fig. 9;

Figure 11 is a sectional view taken along the plane XI—XI of Fig. 9;

Figure 12 is a bottom plan view of the partially finished insole of Fig. 9 having the leather finishing layer applied thereto;

Figure 13 is a view taken along the plane XIII—XIII of Fig. 12;

Figure 14 is a top plan view of the finished insole;

Figure 15 is an inverted side elevational view of the finished insole of Fig. 14; and

Figure 16 is a sectional view taken along the plane XVI—XVI of Fig. 14.

As shown on the drawings:

In Fig. 1, reference numeral **20** refers generally to an insole blank or insole proper formed of leather of substantially uniform transverse and longitudinal thickness, the insole proper having an exterior contour appropriate to the shoe in which it is to be employed. The insole proper is conventionally divided into three sections from rear to front, including the rear part **21**, the shank **22** and the forepart **23**.

As is conventional in the art, the forepart is preferably reduced in transverse thickness as shown in Fig. 3 by a beveling of the shank **22**, as at **24**, in order to insure a smooth flexing of the insole, the sharply reduced portion **24** being subsequently beveled as at **25** in Fig. 4. Although the forepart **23** is of less thickness than the shank **22** and the rear part **21**, the insole is of substantially uniform transverse thickness across its entire width.

There is best shown in Figs. 5 and 6, a flexible tape generally indicated by numeral **26**, preferably formed of fabric or other suitable material, as applied to the shank and forepart of the insole proper **20**. The tape **26** is applied to the undersurface of the insole by means of a suitable adhesive, indicated generally at **27**, the tape being applied to marginal portions of the shank and forepart. The tape need not be applied directly against the edge of the insole, since the feather about the forepart may be removed by a trimming operation if so desired. It will be noted from Fig. 6 that the tape **26** includes edge portions **28** secured flatwise to the surface of the insole and a double thickness, folded over flange or rib portion **29**, the flange **29** being folded over as in Fig. 6 to permit the ready application of the tape to the insole proper. Following the application to the insole proper, and the removal of the feather about the forepart, if necessary, the flange or rib **29** is deformed from the plane of the insole proper, as by "boning," so that it depends from the insole to form a dependent, marginal, double thickness fabric rib.

Next, the canvas cover **30** is applied to the bottom of the sole and more particularly to that portion of the bottom of the sole which is bounded by the tape **26**. In order to secure the cover to the sole, appropriate portions of the insole proper are covered with a suitable adhesive, the cover is applied to the adhesive, and the fabric or canvas cover is "boned" to lie snugly against the upstanding fabric rib **29**, as at **30***a*, best shown in Fig. 8. Following the application of the cover and the boning of the same, the cover is trimmed about its marginal edges so that it terminates substantially flush with the upstanding end of the flange **29**, as shown in Fig. 10.

In order to enhance the flexibility of the sole, the shank and forepart are slashed in a predetermined pattern as best shown in Figs. 9 and 11. A plurality of relatively shallow cuts **31** extending transversely of the forepart and shank of the insole are formed by the slashing operation, the cuts extending through the cover and into the leather of the insole proper. It will be seen in Fig. 10 that the addition of the fabric cover **30** secured to the shank and forepart of the insole proper and to the depending rib **29** results in the formation of a triple thickness rib formed entirely of fabric or other material secured to the undersurface of the insole proper.

Following the application of the cover **30** and the trimming of the same to the form shown in Figs. 9 and 10, the leather finishing layer **32** is applied to the opposing surface of the insole proper and is secured thereto by means of an adhesive. The finishing layer **32** overlies the upper portion of the shank and forepart of the insole and extends downwardly from the marginal edges of the insole into flatwise contact with the depending rib **29** of the tape **26**. That portion **33** of the cover **32** in contact with the rib **29** is secured thereto to provide an additional thickness for the dependent sewing rib. Following the securing of the covering layer or finishing layer **32** to the insole proper, the marginal edges of the covering layer are trimmed to be coextensive with the rib **29**.

As best shown in Figs. 14, 15 and 16, the finished insole **34** comprises the insole proper **20**, and the depending double thickness rib **29** formed by the aforesaid tape **26** secured to marginal portions of the forepart and shank of the insole proper. A bottom cover layer **30** covers those portions of the forepart and shank bounded by the tape **26**, the cover layer **30** terminating in the marginal flange **30***a* secured to the flange or rib **29** of the tape **26**. The upper outer surfaces of the shank and forepart are covered by a finishing layer **32** which also terminates in a marginal flange **33** coextensive with and secured to the rib **29**. In this manner, the rib **29** and the marginal portions of the inner and outer cover layers **30** and **32** respectively coperate to define a sewing rib **35** of multiple thickness formed primarily of fabric applied to the undersurface of the insole proper and secured thereto by a suitable means, such as an adhesive. The depending rib **35**, formed primarily of fabric, is much more flexible than the multi-thickness leather or leather and fabric dependent ribs heretofore known. In addition, the present method of making insoles is much more simple, less expensive, and more easily carried out due to the complete elimination of the heretofore necessary channeling or splitting of marginal portions of the insole proper.

It will be understood that modifications and variations may be effected without departing from the scope of the novel concepts of the present invention.

I claim as my invention:

1. The method of making an insole which comprises adhesively securing a fabric strip to marginal portions of the shank and forepart of an insole proper, said strip having an integrally formed folded rib of multiple thickness initially lying substantially in the plane of the insole proper, deforming the insole rib to dispose it substantially at a right angle to the plane of said insole proper, securing a covering layer to those portions of said insole shank and forepart bounded by said strip, and securing marginal edges of said cover layer to said strip web to form a multi-thickness sewing rib secured to said insole by said strip and said cover.

2. The method of making a stitchless insole which comprises adhesively securing oppositely a fabric strip having a multi-thickness depending rib to marginal portions of the shank and forepart of an insole proper, adhesively securing a covering layer to those portions of said insole bounded by said strip and to the inner lateral flange of said strip, adhesively securing marginal edges of said covering to said rib to reenforce the same and to aid in securing said strip to said insole, and covering opposed surface portions and the outer lateral flange of said strip of said insole with a finishing layer also having marginal edges extending into contact with said rib and adhesively secured thereto to aid in maintaining said strip in position on said insole proper, said tape rib, the marginal portions of said covering, and the marginal portions of said covering layer cooperating to define a multi-thickness sewing rib for attaching the insole to a shoe.

3. A stitchless insole for a shoe, comprising a blank of substantially uniform thickness transversely thereof, a fabric tape reversely folded intermediately thereof to provide a multi-thickness rib and having a pair of opposed lateral flanges adhesively secured to said blank around the shank and forepart of the blank, a fabric cover adhesively secured to said blank inside the area defined by said tape and overlying the inner flange of the tape and extending over the inner face of said rib to which it is adhesively bonded, said cover terminating substantially flush with the outer edge of said rib, and a facing layer adhesively secured to the opposite face of said blank and extending around the edges of said blank to overlie the outer margin of said tape and the outer face of said rib to which it is adhesively secured, said facing layer terminating substantially flush with the outer edge of said rib.

COLEMAN HANDS.

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