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J. B. REID ET AL

3,105,985

METHOD OF ADHESIVELY SECURING A SOCKLINING TO AN INSOLE

Filed July 16, 1962

2 Sheets-Sheet 1

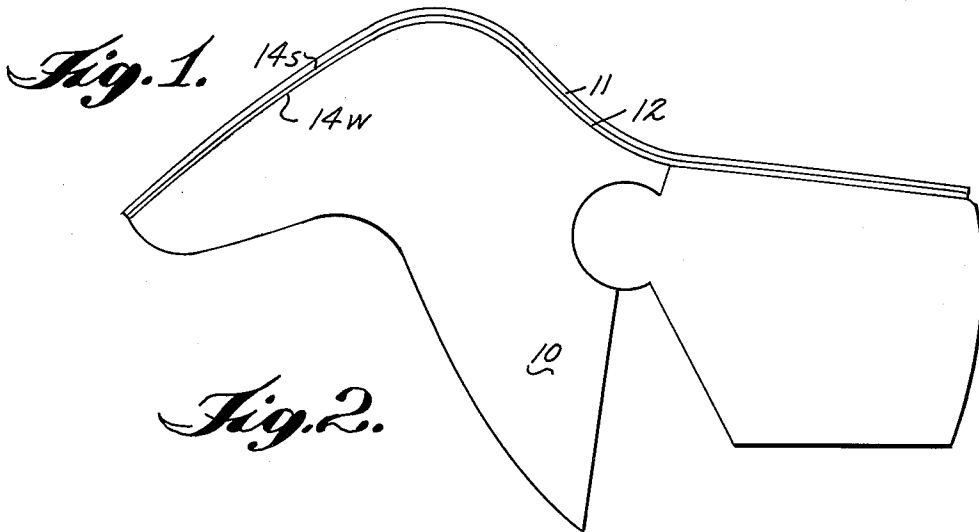


Fig. 2.

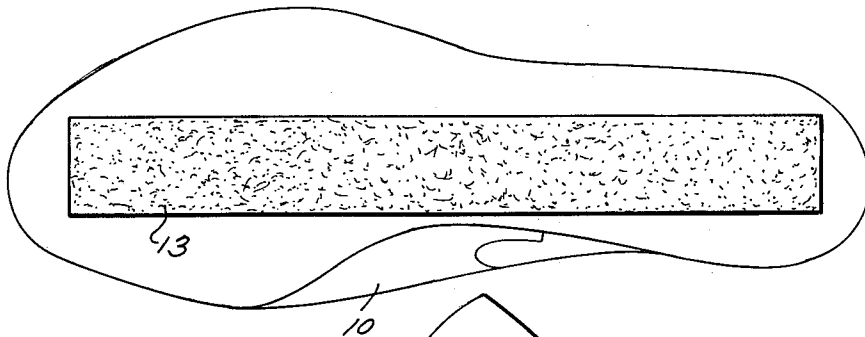
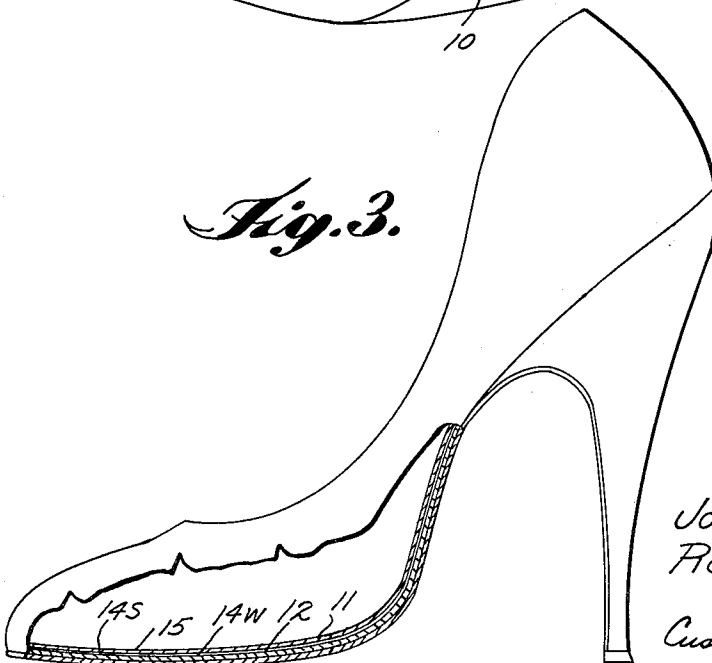


Fig. 3.



INVENTORS

JOHN B. REID
ROBERT A. SPENCE

Cushman, Darby & Cushman
ATTORNEYS

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Fig. 4.

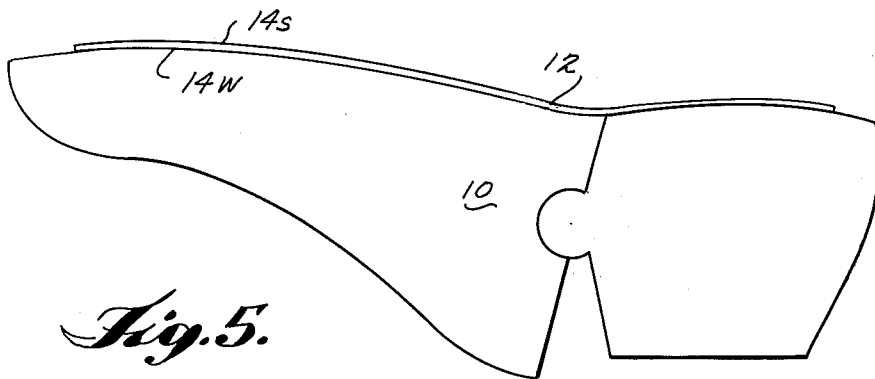


Fig. 5.

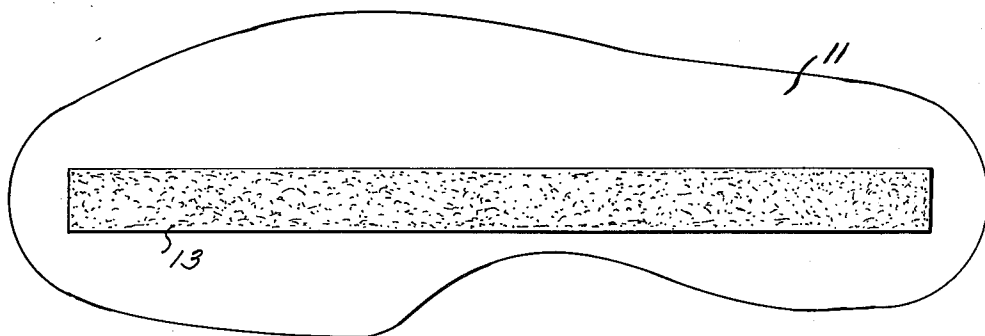
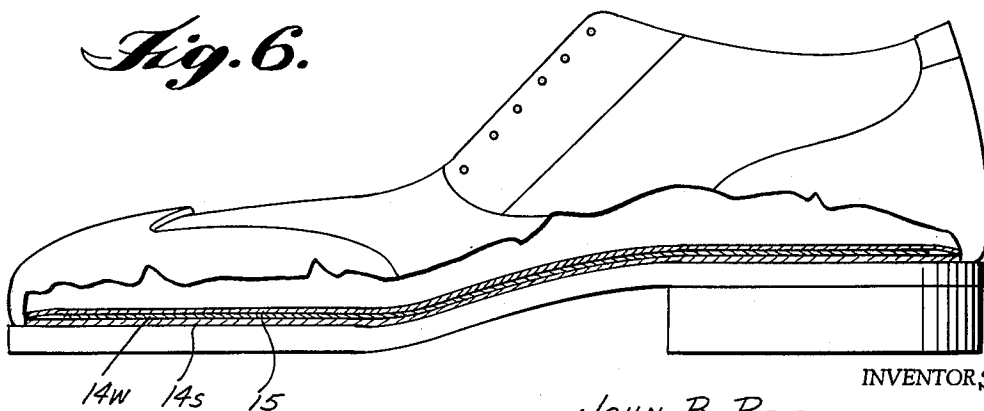


Fig. 6.



INVENTORS

JOHN B. REID
ROBERT A. SPENCE

BY

Cushman, Darby & Cushman
ATTORNEYS

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METHOD OF ADHESIVELY SECURING A SOCK-LINING TO AN INSOLE

John B. Reid, Brighton, and Robert A. Spence, South Lincoln, Mass., assignors to Bain Corporation, Cambridge, Mass., a corporation of Massachusetts
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4 Claims. (Cl. 12-142)

This invention relates to the art of shoe making and has particular reference to an improved method of attaching a conventional socklining to an insole.

In carrying out the present invention an insole is first adhesively united to a last in aligned relation by a double-faced pressure-sensitive adhesive tape in the manner disclosed in our Patent No. 3,052,904, so that the components may be separated readily, either the last from the insole, leaving the tape adhered to the latter, e.g., in the case of women's shoes and some types of men's shoes, or to the last in the instance of most men's shoes. The adhesives on the opposite faces of the tape may possess, and usually do for the purposes of this invention, different adhesive powers. Thereby the tape will adhere to the last or the insole dependent upon the magnitude of the adhesive bond established between these respective components.

For example, in the case of women's shoes, the weaker adhesive face of the tape will be disposed adjacent the last so that when the insole is separated from the last, the tape will be carried with it. Thus, the weaker adhesive face of the tape will be exposed.

We have found that a socklining may be smoothly applied over the insole and adhered thereto by means of the exposed adhesive tape surface. Aside from being free of tack holes and other irregular surface producing conventional expedients, the adhesive face of the tape on the insole, which adheres the socklining to the insole, reinforces, to some extent, the insole, but particularly strengthens the socklining. This is especially true in regard to the socklining at the arch portion of the shoe, where maximum strength is necessary.

The insole and socklining will be dimensionally and in contour substantially the same, and this is likewise true of the insole and the bottom face portion of the last. In this manner the insole and last bottom can readily be aligned in superposed relation, eliminating the need for trimming. This is likewise the case when subsequently the lining is positioned in the shoe and adhered by the tape carried by the insole, as above mentioned.

A socklining may now be attached to the insole of the shoe without the application of a wet adhesive coating, such as latex, and it may be located in alignment with the insole to form the smooth foot contact area by the application of simple pressure due to the exposed pressure-sensitive adhesive face of the tape beneath it, i.e., between the socklining and the insole.

Referring to the drawings:

FIGURE 1 shows a last having applied thereto a substantially dimensionally equal and similarly contoured insole, the pressure-sensitive double-faced adhesive being shown between the insole and the last;

FIGURE 2 shows the insole removed from the last with the exposed adhesive area carried by the insole contacting face of the last;

FIGURE 3 shows a shoe, partially in section, having the socklining adhered to the insole by the pressure-sensitive adhesive disposed therebetween, the insole and socklining being likewise of substantially identical dimensions and contours, respectively, with each other as well as with the bottom face portion of the last; and

FIGURES 4, 5 and 6 are views similar to FIGURES

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1, 2 and 3, except that the invention has been applied to a man's shoe, as distinguished from a woman's shoe and the last has been removed from the insole in FIGURE 5 to receive a socklining.

In the accompanying drawings FIGURES 1, 2 and 3 show the invention applied to women's shoes, and FIGURES 4, 5 and 6 show the invention applied to men's shoes, the reference numerals indicating the same component parts throughout the several views.

The last is shown at 10 and the insole at 11, both of which are of conventional design. The pressure-sensitive adhesive 12 likewise is a conventional material, and is preferably in the form of a double-faced adhesive tape 13, the surfaces 14s and 14w, respectively, being adhesively stronger and weaker, and uniting the last and insole. Thus, when the weaker adhesive face 14w is applied to the last, the tape will peel off the last and remain adhered to the insole. Once the insole is separated from the last, the tape remains on the insole with its weaker adhesive residual face 14w exposed to receive and unite the socklining 15. This latter component is also conventional. In the manufacture of the shoe it is simply necessary to apply the socklining 15 to the insole and press it upon the residual adhesive surface 14w, thereby to adhesively retain the socklining properly in the shoe and reinforce the same, particularly at the arch, as previously described.

As stated, by varying the relative adhesive characteristics of each face of the tape, the tape may be caused to remain adhering to the insole when the last is removed from the shoe, providing an adhesive means, or a combining element, for receiving the socklining, thereby eliminating the use or application of latex (or other similar adhesive) for this purpose, as is now necessary. Also, this will obviate the removal and disposal of the tape from the last or the insole and permits a double and permanent use of the tape. This results in a great saving in labor and materials to the shoe manufacturer through the utilization of the tape as a means of affixing the socklining in the shoe, replacing the use of latex or similar means. On men's shoes, for example, where no socklining is customarily used, the tape would be chosen with the face to be applied to the last having a greater adhesive quality so that the tape would remain on the last.

As stated above, the addition of the adhesive tape will further serve to strengthen and reinforce the layer of socklining by adding tensile and shear strength to the socklining, particularly at the arch. Moreover, the use of the adhesive tape for affixing the socklining to the shoe will provide a convenient means of replacing the socklining if it becomes damaged or soiled subsequent to the manufacture of the shoe, without the necessity of removing a socklining attached to the shoe by a more fixed means. That is, the socklining may be removed and replaced at any time.

Finally, using the tape method described herein, the resultant marks and impressions transferred to finished insole surfaces, from worn lasts containing dirt-embedded holes made by tacks, are eliminated. This is useful in the present invention where the socklining is presented directly to the foot, and also with footwear which does not require socklinings and in which the finished surface of the insole is presented directly to the foot.

This method (using tape) would permit (a) the application of a finished surface (color, texture or coating) now supplied by socklining, directly to the insole before the insole is combined with the last, which is now not the custom, or (b) the application (combining) of socklinings to the insole before the insole is combined to the last, which is now not the custom, both without damage

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to the insole or its finished surface, due to the lack of applying and removing tacks for combining the insole with the last. Thus, we may color or decorate or print on the insole first and use the double-face tape to adhere the insole to the last. In such a case, the adhesive tape will stick to the last when the insole is removed, leaving the insole with the color, texture or coating or whatever has been applied to its foot contact surface, exposed and smooth to receive the sole of the foot.

While we have referred above to the invention as applied to women's shoes, it will be appreciated that it can be applied with equal effect to men's shoes, in many cases, and since the reference numerals apply to the same parts in the several views, a further description of FIGURES 4, 5 and 6 is not considered necessary.

This application is a continuation-in-part of our co-pending application Serial No. 150,037, filed November 3, 1961, now Patent No. 3,052,904.

It will be understood that the several forms of the invention shown and described are merely illustrative and such changes may be made as come within the spirit of the appended claims.

We claim:

1. A method of manufacturing footwear comprising the steps of (1) detachably securing an insole member to a related last member by an adhesive material interposed therebetween having opposed pressure-sensitive faces of different adhesive power which develop adhesive bonds of different magnitude between the opposed faces of said material and each of said members, and (2) stripping said material from that member which is detachably secured by the adhesive bond of lesser magnitude.

2. A method of manufacturing footwear, as defined in claim 1, wherein the adhesive bond established between said material and said insole member exceeds in magni-

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tude the adhesive bond established between said material and said last member whereby said material will remain adhesively secured to said insole member upon removal of said last member.

3. A method of manufacturing footwear as defined in claim 1, wherein the adhesive bond established between said material and said last member exceeds in magnitude the adhesive bond established between said material and said insole member whereby said material will remain adhesively secured to said last member upon removal of said insole member.

4. A method of manufacturing footwear comprising the step of (1) detachably securing an insole member to a related last member by an adhesive material interposed therebetween having opposed pressure-sensitive faces of different adhesive power which develop a primary adhesive bond between one face of said material and said insole that exceeds in magnitude a secondary adhesive bond developed between the other face of said material and said last, (2) stripping said material from said last by rupturing the secondary bond while maintaining said primary bond between said material and said insole, and (3) securing a socklining to said insole by utilizing the adhesive of said secondary bond to develop another secondary adhesive bond between said material and said socklining.

References Cited in the file of this patent

UNITED STATES PATENTS

2,607,711	Hendricks	Aug. 19, 1952
2,701,887	Nolan	Feb. 15, 1955
2,760,215	Newton et al.	Aug. 28, 1956
2,822,557	Stritter	Feb. 11, 1958
2,985,970	McCarthy	May 30, 1961
3,059,350	Price	Oct. 23, 1962