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SHOE LASTING

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Fig. 1

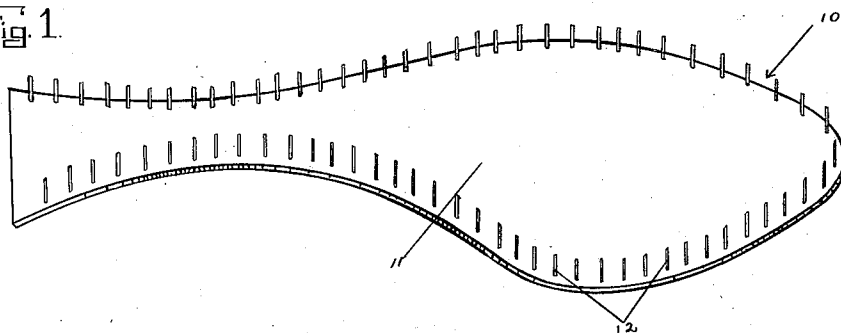


Fig. 2

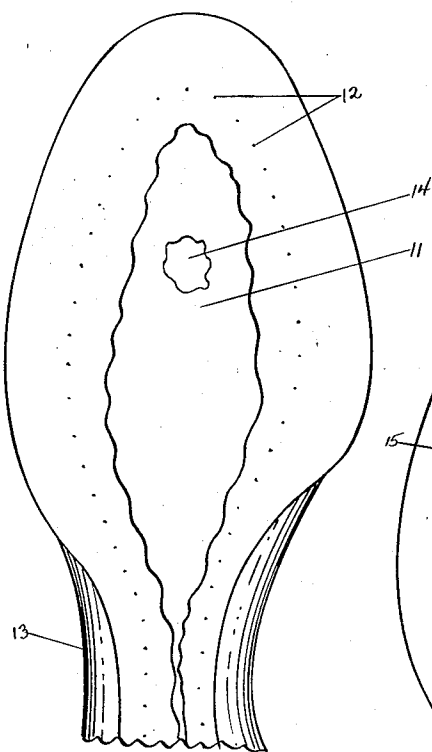
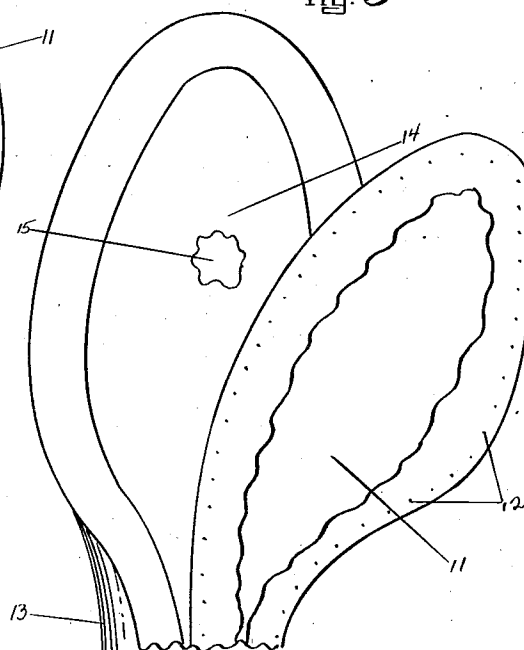


Fig. 3



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## UNITED STATES PATENT OFFICE

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## SHOE LASTING

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3 Claims. (Cl. 12-145)

This invention relates to improvements in shoe-lasting and more particularly to improvements in the methods of lasting shoes.

Heretofore in making shoes of a type particularly adapted for manufacture according to the present invention, the upper and the insole have been laid or placed on a suitable last and secured temporarily in any suitable manner, the upper being usually secured to the last by a few tacks driven through the material of the upper and into the last. Then in the following operation of drafting, suitable adhesive material, such as cement, has been applied and, except at the heel, the lower edge of the upper has been drawn around the edge of the insole by successive pulls at short intervals apart to smooth the upper on the last. As each part is drawn over the edge of the insole to the desired extent, it is secured in position by tacks placed relatively close together. Upon completion of the drafting operation there was a line of closely spaced tacks extending around the edge of the forward part and the shank and serving to hold the upper in position until the cement hardened and secured the upper firmly to the insole. At the heel portion the upper and counter were fastened to the insole in any suitable manner, as by tacks or nails driven through the upper, the counter and the insole, and clinched by driving them against a metal plate on the heel of the last.

Then the tacks were withdrawn one by one around the forward portion and the shank of the insole, and the edge of the upper cemented to the insole was trimmed and the cut off portion was removed.

This prior method had many disadvantages. The tacking of the edges of the upper to the insole and the last took a great deal of time and the same was true in regard to the later removal of the tacks. Furthermore, in removing the tacks rapidly there was considerable danger of missing some of them. It might be necessary therefore to examine the work carefully to see if all tacks had been removed. If any tacks were finally left in the shoe they might cause a great deal of trouble. After trimming the edge of the upper there might be considerable trouble in removing the cut-off pieces due to cement which would tend to hold them on the insole.

Another great disadvantage of the prior methods arises from the fact that the driving of so many tacks into the bottom of the last broke up and roughened the surface thereof so that tacks driven later might not hold and, what

is particularly important, this roughness would be imparted to the interior of the shoe and render it uncomfortable to wear. As a result each last would have to be replaced after short service and the cost of the shoes would be increased considerably due to the fact that the lasts are quite expensive.

An important object of the invention is to provide novel and advantageous improvements in shoe-lasting. A further object is to provide improvements in shoe-lasting of the character described whereby the aforesaid and other disadvantages of prior shoe-making methods will be avoided.

In carrying out the present invention, in an approved manner, use may be made of a false insole applied temporarily on the bottom of the insole but removable therefrom after the cement has set and thoroughly secured the edge of the upper to the bottom of the insole. Said false insole extends from the front of the heel seat to the front end of the shoe but is enough smaller than the regular insole to leave a suitable margin of upper secured to insole at the edge of the false insole when trimming has been effected prior to removal of the false insole. The false insole is provided with a series of closely arranged pins projecting from one face thereof along the edge, which pins will serve just as effectively in holding the upper material in position as did the tacks formerly driven into the last. A convenient way of providing such pins is to drive tacks through the false insole so that the pointed ends of the tacks serve as pins.

In carrying out the invention the upper and regular insole are laid or placed on the last and the false insole is laid on the regular insole with the pins projecting away from the last. The false insole may be secured in position in any suitable manner as by driving two or more tacks therethrough and into the last. Then the cement is placed between the upper and insole and the operator starts the drafting operation in which the upper is drawn tight over the edge of the insole and forced down on the adjacent pins as by hitting the material adjacent to the pins with some relatively light object.

This operation is carried on, step by step, around the front part and shank of the insole until completed, thus assuring the holding of the upper in position until the cement has set. With this arrangement it may be possible to tighten the upper at any particular point by bending the pin or pointed part of a tack toward

the central part of the false insole after the upper has been impaled on such pin.

After the cement has set the edge of the upper at the bottom face of the regular insole may be trimmed using the edge of the false insole as a guide. Then by removing the false insole with the cut-off portion thereon, the shoe will be made ready for the application of an outsole.

The false insole is very cheap and easy to produce and by its use not only saves the lasts from damage and assures their long life but very materially shortens the time of production of each shoe by avoiding the driving of so many tacks during the drafting operation, and also the later pulling of such tacks. Another advantage results from the covering of the regular insole by the false insole at points where cement would ordinarily but disadvantageously be applied to the regular insole.

Other objects, features and advantages will appear upon consideration of the following description and of the drawing, in which:

Fig. 1 is a perspective view embodying one form of false insole used in carrying out the present invention;

Fig. 2 is a fragmentary bottom plan view illustrating a last with an upper, a regular insole and a false insole assembled thereon as required during the setting of the cement between the regular insole and the upper, parts being broken away to show underlying structure; and

Fig. 3 is a fragmentary view, similar in general to Fig. 2 but illustrating the false insole as partially removed after the trimming of the upper material.

Referring to the drawing, there is illustrated in Fig. 1 a device 10 which, for reasons that will be apparent later, may be called a false insole. The device 10 may be made up of a body or member 11 of suitable sheet material shaped in general like an insole and provided at one face with projecting pins 12, which pins may conveniently be the pointed ends of tacks driven through the sheet material from the other face.

In Figs. 2 and 3 are illustrated the relation of different parts in successive stages of manufacture. An upper 13 and an insole 14 are laid on a last 15 in the usual manner.

However, preparatory to the drafting operation, the false insole 10 is laid on the insole 14 with its pins 12 projecting outwardly from the insole and the last. In order to function as desired, the false insole 10 is made sufficiently smaller than the regular insole 14 so that there will be left along its edge a sufficient margin of the regular insole to permit a strong attachment of the upper to the regular insole by means of adhesive.

After the false insole 10 has been placed in position on the insole 14 and secured to the last 15 with its edge properly positioned with respect to the edge of the insole 14, adhesive may be inserted between the edge of the upper 13 and the insole 14. Then in the drafting operation, the edge of the upper is engaged at different successive points in succession and as soon as the material at one point is pulled over the insole 14 far enough to remove wrinkles in adjacent parts

of the upper on the last the edge of the upper is forced down on adjacent pins 12, this operation being continued until carried completely around the part of the false insole provided with pins 12.

Then, after the cement is thoroughly set, trimming is effected around the edge of the false insole 10 leaving it ready for removal as indicated in Fig. 3, such removal completing the preparation for application of an outsole not shown. In this connection it will be apparent that the false insole will protect the corresponding surface of the insole from application of cement thereto.

It will be evident that, according to the present invention, there is a great shortening of the time necessary for making the shoe and the lasts may be used a great many times without substantial damage. Both of these features tend to provide for economy in manufacture and reduce the manufacturing cost of the shoes.

It should be understood that various features may be changed and that certain features may be used without others, without departing from the true spirit and scope of the invention.

What I claim is:

1. The method of lasting a shoe having an insole by using a false insole of smaller size than the regular insole and having pins projecting from one face thereof at close intervals along its edge, which comprises laying the shoe upper and an insole on the last, laying the false insole on the regular insole so as to leave a margin of the regular insole exposed and having the pins exposed, applying cement between the edge of the upper and the insole, drafting the edge of the upper over the insole from point to point and securing it on the pins as soon as it is properly positioned.

2. The method of lasting a shoe having an insole by using a false insole of smaller size than the regular insole and having pins projecting from one face thereof at close intervals along its edge, which comprises laying the shoe upper and an insole on a last, laying the false insole on the regular insole so as to leave a margin of the regular insole exposed and having the pins exposed, applying cement between the edge of the upper and the insole, drafting the edge of the upper over the insole from point to point and securing it on the pins as soon as it is properly positioned, trimming the edge of the upper along the edge of the false insole as a guide, and removing the false insole with the upper material on the pins thereof.

3. The method of lasting a shoe having an insole by using a false insole of smaller size than the regular insole and having pins projecting from one face thereof at close intervals along its edge, which comprises laying the shoe upper and an insole on a last, laying the false insole on the regular insole so as to leave a margin of the regular insole exposed and have the pins exposed, applying cement between the edge of the upper and the insole, drafting the edge of the upper over the insole from point to point and securing it on the pins as soon as it is properly positioned, and removing the false insole after the cement has set.

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