May 19, 1936. E. A. CORBIN, JR 2,040,921

MOLDED SHOE AND METHOD OF MAKING THE SAME

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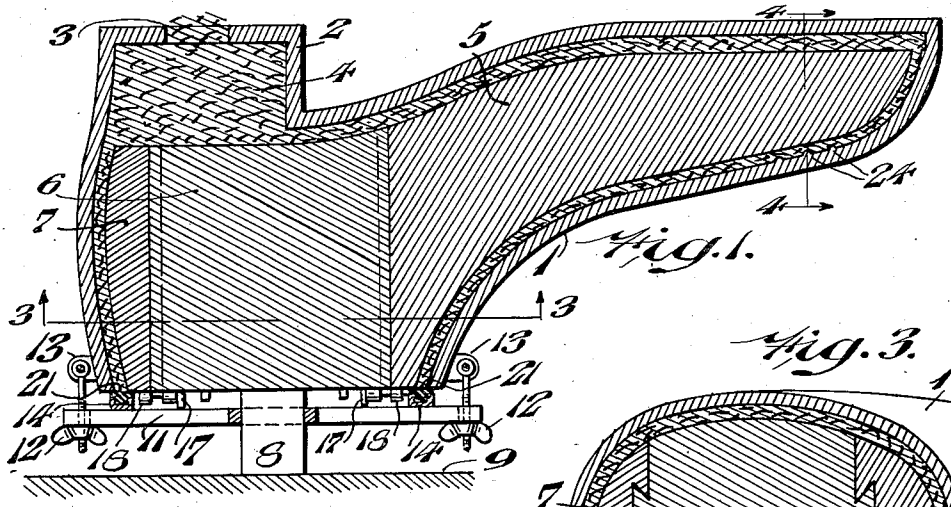


Fig. 1.

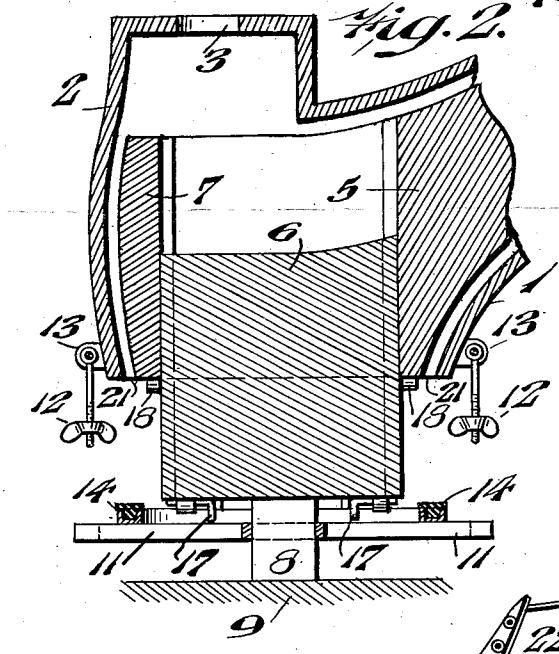


Fig. 2.

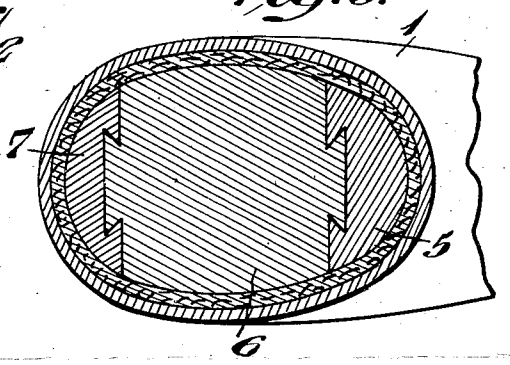


Fig. 3.

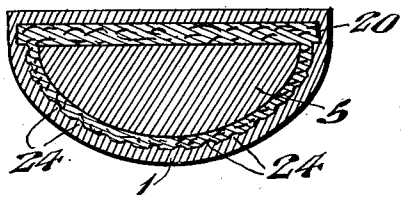


Fig. 4.

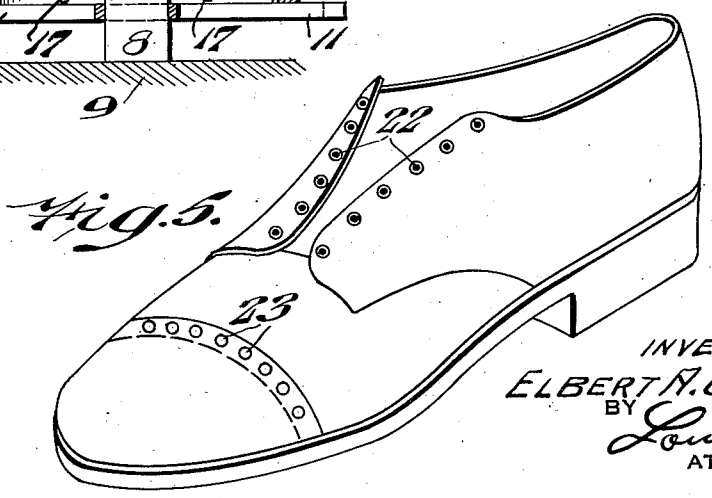


Fig. 5.

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MOLDED SHOE AND METHOD OF MAKING THE SAME

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4 Claims. (Cl. 18—47.5)

My invention relates to a new and useful molded shoe and method of making the same, and it relates more particularly to a one-piece shoe all the parts of which are formed integrally and which is flexible, comfortable, durable, waterproof and inexpensive to produce.

My invention still further relates to a molded shoe the body of which is thoroughly impregnated with any desired color to simulate conventional tanning, and at the same time to prevent the scarring or blemishing of the shoe during actual use or wear due to accidents which damage the upper outer surfaces of the shoe.

My invention still further relates to a novel method of making a molded shoe which is very inexpensive and which lends itself to large scale production.

In the accompanying drawing,

Fig. 1 represents a vertical sectional view illustrating the method of making my novel shoe.

Fig. 2 represents a fragmentary sectional view of the left hand portion of Fig. 1, illustrating the manner of assembling and dismantling the mold used in carrying out my invention.

Fig. 3 represents a section on line 3—3 of Fig. 1.

Fig. 4 represents a section on line 4—4 of Fig. 1.

Fig. 5 represents a perspective view of a shoe formed according to my novel method.

Referring to the drawing in which like reference characters indicate like parts, 1 designates an outer integral mold of any desired size and style, which is adapted to receive a core of a corresponding size and style, all according to the size and style of the shoe to be formed. The outer mold 1 is provided with a well 2 which is shaped according to desired shape of the heel of the shoe. The well 2 is provided with an opening 3 through which the material of which the shoe is to be molded may be introduced by any pressure feed device (not shown). Coacting with the outer mold 1 is an inner sectional core preferably formed of the sections 5, 6, and 7, which are assembled together by the dovetailed arrangement best seen in Fig. 3, it being understood the number of sections of the mold and the manner of their assembly can be varied without departing from the scope of my invention. In the present instance, the central section 6, having a male or female dovetail connection is permanently and rigidly secured to the upright 8, which in turn is suitably secured to the work bench or other support 9. The upright 8 rigidly carries the horizontal plate or platform 11 which is adapted to be engaged near its edge by the clamps 12 which are pivoted to the mold at 13. The platform 11 also carries the gasketed closure 14 which serves a purpose hereinafter set forth. In addition to the foregoing I prefer to use one or more slide latches 17 which may be carried by the section 6 and which may engage lugs 18 on the sections 5 and 7 or vice versa. At the junction of the sole or bottom of the mold 1, with the "uppers" thereof, I provide the continuous groove 20 which forms and predetermines the width of the sole of the finished shoe.

Referring to Fig. 2, it will be seen that the inner core section 6 is fixed on the upright 8 and hence on the support 9. In order to assemble the mold, the inner sections 5 and 7 of the core are first inserted into the mold 1, and with the mold in an inverted position, it is pressed down over the stationary section 6 to wedge the latter between the sections 5 and 7 to produce the dovetailed arrangement shown in Figs. 1 and 3. When the bottom edges of the sections 5, 6, and 7 are flush, the latches 17 are applied to secure the three sections of the inner mold in horizontal alignment or registration with each other and with the outer mold 1. The clamps 12 then secure the mold 1 to platform 11, support 8 and work bench or the like 9. The integration of the sections 5, 6, and 7 by the dovetailed arrangement shown and by the latches 17 or their equivalent, together with the fastening of the outer mold 1 by means of the clamps 12 to the support 9, which also carries the upright 8 carrying the inner core, results in accurate centering of the inner core with respect to the outer mold 1 in all directions. The space between the inner core and outer mold determines the thickness of the uppers of the shoe and can be regulated to suit varying requirements. With the mold completely assembled, as shown in Fig. 1, the material of which the shoe is to be molded is introduced under pressure through the opening 3 and is forced completely to fill the space between the inner core and the outer mold. The gasketed closure 14 serves to close the opening 21 while the mold is in the position shown in Fig. 1, during introduction of the material of which the shoe is to be molded.

In molding my novel shoe I use a suitable form of mascerated cellulose fiber which is admixed with liquid latex in a proportion calculated to produce a plastic mass of the desired consistency. The plastic mass so prepared is forced under pressure through the opening 3 and before it is completely set or cured, the mold is opened and the shoe thus formed is treated in a bath of liquid phenol condensate known in the trade as

"bakelite" having any desired color. The liquid phenol condensate penetrates through the entire thickness or body of the walls of the shoe and thoroughly permeates the material so that if the shoe is skinned or scratched the substrata of the "leather" of the shoe will have the same color as the upper, outer surface thereof, thus avoiding the blemishes which result when a conventionally tanned shoe leather is scratched. The completed shoe after treatment in the liquid phenol condensate bath is then dried and allowed to cure with or without the use of heat. A tongue is then secured in position, and the holes for the shoe lace are punched as at **22**. In order to produce any desired ornament **23**, the inner core or outer mold **1** or both or either could be provided with suitable configurations **24** which will produce the ornament **23** upon the finished shoe during the molding operation. While I have illustrated and described my invention as specifically applied to the formation of an integral molded shoe, it is within the scope of my invention to mold or otherwise form the material disclosed for the manufacture of other articles such as floor coverings or the like, since the cellulose fibers treated with liquid latex and subsequently with liquid phenol condensate in the manner described forms a very tough, durable, waterproof and flexible material which could be advantageously used wherever any or all of these characteristics are necessary or desirable.

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

1. The method of making a one-piece shoe having an upper, a heel, and a sole, which consists in forcing a mixture of cellulose fiber and liquid latex into a closed mold, comprising an inner core and an outer casing, said inner core being so spaced from said outer casing as to provide a relatively narrow space for the formation of the upper of the shoe, a relatively wider space for the formation of the sole of the shoe, and a relatively deep pocket for the formation of the heel of the shoe.

2. The method of making a one-piece shoe having an upper, a heel, and a sole, which consists in forcing a mixture of cellulose fiber and liquid latex into a closed mold, comprising an inner core and an outer casing, said inner core being so spaced from said outer casing as to provide a relatively narrow space for the formation of the upper of the shoe, a relatively wider space for the formation of the sole of the shoe, and a relatively deep pocket for the formation of the heel of the shoe, and treating the molded shoe with phenol condensate.

3. The method of making a one-piece shoe having an upper, a heel, and a sole, which consists in forcing a mixture of cellulose fiber and liquid latex into a closed mold, comprising an inner core and an outer casing, said inner core being so spaced from said outer casing as to provide a relatively narrow space for the formation of the upper of the shoe, a relatively wider space for the formation of the sole of the shoe, and a relatively deep pocket for the formation of the heel of the shoe, and treating the molded shoe before it is cured with phenol condensate.

4. As an article of manufacture, a one-piece shoe formed of a molded mixture of cellulose fiber and liquid latex and having distinct but integral upper, sole and heel portions.

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