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D. A. CUTLER

MANUFACTURE OF CREPE RUBBER SHOE SOLES

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Fig. 1.

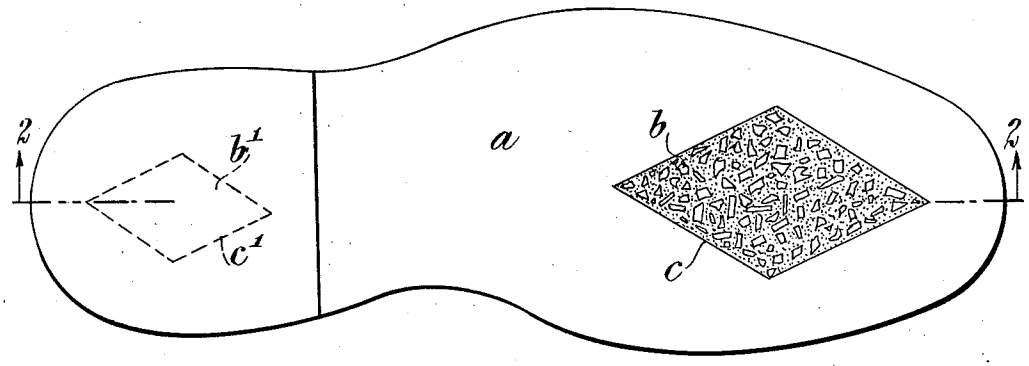
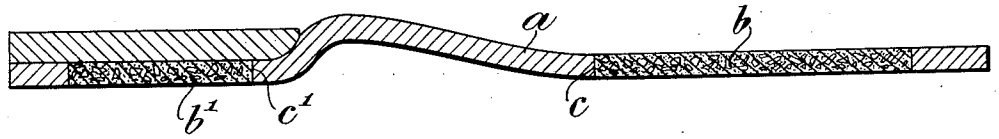


Fig. 2.



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UNITED STATES PATENT OFFICE.

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MANUFACTURE OF CREPE RUBBER SHOE SOLES.

Application filed November 5, 1925. Serial No. 66,887.

Shoe soles of crepe rubber, that is of pure rubber, unvulcanized, have now achieved a permanent place in the industry, having qualities which commend them to users, especially for sport wear. Nevertheless, such soles have had hitherto one objectionable quality, namely, that in long continued use under some conditions, they become smooth on the ground contact surface and slippery on wet pavements or other smooth surfaces. Many efforts have been made to remedy this difficulty without destroying or impairing other good qualities, but hitherto without success. By the present invention, however, there has been developed a remedy for the difficulty which overcomes the tendency of such soles to become slippery through long use, but without sacrificing any of the desirable qualities of such soles. In another application of the present applicant, Serial No. 40,131, filed June 29, 1925, there is described an improved compound which consists of granules of cork enveloped in coagulated latex. Whether such compound has the qualities necessary to enable the shoe sole made entirely of the compound to endure for a long time all of the conditions of hard use, has not yet been determined fully. However, it has been found that the application to a crepe rubber sole of an insert of the new compound, if the application is made properly, provides a ground contact surface which will not become slippery through use, while the desirable qualities of the crepe rubber sole are fully preserved. The invention will be more fully explained hereinafter with reference to the accompanying drawings, in which:

Figure 1 is a top view of a crepe or pure rubber shoe sole, with an anti-slipping insert in the forward part of the sole and in the heel.

Figure 2 is a view in section on the plane indicated by the broken line 2—2 of Figure 1.

The crepe rubber sole *a*, whether as to the portion of the sole under the ball of the foot or the portion under the heel, or as to both, is of pure, unvulcanized rubber, secured to the shoe in any approved manner. Applied to the sole, either under the ball of the foot or under the heel, or in each of these places, is an insert *b*, *b'* of a compound which consists of granules of cork enveloped in coagulated latex, as fully described in the application above mentioned. In order that the desirable qualities of the crepe rubber sole may be retained without impairment, it is necessary that the anti-slipping insert be applied to the same without the application of heat and without the use of fastening devices of any kind, and yet in such a way that a perfect union of the insert with the unvulcanized, pure rubber shall be secured. It has been found that this can be accomplished only by filling the previously prepared cavity in the sole, indicated at *c* and *c'*, with a mass of granulated cork mixed with latex without coagulation and then subjecting the mixture to pressure while coagulation of the latex proceeds, the pressure being subsequently relieved. If coagulation of the latex has taken place before the mixture is applied, the desirable union between the mixture and the pure rubber of the sole will not take place, but if the mixture is applied before coagulation of the latex has taken place and is subjected to pressure while coagulation proceeds, not only are the desirable qualities of the mixture preserved, but a practically homogeneous union between the mixture and the pure rubber sole is secured, so that no separation takes place even in long continued wear.

I claim as my invention:

1. The improvement in the manufacture of crepe rubber shoe soles, which consists in applying to the sole a mixture of granulated cork with uncoagulated latex and subjecting the mixture to pressure while coagulation of the latex proceeds.

2. The improvement in the manufacture of crepe rubber shoe soles, which consists in forming a cavity in the crepe rubber sole, filling the cavity with a mixture of granulated cork and uncoagulated latex and subjecting the mixture to pressure while coagulation of the latex proceeds.

This specification signed this 2d day of November A. D. 1925.

DAVID A. CUTLER.