L. M. CARROLL.

HOLLOW SHOE FORM.

APPLICATION FILED MAR. 23, 1910.

985,393. Patented Feb. 28, 1911.

Fig. 1.

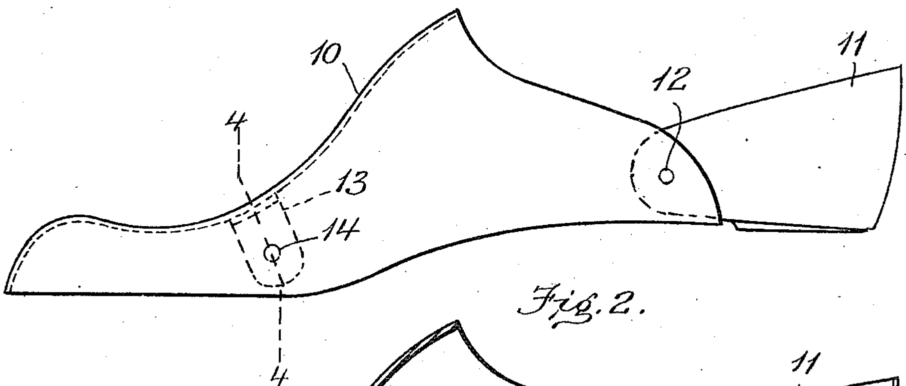


Fig. 2.

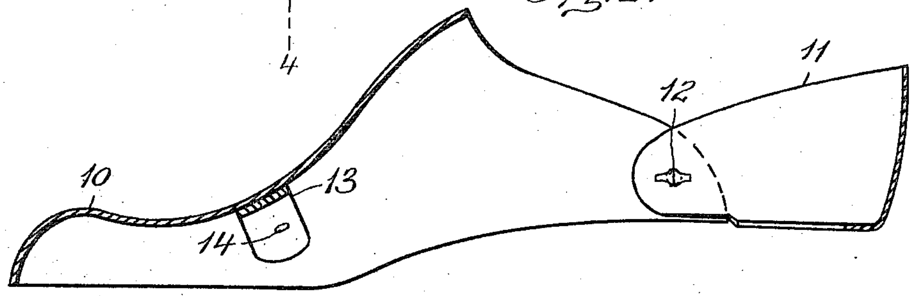


Fig. 3.

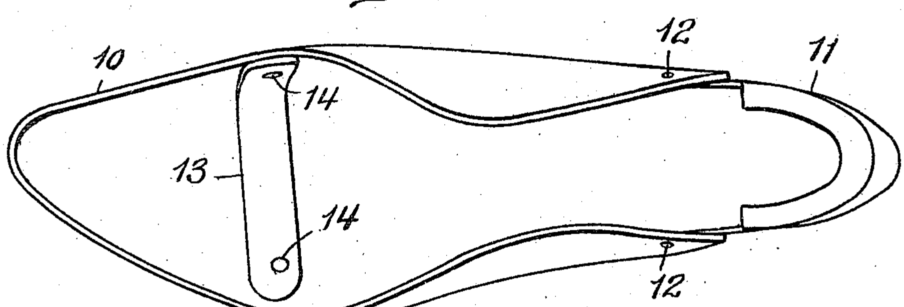
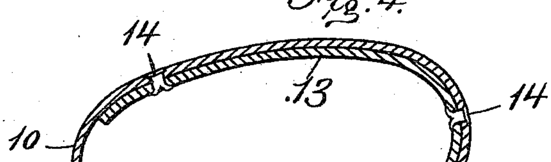


Fig. 4.



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LAWRENCE M. CARROLL, OF MANCHESTER, NEW HAMPSHIRE.

HOLLOW SHOE-FORM.

985,393. Specification of Letters Patent. Patented Feb. 28, 1911.

Application filed March 23, 1910. Serial No. 551,050.

To all whom it may concern:

Be it known that I, LAWRENCE M. CARROLL, of Manchester, in the county of Hillsboro and State of New Hampshire, have invented certain new and useful Improvements in Hollow Shoe-Forms, of which the following is a specification.

This invention relates to hollow shoe forms, and its object is to provide improved means for reinforcing the form at the ball portion so as to preserve the original contour thereof.

Various devices have been applied to shoe forms for this purpose, but those devices which have been applied have not been sufficiently rigid to preserve the original contour of the form.

The reinforcing devices hitherto employed for preserving the contour of the form have been composed of resilient material such as spring steel, the material being attached in the form of a strip to the inner surface of the form.

It is the custom to compose hollow shoe forms of the type to which this invention relates of fibrous material such as wood fiber, the material being molded and being relatively thin. The material is impregnated with a resinous substance for the purpose of rendering it reasonably stiff. A form thus composed is sufficiently stiff at all parts except at the ball portion, which is the widest part of the form, and which because of its prominence is subjected to the greatest degree of strain both in inserting the form in a shoe or removing it therefrom, or in manipulating the shoe containing the form. It is obviously possible to increase the thickness of the material of which the form is composed in order to increase the stiffness of the form, but inasmuch as a relatively thin sheet of material has sufficient stiffness at all parts except at the ball portion of the form it is apparent that a great deal of material would be wasted by adopting such a method.

The reinforcing strips of spring material hitherto employed for reinforcing the form are inefficient for the reason that in their normal condition they are very flexible and they do not offer an appreciable degree of tension unless they are bent to a considerable degree from their normal condition. For this reason if a strip of spring material exerting no tension when the shoe form is in its original shape is employed for reinforcing purposes it may be readily understood that no benefit can be derived from the tension of the reinforcing strip unless the form is distorted so as to create the tension. If, on the other hand, the reinforcing strip of spring material is so shaped as to exert a tension upon the form when the form is in its original shape the tendency of the tension of the reinforcing strip is to destroy the shape of the form. Because of the character of the resinous sizing, or stiffening substance, with which the fibrous material is impregnated the material becomes comparatively soft when warm, and it is therefore difficult to preserve the original shape of the form, especially in warm weather.

The reinforcing strip forming the subject matter of the present invention is composed of material which is normally rigid or stiff, at least as rigid or stiff as the material of which the form is composed. The strip is preferably composed of the same material as that of which the form is composed, or of material of a similar nature, that is, material which may be molded when in a semi-plastic condition, and which may harden in the shape in which it is molded. The strip may thus be molded so as to conform to the contour of the hollow form and may be placed against the inner surface of the form and affixed thereto so as to increase the rigidity of the form. The statement that the reinforcing strip is comparatively rigid or stiff is sufficient to show that its reinforcing function and its form preserving function are as great in its normal condition as when it is distorted. For this reason it is apparent that a hollow form reinforced with a relatively rigid or stiff strip is better adapted to retain its original shape than one which is reinforced by a flexible strip which depends upon flexure to afford reinforcing tension.

Of the accompanying drawings which illustrate a hollow shoe form provided with a reinforcing strip formed and applied in accordance with this invention,

Figure 1 is a side elevation. Fig. 2 is a longitudinal section. Fig. 3 is an inverted plan view. Fig. 4 is a cross section on line 4—4 of Fig. 1.

The same reference characters indicate the same parts wherever they occur.

The hollow form illustrated by the drawings comprises a fore part 10 and a heel part 11. The two parts are provided with complemental overlapping portions which are

united by rivets 12, or otherwise, so that one of said parts may be tilted with relation to the other so as to facilitate the insertion of the form in a shoe or the removal of the form. The form is composed of a relatively thin sheet of fibrous material such as wood fiber which is molded to the desired form. The fibrous material is impregnated with a sizing which may include a base of resin and which renders the fibrous material sufficiently stiff or rigid for the purpose.

A reinforcing strip 13 is arranged within the fore part at the ball portion thereof, said strip extending transversely of the fore part. The strip is relatively stiff and composed of the same material as that of which the form itself is composed. The strip is of the same contour as the part to which it is attached as shown by Fig. 4, and is fastened to the inner surface of the fore part by means such as rivets 14, or by cement or any equivalent means. The strip may be successfully applied in either of two ways, for example, it may be applied when comparatively soft and flexible and molded against the inner surface of the fore part and attached while soft so that it may harden in contact with the form and assume the shape of the form. On the other hand, the strip may be molded and permitted to harden before it is attached, the result of both methods being the same.

Having thus explained the nature of my said invention and described a way of constructing and using the same, although without attempting to set forth all of the forms in which it may be made or all of the modes of its use, what I claim is:—

The combination with a hollow shoe form of fibrous material, of a rigid non-yielding reinforcing brace of the same material having its face in engagement with the interior of said form and conforming with the contour of the latter, whereby expansion and contraction of said form is prevented, and means for rigidly securing said brace to said form.

In testimony whereof I have affixed my signature, in presence of two witnesses.

LAWRENCE M. CARROLL.

Witnesses:
EMDON FRITZ,
ARTHUR S. HEALY.