No. 832,277. PATENTED OCT. 2, 1906.

S. SCHWARZSCHILD.

PROCESS OF MANUFACTURING OVERSHOES.

APPLICATION FILED MAR. 29, 1906.

Fig. 1.

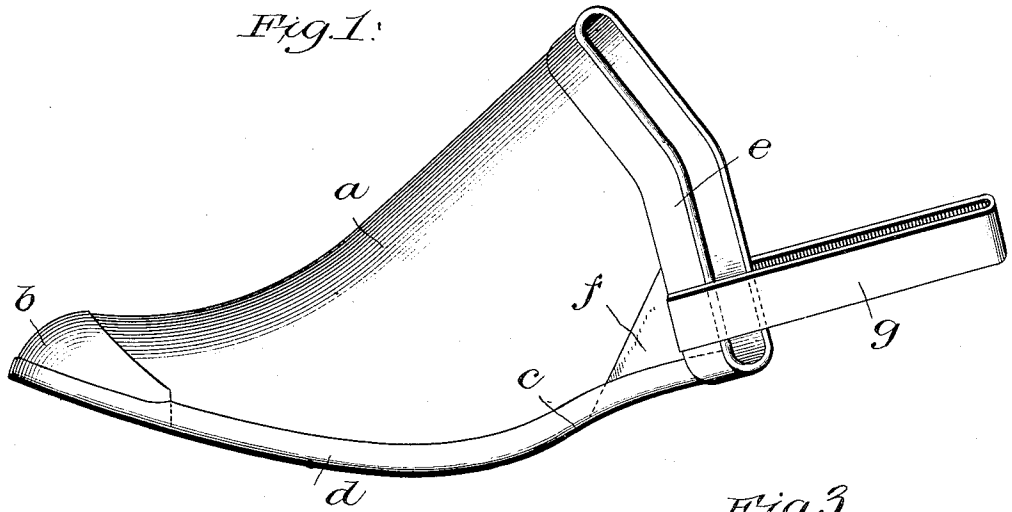



Fig. 2.

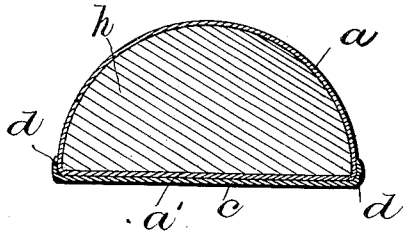



Fig. 3.

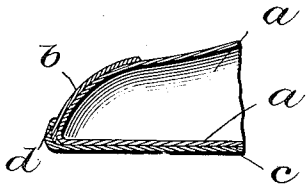
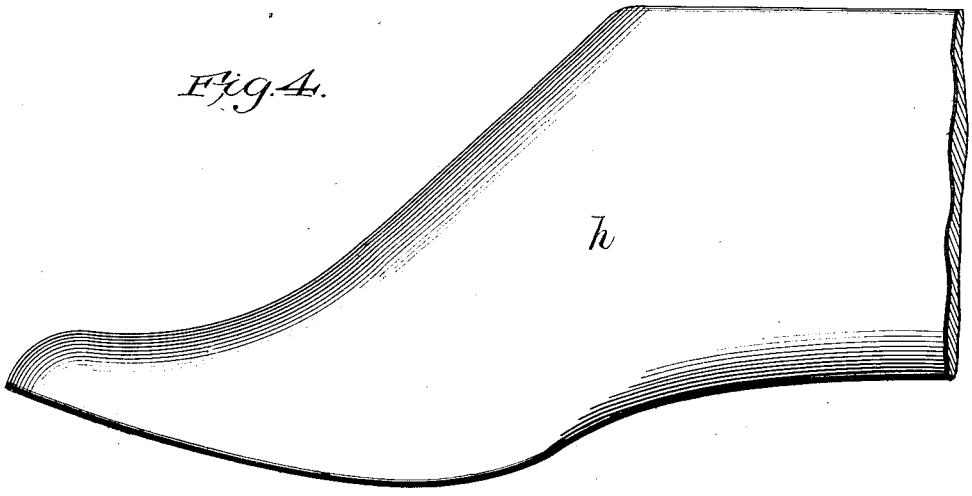



Fig. 4.




Witnesses

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# UNITED STATES PATENT OFFICE.

SOLOMON SCHWARZSCHILD, OF ROCHESTER, NEW YORK, ASSIGNOR OF ONE-THIRD TO ALBRECHT VOGT, ONE-THIRD TO EDWARD G. PFAHL, AND ONE-THIRD TO ALBERT E. VOGT, OF ROCHESTER, NEW YORK.

## PROCESS OF MANUFACTURING OVERSHOES.

No. 832,277. Specification of Letters Patent. Patented Oct. 2, 1906.

Original application filed November 21, 1905, Serial No. 288,442. Divided and this application filed March 29, 1906. Serial No. 308,761.

*To all whom it may concern:*

Be it known that I, SOLOMON SCHWARZSCHILD, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Processes of Manufacturing Overshoes, of which the following is a specification.

The principal object of this invention is the production of an overshoe capable of being made to occupy the smallest possible space consistent with strength, durability, and protection against moisture, so that a pair of the said overshoes may be carried in the pocket, in a ladies' hand-bag, or otherwise with convenience and worn on the feet only when actually needed, the said invention being an improvement on the one forming the subject of an application for Letters Patent of the United States, filed by me September 22, 1905, and Serially numbered 279,696, and the present application, forming a division of an application filed by me November 21, 1905, for overshoes, Serial No. 288,442.

Overshoes produced by the methods of manufacture now in vogue are stiff and inelastic and therefore not adapted to fulfil the requirements of my invention. Moreover, such methods of manufacture render necessary the employment of one or more seams in the shoe, particularly between the sole and the side portions, and seams are always a source of weakness in any structure.

In the manufacture of overshoes according to my invention I employ a process whereby a continuous homogeneous structure may be had, possessing the highest possible degree of flexibility and the greatest strength for the amount of material employed. In order to more fully describe my said invention, I will first describe in detail a form of the manufactured article and then the process of manufacture whereby they are produced.

Reference will be had to the accompanying drawings, wherein—

Figure 1 is a perspective view of one form of the said invention; Fig. 2, a cross-section taken across the forward portion of the overshoe with the foot-form or mold therein; Fig. 3, a fragmentary sectional view of the toe portion of the overshoe; and Fig. 4, a side elevation, broken away, of one of the foot-forms or molds used in the herein-described process of manufacture.

The specific form of my invention herein described belongs to that class of overshoes known as "footholds," designed to protect the forward portion only of the foot.

In the form of the invention shown in Figs. 1, 2, and 4 the overshoe comprises a thin rubber body portion *a* and a thin rubber sole-piece *a'* integral therewith, the two together forming an integral seamless covering adapted to envelop the forward portion of the foot of the wearer. The rubber forming this portion of the overshoe may be very much thinner and of a much higher degree of flexibility than that usually employed in overshoes, and these characteristics are obtained by the novel method of making the overshoe, which will be hereinafter set forth in greater detail. Over the toe of the overshoe extends a toe-cap *b*, consisting of a piece of sheet-rubber cemented to the outside of the section *a*. The sole of the overshoe is reinforced by a sole-piece *c*, consisting of a piece of sheet-rubber cut the required shape and cemented to the exterior of the portion *a* and extending a short way up the side thereof, as at *d*. Around the edge of the opening of the overshoe extends a reinforcing-strip *e*, preferably of sheet-rubber, cemented to the exterior of the portion *a* and extending over the sole portion *c*. A reinforcement or gusset *f* may be placed in the angle between the strip *e* and the sole-piece *c* to prevent the thin rubber body portion *a* from tearing at that point. This gusset may or may not be integral with the strip *e*.

An overshoe of the form described will not readily slip off when once placed on the foot, even though no additional means is provided for holding the same, due to the adhesion and elastic properties of the rubber. I may, however, provide an elastic heel-strap *g*, which may be vulcanized, cemented, or otherwise attached to the overshoe, as shown. This heel-strap may be permanently secured to the overshoe or detachably secured thereto in any desired way.

In the manufacture of overshoes according to my present invention I employ a mold or foot-form *h*, of any desired material, preferably of porcelain or other substance to

which the solution hereinafter described will not stick, the said form being of the shape and size, so far as that portion which is to be covered by the overshoe is concerned, that the interior of the finished overshoe is to be. These forms may therefore be substantially of the same shape and size of a given shoe-last or may extend only from the shank forward, depending upon the style of overshoe to be produced. Either kind may be employed in producing the style of overshoe herein shown. Obviously if it is desired to make an overshoe to cover the whole foot, the whole form would be dipped into the solution, or as much thereof as desired, whereas if the style of overshoes is of the type here described the forward portion only of the form may be dipped. The result of this dipping process is the formation of a deposit of rubber of uniform thickness on the exterior of the form and forming the body portion *a* of the overshoe. After the naphtha has been allowed to evaporate from the rubber deposit on the form and after the final dip, but while the rubber is still on the form, the toe-cap *b*, consisting of a piece of sheet-rubber cut to the proper shape, is cemented over the toe, the sole-piece *c*, consisting of a piece of sheet-rubber cut to the proper size, is cemented to the bottom of the portion *a* and along the edges thereof, as at *d*, and the reinforcing-strip *e* and gusset *f* are cemented on. After cementing these various pieces on, the form, with the overshoe thereon, is placed in a vulcanizer for about an hour under any suitable pressure of steam. When the rubber has been properly vulcanized, the form is withdrawn fom the vulcanizer, when the overshoe may be readily taken off the form. The rubber of the overshoe may be given a bright smooth finish by the application thereto of a varnish or other finishing compound. For some purposes it may be desirable to leave off the extra sole-piece *c* and the toe-cap and, indeed, all extra reinforcing-pieces, and this may be done without departing from the spirit of my invention, though the shoe is much more durable with these on it.

It will be obvious that by the process herein described I am enabled to produce an overshoe possessing the greatest flexibility and lightness, and therefore the greatest capacity to be compressed into a small space, while at the same time producing an overshoe which is entirely free from seams, and therefore possessing the greatest strength for a given amount of material.

What I claim is—

1. The herein-described process of manufacturing overshoes, which consists in forming superposed deposits of rubber-containing material on the exterior of a foot-form, cementing a sole-piece of rubber-containing material to the exterior of the sole portion of said material deposited on said form, and then vulcanizing the whole.

2. The herein-described process of manufacturing overshoes, which consists in forming superposed deposits of rubber-containing material on the exterior of a foot-form, cementing a sole-piece of rubber-containing material to the exterior of the sole portion of the material deposited on said form, reinforcing the material deposited on said form by cementing a strip of rubber-containing material thereto, and then vulcanizing the whole.

3. The herein-described process of manufacturing overshoes, which consists in dipping a foot-form into a bath of rubber-containing material, withdrawing said form from said bath with a coating of said material deposited on said form, securing a reinforcement of rubber-containing material to said material deposited on said form, and then vulcanizing the whole.

4. The herein-described process of manufacturing overshoes, which consists in dipping a foot-form into a bath of rubber-containing material, withdrawing said form from said bath with a coating of said material deposited on said form, repeating the foregoing steps a number of times to form a plurality of superposed deposits of said material on said form, securing a sole-piece of rubber-containing material to the exterior of the material deposited on said form, and then vulcanizing the whole.

5. The herein-described process of manufacturing overshoes, which consists in dipping a foot-form into a bath of rubber-containing material, withdrawing said form from said bath with a coating of said rubber-containing material on said form, cementing a sole-piece of rubber-containing material to the exterior of the material deposited on said form, and then vulcanizing the whole.

6. The herein-described process of manufacturing overshoes, which consists in dipping a foot-form into a bath of rubber-containing material, withdrawing said form from said bath with a coating of said rubber-containing material on said form, repeating the foregoing steps a number of times to form a plurality of superposed deposits of said material on said form, cementing a sole-piece of rubber-containing material to the exterior of the material deposited on said form, and then vulcanizing the whole.

7. The herein-described process of manufacturing overshoes, which consists in dipping a foot-form into a bath of rubber-containing material, withdrawing said form from said bath with a coating of said material deposited on said form, cementing a sole-piece of rubber-containing material to the exterior of the material deposited on said form, and vulcanizing the whole in contact with steam under pressure.

8. The herein-described process of manufacturing overshoes, which consists in dipping a foot-form into a bath containing rubber and a volatile ingredient, withdrawing said form from said bath with a deposit of the ingredients thereof on said form, allowing the volatile ingredients of said deposit to evaporate, cementing a sole-piece of rubber-containing material to the exterior of the material deposited on said form, vulcanizing the whole in contact with steam under pressure, and then removing the same from said form.

9. The herein-described process of manufacturing overshoes, which consists in dipping a foot-form into a bath containing rubber and a volatile ingredient, withdrawing said form from said bath with a deposit of the ingredients thereof on said form, allowing the volatile ingredients of said deposit to evaporate, repeating the foregoing steps a number of times to form a plurality of superposed deposits on said form, cementing a sole-piece of rubber-containing material to the exterior of the material deposited on said form, vulcanizing the whole in contact with steam under pressure, and then removing the same from said form.

In testimony whereof I affix my signature in presence of two witnesses.

SOLOMON SCHWARZSCHILD.

Witnesses:
E. G. HOHL,
KATHARINE C. DRISCOLL.