(No Model.)

E. STOUT.

MANUFACTURE OF RUBBER BOOTS OR SHOES.

No. 295,062. Patented Mar. 11, 1884.

Fig. 1.

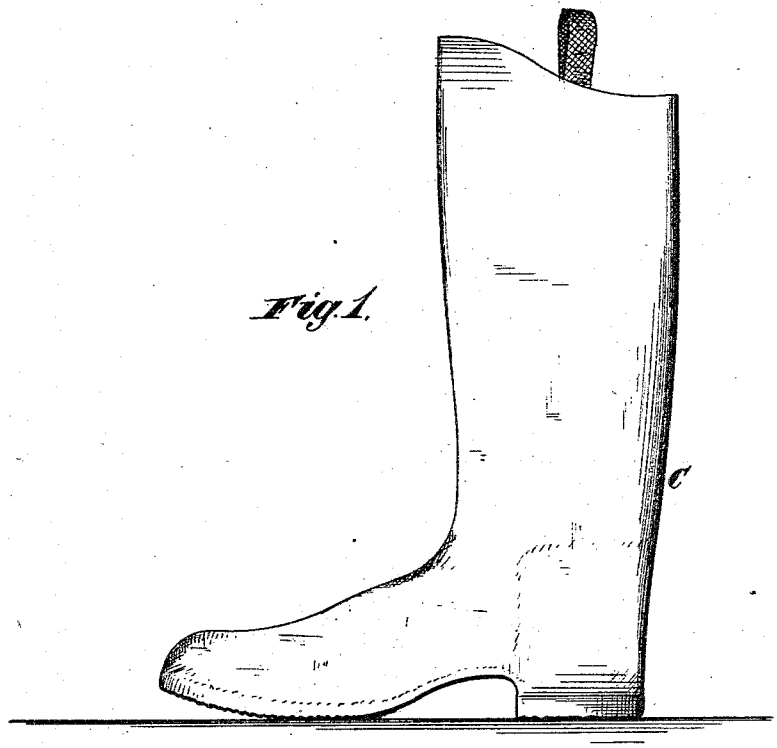


Fig. 2.

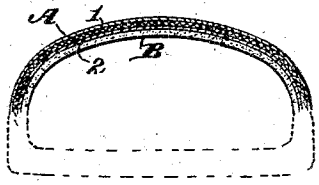


Fig. 4.

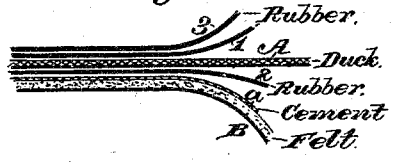
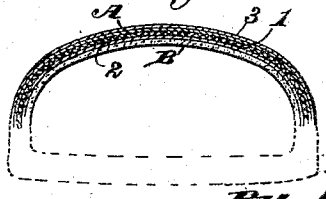


Fig. 3.



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UNITED STATES PATENT OFFICE.

ELISHA STOUT, OF LAMBERTVILLE, NEW JERSEY.

MANUFACTURE OF RUBBER BOOTS OR SHOES.

SPECIFICATION forming part of Letters Patent No. 295,062, dated March 11, 1884.

Application filed January 3, 1884. (No model.)

To all whom it may concern:

Be it known that I, ELISHA STOUT, a citizen of the United States, residing at Lambertville, in the county of Hunterdon and State of New Jersey, have invented new and useful Improvements in Manufacture of Boots and Shoes, of which the following is a specification.

This invention has for its object to provide an improved water-proof boot or shoe, and process for making the same; and to such ends it consists, first, in a boot or shoe composed of a sheet of duck or like fabric having on its opposite sides films or sheets of rubber pressed into the fabric, and a lining of felt or similar heavy fabric cemented to the interior film or sheet of rubber; and, second, in the method of making a fabric for the manufacture of boots and shoes by applying a film or coating of rubber to each surface of a piece of textile fabric, pressing the rubber into the interstices of the fabric by the action of revolving rollers, and finally cementing a sheet of felt or like material to one of the films or coatings.

In the accompanying drawings, Figure 1 is a side elevation of a boot made in accordance with my invention. Fig. 2 is a transverse sectional view of the foot portion; Fig. 3, a similar view of a modification, and Fig. 4 a detail view on an enlarged scale.

In practicing my invention I take a sheet or piece of duck, A, or other suitable fabric, and apply to one side a coating or a thin film of rubber, 1, applied by a brush or other suitable means, or else apply a thin sheet of rubber, by any of the well-known means for such purposes, and then pass the fabric between heated rolls, the roll next to the coated or covered surface being a friction-roll traveling at about twice the speed of the other roll, whereby the rubber is spread or attenuated and embedded into the interstices of the fabric, so as to form a close and compact union therewith, the same as if a part of the fabric. I next apply a film or coating of rubber, 2, to the other side of the fabric in the same manner as at first, and then pass the fabric again between the rolls, the last coated or covered surface being next to the roll traveling at the greater speed, whereby that surface is made like unto the other. I then apply in the same manner a second coating or covering, 3, as before, to one of the sides, and again pass the fabric between calendering-rolls traveling at the same speed, the roll next to the second coated surface preferably being a friction-roll, thereby producing a rubber-surfaced fabric that is smooth and tough and attractive, and that will not break, crack, or peel off, and that will wear long and give the best satisfaction. The rubber fabric is now in condition to have the felt or other heavy textile material applied and made up into boots or shoes. The felt B, or other heavy textile material—such as canton-flannel with the nap exposed—is applied either before the fabric is cut into shape for the boot or shoe C, or after it is so cut, and is cemented to the fabric by applying a thin sheet or film of rubber or rubber cement, *a*, to the surface of the lining material, and then applying such material to the fabric with the cemented surface next to the single-coated side of the fabric, after which the fabric and lining material are passed between heated rolls, and the two parts thus firmly and securely united to each other. At the seams of the boots and shoes the fabric is made to lap, and the parts at such points cemented together and the joints made smooth by tools in the manner commonly practiced.

If desired, a second coating or covering of rubber to the external surface can be omitted, as very superior results over other like fabrics are obtained by applying a single coating to each side in the manner described, and as illustrated in Fig. 2.

Any suitable rubber compound may be used; but I prefer to use one containing lamp-black, whiting, litharge, lead, rosin, and rubber.

The boot or shoe formed according to the foregoing description is an improvement on what has heretofore been made for the reasons stated—that it is strong and the rubber surface will not split, break, crack, or peel off, and will prove satisfactory in other particulars.

I am aware that a rubber boot has heretofore been composed of an inner and an outer sheet of rubber and an intervening layer of textile material, all united by vulcanization; and such, therefore, I do not broadly claim.

Having thus described my invention, what I claim is—

1. A boot or shoe composed of a sheet of

duck or like fabric, having on its opposite sides films or sheets of rubber pressed into the fabric, and a lining of felt or similar heavy fabric cemented to the interior film or sheet of rubber, substantially as shown and described.

2. The method herein described of making a fabric for the manufacture of boots and shoes, which consists in applying a film or coating of rubber to each surface of a piece of textile fabric, pressing the rubber into the interstices of the fabric by the action of revolving rollers, and finally cementing a sheet of felt or like material to one of the films or coatings of rubber, substantially as set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ELISHA STOUT.

Witnesses:
W. A. GREENE,
E. RITTENHOUSE.