

I. F. WILLIAMS.
Rubber Boots.

No. 166,669.

Patented Aug. 10, 1875.

Fig. 1.

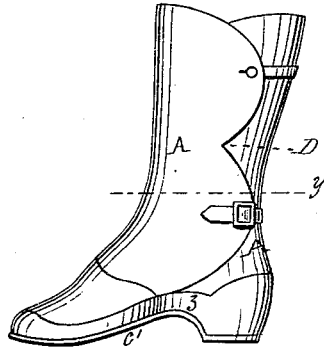


Fig. 2.

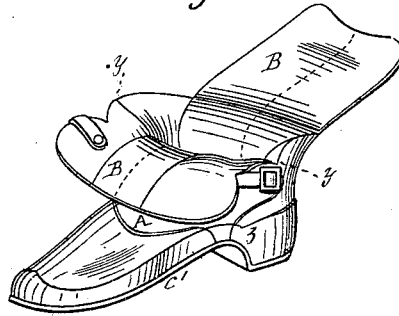


Fig. 3.

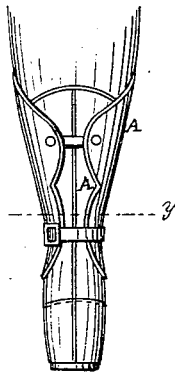


Fig. 4.



Fig. 5.

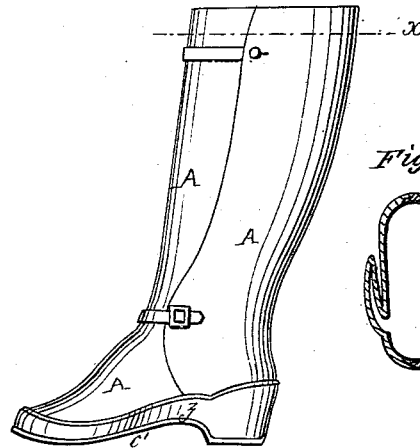


Fig. 6.

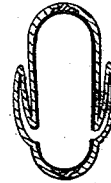


Fig. 7.

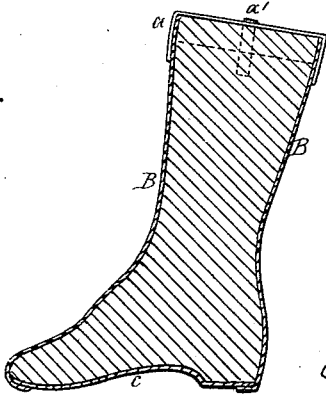


Fig. 8.

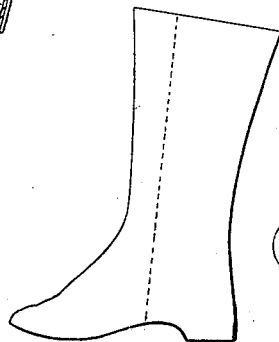


Fig. 9.

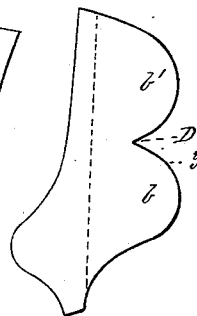
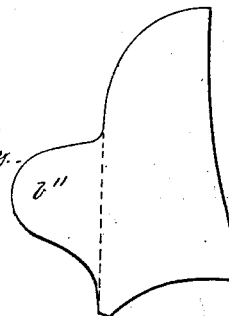


Fig. 10.



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UNITED STATES PATENT OFFICE.

ISAAC F. WILLIAMS, OF BRISTOL, RHODE ISLAND.

IMPROVEMENT IN RUBBER BOOTS.

Specification forming part of Letters Patent No. **166,669**, dated August 10, 1875; application filed November 24, 1874.

To all whom it may concern:

Be it known that I, ISAAC F. WILLIAMS, of the town and county of Bristol, in the State of Rhode Island, have invented certain new and useful Improvements in Rubber Boots; and I do hereby declare that the following specification, taken in connection with the drawings furnished and forming a part of the same, is a clear, true, and complete description thereof.

My improvement relates to that class of boots which are made of an outer and an inner textile fabric, connected together by a layer of rubber. The main object of my invention is to furnish a rubber boot, which fits well around the ankle, which may be easily put on and taken off, and which is neat and attractive in appearance; and my invention mainly consists in a boot composed of an inner upper fitted to the last, slitted upward from near the sole, and long enough to allow this inner upper, after vulcanization of the rubber, to be removed readily from the last, (or what is in substance the same thing, to allow it to be readily put on or taken off the foot,) and of an outer upper which is cut so large that it does not require to be slit in order that it may be removed from the last or put on and taken off the foot. My improved boot consists, in fact, of an inner and an outer upper and a suitable sole, the inner upper being made to fit the last, and therefore requiring to be slit open from near the sole upward, while the outer upper is made much larger than the inner upper, and requires the surplus stock to be overlapped and fastened in order to fit the boot closely to the ankle and leg. My invention further consists in a boot made with an overlapping leg-section and an overlapping ankle-section, the latter being provided with a so-called "bellows-flap," formed of continuations of the front and rear uppers; and my invention still further consists in a peculiar outline of the edge of the overlapping section at a point adjacent to the ankle.

Referring to the drawings, Figures 1, 2, and 3 are views of one form of my improved boot; and Fig. 4 is a lateral section of the boot shown in previous figures at line *y*. Fig. 5 represents, in side view, a boot embodying my in-

vention, but of a slightly different form; and Fig. 6 is a lateral section of the same at line *x*. Fig. 7 is a longitudinal vertical section of a novel last, (of my own invention, and which constitutes the subject of separate application for Letters Patent,) with the inner upper, and an inner sole, upon it. Fig. 8 is a pattern for the inner upper, and Figs. 9 and 10 represent patterns for the main portions of the outer uppers of a boot like that shown in Fig. 1.

The parts of the inner upper B composed of suitable fabric are first lasted in the usual way—that is, the inner sole *c* is applied to the bottom of the last, and the inner upper is fitted over the last lapped upon the inner sole, and secured in place. I prefer to cut the inner upper by the pattern shown in Fig. 8.

In Fig. 7, *a a'* represent adhesive straps, (as ordinarily employed,) which go over the end of the last, and serve to keep the parts of the inner upper in proper relative positions to each other and to the last. The outer upper A, composed of a suitable fabric, is then, with the intervening rubber, applied and secured to the inner upper, except at those portions of the outer upper designated at *b b'* and *b''* in Figs. 9 and 10, which portions, in this form of boot, constitute the overlapping or folding portions, they being in excess of what is requisite for actually inclosing or fitting the last.

Referring to Fig. 9, it will be understood that all of the outer upper which lies to the right hand of the dotted line constitutes the excess or surplusage of the front outer upper referred to, and that the excess of the rear outer upper lies to the left of the dotted line in Fig. 10. In making the boot shown in Fig. 1 these patterns are used, and to form a water-excluding joint a so-called bellows-flap is made by joining the outer edge of the part *b* with the outer edge of part *b''* below the line indicated at *y*.

When the leg is desired with a water-excluding capacity up to its top, the rear and front outer uppers are both cut with the excess before referred to, extending from a point near the sole to the top of the leg, as illustrated in the boot shown in Figs. 5 and 6, in which case the edges of the overlapping sections are united from the foot upward to the top of the boot-leg.

After the usual outer vamp (if the vamp and front outer upper are made in two parts) and the rear and front outer uppers are applied to the inner upper, the foxing Z, (if foxing be desired,) and also the outer sole *c'*, is applied, after which (the several rubber seams or joints having been properly formed) the boot is vulcanized in the usual manner. After vulcanization the inner upper is slit from near the sole upward to the top of the leg, and the binding-straps *a a'* cut, after which the boot is readily removed from the last.

The novelty of the main feature of my invention does not lie, of course, in the patterns used, nor in the use of a folding gore-piece, as it is obvious that the patterns may be largely varied, and the folding gore-piece is well known. My inner upper must, however, be so cut as to permit it to be laid upon and conformed to the last or foot, and the outer upper must be cut as much larger than the inner upper as will provide for the overlapping of the front and rear sections thereof, and thereby guarding or covering the slit in the inner upper, and allowing the boot to be readily removed from the last, or be readily put on and taken off of the foot of the wearer, and at the same time admitting of the union of the outer edges of said overlapping portions of the front and rear outer upper in forming the water-excluding bellows-flap. The parts of the outer upper, which are not attached to the inner upper, are caused to fit snugly by securing them by means of the leg and ankle straps shown, or other suitable devices.

The boot shown in Fig. 1 is preferred by me to any other form which I have heretofore devised, so far as relates to having the water-excluding capacity extended only upward to a point adjacent to the ankle-joint, and having the upper or leg portion open, but water-proofed for protecting the leg of the wearer from dampness through contact with wet clothing, &c. Boots so constructed prevent the introduction of water to the foot under ordinary circumstances, and at the same time they are not liable to induce that undue perspiration, which is objectionably incident to close-legged rubber boots, and by forming the bellows-flap of extensions of the outer uppers a neat fit and a desirable finish is attained.

It will be readily seen when a boot having

overlapping leg and ankle sections is on the foot, that in the act of walking the foot and leg of the boot occupy different positions with relation to each other, and that there exists a tendency for the edge of an overlapping section adjacent to the ankle-joint to project laterally whenever the toe is raised or lowered from the position which the toe of the boot normally occupies, when not on the foot of the wearer. This laterally-projecting portion of the overlapping section is not only unsightly, but it is liable, while the boot is being worn by a lady, for instance, to disagreeably engage with her skirts, and also with the adjacent side of the other boot.

I practically obviate this lateral projection referred to by means of the peculiarly-cut outline at the edge of the overlapping portion, as shown at D, Figs. 1 and 9. The rounded outlines of the lower or ankle section and of the upper or leg section not only contribute to the symmetrical appearance of the boot, but they are conducive to a close fit. The making of the recessed cut D, which constitutes one feature of my invention, results in the removal of that portion of the overlapping section which would be laterally projected under the circumstances stated, and both of the upper and lower sections therefore remain practically smooth, regardless of the position occupied by the foot.

Having thus described my invention, I claim as new—

1. The improved boot composed of textile fabric and rubber, having an inner upper cut to fit the last or foot, and an outer upper cut larger than the inner upper, with the surplus portion thereof overlapped, substantially as described.

2. The improved boot, having an open overlapping leg-section and the overlapping ankle-section, provided with the bellows-flap, formed of continuations of the front and rear uppers, substantially as described.

3. In a boot, the overlapping leg and ankle section, provided with the recess D at the edge between the said sections, substantially as described.

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