

(No Model.)

I. F. WILLIAMS.
RUBBER BOOT OR SHOE.

No. 294,173.

Patented Feb. 26, 1884.

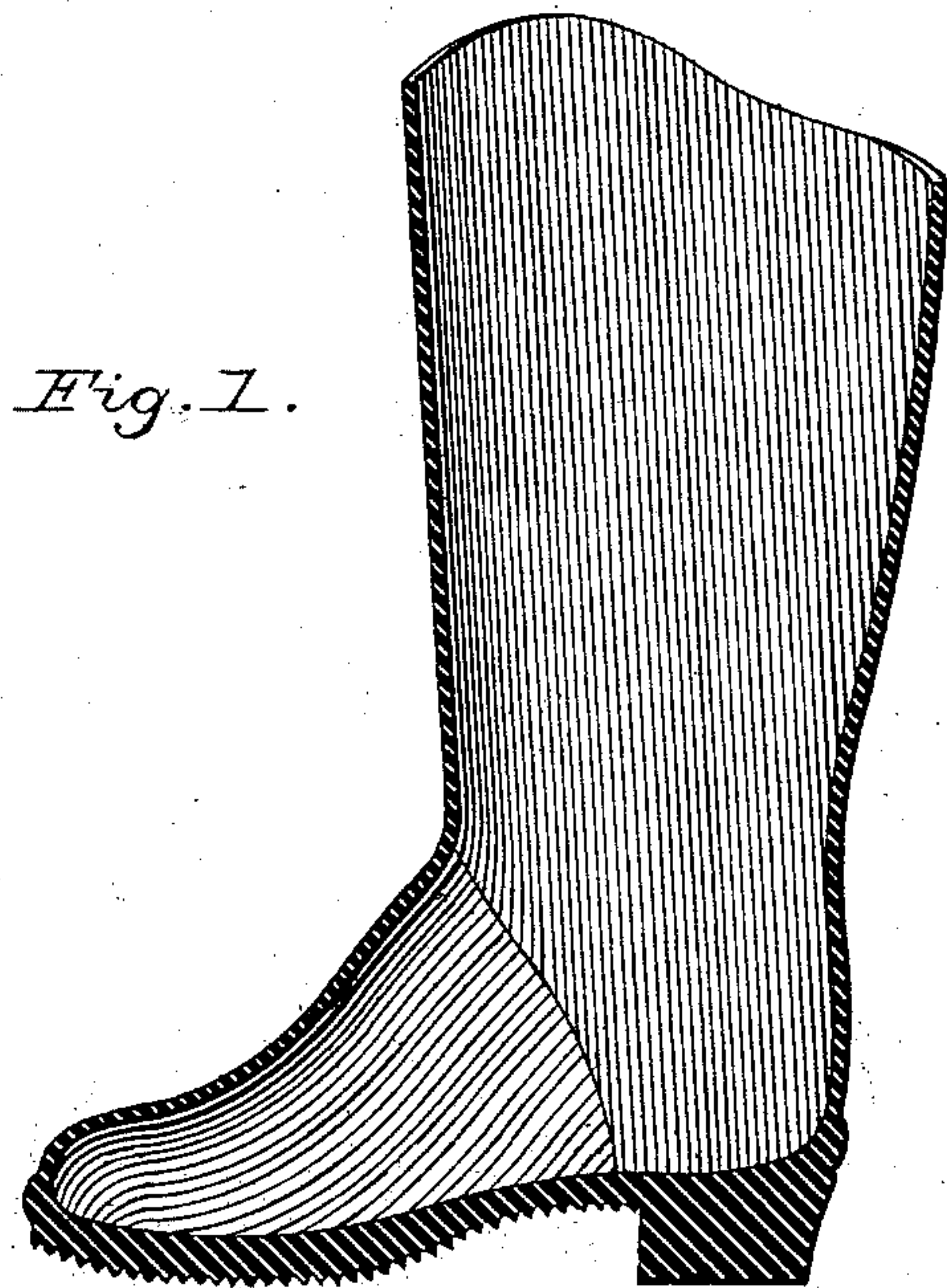


Fig. 2.

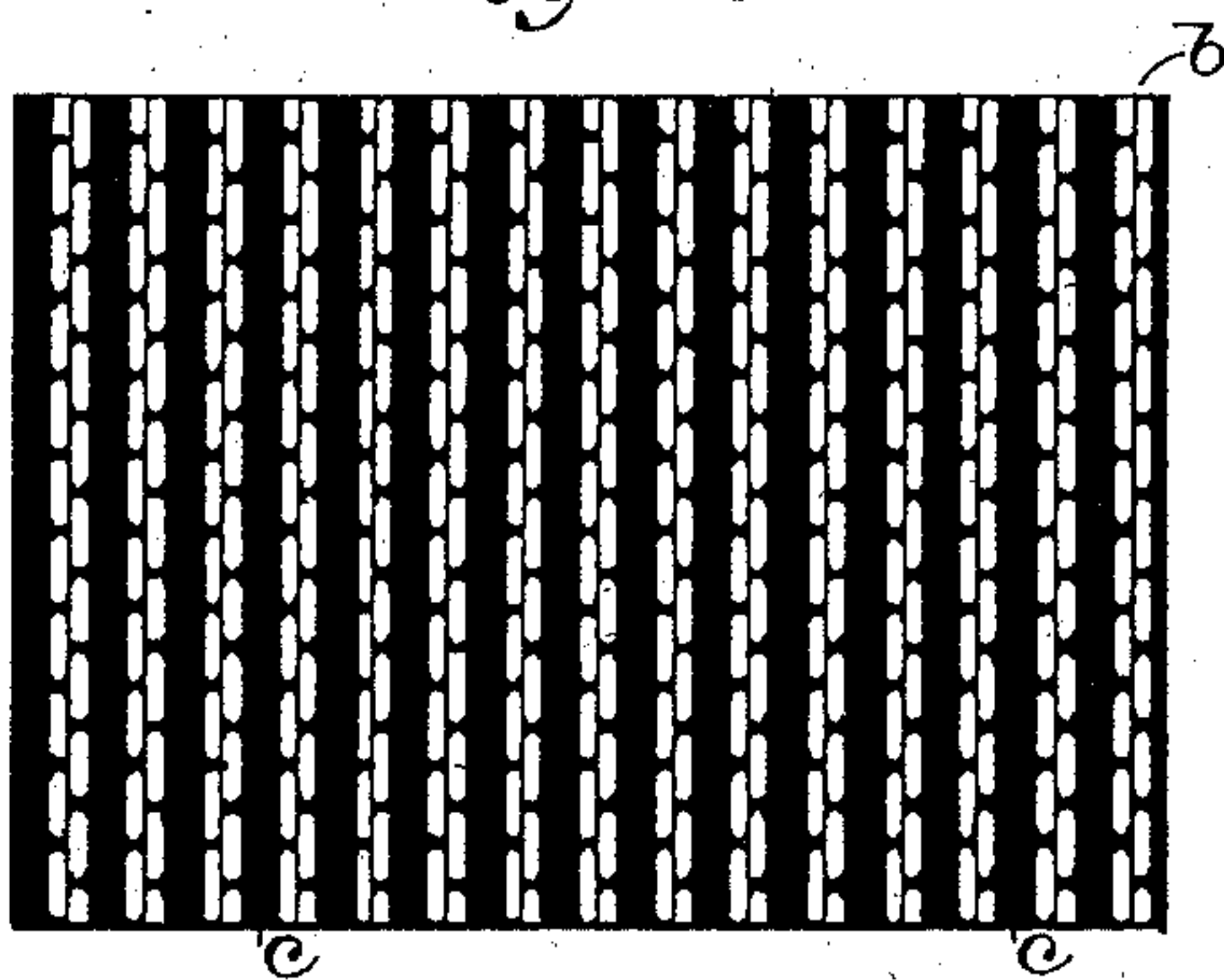
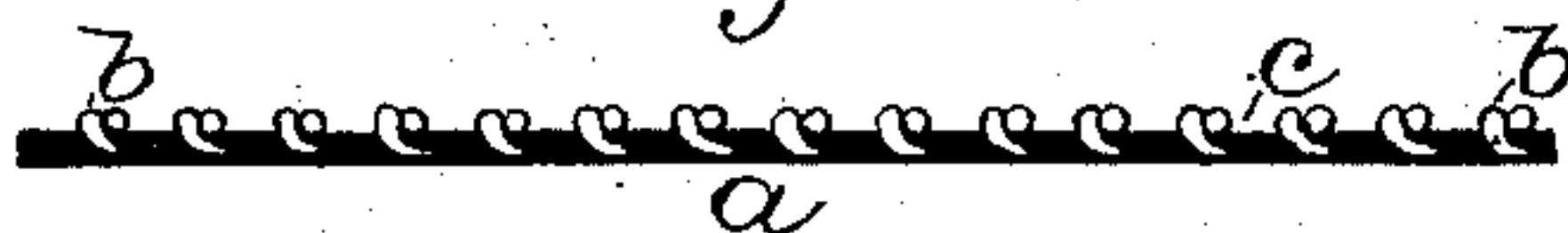


Fig. 3.



Attest:

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UNITED STATES PATENT OFFICE.

ISAAC F. WILLIAMS, OF BRISTOL, RHODE ISLAND.

RUBBER BOOT OR SHOE.

SPECIFICATION forming part of Letters Patent No. 294,173, dated February 26, 1884.

Application filed June 24, 1882. (No model.)

To all whom it may concern:

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

My said improvements relate to the lining of rubber boots and shoes; and in order that the advantages thereof may be readily appreciated, I will state that heretofore rubber boots and shoes have been lined with knit, woven, and felted fabrics in one of two conditions—viz., either with the inner or face surface of said fabrics in its natural fibrous condition, or coated with gum compound and vulcanized. The fibrous or natural surfaced lining is desirable, because of its warmth and its comfortable effect when worn without stockings; but such linings have been deemed objectionable by many, on account of continued absorption of perspiration, and their liability of becoming offensive, and because of the difficulties experienced in drying out the interior should the boot or shoe get filled with water from over its top, as is sometimes the case. The rubber-surfaced lining is also deemed desirable, because it obviates the absorption of perspiration, and enables the boot or shoe to be readily cleansed and dried out when wet; but such linings are obviously deficient in that warmth and general comfort to the wearer which are incident to the fibrous-surfaced lining. Rubber boots have also been lined at the rear portions thereof with rubber-surfaced lining and at their front portions with fibrous-surfaced lining, thus employing in one boot both kinds of lining.

The object of my invention is to provide a lining which has substantially all of the advantages incident to the fibrous-surfaced lining, as well as such as are incident to the rubber-surfaced lining, and in doing this to reduce the disadvantages incident to each, as far as is believed to be possible, with a merging of these separate desirable characteristics. I attain this end by lining rubber boots and shoes with a fabric having a complex surface,

in that said fabric has an inner face which is partially in its normal fibrous condition and partially rubber-surfaced.

To more particularly describe my invention, I will refer to the accompanying drawings, in which Figure 1 is a longitudinal vertical section of a rubber boot embodying my invention. Figs. 2 and 3 are respectively front and sectional views of a piece of one variety of my novel lining.

The sheeted fabric used by me may be woven, knit, or felted, it being immaterial in what manner the textile or felting fiber is worked for producing the same; nor is it material in what manner the rubber or compounds thereof are applied to said sheeted fabric, provided that when the boot or shoe is finished said lining fabric has a complex surface, partially in its natural or fibrous condition and partially rubber-coated; but the rubber-surfaced portions should alternate with the fibrous-surfaced portions, and it is desirable that they should substantially correspond in area.

In the drawings I have selected for illustration one of the simplest varieties of my complex-surfaced lining, in which textile fiber is worked into what is well known as "ribbed stockinet," its rear surface, *a*, being flat or smooth and its front surface ribbed, as at *b*, with intervening recessed spaces, *c*. The rubber compound is applied to the rear surface by the well-known process of "machining," in such quantities and with such pressure as causes said compound to thoroughly coat the rear surface, and to be forced through the front surface at the spaces *c* without permeating the raised ribs *b*, so that when such coated fabric as a lining is combined, as usual, with the other portions of the boot or shoe and vulcanized, the raised portions of the inner face of the lining will be in their normal or fibrous condition and the intermediate spaces will be occupied by rubber smoothly surfaced.

A rubber boot or shoe thus lined has an interior fibrous surface for contact with the stocking or foot, and it therefore is warm and comfortable to the wearer, and the rubber surface alternating with the fibrous surface prevents the undue absorption of perspiration and enables the fibrous ribs to readily dry

after they have been wet or dampened, and such a boot or shoe is much less liable to become offensive than if the lining had only the fibrous surface. Although I prefer to employ a 5 ribbed sheeted fabric, I do not limit myself thereto, except as hereinafter indicated in my claims.

Instead of the ribbed stockinet, it is obvious that a woven or felted fabric may be employed, it being only requisite that the front 10 surface thereof, which is to be the lining surface of the boot, is provided with the rubber-coated surfaces, alternating with the fibrous surfaces, and this can readily be accomplished in various ways; and, if desired, the 15 surface of the rubber coating may be raised above the fibrous surface; or said rubber surface may be flush with the intervening natural surface of the fabric, instead of having said 20 natural surfaces raised, as shown, although I prefer the latter arrangement, whether said natural surfaces be in the form of straight and parallel ribs or of figures in various designs. When parallel ribbed fabrics are employed, 25 and the ribs thereof are arranged lengthwise with boot-legs and with the feet of boots or shoes, it enables them to be readily put on

and taken off, and if said ribs project considerably beyond the rubber surfaces they contribute to more or less ventilation of the 30 boot or shoe while worn. I am aware, however, that it is not new to employ a ribbed lining for rubber boots or shoes for ventilating purposes; but, so far as my knowledge extends, I am the first to employ a lining having 35 a complex surface composed of portions in their natural or fibrous condition, and intervening portions which are rubber surfaced or coated.

Having thus described my invention, I claim 40 as new—

1. A rubber boot or shoe lined with a fabric having on its inner face fibrous surfaces, and intervening rubber-coated surfaces, substantially as described. 45

2. In a rubber boot or shoe, a fibrous lining having upon its inner face parallel raised ribs, and intermediate surfaces of rubber, substantially as described.

ISAAC F. WILLIAMS.

Witnesses:

OZRO C. BARROWS,
GEO. O. EDDY.