

(No Model.)

F. C. WILLIAMS.
RUBBER SHOE.

No. 473,650.

Patented Apr. 26, 1892.

Fig 1

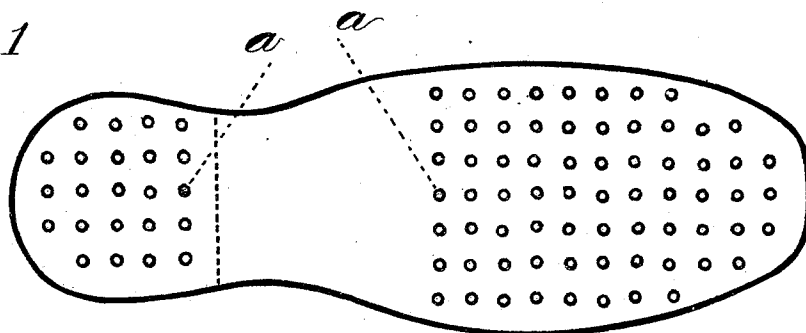


Fig 2

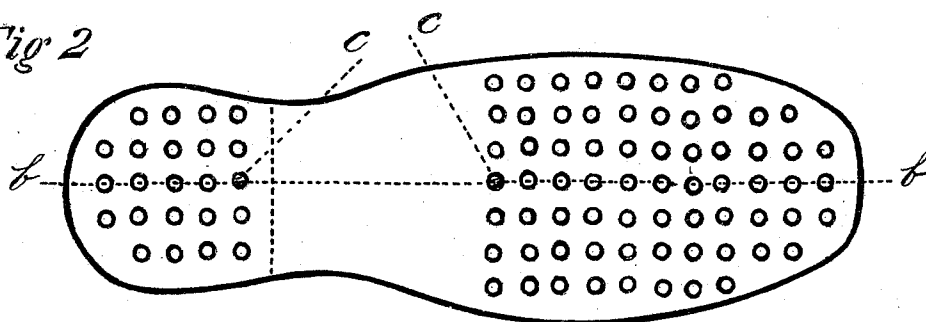
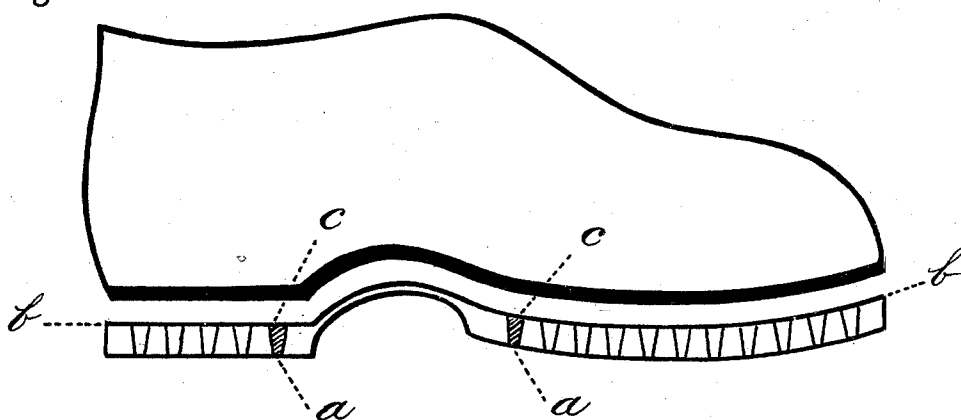


Fig 3



WITNESSES:

O. R. Pipping
Edward, Rigby

INVENTOR

Francis C. Williams

UNITED STATES PATENT OFFICE.

FRANCIS C. WILLIAMS, OF PHILADELPHIA, PENNSYLVANIA.

RUBBER SHOE.

SPECIFICATION forming part of Letters Patent No. 473,650, dated April 26, 1892.

Application filed February 4, 1892. Serial No. 420,353. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS C. WILLIAMS, a citizen of the United States of America, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Soles and Heels for Rubber Boots and Shoes, of which the following is a specification, reference being had therein to the accompanying drawings.

The object of this invention is to produce a rubber boot or shoe with a sole and heel having a gritty compound applied, so as to form an anti-slipping surface, which will continue to be effective as long as the outside rubber sole and heel last.

This invention is in the nature of an improvement in the manner of applying a gritty substance to the outer wearing-surface of soles and heels of rubber boots and shoes, whereby the rubber sole retains its elasticity and does not break or crack, as would be the case were the sole coated on the surface with the gritty substance or composed wholly of such a material.

By my improvement the outer rubber soles and heels are perforated with more or less holes sufficiently large to contain enough of the gritty substance to form an anti-slipping surface. These holes or perforations are made in the soft-rubber outside sole and heels, and while in the soft state the said perforations are filled with a mixture of the soft rubber (same as the sole and heel are composed of) and a gritty material, the whole to be then vulcanized together. The holes are to be arranged in straight lines, so that a continuous

elastic surface or strip will be left both lengthwise and across the sole, allowing it to bend freely in both ways.

In the accompanying drawings, Figure 1 represents the bottom surface of the rubber sole and heel with the many perforations, as *a a*. Fig. 2 is the upper surface of same, *c c* showing the perforations. Fig. 3 is a longitudinal section of the sole and heel on the line *b b* in Fig. 2, showing the outer rubber sole and heel as detached from the shoe and the part perforated.

In Fig. 1 the wearing-surface of the outer sole and heel is shown with a series of perforations separated from each other. Said perforations are to be filled with a compound of rubber and grit. This sole and heel, when all the perforations are so filled, is covered by the water-proof insole, as shown in Fig. 3. A longitudinal view of the sole and heel is shown by Fig. 3, the sole and heel being cut through the middle line of perforations, as *b b* in Fig. 2, the filled perforations being shown by *c a c a*.

I claim as my invention—

A rubber shoe having its outer sole or wearing-surface provided with a series of perforations separated from each other, said perforations being filled with a compound of rubber and grit and the whole vulcanized, substantially as described.

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

FRANCIS C. WILLIAMS.

Witnesses:

O. R. PIPPING,
EDWARD RIGBY.