

(No Model.)

F. RICHARDSON.  
RUBBER SHOE.

No. 250,973.

Patented Dec. 13, 1881.

Fig. 1.

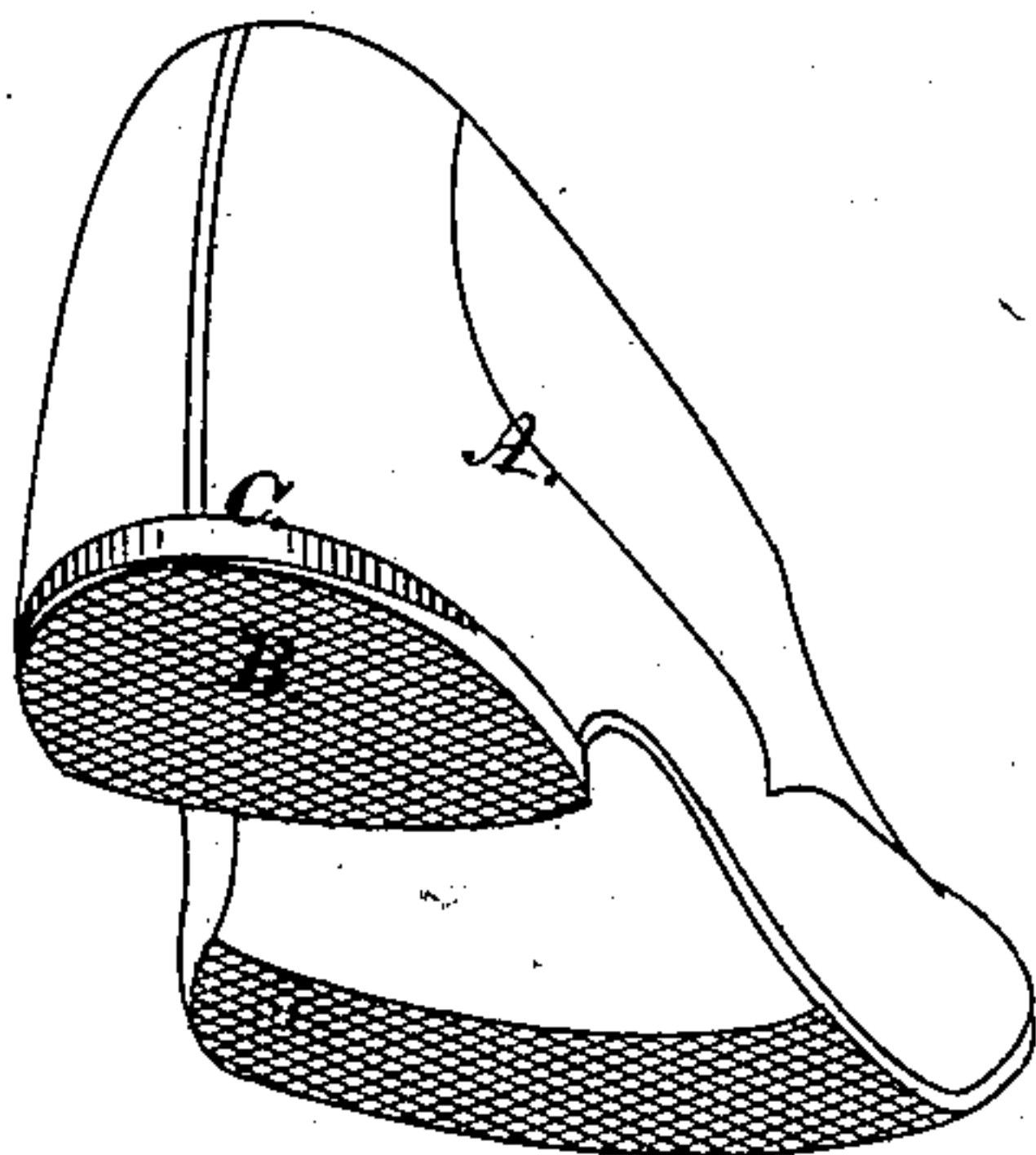


Fig. 2.

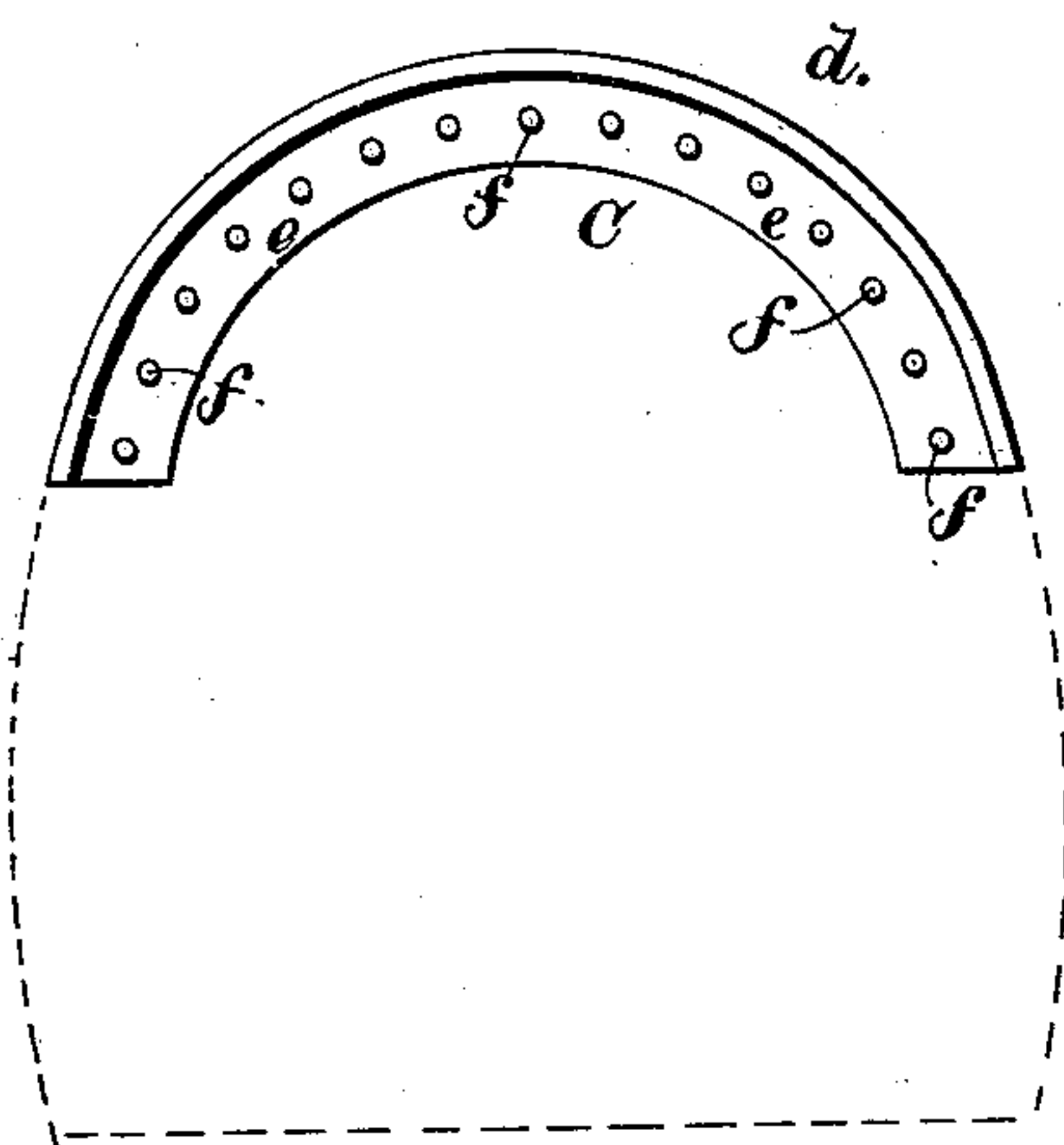


Fig. 3.

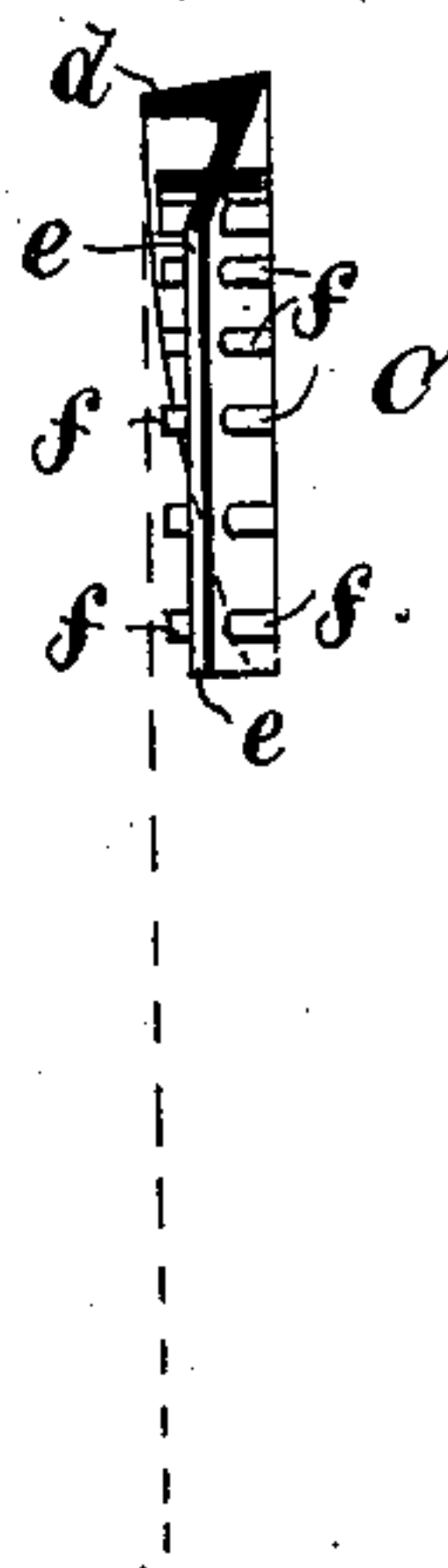
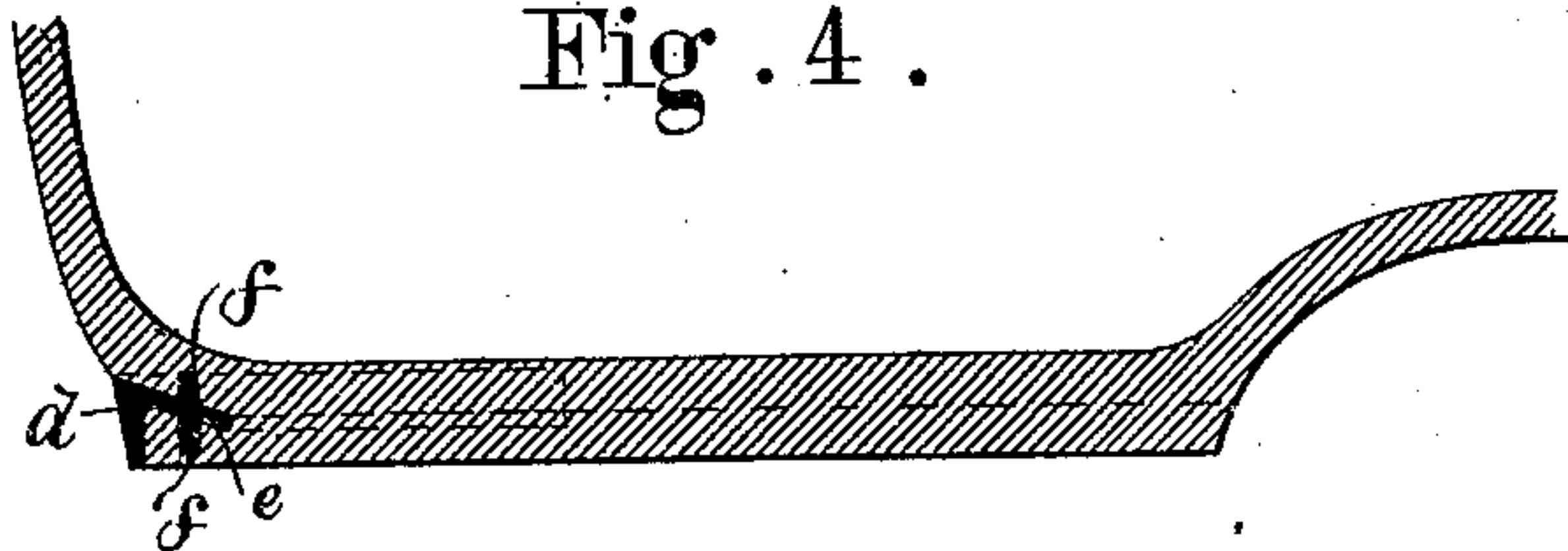


Fig. 4.



WITNESSES:

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INVENTOR

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*att'y*

# UNITED STATES PATENT OFFICE.

FREDERICK RICHARDSON, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO  
THE REVERSIBLE HEEL COMPANY, OF SAME PLACE.

## RUBBER SHOE.

SPECIFICATION forming part of Letters Patent No. 250,973, dated December 13, 1881.

Application filed May 9, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK RICHARDSON, of the city and county of Providence, and State of Rhode Island, have invented a new and useful Improvement in Rubber Shoes; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to an improved metallic guard placed on the rear end of the heel portion of a rubber shoe to protect that portion against rapid wear.

The invention consists in the peculiar construction of the heel-guard, and in the manner in which the same is secured to the rubber, as will be more fully set forth hereinafter.

Figure 1 is a perspective view of a rubber overshoe, showing the metal heel-guard secured thereto. Fig. 2 is a plan view of the metal heel-guard, and Fig. 3 is a sectional view of the same. Fig. 4 is an enlarged sectional view of the heel portion of a rubber overshoe having the metal heel-guard secured thereto.

In the drawings, A represents the shoe; B, the heel, and C the metal heel-guard.

The heel-guard is made of cast metal, and consists of the rim *d*, which forms the outer protection of the heel and may extend to the tread-surface of the heel, so as to form a wearing-surface. It is provided with an inwardly-extending flange on which a number of pins, *ff*, project from the plate on the upper and lower surface.

When the shoe is being made, and before the heel-piece or the outer sole (if the same forms the heel-piece) is secured, a number of holes are made by a special tool corresponding with the pins *ff* on the metal heel-guard. The heel-guard is now placed so that the pins *ff* fill these holes. The face-piece is now pierced with the same or a similar tool, and placed

over the pins on the lower face of the flange *e* and secured to the shoe, so as to expel all the air. The shoe is now subjected to heat in the vulcanizing-oven, and when the sulphur is melted and mixed with the rubber the whole becomes one homogeneous mass. The metal heel-guard will be permanently secured, and will resist all the ordinary wear, protecting the rubber overshoe at its weakest part, and thereby increasing the durability of the same.

The metallic heel-guard is, previously to being applied, covered with dissolved rubber or similar cement, so as to insure the firm adhesion of the same. One or more coats of such cements may be used. This cement or rubber is dissolved in naphtha or other volatile liquid, and when placed on the metal the volatile liquid is allowed to evaporate, so as to form a film on the metal. The metal is now secured by pressing against the soft rubber, and the whole is subjected to the usual process of vulcanization.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A cast-metal heel-guard, consisting of the rim *d*, having the flange *e*, projecting from a point above its lower edge, and provided with the series of upward and downward projecting pins, substantially as described, and for the purpose set forth.

2. The combination, with the cast-metal heel-guard, consisting of the rim *d*, having flange *e*, provided with the upward and downward projecting pins *f*, of the face-piece let into rim below the flange, and having holes embracing the downward-projecting pins, substantially as described.

FREDERICK RICHARDSON.

Witnesses:

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WM. L. COOP.