

(No Model.)

F. RICHARDSON.  
Boot and Shoe Heel.

No. 236,086.

Patented Dec. 28, 1880.

Fig. 1

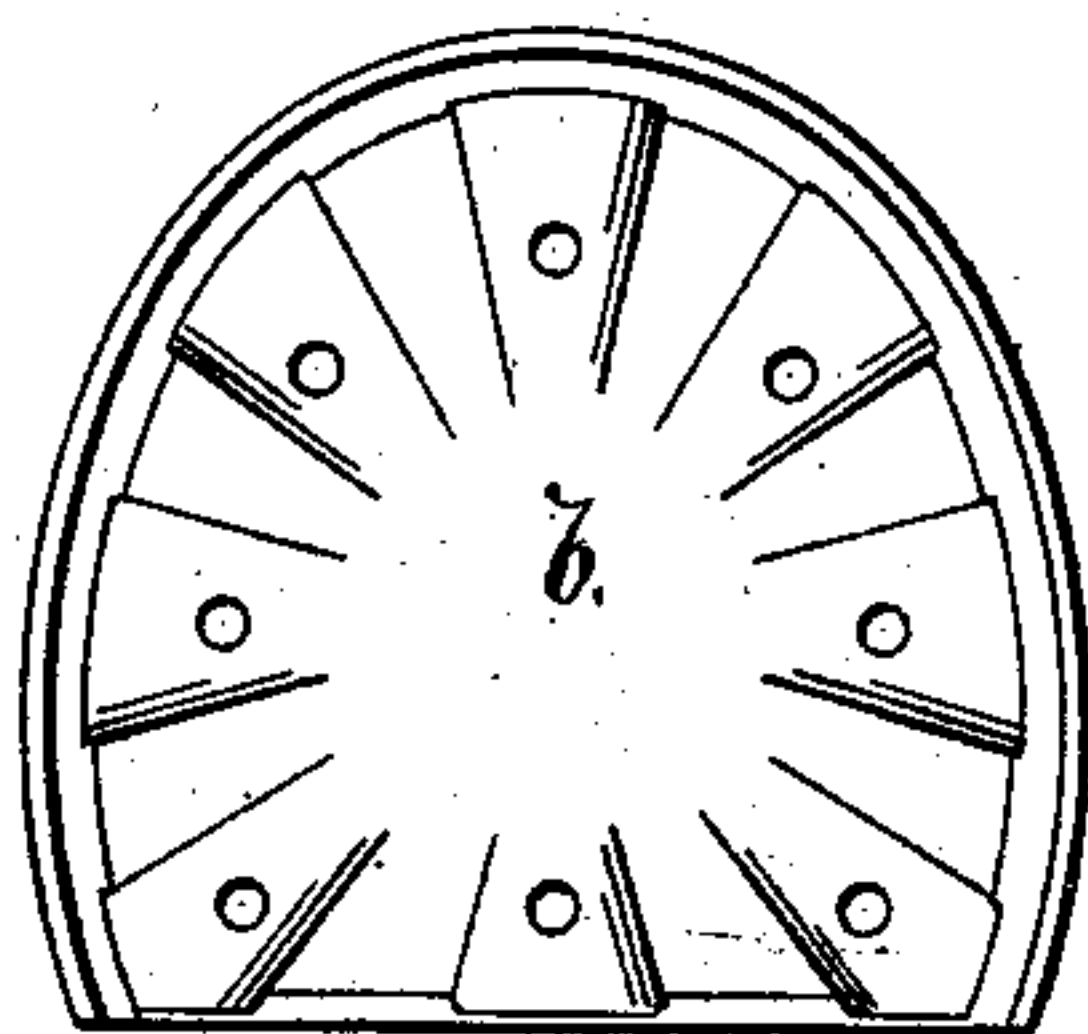


Fig. 2.

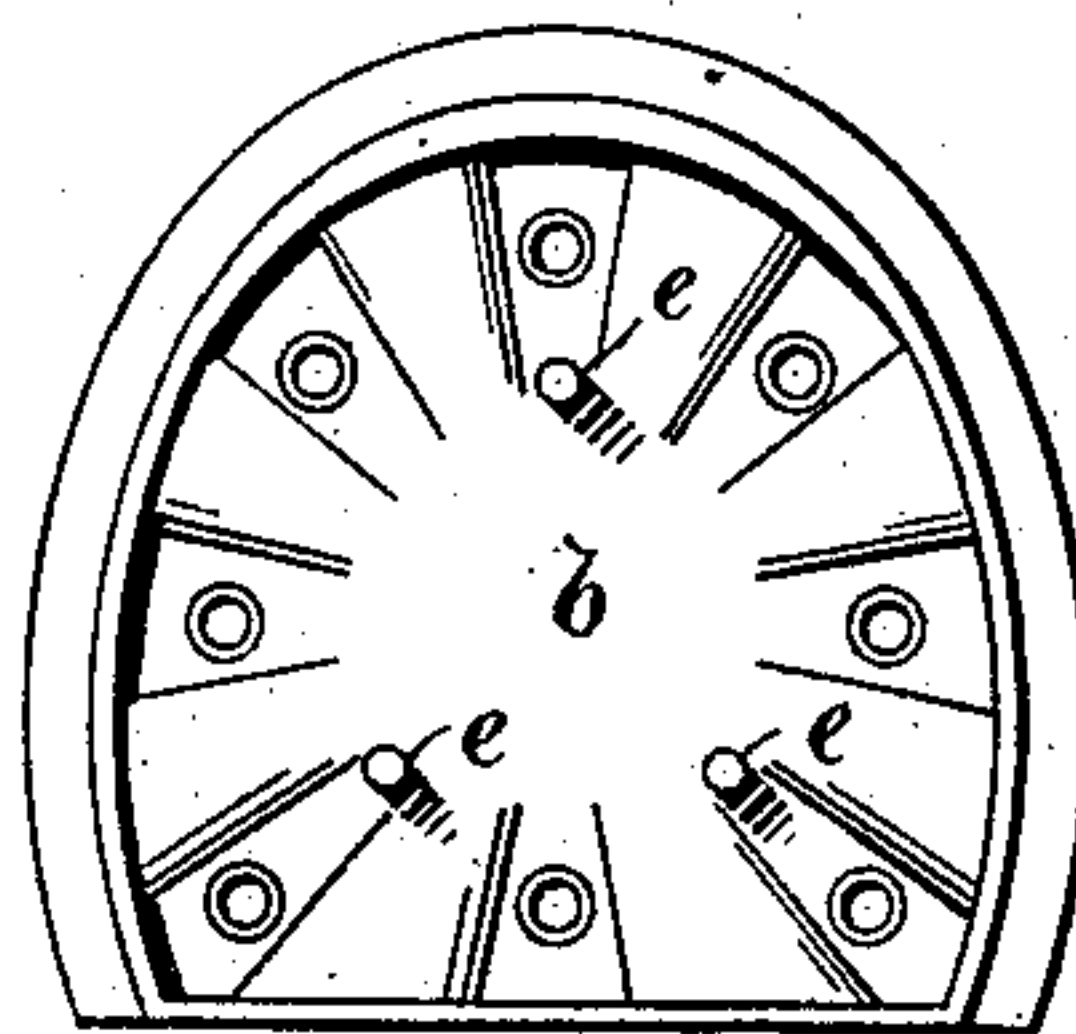


Fig. 3.

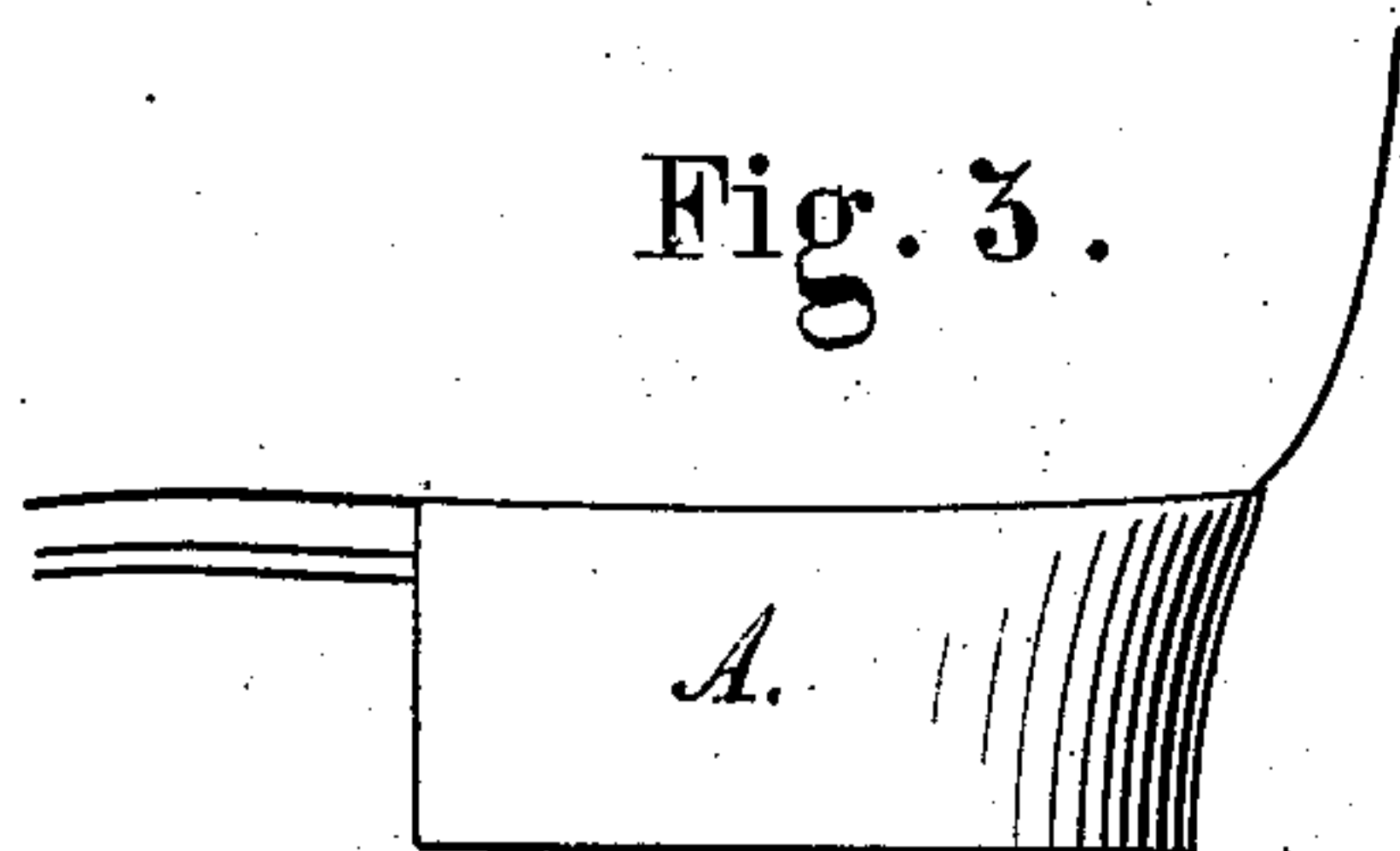


Fig. 4 .

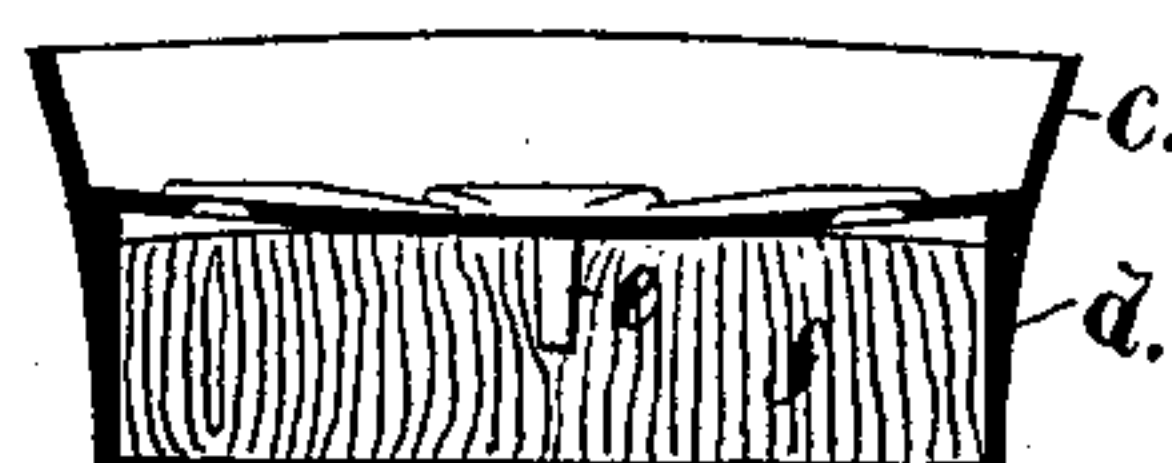


Fig. 5 .

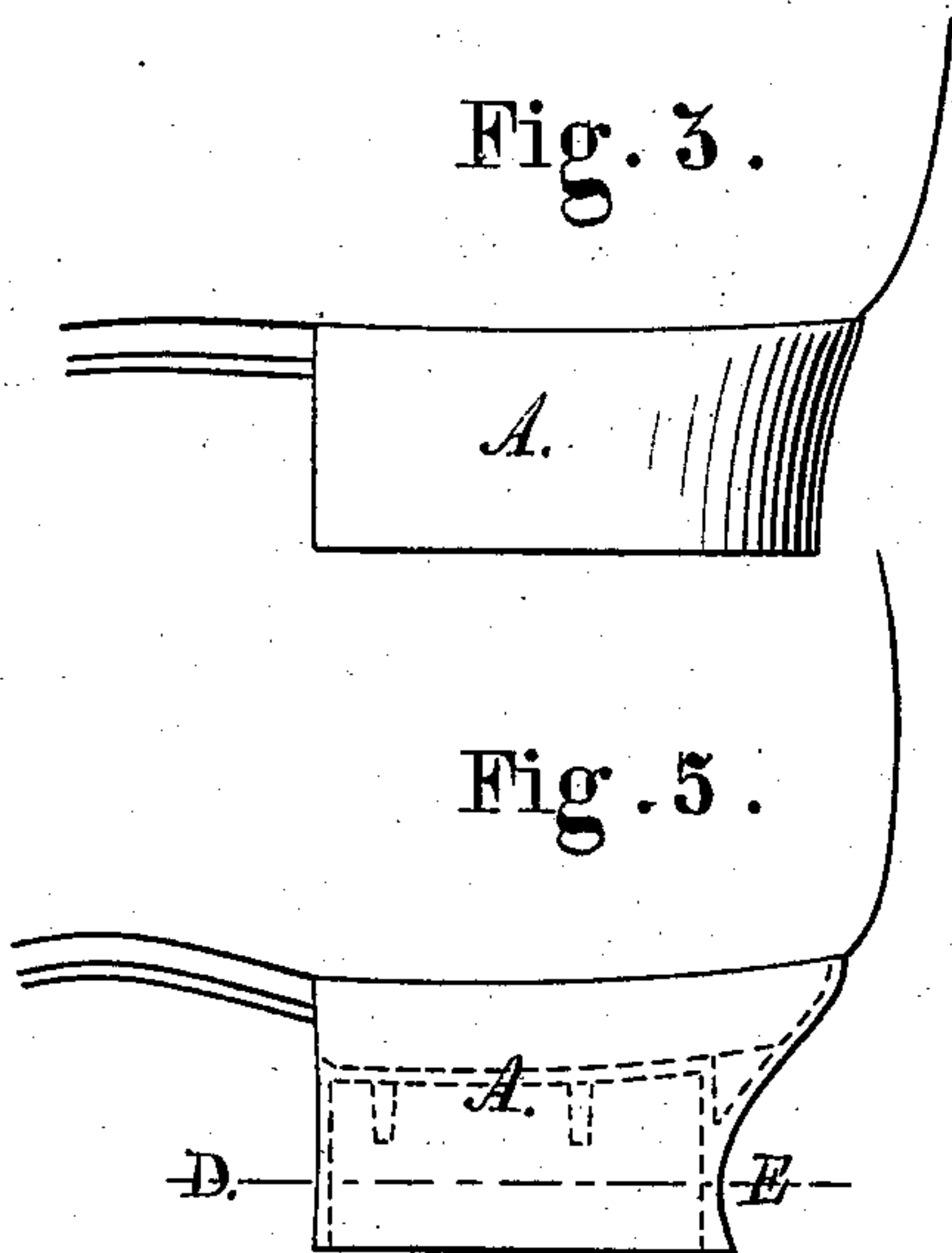
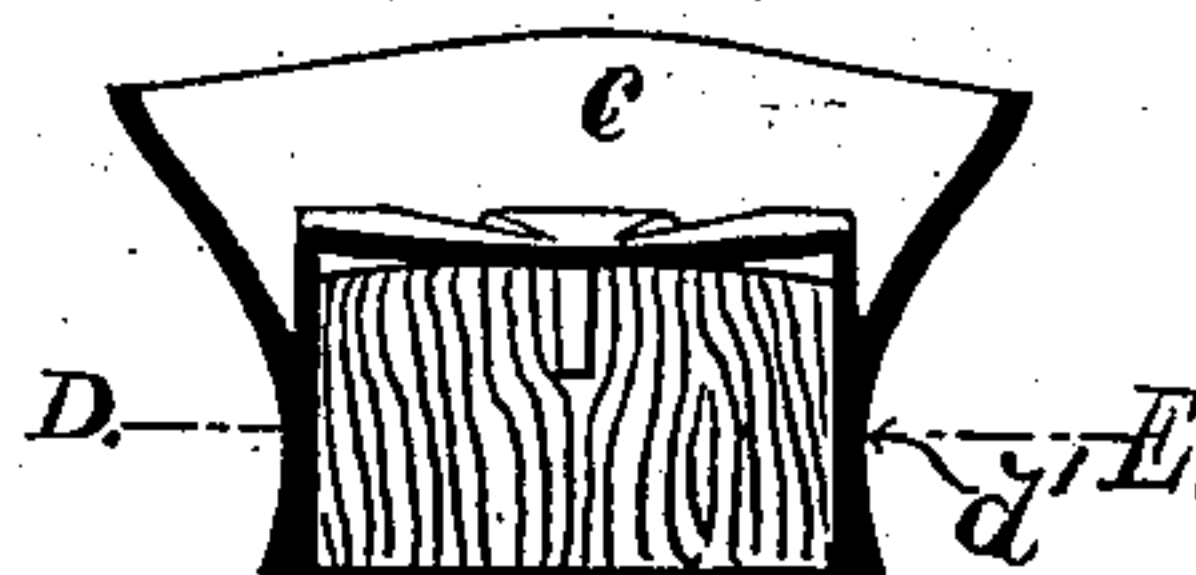


Fig. 6 .



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# UNITED STATES PATENT OFFICE.

FREDERICK RICHARDSON, OF PROVIDENCE, RHODE ISLAND.

## BOOT AND SHOE HEEL.

SPECIFICATION forming part of Letters Patent No. 236,086, dated December 28, 1880.

Application filed May 12, 1880. (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 Boot and Shoe Heels; 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 improvements in metal heels for boots and shoes; and it consists in the peculiar construction of the heel-shell, by which broader surface of metal is secured at the wearing-surface and a better form or outline is given to the heel.

It further consists in corrugating the partition plate in the shell and in providing the same with pins, as will be more fully set forth hereinafter.

Figure 1 is a top view of my improved boot-heel shell, showing the corrugations of the partition-plate. Fig. 2 is a bottom view of the boot-heel shell, showing the corrugation of the partition-plate and the pins projecting from the same. Fig. 3 is a side view of the boot-heel. Fig. 4 is a sectional view of a boot-heel, showing the pin entering the wooden core or wearing-block. Fig. 5 is a side view of a heel provided with an enlarged wearing-surface at the bottom. The longitudinal section is indicated in broken lines, as also the pins for retaining the wooden core. Fig. 6 is a transverse section view of the heel.

In the drawings, A represents a metallic heel-shell divided into two parts by the partition *b*, the upper part, *c*, to receive the heel portion of the boot or shoe and the lower part, *d*, the wooden block or core *f*. When such metal heel-shells are cast the shell A, in cooling, shrinks, and as the plate *b* is rigid and liable to cool sufficiently to congeal the metal, the whole is in a state of tension and is liable to break by any quick blow or sudden strain. To prevent this and allow the plate *b* to yield to this strain, I corrugate the plate, and preferably more at the junction with the shell than the center of the plate, whereby the shrinking of the shell will not be restrained by the partition-plate and the tension on the metal will be reduced. To still further reduce this lia-

bility to strain, I bend the plate *b* so that its upper surface is concaved; but such concavity does not exceed the depth of the corrugations, and the wooden core will rest firmly on the corrugations while the heel portion of the boot or shoe rests on the upper corrugations, thus relieving the center of the plate from strain. The pins *e e* are cast with or secured to the plate *b*, and are adapted to enter the wooden core and retain the same until the whole is secured to the boot or shoe.

Boot or shoe heels provided with a wooden core or wearing-surface are sold with the wooden core forced into the shell. They are liable to be kept on hand a long time before they are secured to the boot or shoe, and the wooden core is liable to shrink and get loose. By using two or more pins, *e*, the wooden core *f* can be firmly secured, and even when the core shrinks it is not liable to fall out of the shell or even get loose, as by shrinking it will bear harder on the pins, and will therefore be always firmly held.

Heels made of a metal shell and a wooden core or wearing-surface, when made of cast metal, are usually made of the form shown in Figs. 3 and 4, so as to draw freely from the sand. In this construction the edge of the shell inclosing the wooden core is thin and liable to wear. To increase the strength and the metal at the edge, I cast my improved heel-shell in a three-parting flask, one joint being in the concave *d'*. (Indicated by the broken line D E.) In this manner the heel-shell can be cast with a thick edge at the end of the shell, to form with the core *f* the wearing-surface, and a more agreeable form can be given to the heel-shell.

I am aware that heel-shells stamped of sheet metal have been made having the outline of the heel-shells shown in Figs. 5 and 6; but such heel-shells did not present a thicker wearing-surface on the edge, and such edge did not itself form the wearing-surface.

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

1. In a metallic heel-shell, a partition-plate corrugated, as described, to take up or compensate for shrinkage, substantially as specified.



2. In a metallic heel-shell, a corrugated and concaved partition-plate, substantially as and for the purpose described.

3. In a heel, the combination of the shell, 5 a partition-plate therein having pins formed therewith, and a wooden core secured in place in the shell by said plate and pins, substantially as described.

4. A cast-metal heel-shell having an en-

larged bearing-surface or tread formed by an increased thickness of metal below the line D E, substantially as and for the purpose described. 10

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Witnesses:

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