No. 897,920. PATENTED SEPT. 8, 1908.

F. P. McINTYRE.

CUSHION FOR BOOTS AND SHOES.

APPLICATION FILED AUG. 11, 1906.

2 SHEETS—SHEET 1.

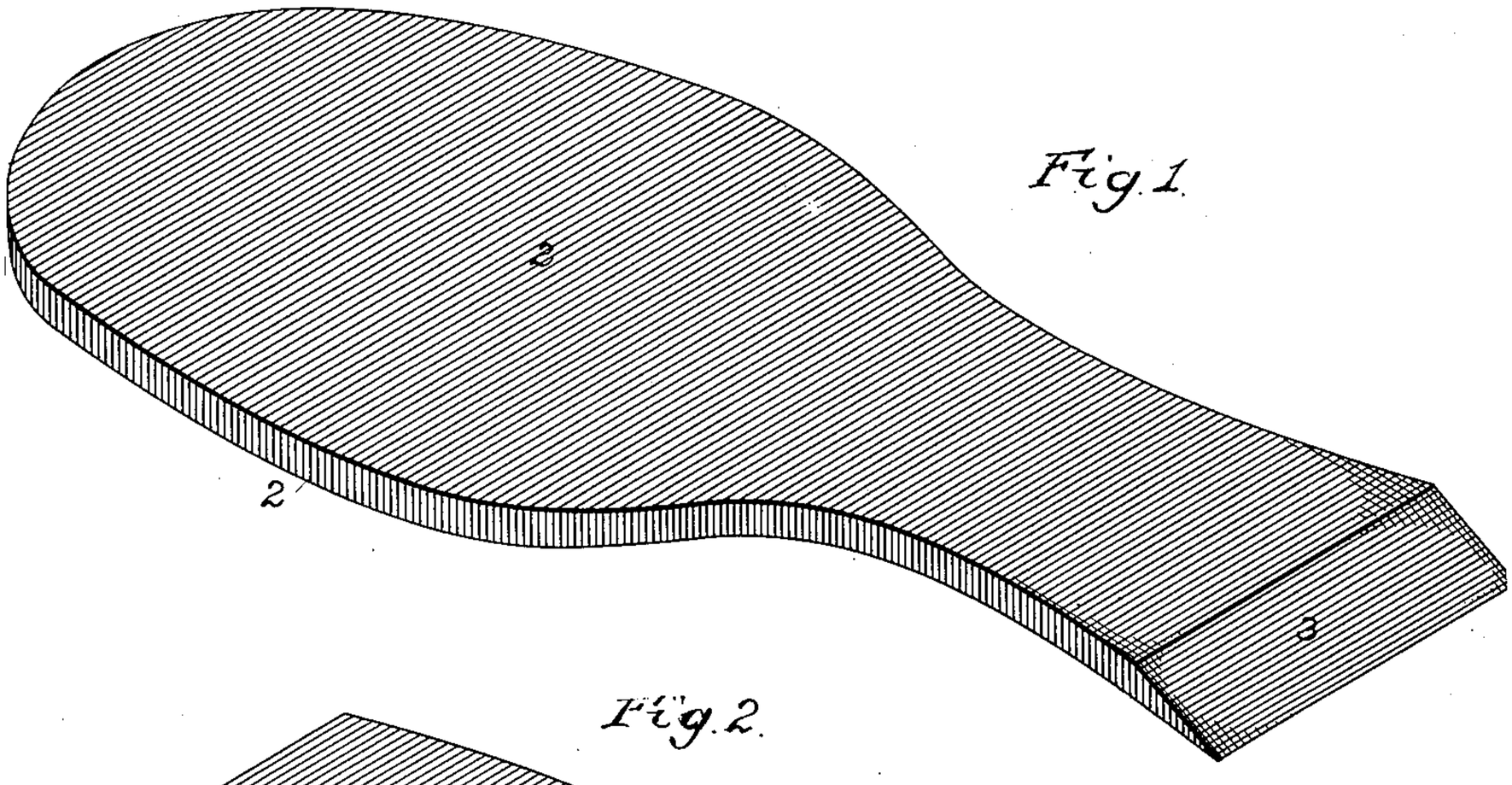

Fig. 1.

Fig. 2.

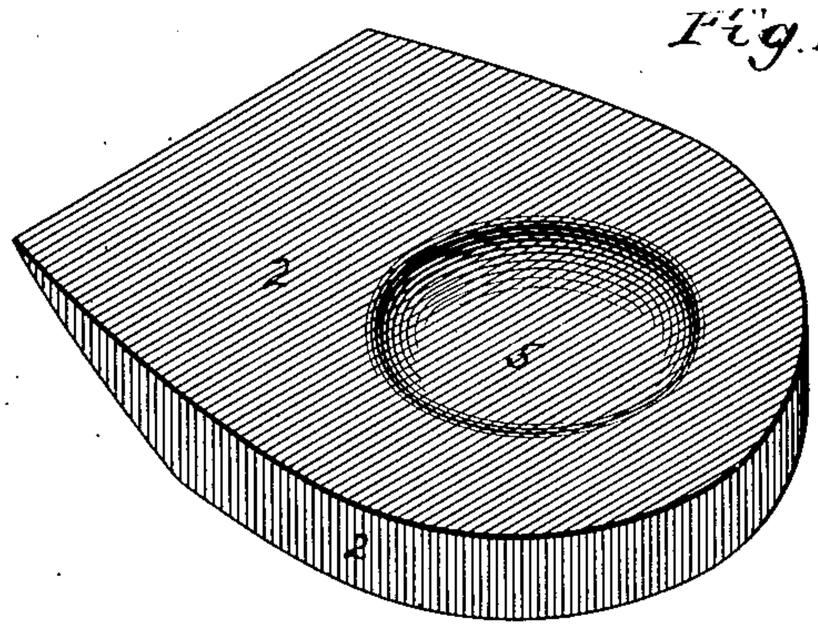

Fig. 4.

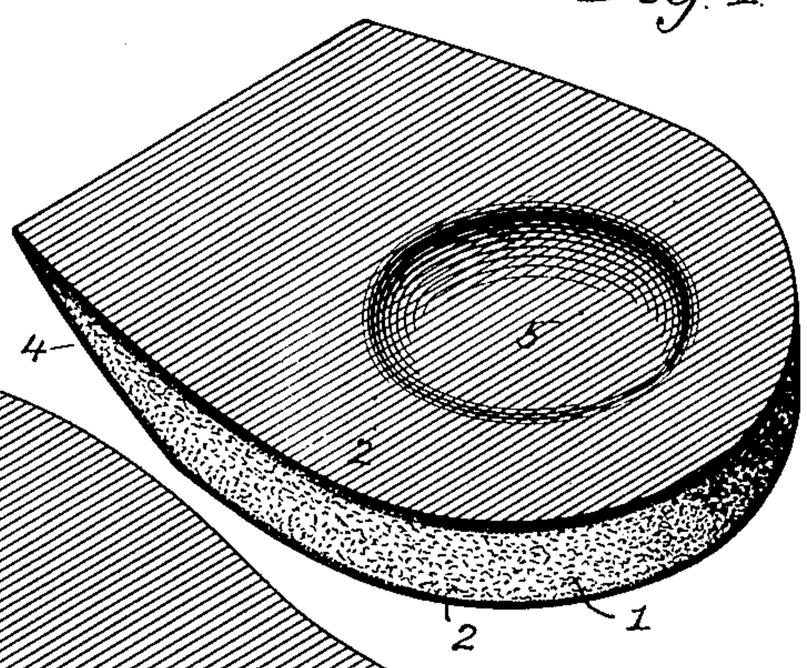

Fig. 3.

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2 SHEETS—SHEET 2.

Fig. 5.

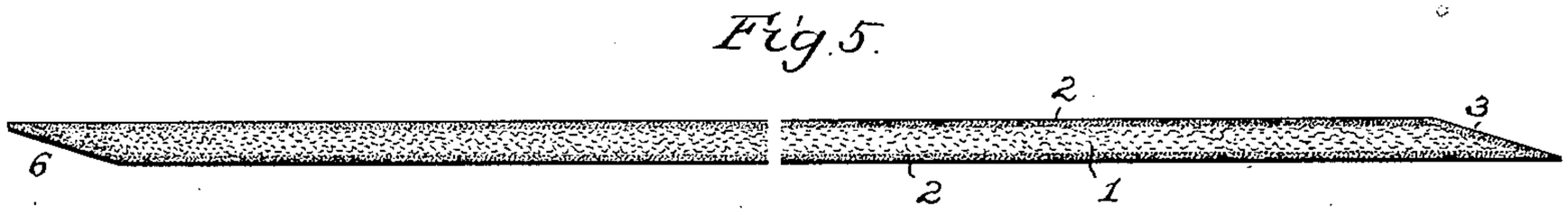


Fig. 6

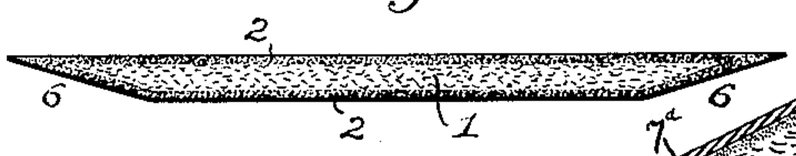


Fig. 11.

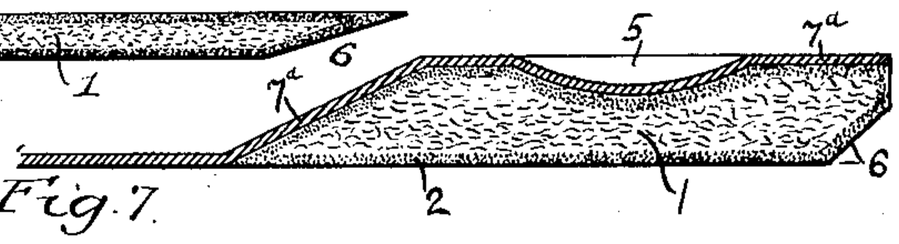


Fig. 7.

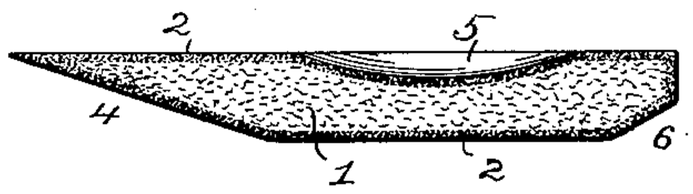


Fig. 8.

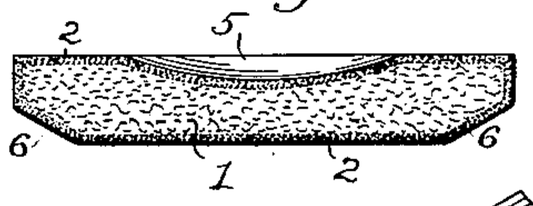


Fig. 9.

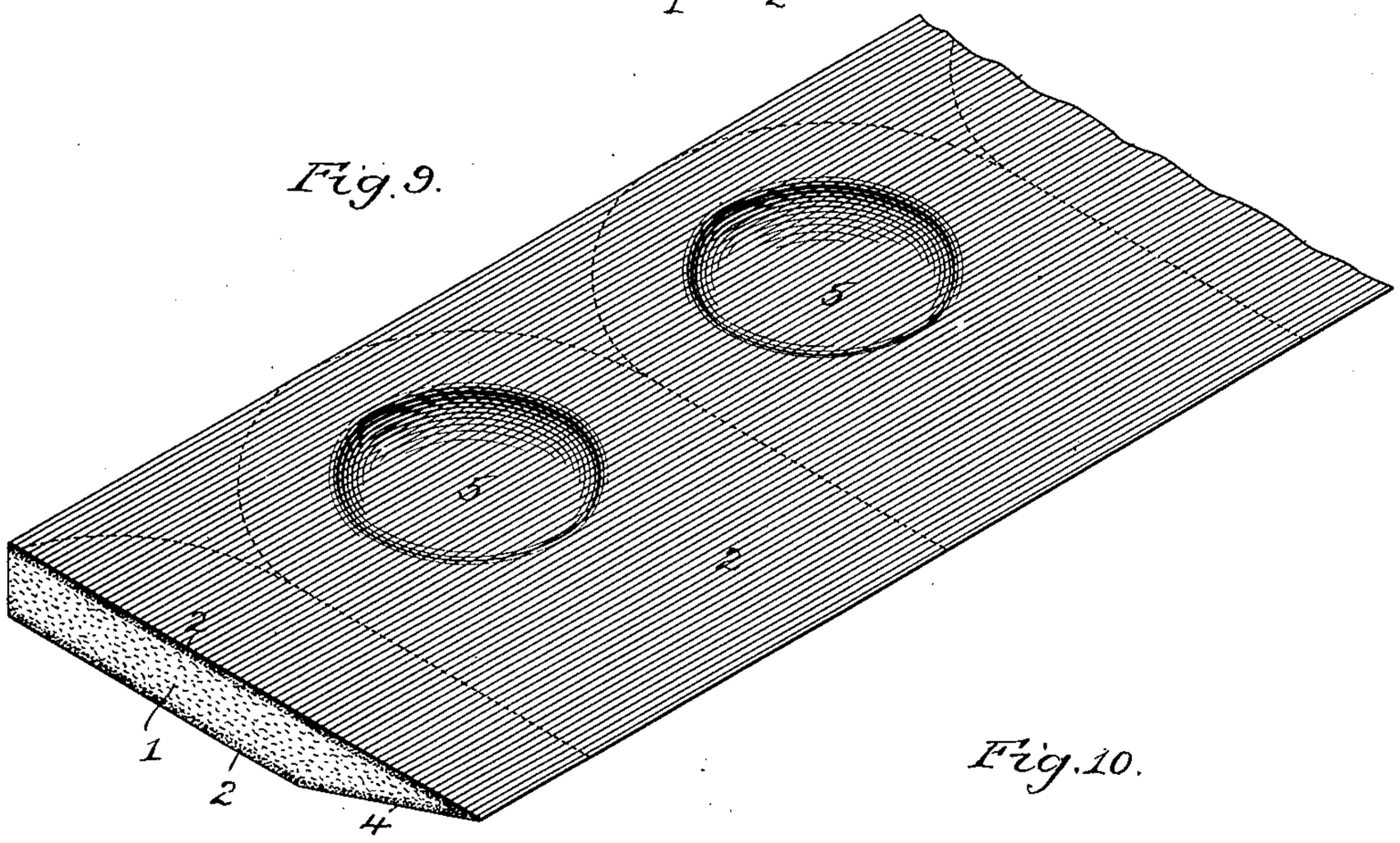
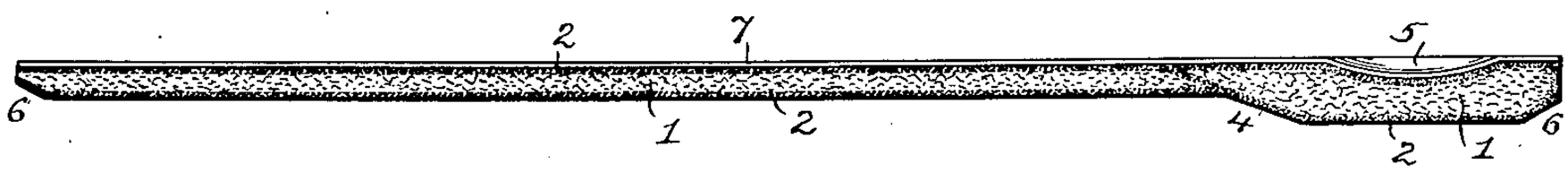


Fig. 10.



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UNITED STATES PATENT OFFICE.

FRANK P. McINTYRE, OF PHILADELPHIA, PENNSYLVANIA.

CUSHION FOR BOOTS AND SHOES.

No. 897,920. Specification of Letters Patent. Patented Sept. 8, 1908.

Application filed August 11, 1906. Serial No. 330,162.

To all whom it may concern:

Be it known that I, FRANK P. McINTYRE, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Cushions for Boots or Shoes, of which the following is a specification.

The object of my invention is to provide a sponge rubber cushion for the sole or heel of a boot or shoe, which cushion will be of a more acceptable character than those heretofore made. This object I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which

Figure 1 is a perspective view of a sponge rubber cushion made in accordance with my invention and intended for the insole of a boot or shoe; Fig. 2 is a similar view of a heel cushion; Fig. 3 is a perspective view of another form of sole cushion embodying certain features of my invention; Fig. 4 is a perspective view of a similarly modified form of the heel cushion; Fig. 5 is a longitudinal section of the sole cushion shown in Fig. 1; Fig. 6 is a transverse section of the same; Fig. 7 is a longitudinal section of the heel cushion shown in Fig. 2; Fig. 8 is a transverse section of the same; Fig. 9 is a view of a strip from which heel cushions of the character shown in Fig. 4 may be cut; Fig. 10 is a longitudinal sectional view of a slip insole in the making of which my improved heel and sole cushions have been employed, and Fig. 11 is a sectional view, illustrating a special form of heel cushion embodying my invention.

Prior to my invention sponge rubber has been made only in relatively large or thick masses, and, in order to adapt this material for use as a cushion for a boot or shoe insole or heel pad, it was necessary to cut the thick mass into strips of the relatively thin character needed for such uses. Not only is the cutting of the sponge rubber mass a difficult matter because of its elastic nature and its irregular cellular formation, but the strips thus prepared are also unsatisfactory because the surface cells are all open and therefore do not retain the air, and, as the cushion effect of sponge rubber depends largely upon the volume of air confined in the innumerable cells of which the material is composed, this cutting away of the cells at the faces of the strip materially detracts from the elasticity of the pad or cushion.

In carrying out my invention, therefore, I form in the first instance, by suitable molds or other means, masses 1 of sponge rubber of the shape and thickness necessary for the desired sole or heel cushion, and upon the outer surfaces of each of these sponge rubber masses and integral with the same, I form a layer 2 of rubber of close texture which is impervious to air and seals the air cells at the surface of the mass, and thereby overcomes the objection above noted to the usual method of preparing sponge rubber cushions for boots and shoes.

The sole cushion shown in Fig. 1 is beveled on its upper face at the heel end of the cushion as indicated at 3, and the heel cushion is likewise beveled on its under face at the front as indicated at 4, in order that the cushions may overlap each other when applied to the boot or shoe, and I also by preference form in the top of the heel cushion a recess or depression 5 for the reception of that portion of the heel upon which the greatest amount of thrust is exerted in walking, thereby serving to equalize the pressure upon all portions of the heel and thus render the heel pad better able to perform its intended function than one presenting a flat face.

The rubber facing of close texture extends not only throughout the beveled portions of the heel and sole cushion, but also throughout the depression or recess in the top of the heel cushion. It is advisable in many cases to bevel also the outer edge portion of the sole cushion and the lower corner of the heel cushion as indicated at 6, especially if the sole portion of the cushion is to be sewed into the structure of the shoe in the manufacture of the same, this decrease in bulk of the edge portion of the cushion not only facilitating the sewing operation and permitting the use of the cushion without affecting the neat appearance of the boot or shoe in connection with which it is used, but also providing for lateral displacement of the rubber when the cushion is subjected to the pressure of the foot or heel, the beveling or chamfering of the edge of the cushion preventing the laterally displaced rubber from coming into contact with the upper of the shoe. By this means the lateral elasticity of the cushion is preserved, the same can expand and contract freely and the comfort of the wearer of the shoe is insured. The beveling of the corners of the heel cushion causes the same to accord with the rounded contour of the interior of

the heel portion of the shoe at the point where the heel joins the upper.

My invention may be carried out in a cheaper although not quite so effective a manner as that above described, by molding or otherwise forming the sponge rubber in strips of the desired width and thickness, and provided upon their upper and lower faces with integral layers 2, composed of rubber of close texture, and afterwards cutting from such strip by means of suitable dies the desired sole or heel cushion. A strip prepared in this way for the manufacture of heel cushions is shown in Fig. 9, and sole and heel cushions made in this way are illustrated respectively in Figs. 3 and 4.

As both the upper and lower faces of sponge rubber cushions made in accordance with my invention present smooth surfaces of close texture, strips of leather, cloth or other material can be readily secured thereto by paste or cement, as may be necessary in the construction of an insole, heel pad, or other article in which the sponge rubber cushion is to be employed, and in Fig. 10 I have shown a slip insole thus constructed, the upper layer of leather being represented at 7, while in Fig. 11 I have shown a heel pad or cushion with upper layer of leather 7ª.

I claim:—

1. A sponge rubber cushion for boots or shoes having integrally combined therewith thin surface layers composed of rubber impervious to air.

2. A sponge rubber cushion for boots or shoes having a recess or depression in its upper face, and having integrally combined therewith thin surface layers of rubber impervious to air, the upper layer following the contour of said depression or recess.

3. A sponge rubber cushion for boots or shoes consisting of a mass of sponge rubber completely inclosed within a thin surface layer or coating of rubber impervious to air which is integrally combined with said sponge rubber mass.

4. A sponge rubber cushion for boots or shoes consisting of a mass of sponge rubber with beveled edge and indented top, said cushion having a thin surface layer or coating of rubber impervious to air which completely incloses the sponge rubber mass and is integrally combined therewith.

5. A slip insole for boots or shoes consisting of a cover of leather, and a sponge rubber sole and heel cushion, each having thin surface layers of rubber impervious to air to one of which the cover is secured.

6. A slip insole for boots or shoes consisting of a cover of leather, and a sponge rubber sole and heel cushion, each having thin surface layers of rubber impervious to air to one of which the cover is secured, the heel cushion having a surface depression and the surface layer following the contour of said depression.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

FRANK P. McINTYRE.

Witnesses:
HAMILTON D. TURNER,
KATE A. BEADLE.