No. 625,897.

Patented May 30, 1899.

H. O'SULLIVAN.

CUSHION HEEL.

(Application filed Jan. 21, 1899.)

(No Model.)

Fig: 1.

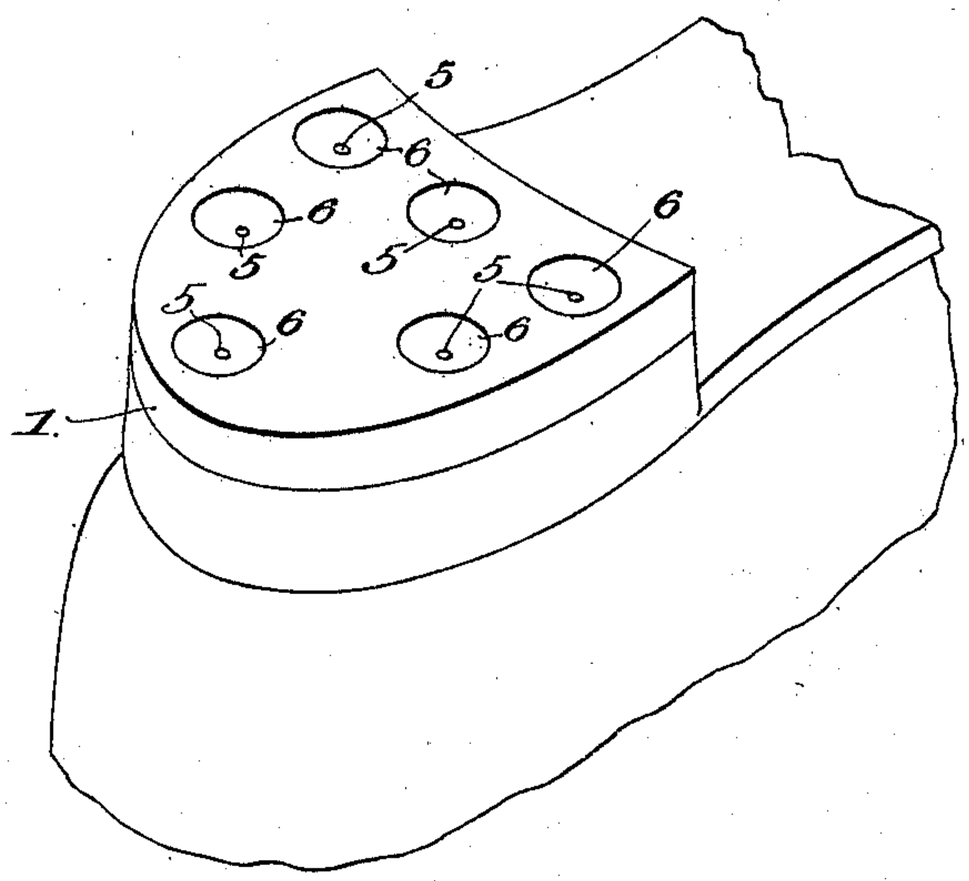


Fig: 2.

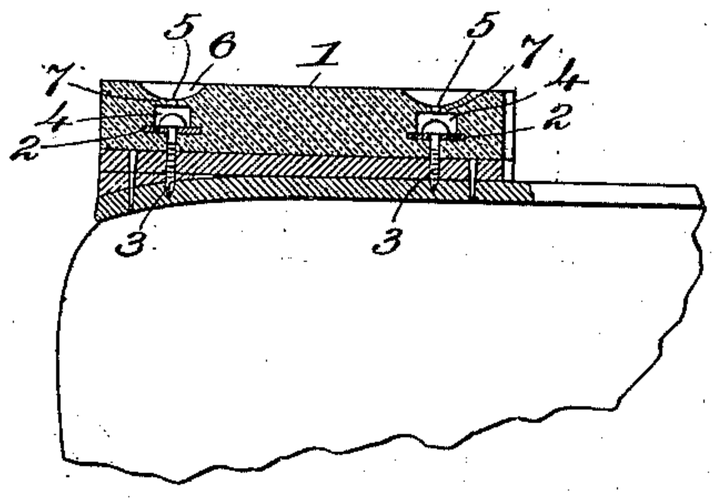
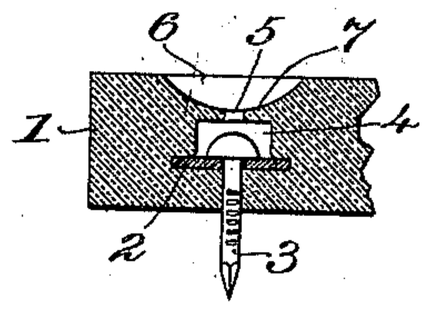


Fig: 3.



Witnesses:
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Inventor:
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By his attorneys,
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UNITED STATES PATENT OFFICE.

HUMPHREY O'SULLIVAN, OF LOWELL, MASSACHUSETTS, ASSIGNOR TO O'SULLIVAN BROTHERS, OF SAME PLACE.

CUSHION-HEEL.

SPECIFICATION forming part of Letters Patent No. 625,897, dated May 30, 1899.

Application filed January 21, 1899. Serial No. 702,900. (No model.)

To all whom it may concern:

Be it known that I, HUMPHREY O'SULLIVAN, a citizen of the United States, residing at Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Cushion-Heels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to an improvement in cushion-heels for boots and shoes, and more particularly to an improved form of cushion-heel provided with nail or screw head chambers.

Many forms of cushion-heels in which the heads of the nails or screws by which they are secured to the body of the shoe are exposed are found to be more or less objectionable, as such nail or screw heads are liable to catch dirt or snow from the street and carry it into the house with the wearer. To overcome this objection and to secure other advantages, hereinafter pointed out, are the objects of the present invention, which consists in the cushion-heel hereinafter described, and more particularly set forth in the claims.

The preferred form of my invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of my improved heel. Fig. 2 is a longitudinal sectional elevation; and Fig. 3 is an enlarged sectional elevation of a portion of the heel, showing details hereinafter to be described.

1 indicates the preferred form of my cushion-heel, which will be made of rubber or other elastic material and provided with a number of nail or screw head chambers 4, which are adapted to receive the heads of the nails or screws by means of which the cushion-heel is to be secured to the shoe and to protect them from the action of the elements and at the same time to prevent them from carrying dirt or snow. While the nail or screw head chambers 4 are preferably made a little larger than the diameter of the nail or screw heads they are to receive, the size may vary without departing from the spirit of my invention, as it contemplates, broadly, a cushion-heel with nail or screw head chambers. There are preferably provided a number of burs or washers 2, located in the nail or screw head chambers 4, through which the nails or screws are adapted to be driven into the body of the shoe and which are intended to prevent the yielding of the head of the nail through the material of the cushion-heel. These burs or washers may be loose in the nail or screw head chambers or they may be extended beyond the walls of the same into the body of the heel, so that they may be said to be embedded in the heel. This latter construction is illustrated in the drawings and considered to be preferable; but I consider that whether the washer be loose in the nail or screw head chamber or embedded in the heel in the manner shown the construction in either case would be within the purview of my invention.

A suitable opening is provided in the tread-surface of the heel leading to the nail or screw head chamber through which the nail or screw is intended to be inserted. These small openings may be any suitable form; but I prefer to make them small round holes, as 5, which, being elastic, will expand to permit the passage of the head of the nail or screw therethrough and afterward contract to prevent the entrance of dirt or snow.

If desired, the tread-surface of the cushion-heel may be provided with a number of suction-recesses 6, and when so provided I prefer to locate them concentrically with the nail or screw head chambers, as shown. In the cushion-heel of the drawings these suction-recesses are made comparatively flat instead of being made convex or cylindrical, whereby I have found that they will be less liable to take up and carry dirt or snow. When the cushion-heel is provided with suction-recesses, the hole 5 will be short, and the material of the heel between the suction-recess and nail or screw head chamber may be aptly termed a "protecting-lip" 7, for the reason that it serves to protect the head of the nail or screw from the action of the elements and at the same time to prevent it from picking up dirt or snow. Moreover, when the protecting-lip 7 is thin, as shown in the drawings, it readily yields to the pressure of the nail-head thereon as the

nail-head enters the recess and then contracts to prevent dirt or snow from entering.

The heel as above described may be made according to any of the well-known and accepted ways of making rubber articles. A convenient method, however, of making these heels may be described as follows: The rubber from which the heel is to be made is pressed into the desired form in a mold. One part of the mold may be provided with integral projections corresponding in form to the cavity 6, and upon this projection and suitably attached thereto may be mounted a block which corresponds in size and form to the chamber 4, being conveniently secured thereto by means of a uniting-neck which corresponds to the small opening 5 of the heel. A small projection centrally disposed upon the upper side of the block corresponding to the chamber 4 receives upon it the washer 2. In preparing the mold to receive the rubber the washers are laid upon the projections, and then a piece of rubber corresponding approximately to the size of the mold and of a volume equal to the volume of the finished heel is laid upon the projections, and then the other die or mold approaches the former mold, and the rubber, being of a viscous consistence, is pressed into the mold and flows around the projections and washers and completely fills all of the mold and closely embraces the projections, necks, and washers therein. The molds are hot and the pressure upon the parts thereof is great and maintained for several minutes, during which time the heat of the mold vulcanizes the rubber. Then the parts of the mold are separated, and the rubber heel is removed therefrom. The enlargements corresponding to the chambers 4 are pulled out of the cavities through the opening 5, which, being elastic, stretch to permit the enlargements to pass therethrough, afterward contracting again to their normal size. The washers of course remain in the heel.

Throughout the specification and claims I have used the word "chamber" as defining a cavity substantially inclosed by the material of the heel, thereby clearly distinguishing it from the word "recess," which I have used as designating an open cavity.

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

1. A cushion-heel of elastic material provided with a plurality of nail or screw head chambers adapted to receive the heads of the nails or screws to secure said heel to the body of the shoe, substantially as described.

2. A cushion-heel of elastic material, provided with a plurality of nail or screw head chambers, and a plurality of small burs or washers, adapted to receive nails or screws to secure said heel to the body of the shoe, substantially as described.

3. A cushion-heel of elastic material provided with a plurality of nail or screw head chambers, and a plurality of small burs or washers embedded in the body of the heel and adapted to receive nails or screws to secure sail heel to the body of said shoe, substantially as described.

4. A cushion-heel of elastic material provided with a plurality of nail or screw head chambers and a plurality of suction-recesses in the tread-surface of the heel and separated from the nail or screw head chambers by protecting-lips, substantially as described.

5. A cushion-heel of elastic material provided with a plurality of nail or screw head chambers, a plurality of suction-recesses in the tread-surface of the heel and separated from the nail or screw head chamber by protecting-lips, and a plurality of small burs or washers adapted to receive nails or screws to secure said heel to the body of the shoe, substantially as described.

6. A cushion-heel of elastic material provided with a plurality of nail or screw head chambers, a plurality of suction-recesses in the tread-surface of the heel and separated from the nail or screw head chamber by protecting-lips, and a plurality of small burs or washers embedded in the body of the heel and adapted to receive nails or screws to secure said heel to the body of the shoe, substantially as described.

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

HUMPHREY O'SULLIVAN.

Witnesses:

A. E. WHYTE,

C. KITCHING.