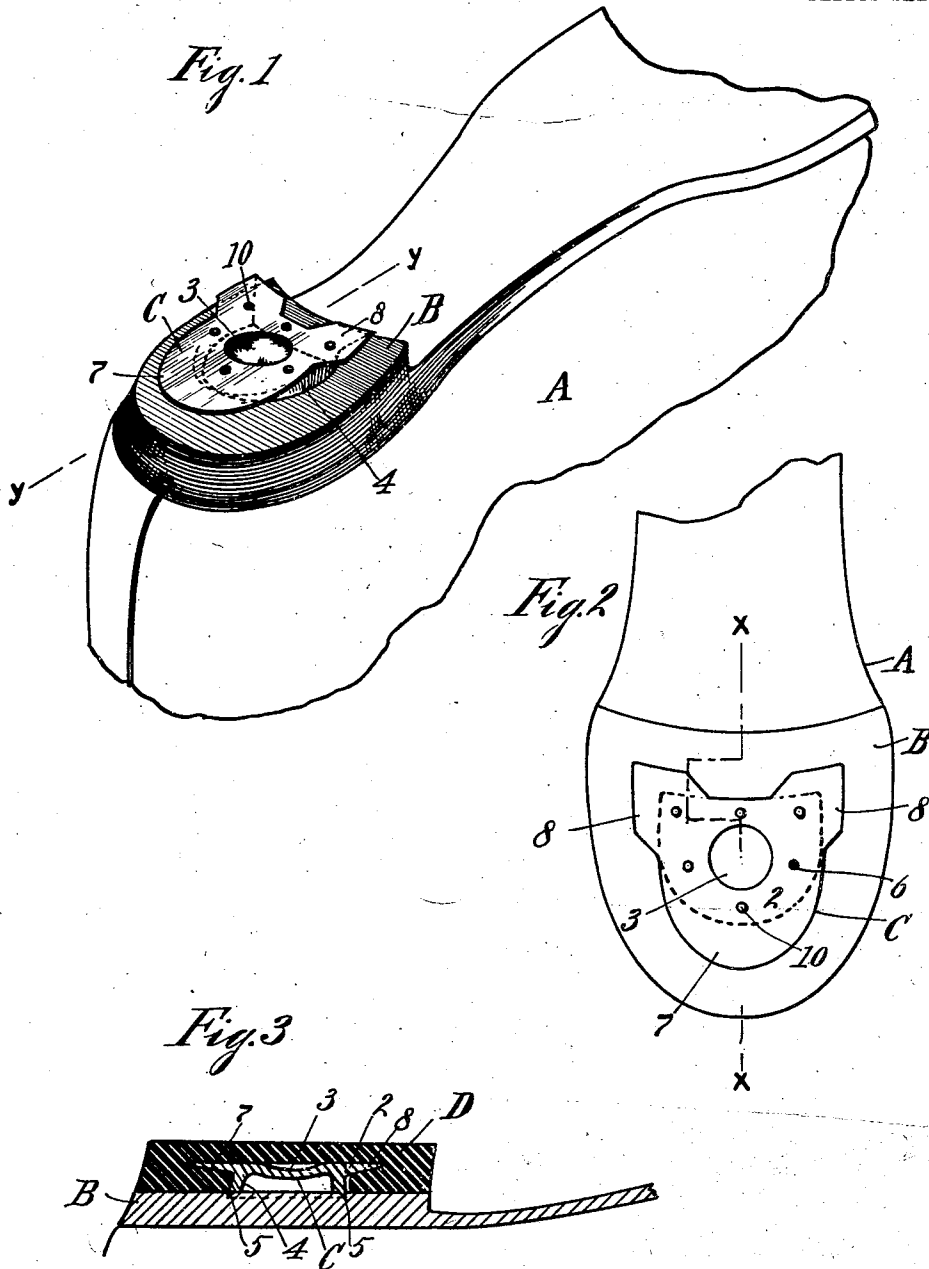


F. A. NOLAN.
DETACHABLE RUBBER HEEL.
APPLICATION FILED FEB. 13, 1911.

1,000,110.

Patented Aug. 8, 1911.
2 SHEETS—SHEET 1.



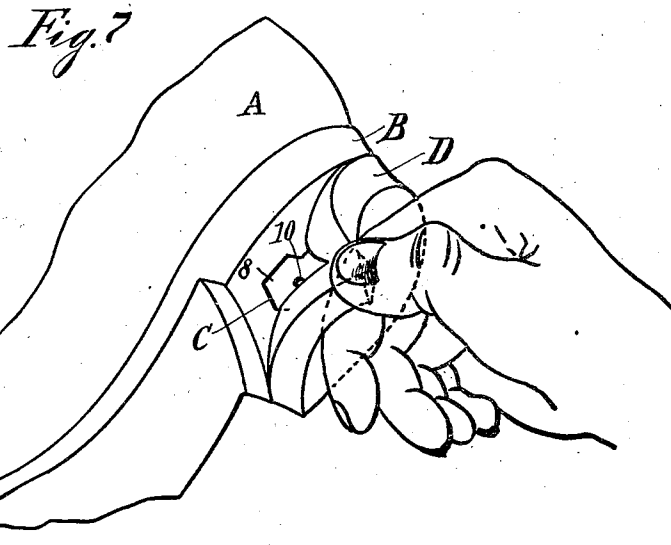
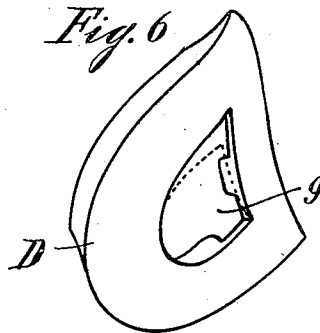
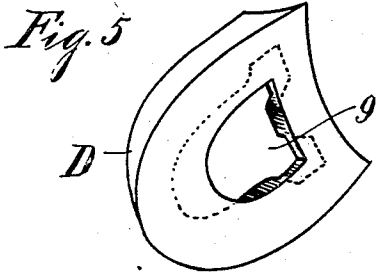
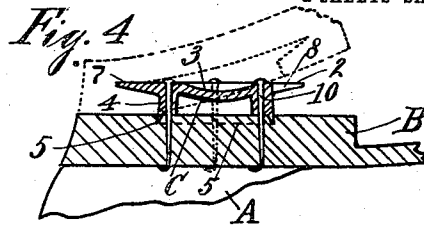
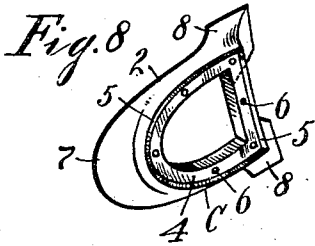
Witnesses,
George Voelker
A. Smith

Inventor,
Francis A. Nolan
by Rothrop & Johnson
his Attorneys

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

FRANCIS A. NOLAN, OF ST. PAUL, MINNESOTA.

DETACHABLE RUBBER HEEL.

1,000,110.

Specification of Letters Patent.

Patented Aug. 8, 1911.

Application filed February 13, 1911. Serial No. 608,177.

To all whom it may concern:

Be it known that I, FRANCIS A. NOLAN, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Detachable Rubber Heels, of which the following is a specification.

My invention relates to improvements in detachable rubber heels for boots and shoes, its object being to provide an improved rubber heel and heel-fastening device, whereby the heel can be easily and conveniently attached to the shoe and detached therefrom, and whereby the heel will be held securely against accidental displacement.

To that end the invention consists in the construction, combination and arrangement of parts hereinafter described and claimed. In the accompanying drawings forming part of this specification, Figure 1 is a perspective view of the heel-fastener shown in place upon the heel-portion of a shoe; Fig. 2 is a plan view of the same; Fig. 3 is a vertical section through a rubber heel and its fastener on line $x-x$ of Fig. 2; Fig. 4 is a vertical section on line $y-y$ of Fig. 1; Fig. 5 is a perspective view of the rubber heel alone; Fig. 6 is a similar view, but with the heel distorted and stretched by a pull upon one of its front corners; Fig. 7 is a perspective view of the rubber heel and heel fastener in place upon a shoe, one corner of the rubber heel being shown pulled out in the process of attachment or detachment; and Fig. 8 is a perspective view of the fastener alone.

In the drawings A represents a shoe, B the heel-portion thereof, C my improved heel fastener, and D the rubber heel to be attached to the fastener.

The heel fastener consists of a continuous metal plate 2 having upon its underside a stirrup shaped rim 4 which terminates in a knife edge 5. Through the plate and rim are holes 6 to receive nails 10 by which the fastening device may be secured upon the heel-portion of the shoe, as best shown in Fig. 4. The plate extends entirely across the rim, within the outline of which it is imperforate and formed in its under face with a central concavity or depression 3, which will be practically sealed to the entrance of air when the rubber heel is put in place as hereinafter described.

The plate 2 is formed with a rearwardly

projecting oval flange 7, which follows in a general way the contour of the rear side of the heel and extends well back from the rim 4. The front edge of the plate, at its middle point, is substantially flush with the rim 4, but at each of its front corners the plate is formed with a horizontal flange 8 which projects laterally beyond the side of the rim and forwardly beyond the front thereof, as best shown in Fig. 2, so as to afford an anchorage for the side and front portions of the rubber heel D. The rim 4 serves to hold the flanges 7 and 8 a sufficient distance above the heel portion of the shoe to allow the rubber heel to be sprung in under them.

The rubber heel D is formed in its upper face with a central hole or socket 9 just large enough to receive the rim 4 of the fastener, while at the base of the hole it is formed with horizontal recesses at the rear and each of the front corners, as indicated in dotted lines in Fig. 5, so that the contour of the recesses will correspond with the contour of the flanges 7 and 8 of the fastener plate 2. Thus when the rubber heel is in place, as shown in Fig. 3, the rubber will fill the space around the rim 4 between the shoe-heel B and the flanges 7 and 8, and be securely held in place by the flanges.

To adjust the heel fastener upon the shoe-heel, the rubber heel is first fitted over the fastener and arranged in proper position upon the heel-portion B, as shown in Fig. 3. A blow upon the bottom of the rubber heel will drive the knife edge 5 slightly into the heel-portion and thus mark thereon the outline of the rim. The rubber heel is then removed from the fastener, and the fastener nailed or otherwise secured upon the heel-portion in the position thus outlined. The rubber heel is first drawn over the rear flange 7, as shown in Fig. 4; and then its front corners are pulled and stretched, one at a time, until they can be sprung over the corner flanges 8.

In Fig. 7 the rubber heel is shown drawn over the rear flange 7 and over one of the corner flanges 8, while its free corner is being pulled out to be sprung over the other corner flange 8. Similarly in detaching the rubber heel, the first step is to seize one of its front corners as shown in Fig. 7, and stretch it out until it can be pulled over the corner flange which holds it; the next step is to pull the other corner off the opposite corner

flange of the fastener. When this has been done the whole heel can be drawn back until it is free from the rear flange 7. The rear flange 7 is of such length that the rubber heel cannot be removed from it until the front corners have been first released, as described. This is one of the important features of the present invention, because the accidental knocks and pulls to which the rubber heel is subjected in ordinary use are usually exerted upon the rear and not upon the front, and displacement from the rear is here made impossible. It is also easier for the wearer to remove the heel and replace it by operating from the front, instead of from the back, of the heel. By having the flanges 8 only at the corner, and not extending all across the front of the heel, I avoid weakening the rubber and obtain the full benefit of its elasticity when the corner is lifted, and the lateral projection of the corner flanges 8 will prevent the rubber heel from accidentally working off at the sides. The depression 3 in the top of the fastening device will act as a partial vacuum still further to hold the rubber heel upon the fastening plate, and by making the rear portion of the rim and the rear flange 7 of oval shape so as to follow in a general way the contour of the heel-portion, I leave as much rubber as possible at the sides so as to avoid weakening it at this point.

The term "shoe" as used in the claims is meant to include boots, slippers and any other sort of foot-wear to which the invention is applicable.

I claim as my invention:

1. In combination, a metal plate adapted to be permanently secured to the heel portion of a shoe and having upon its upper side a rim adapted to abut against said heel portion and hold the plate spaced therefrom, said plate being formed with a horizontal flange at its rear, and with horizontal flanges at each of its front corners, said corner flanges being spaced apart from each other and extending forwardly beyond the rim, and the front edge of the plate between said corner flanges standing flush with the rim, and a rubber heel adapted to be fitted over the flanges of the plate, said rubber heel being formed with a socket adapted to fit snugly over the rim and at the base of the socket with horizontal recesses adapted to receive the rear flange and the corner flanges of the plate.

2. A rubber heel and its fastening means comprising a metal plate adapted to be permanently secured upon the heel portion of a shoe and having upon its shoe-abutting side a rim adapted to hold the plate spaced apart from the shoe, said plate being formed at the rear with a rearwardly extending flange and at each of its front corners with a flange ex-

tending forwardly and laterally beyond the rim, and a rubber heel formed with a socket adapted to fit over the rim, and also formed at the base of the socket with horizontal recesses corresponding in outline and position with the rear and corner flanges of the plate, the rear flange being of such length that the heel must be released from the corner flanges before it can be released from the rear flange.

3. A rubber heel and its fastening means comprising a metal plate adapted to be permanently secured upon the heel portion of a shoe and having upon its shoe-abutting side a stirrup shaped rim to hold the plate spaced apart from the shoe, said plate being formed at the rear with a rearwardly extending flange and at each of its front corners with a flange extending forwardly and laterally beyond the rim, the front edge of the plate between said corner flanges standing flush with the rim, and a rubber heel formed with a central socket adapted to fit over the rim, and also formed at the base of the socket with horizontal recesses adapted to receive the rear and corner flanges of the plate, the rear flange being of such length that the heel must be released from the corner flanges before it can be released from the rear flange.

4. A rubber heel and its fastening means comprising a metal plate adapted to be permanently secured upon the heel portion of a shoe and having a rim upon its shoe-abutting side formed with a knife edge whereby its outline can be impressed upon the shoe, said plate being formed at the rear with a horizontal flange and at each of its front corners with a corner flange extending forwardly beyond the rim, and a rubber heel formed with a central socket to receive the rim, and at the base of socket with horizontal recesses adapted to receive the flanges of the plate.

5. In combination, a continuous metal plate adapted to be permanently secured upon the heel portion of a shoe and having upon its upper side a rim adapted to abut against the heel portion and hold the plate spaced therefrom, the portion of the plate within the rim being imperforate but formed in its under face with a central depression for the purpose set forth, said plate being formed with flanges at its rear and at each of its front corners, and a rubber heel formed with a central socket to receive the rim, and formed at the base of the socket with horizontal recesses adapted to receive the flanges of the plate.

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

FRANCIS A. NOLAN.

Witnesses:

ARTHUR P. LOTHROP,
H. SMITH.