

No. 652,036.

Patented June 19, 1900.

D. A. McDONALD.

ANTISLIPPING DEVICE FOR BOOTS OR SHOES.

(Application filed Aug. 26, 1899.)

(No Model.)

Fig. 1.

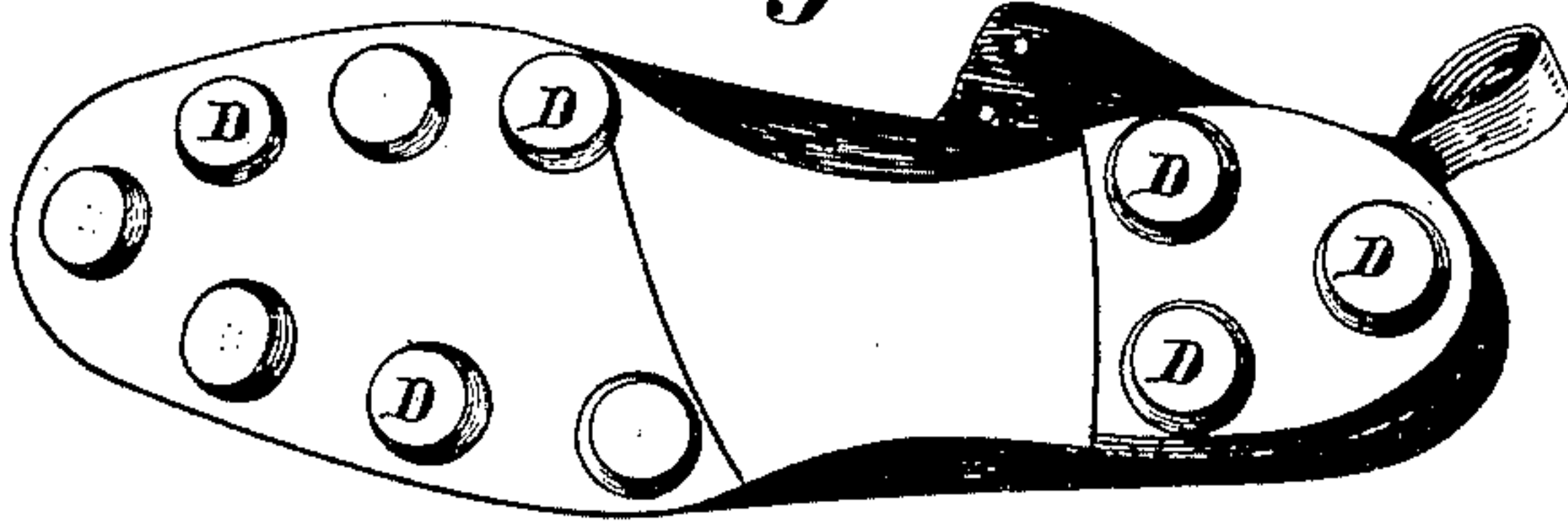


Fig. 2.

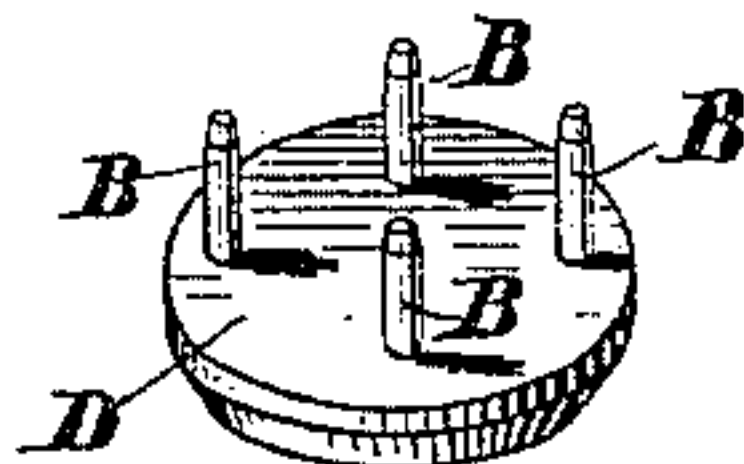
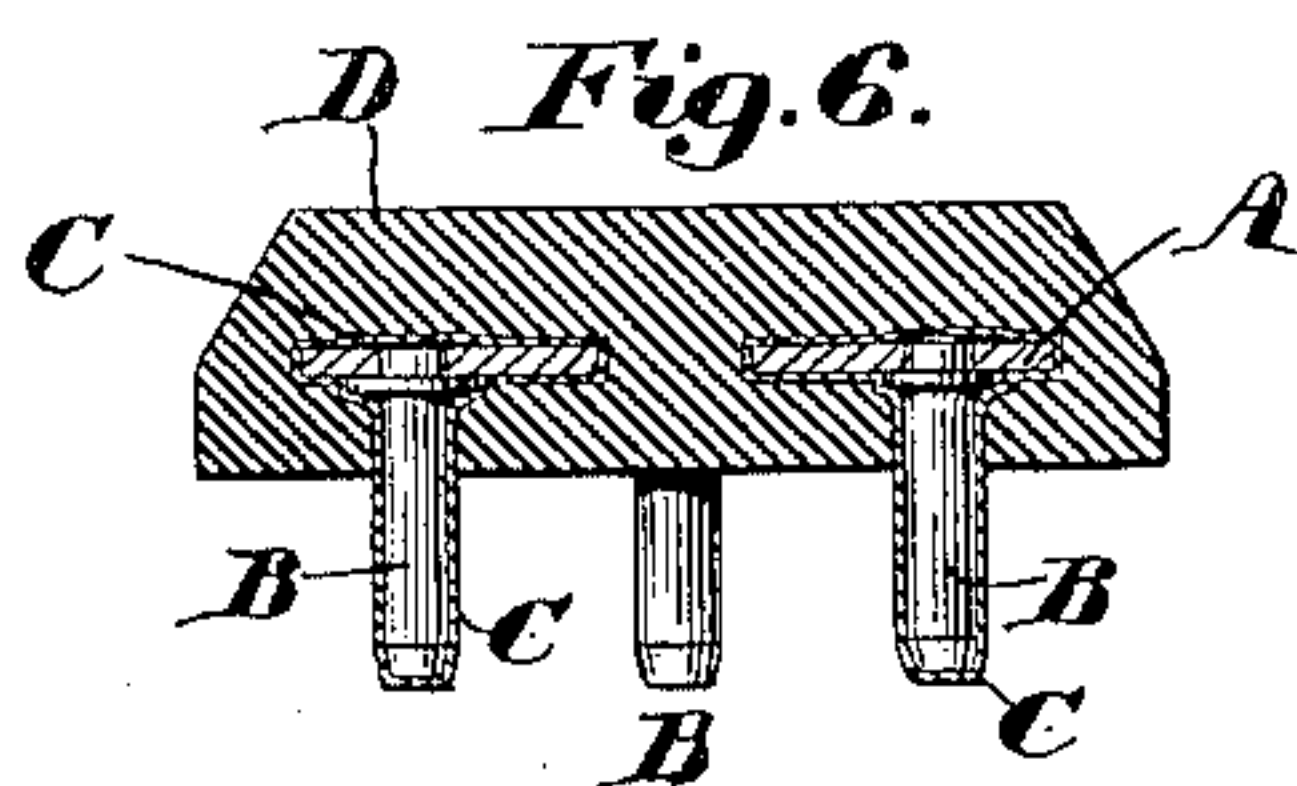
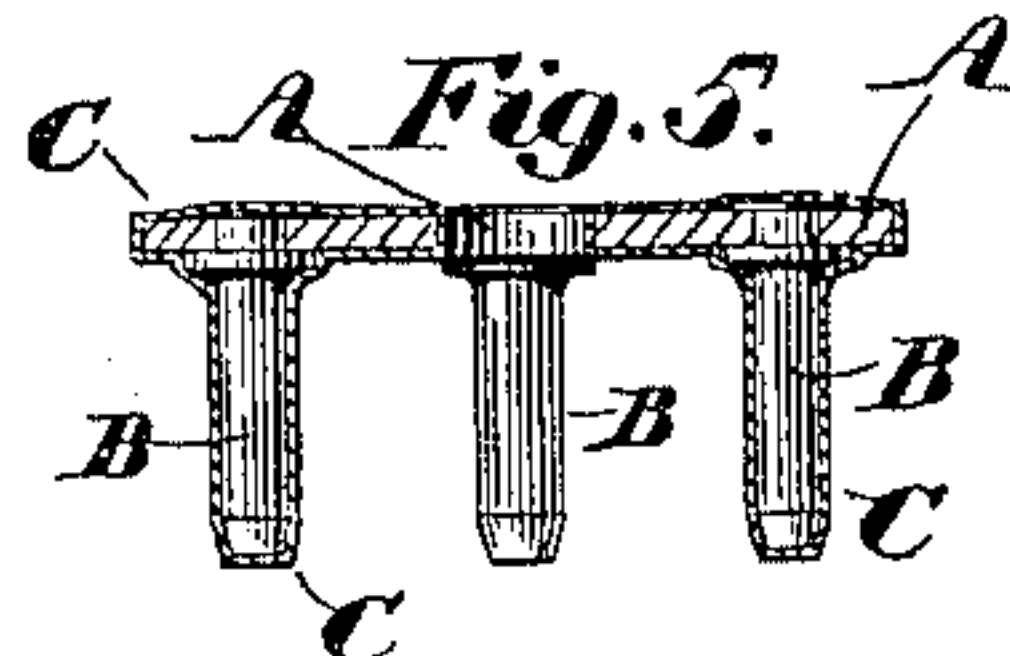
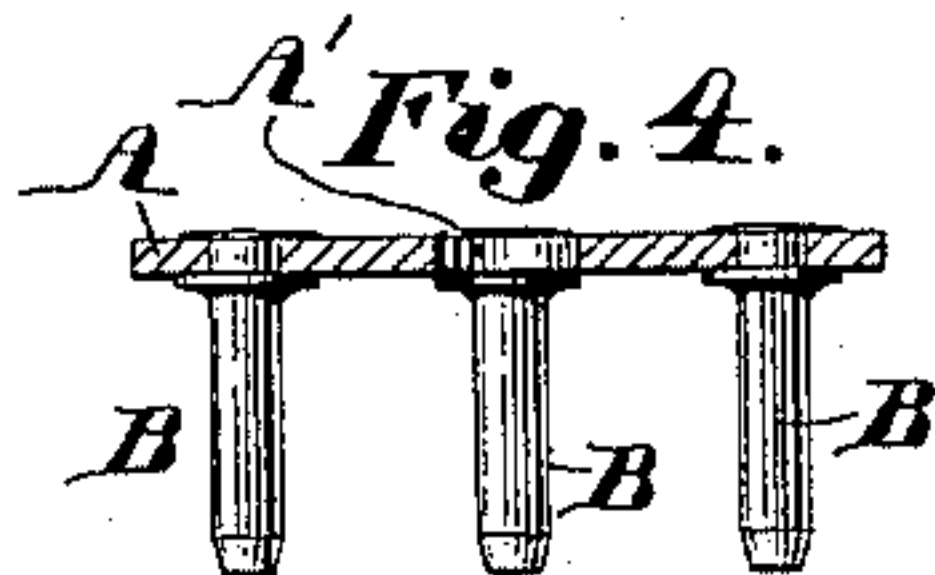
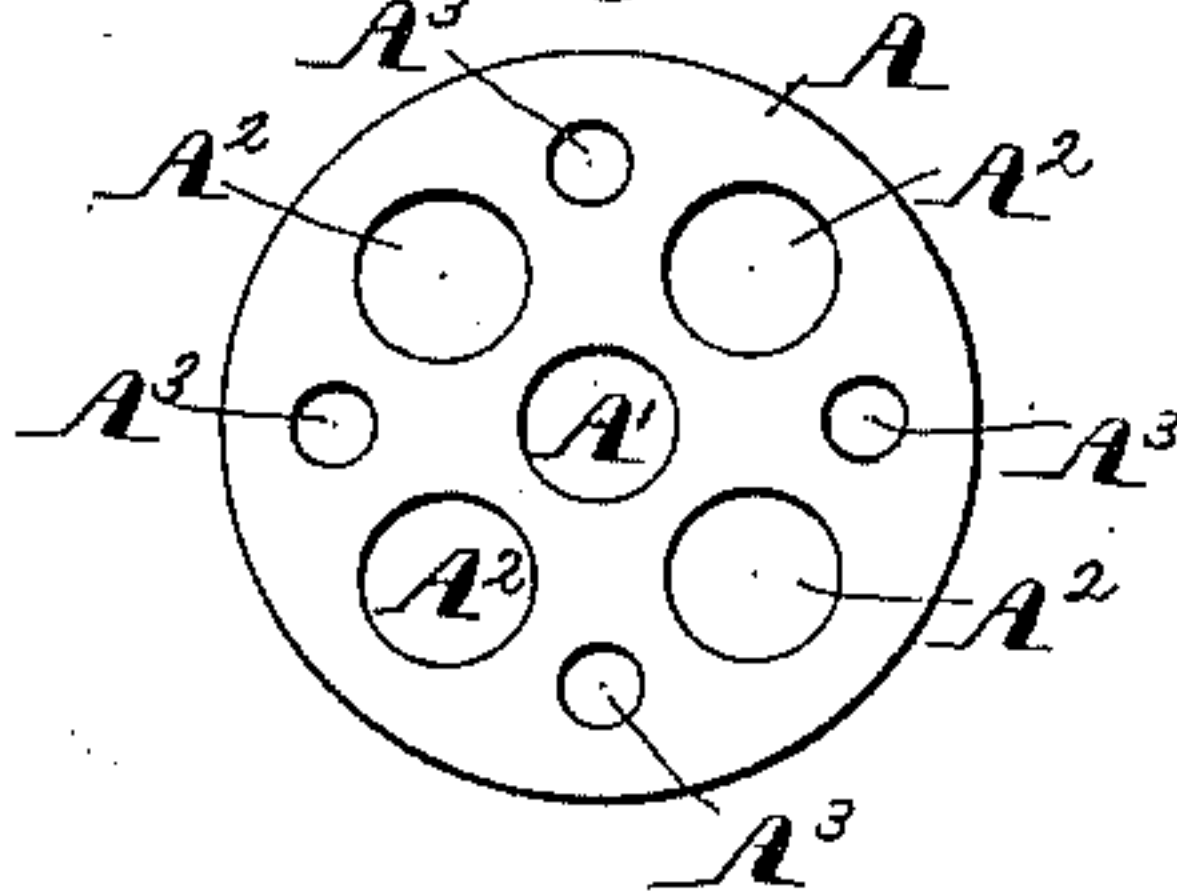


Fig. 3.



Witnesses:

Nathan C. Lombard 2nd
Walter Reed

Inventor:

Dominick A. McDonald,
by Walter E. Lombard.
Atty.

UNITED STATES PATENT OFFICE.

DOMINICK A. McDONALD, OF BOSTON, MASSACHUSETTS.

ANTISLIPPING DEVICE FOR BOOTS OR SHOES.

SPECIFICATION forming part of Letters Patent No. 652,036, dated June 19, 1900.

Application filed August 26, 1899. Serial No. 728,576. (No model.)

To all whom it may concern:

Be it known that I, DOMINICK A. McDONALD, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a certain new and useful Antislipping Device for Boots or Shoes, of which the following is a specification.

This invention relates to antislipping devices for boots and shoes, and is particularly intended for use in connection with shoes worn in playing golf, base-ball, and similar sports in which it is essential that the shoe-soles of the players shall be provided with antislipping devices.

The principal object of this invention is to produce a simple, durable, and efficient antislipping device of improved construction and organization embodying a metallic plate or disk having a plurality of attaching-pins and an elastic covering anchored to and embedding such said plate, the construction thereof being such that the concrete device may be quickly and readily attached to the sole or heel-lift of a boot or shoe, may be subjected to rough usage, and will be positively held against accidental displacement either as a whole or in part.

A further object of the invention is to provide an antislipping device comprehending a metallic securing-plate having a plurality of attaching-pin-receiving holes surrounding a common center, one or more anchor-holes located intermediate the pin-holes, a plurality of shouldered pins extending through said pin-holes, an electroplating surrounding the pins and plates, and an elastic covering molded entirely around the plate and extending through the anchor-holes and surrounding the inner ends of the attaching-pins.

With these objects in view the invention consists in certain details of construction and in the combination and arrangement of the several parts of the antislipping device, substantially as hereinafter described, and more particularly pointed out in the claims.

In the drawings accompanying and forming part of this specification, Figure 1 represents the bottom of a shoe with a series of antislipping devices embodying this invention applied thereto. Fig. 2 is a perspective view of one of the antislipping devices. Fig.

3 is a plan view of the securing-plate. Fig. 4 is an inverted vertical section of the securing-plate with the attaching-pins in position to be more firmly secured thereto by electroplating. Fig. 5 is a like view of the parts shown in Fig. 4 and representing the film of electroplating surrounding said parts, and Fig. 6 is a similar view of the parts shown in Fig. 5 with the elastic covering or antislipping disk thereon.

Similar characters represent like parts in all the figures of the drawings.

The antislipping device in the preferred construction and organization thereof shown in the accompanying drawings comprises a centrally-perforated discous securing-plate A, having a plurality of pin-receiving holes A^3 disposed, preferably, equidistant about a common center and also having a series of anchor-holes A^2 disposed intermediate the pin-receiving holes A^3 , a plurality of shouldered pins B, seated in said holes A^3 and preferably riveted to the plate A, an electro-deposited film or electroplating C, surrounding the plate A and pins B and constituting an additional securing means for said pins, and an elastic covering D, molded entirely around the securing-plate and extending through the anchor-openings and surrounding the inner ends of the attaching-pins B.

By reference to Figs. 3 and 4 of the drawings it will be seen that each pin-receiving hole A^3 is of a diameter somewhat less than the diameter of that portion of the pin B which is intended to enter the sole or heel-lift of the shoe, or, in other words, that end of the securing-pin which passes through the hole A^3 is reduced in diameter to form a shoulder, which presses tightly against the upper or inner face of the securing-plate when the antislipping device is secured to the shoe. This is of some desideratum and differs materially from the structure in any antislipping device of this character known to me in that the shoulder of the pin receives the entire stress exerted upon the upper end of said pin (which is due to the weight of the wearer of the shoe or boot to which the antislipping device is attached) and obviates the possibility of the pin being forced through or displaced with relation to the securing-plate, as will readily be apparent.

In practice it is preferable to form the pin-holes substantially equidistant with respect to each other and with respect to a common center, so that the strains will be uniformly distributed throughout the area of the attaching-plate, thus preventing in a measure accidental displacement or dislodgment of the antislipping device with relation to the shoe or boot.

By reference to Fig. 3 it will be seen that the anchor-holes A^2 are of larger diameter than and are located substantially midway between the pin-holes A^3 and also that said anchor-holes are equidistantly disposed about the central perforation of the plate A, which central perforation also constitutes an anchor-hole and is designated by A' .

The elastic covering D is shown in the nature (see Figs. 2 and 6) of a disk and will preferably be constructed of rubber vulcanized or molded entirely around the securing-plate A in such manner as to extend through the anchor-holes A^2 and surround end portions of the securing-pins adjacent to said plate A, thus forming a homogeneous mass, with said plate firmly embedded therein.

Before applying the elastic covering to the securing-plate and pins said plate and pins are thoroughly cleaned and (in the assembled condition shown in Fig. 4) have electrodeposited thereon a metallic film having the requisite affinity for the substance of the elastic covering. For instance, a copper film will preferably be provided if the covering is constructed of rubber. The application of the film or electroplating is not only to secure the proper adhesion of the elastic covering, but is also for the purpose of securing a more rigid connection between the pins and securing-plate.

By molding or vulcanizing an elastic covering about the securing-plate and pins in the manner shown in Figs 2 and 6 it will be seen that an elastic cushion is provided between the securing-plate and that portion of the shoe to which the antislipping device is attached and that an elastic cushion is provided on the bottom or outer face and entirely around the outer edge of said plate.

In practice the outer edge of the discous elastic covering will be beveled or chamfered, as shown in Figs. 2 and 6, for obvious reasons.

By means of the numerous holes in the plate A and a series of pins secured to said plate the elastic covering or rubber disk when completed is as strong as if it were one solid mass of rubber, the strength of the same being greatly increased by the plating, which permits the rubber to firmly adhere to every portion of the metal in which it comes in contact, making it a difficult job to separate the rubber from the plate.

Actual experiment has proved that it is impossible by even the roughest usage for a wearer to kick or otherwise separate the rubber disk from the securing-plate.

My invention differs from all other devices of this nature in so far as it is applied to the outside of the sole and does not project through the sole, thus permitting the shoe to remain water-tight, and at the same time it thereby gives to the wearer a smooth even surface on the interior of the shoe, which obviously is a great advantage.

The device is secured to the shoe at several points, as indicated in Fig. 1, without clenching, the pins B being driven straight into the sole. Actual use has shown that this method of securing to the sole is entirely effective and that it is impossible in even the roughest usage to remove the device from the shoe. By considerable judicious prying, however, old ones can be removed and new ones inserted or all the disks may be removed from a pair of shoes without injury to the shoes, so that they may be worn for ordinary use.

By the use of this device any favorite style of shoe may be readily converted into a golf-shoe or an old shoe may be provided with antislipping devices at small expense.

I claim—

1. An antislipping device comprising a securing-plate having a plurality of pin-receiving holes, and a plurality of anchor-holes disposed intermediate the pin-receiving holes; a plurality of pins having diametrically-reduced ends secured in the pin-receiving holes and having shoulders bearing against the face of the securing-plate; and an elastic covering wholly embedding said plate and extending through the anchor-holes thereof, and also surrounding those end portions of the pins adjacent to said plate.

2. An antislipping device comprising a metallic disk or plate having a plurality of anchor-holes; a plurality of pins secured to said disk intermediate said anchor-holes, and projecting outward from one face of said disk with their axes substantially equidistant with respect to each other and with respect to a common center; and a unitary elastic covering wholly embedding said disk, and extending through the anchor-holes thereof, and also surrounding those end portions of the pins adjacent said disk, substantially as described.

3. An antislipping device comprising a securing-plate having a plurality of pin-receiving holes and a plurality of intermediate anchor-holes; a plurality of pins having diametrically-reduced ends secured in the pin-receiving holes and having shouldered bearings against the upper face of the securing-plate; an electroplating surrounding the pins and plate; and an elastic covering wholly embedding said plate and extending through the anchor-openings in said plate and surrounding the shouldered end portion of the pins.

Executed at Boston, Massachusetts, this 25th day of August, 1899.

DOMINICK A. McDONALD.

Witnesses:

WALTER E. LOMBARD,
WILLIAM C. LOW.