

J. R. SANFORD.
 SUCTION TREAD.
 APPLICATION FILED NOV. 8, 1909.

989,514.

Patented Apr. 11, 1911.

Fig. 1.

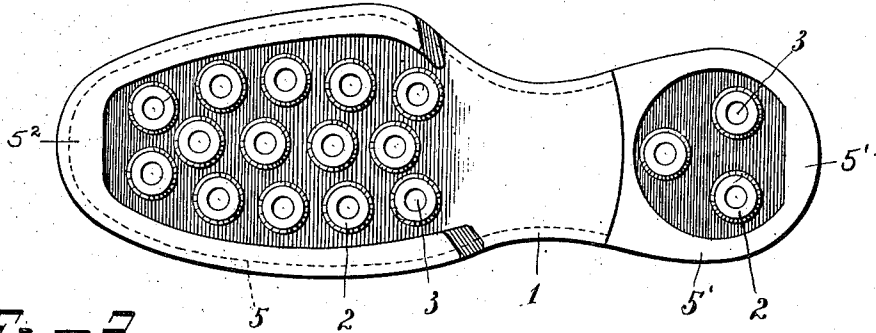


Fig. 2.

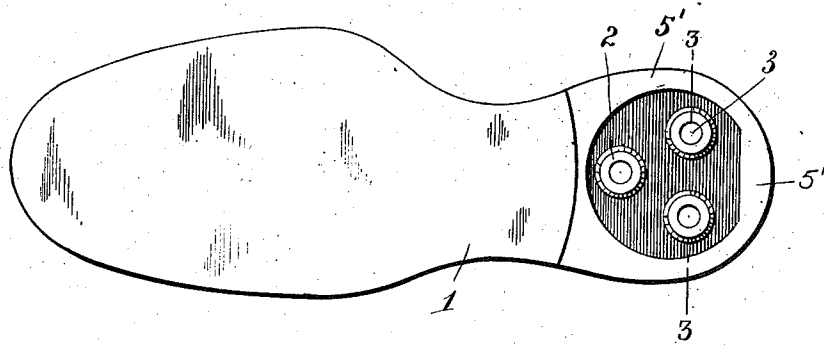
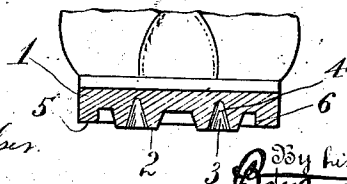


Fig. 3.



Witnesses:
 Fred M. Dannerfelber
 Charles Pease

Inventor
 J. R. SANFORD.
 By his Attorneys.
 Raulo B. Miesse & Co.

UNITED STATES PATENT OFFICE.

JOSEPH R. SANFORD, OF SALISBURY, CONNECTICUT, ASSIGNOR TO THE FLEXIBLE RUBBER GOODS COMPANY, OF SALISBURY, CONNECTICUT, A CORPORATION OF CONNECTICUT.

SUCTION-TREAD.

989,514.

Specification of Letters Patent. Patented Apr. 11, 1911.

Application filed November 8, 1909. Serial No. 526,741.

To all whom it may concern:

Be it known that I, JOSEPH R. SANFORD, a citizen of the United States, residing at Salisbury, county of Litchfield, State of Connecticut, have invented certain new and useful Improvements in Suction-Treads, of which the following is a full, clear, and exact description.

My invention relates to shoe treads, and is concerned particularly with improved means to prevent slipping.

A preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a shoe tread showing the invention applied to the sole and heel thereof. Fig. 2 is a view similar to Fig. 1 showing the invention applied only to the heel. Fig. 3 is a cross section on the line 3—3 Fig. 2.

The invention contemplates broadly the provision of a plurality of suction cups at the tread surface of the tread, which, when compressed by the weight of the wearer, afford a secure grip upon the surface of the ground, owing to the suction effect produced by such pressure.

It has been found in practice that if the entire weight of the wearer is borne by the suction cups without other support, said cups wear away with undue rapidity and are sometimes entirely broken off. At the same time, if auxiliary support is provided in the ordinary manner, the suction action of the cups is lost to a large extent. To obviate these defects, the tread 1 is provided with a plurality of suction cups 2 having the sockets 3, which sockets preferably extend well into the body of the tread, as indicated at 4, Fig. 3. Surrounding the area occupied by the suction cups and preferably at the perimeter of the tread is a supporting rim 5, which, as shown in Fig. 4, is of less height than the cups 2. Said rim also has a flat tread surface of considerable transverse area to take the brunt of the wear, and this surface may be widened somewhat, as for example at 5', at the rear of the heel, or

at 5² at the extremity of the toe, to take excessive wear. By this construction the initial pressure due to the weight of the wearer is borne by the suction cups and serves to compress the same in the usual manner to effect the gripping action. Furthermore, pressure upon the tread brings the excessive weight to bear upon the rim 5, which therefore acts as an additional support, and, in fact, takes the brunt of the wear. This supporting rim furthermore being located at or adjacent to the perimeter of the tread acts as a lateral support when more pressure is brought upon one side of the tread than the other, thereby preventing undue distortion of the suction cups and effecting considerable economy in the wear thereof.

The inner walls of the rim 5 are made more or less abrupt, as indicated at 6, Fig. 4, in order to afford a more effective gripping action, and in the heel tread, in which the rim 5' preferably entirely surrounds the area occupied by the suction cups, the abrupt walls of the rim 5' serve to form a suction recess of considerable area surrounding and acting in conjunction with the suction recesses of the cups.

While I have herein described particular embodiments of my invention, it is to be understood that the same may be varied in detail and arrangement of parts without departing from the spirit and scope thereof.

What I claim is:

1. A shoe tread comprising a body portion having a plurality of suction cups projecting therefrom, and a lateral supporting rim of less depth than said cups and entirely surrounding the same, said rim having a flat tread surface and having abrupt inner walls to form a suction recess around said cups.

2. A shoe tread comprising a body portion having a suction cup projecting therefrom and a lateral supporting rim of less depth than said cup and entirely surrounding the same, said rim having a flat tread surface and having abrupt inner walls to form a suction recess around said cup.

3. A shoe tread comprising a body portion having a plurality of suction cups projecting therefrom, a lateral supporting rim of less depth than said cups and extending
5 along the edge of the tread, said rim having a widened portion to take excessive wear and having a flat tread surface, said rim

also having abrupt inner walls and extending entirely around the tread to form a suction recess around said cups.

JOSEPH R. SANFORD.

Witnesses:

DONALD J. WARNER,
HOWARD F. LONDON.