

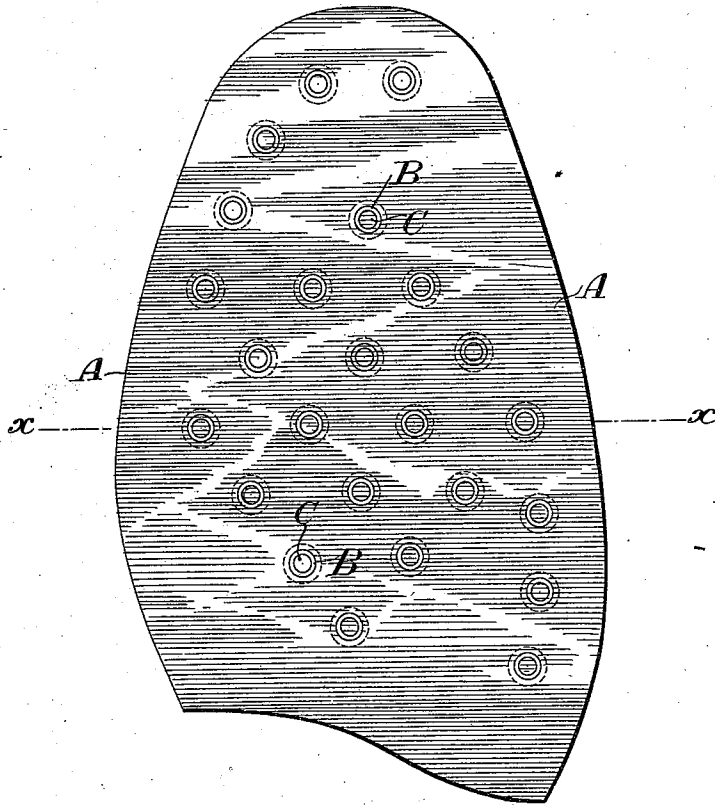
(No Model.)

J. H. BORRETT.  
SOLE OR HEEL.

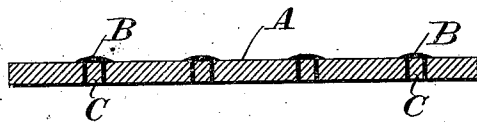
No. 555,558.

Patented Mar. 3, 1896.

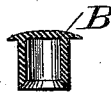
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



*Attest*  
*Chas H. Botta*  
*C. J. Sawyer*

*Inventor*  
*Joseph Hayward Borrett*  
*by* *W. B. Philipp*  
*Atty*

# UNITED STATES PATENT OFFICE.

JOSEPH HAYWARD BORRETT, OF LONDON, ENGLAND.

## SOLE OR HEEL.

SPECIFICATION forming part of Letters Patent No. 555,558, dated March 3, 1896.

Application filed July 30, 1891. Serial No. 401,181. (No model.) Patented in England May 13, 1891, No. 8,220; in France July 18, 1891, No. 214,950, and in Germany July 18, 1891, No. 63,360.

*To all whom it may concern:*

Be it known that I, JOSEPH HAYWARD BORRETT, of 700 Holloway Road, London, N., England, have invented certain new and useful  
5 Improvements Relating to the Soles and Heels of Boots and Shoes, of which the following is a specification, and which have been patented in other countries as follows: in Great Britain by Letters Patent No. 8,220, dated May  
10 13, 1891; in France by Letters Patent No. 214,950, dated July 18, 1891, and in Germany by Letters Patent No. 63,360, dated July 18, 1891.

The object of this invention is to give an  
15 improved wearing-surface to the soles and heels of boots and shoes.

In the accompanying drawings, Figure 1 is an under side view of an outer sole with my invention applied thereto. Fig. 2 is a cross-  
20 section on the line *xx*, Fig. 1. Fig. 3 is a cross-section, and Fig. 4 an under side view, of one form of hollow stud, on an enlarged scale.

In carrying out this invention steel studs  
25 with tubular stems or short lengths of steel tube are employed, which tubular pieces are forced through the outer leather sole from the back. These tubular pieces act as a kind of hollow punch and cut their way through  
30 the sole, a small plug of leather entering and being compressed in the tube. The lengths of tube will be slightly longer than the thickness of the leather sole and when forced through will project slightly beyond the surface of the sole. The projecting portions are  
35 ground off by means of an emery-wheel or removed in any other convenient manner, so as to leave the studs flush with the sole.

The small plugs of leather inside the tubu-

lar pieces form an important feature of this invention, as, being compressed in the studs, the leather forms a hard wearing-surface, which prevents the tubes wearing away unevenly. These tubular pieces, when not  
40 made with solid heads, will be slightly splayed out at their inner ends, and by reason of their being flush with the sole externally will not collect mud and dirt, as is the case with  
45 hobnails, while they are not liable (by reason of the solid or splayed heads on the inner side of the sole) to drop out of the sole,  
50 as wire pins or hobnails are liable to do, leaving holes in the sole for the entrance of wet and dirt.

A is the sole. B is a solid-headed stud  
55 with a tubular stem, and C is the plug of compressed leather.

For the heels of boots and shoes the tubular pieces will be applied to the bottom "lift"  
60 of the heel.

The hollow studs or tubular pieces may be manufactured in any convenient manner, the mode of manufacturing forming no part of the present invention.

What I claim is—

A sole or heel for boots and shoes having a  
65 wearing-surface consisting of portions of the sole or heel compressed to greater density than other portions of the sole or heel and forming plugs within metal tubes open on  
70 the outside of the sole or heel and forced through the leather from the back to form the compressed plugs, substantially as described.

JOSEPH HAYWARD BORRETT.

Witnesses:

W. K. WHITE,  
H. F. C. GÖETZ.