

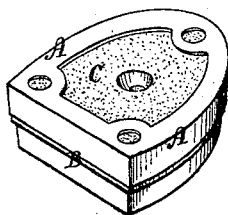
*Richardson & Hacker,*

*Boat Keel.*

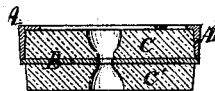
*No. 112,962,*

*Patented Mar. 21. 1871.*

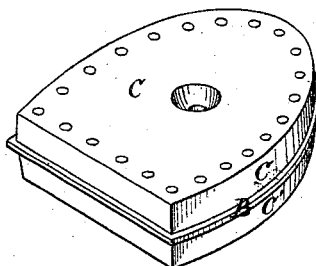
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Witnesses:  
*Phil. A. Warner,*  
*J. A. Jackson*

Inventors.  
*Frederick Richardson & J. Hacker,*  
By *Wm. Wood*  
Atty.

# UNITED STATES PATENT OFFICE.

FREDERICK RICHARDSON AND FRANCIS HACKER, OF PROVIDENCE, R. I.,  
ASSIGNORS TO REVERSIBLE BOOT HEEL COMPANY, OF SAME PLACE.

## IMPROVEMENT IN REVERSIBLE BOOT-HEELS.

Specification forming part of Letters Patent No. **112,962**, dated March 21, 1871.

*To all whom it may concern:*

Be it known that we, FREDERICK RICHARDSON and FRANCIS HACKER, both of the city and county of Providence, and State of Rhode Island, have invented a certain new and useful Improvement in Reversible Boot-Heels; and we do hereby declare that the following specification, taken in connection with the drawing furnished and forming a part of the same, is a true, clear, and exact description thereof.

Our improvement consists of a permanently-fixed socket heel-plate, similar to those described in the Letters Patent issued to Frederick Richardson, dated May 5, 1868, in combination with a double or single faced rubber heel-tap provided with a central flange.

Referring to the drawing, Figure 1 represents one of our improved reversible heels in perspective. Fig. 2 represents the same in cross vertical section. Fig. 3 represents our improved heel detached.

A in each instance represents the permanently-attached socket-plate. B represents a central flange, of a size and outline form corresponding with the outside lower edge of the socket-plate A. C and C represent two solid vulcanized-rubber heel-taps, embracing horizontally within the mass the flange B, which projects equally from all sides sufficiently to form a firm and secure bearing against the lower edges of the socket-plate. A countersunk screw-hole passes through the heel-taps for the reception of a holding-screw, which enters the center of the boot-heel.

The particular value of a rubber heel-tap consists in its affording to the wearer a firm footing on ice, and, to a great extent, obviates the liability of slipping.

Ladies often object to the noise made by ordinary heels while walking. With our improved rubber heel this objection is fully obviated.

The irregular wear of the heel may be readily compensated by changing it from one foot to the other, and when one side is worn thin and useless the tap may be turned and the other side worn; or, if desired, one tap may be of leather and the other of rubber, and then, as circumstances may require, the wearer may make his own choice.

The central screw may be easily drawn and replaced, and if the original hole in the heel be properly made, no difficulty is experienced in having the screw maintain a firm hold in the leather throughout many changes of the heel-tap.

The rubber taps may be made solid in a mold with the central plate in position, or molded separate, and then attached by any suitable adhesive matter well known to persons skilled in the art.

When the two rubber faces are molded solid, perforations in the central plate secure solidity and a perfect unity of the two taps.

When desirable, metallic studs attached to the central plate may be employed to render the tap more durable; or metallic heel-pieces may be made to extend to the wearing-surface from the rear of the central plate, the same being attached thereto or forming a part thereof.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

The double or single reversible rubber heel-tap C, provided with a central flange, B, and adapted for use with a socket-plate, A, as and for the purposes specified.

FREDK. RICHARDSON.  
FRANCIS HACKER.

Witnesses:

HENRY MARTIN,  
JOHN C. PURKIS.