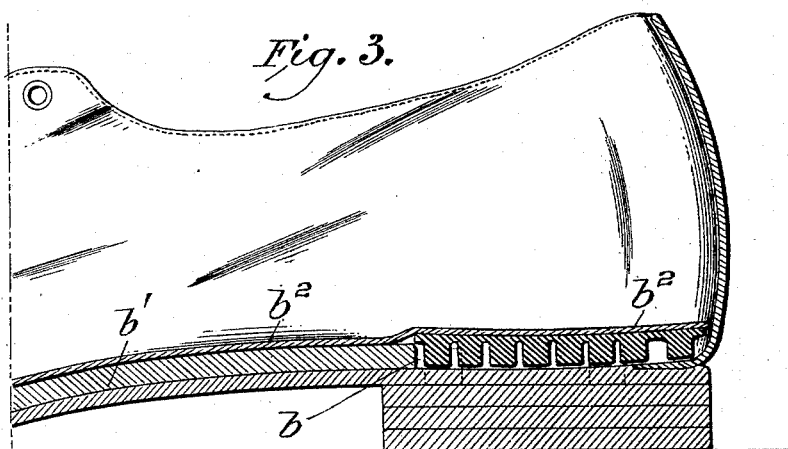
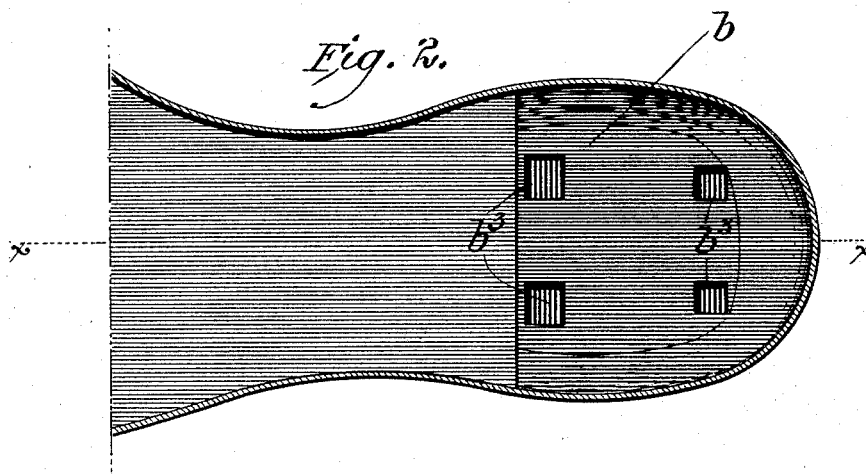
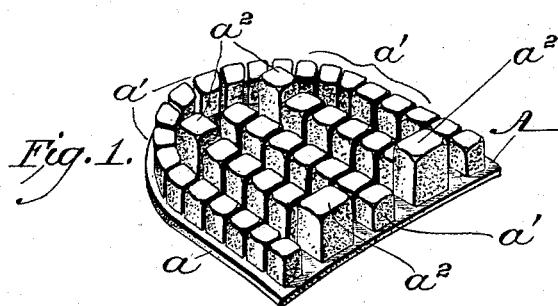


(No Model.)

F. P. McINTYRE.  
BOOT OR SHOE HEEL.

No. 456,677.

Patented July 28, 1891.



Witnesses:  
*John A. Blair*  
F. Norman Dixon

Inventor:  
*Frank P. McIntyre*  
per *Joshua Pussey*  
Attorney.

# UNITED STATES PATENT OFFICE.

FRANK P. MCINTYRE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF  
ONE-HALF TO ALBERT A. GUIGUES, OF SAME PLACE.

## BOOT OR SHOE HEEL.

SPECIFICATION forming part of Letters Patent No. 456,677, dated July 28, 1891.

Application filed January 8, 1891. Serial No. 377,093. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK P. MCINTYRE, a citizen of the United States, residing in the city and county of Philadelphia, and State of Pennsylvania, have invented certain new and useful Improvements in Boots and Shoes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, of which—

Figure 1 is a perspective view of the elastic pad or spring-plate detached and inverted. Fig. 2 is a sectional plan view of the heel portion of a shoe with the said plate removed. Fig. 3 is a section on line  $xx$ , Fig. 2, with the said pad in place.

The object of this invention is to provide an elastic bearing or cushion of novel construction in the inside of heels of shoes and boots, whereby the wearer of the shoe or boot shall be greatly relieved of the shocks or jars of walking, and also whereby railway-conductors and others whose time is mainly passed upon moving trains may be relieved from the continuous and injurious jars to the system occasioned by the vibration of the cars.

To this end the invention consists in the combination, with a boot or shoe constructed with a recess or depression and sockets in its heel portion, of a pad or bearing device fitted loosely in said recess or depression and provided with elastic studs or projections fitted to said sockets, as hereinafter described.

Referring to the drawings, the pad  $A$  (shown detached in Fig. 1) consists of a plate  $a$  of india-rubber, smooth on its upper surface (which comes next to the heel of the wearer) and on its under side provided with a series of projections or corrugations  $a'$ , leaving interspaces or channels between them. Preferably this plate is integral—that is, molded in rubber. Its outline is substantially that of the heel of a shoe. The shoe is prepared for the reception of this plate or pad by forming a socket or depression  $b$  within the shoe immediately above the heel, which may be done by suitable devices, either by compression of the leather or by cutting it away. In the present instance this socket is formed by shortening the insole  $b'$ , instead of continuing it over the heel, as is usually done. The

pad is inserted in the socket, which it neatly fits, although normally projecting slightly above the level of the top of the insole  $b'$ , as seen, and the supplemental or thin insole  $b^2$  is or may be pasted over it, (the pad,) thereby aiding in holding the latter in place.

I remark that the unused part of the insole  $b'$  may be economized for use in making heels, as, also, when the upper layer or layers of the heel are cut out, they may be used for a like purpose for heels of smaller shoes.

I provide the pad with, say, four or more points of support  $a^2$ , projecting beyond the other points thereof, and make corresponding sockets  $b^3$  in the inside of the heel of the shoe. Thus the pad is better kept from lateral displacement. The relative length of these projections  $a^2$  and the depth of the sockets  $b^3$  are preferably such that normally—that is, when the shoe is not worn—keep the upper surface of the pad somewhat above the adjacent inner surface of the shoe, and also receive the ordinary impact or weight of the wearer, but allowing the other part or points of the pad to bear against the surface beneath when an extraordinary weight is brought against the heel, as in jumping or rapid walking.

I sometimes dispense with the supplemental or thin insole for maintaining the pad in place, in which case I secure the pad by means of a suitable cement applied to the sockets or to the ends of the projections.

It will be obvious that my device may be readily applied not only to shoes and boots in the process of manufacture, but also (by cutting out a suitable depression to receive the pad) to those already made; also, that one of the pads may be easily removed, when desired, and another substituted therefor. I purpose making the pads of different resistance or elasticity, so that those may be inserted that are best adapted to the weight of the wearer or to other special requirements.

It will be observed that in the particular construction of the pad shown the air may pass through the channels between the projections or corrugations, thus giving ventilation beneath the heel of the wearer.

I am aware of the fact that what are known as "spring-heel shoes" have long been in use;

also, that india-rubber and other elastic heel-plates have been applied permanently to the bottom or under side of shoes.

Having thus described my invention, I  
5 claim as new and desire to secure by Letters Patent—

A boot or shoe constructed with the recess or depression  $b$  and the sockets  $b^3$  in the heel  
10 portion and provided with the elastic-pad device fitted loosely in said recess or depres-

sion and provided with the elastic projections  $a^2$ , fitted to said sockets, substantially as described.

In testimony whereof I have hereunto affixed  
my signature this 12th day of December, A. D. 15  
1890.

FRANK P. MCINTYRE.

Witnesses:

JOSHUA PUSEY,  
JOHN R. NOLAN.