

F. RICHARDSON.  
Heels for Boots and Shoes.

No. 219,525.

Patented Sept. 9, 1879.

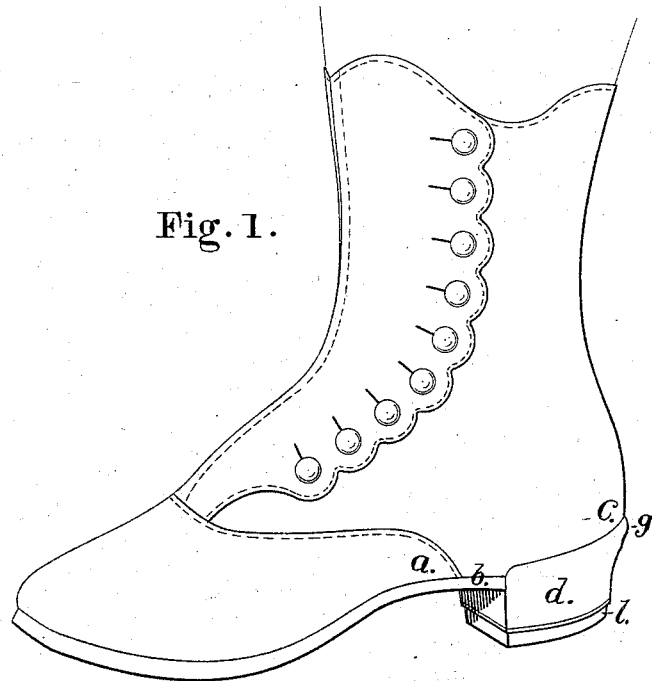


Fig. 1.

Fig. 2.

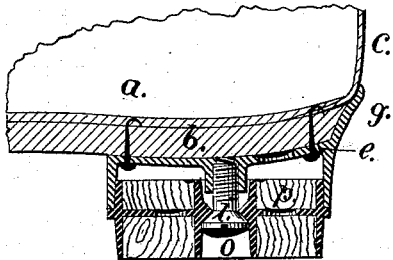


Fig. 3.

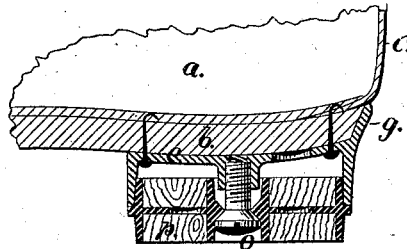


Fig. 4.

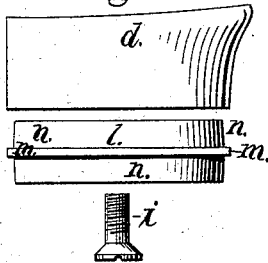


Fig. 5.

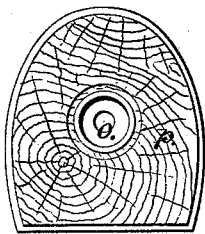
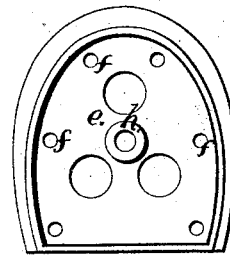


Fig. 6.



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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN HEELS FOR BOOTS AND SHOES.

Specification forming part of Letters Patent No. **219,525**, dated September 9, 1879; application filed September 30, 1878.

*To all whom it may concern:*

Be it known that I, FREDERICK RICHARDSON, of the city and county of Providence, and State of Rhode Island, have invented certain new and useful Improvements in Metallic Heels for Boots and Shoes; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

Figure 1 is a perspective view of a shoe provided with my improved metallic heel. Fig. 2 is a sectional view of the metallic heel applied so as to support the counter of the boot or shoe. Fig. 3 is a sectional view of the metallic heel secured to a boot or shoe. Fig. 4 shows side views of the shell of the metallic heel, the reversible tap, and the screw by which they are secured together. Fig. 5 is a view of the tap, showing the end of the grain of wood forming the wearing-surface of the tap. Fig. 6 is a view of the heel-shell, showing the plate by which the same is secured to the boot or shoe, the nail-holes, and the central boss by which the tap is secured to the shell.

The object of this invention is to produce a metallic boot or shoe heel that shall be strong, durable, and light, composed of the fewest possible parts; that can be firmly secured to the boot or shoe and increase the strength and stiffness of the counters; that shall be provided with an easily renewable, interchangeable, or reversible tap, presenting a durable wearing-surface not liable to slip, to get loose, or be injured by exposure.

My invention consists in a metallic heel for boots and shoes of the construction hereinafter described, and pointed out in the claim.

In the drawings, *a* represents the boot or shoe; *b*, the sole, and *c* the counter, of the same. *d* is a metallic heel-shell, having the outer form of a boot or shoe heel. It is provided with the plate *e*, made preferably in one piece with the shell *d*. A number of holes, *f f*, in the plate *e* serve to secure the plate, and with it the heel-shell *d*, to the boot or shoe by means of nails, (which should be clinched, as shown,) screws, or any other of the usual means.

*g* is a flange arranged to surround the sole of the boot or shoe, or, when required, raised

sufficiently high above the plate *e* to support the counter, as shown in Fig. 2.

*h* is a central screw-tapped boss extending downward from the plate *e*. The screw *i* enters and fits the tap in the boss *h*, and by it the heel-tap is secured to the heel-shell.

*l* is the detachable heel-tap, made of a metal rim, *n*, divided into two parts by the central, or nearly central, plate *m*. The plate *m* extends outside the rims *n n* and forms a double shoulder, by which the tap rests firmly against the lower edge of the shell *d*, and when secured to the shell by the screw *i* forms a solid structure.

A central boss, *o*, forms a countersunk bearing for the head of the screw *i*, and also protects the screw from injury.

The rims *n n* are slightly beveled, so as to enter the shell *d* and form a firm bearing on the same, and the two rims are usually made of equal width, so that the tap may be used with either side upward, or the wearing-surface of the tap may be readily reversed. The two sides may, however, be made of different widths, so that the height of the heel may be changed. Thus, when used on shoes or boots for soldiers, the higher portion may be used on parade, giving the man a better appearance and more graceful motion, while on the march the tap may be reversed and the lower heel will cause less fatigue on a long march.

The heel shown in Fig. 2 is provided with a reversible tap, one side of which is much higher than the other, the higher being shown extending below the heel-shell.

The metal frame of the heel-tap is filled in with wood, not, as has been done heretofore, with a simple layer of wood, but with compressed wood, presenting the grain of the wood as the wearing-surface. By this arrangement several advantages are secured: First, the fiber of the wood can be compressed more perfectly when the pressure is applied laterally than when applied endwise to the fiber. The softer cellular tissues will yield more readily to the pressure and the grain is more closely packed. It presents a better wearing-surface, as more of the hard fibers are concentrated in a given space, and wears longer, as the friction and wear on the end of the fiber have a tendency to

beard or wedge each individual fiber, and the sand or dirt is forced into the interstices of the cellular tissues still remaining, so that such matter forced into the wood hardens the surface and increases the durability. The filling is not liable to split or peel or sliver, and the wooden filling will wear until all the metal portion is worn away, which is not the case in the wood filling heretofore used.

The heel-taps may be readily interchanged when it appears that one side (usually the outer side) wears more, and thus can be maintained at proper level. This is important in the case of young persons, as the wearing of the shoe-heel on one side injures and weakens the ankle, and also destroys the boot or shoe, and as these taps are also reversible, a good new tap can at once be substituted for a worn tap by simply reversing the same.

This metallic heel can be readily attached to a boot or shoe and securely held. It will strengthen the shoe, and when the flange *g* extends to the counter firmly supports the same.

It forms a firm and even support for the heel of the foot, as the plate *e* is made of the proper curve to receive the heel portion of the sole. It is substantial, strong, and can be made attractive or ornamental, if desired. By supporting the counter it prevents the breaking down of the same after the boot or shoe has been wet, and the tap insures a good and firm hold, preventing slipping on either ice, smooth walks, or snow.

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

In a reversible heel-tap, the combination, with the metal frame provided with the diaphragm *m* and central boss, *o*, of a filling consisting of wood compressed to present the end of the grain of the wood to the wear, substantially as set forth.

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