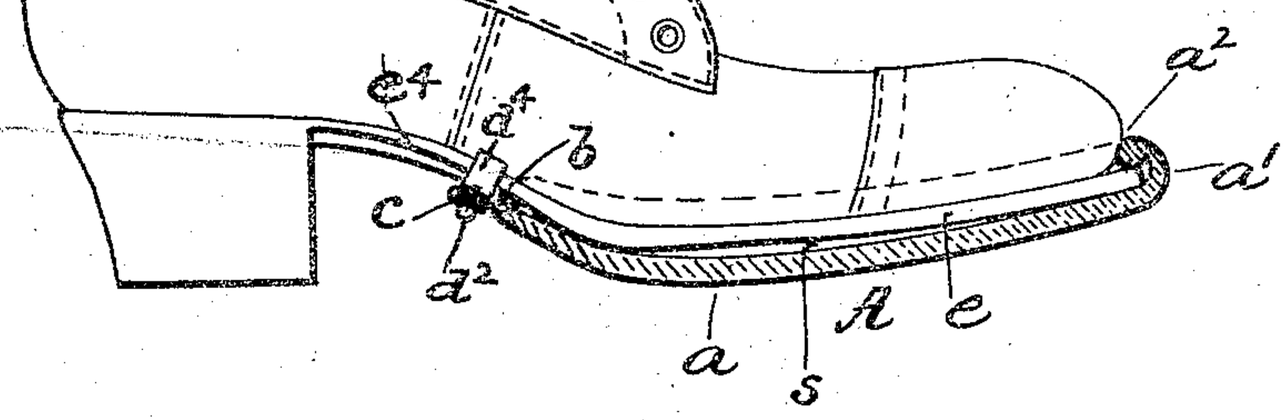
E. FULLER.

RUBBER SOLE PROTECTOR FOR BOOTS AND SHOES.

APPLICATION FILED OCT. 23, 1909.

955,509. Patented Apr. 19, 1910.

FIG. 1.



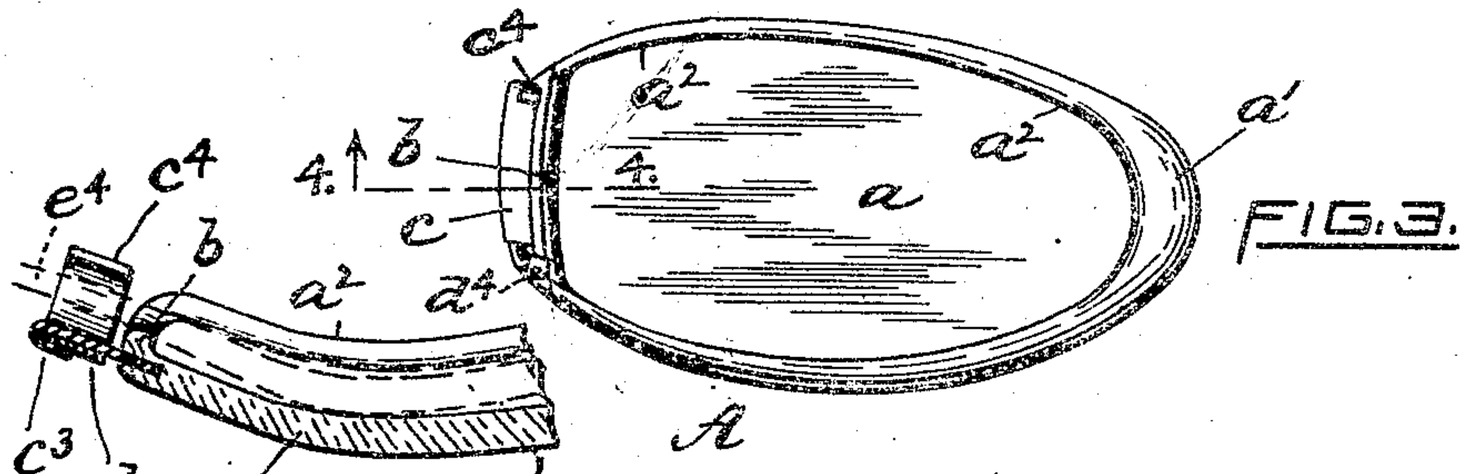


FIG. 3.

FIG. 4.

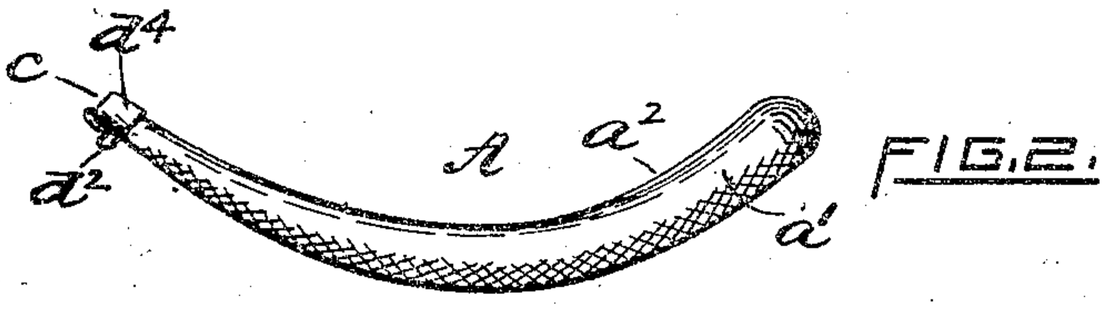


FIG. 2.

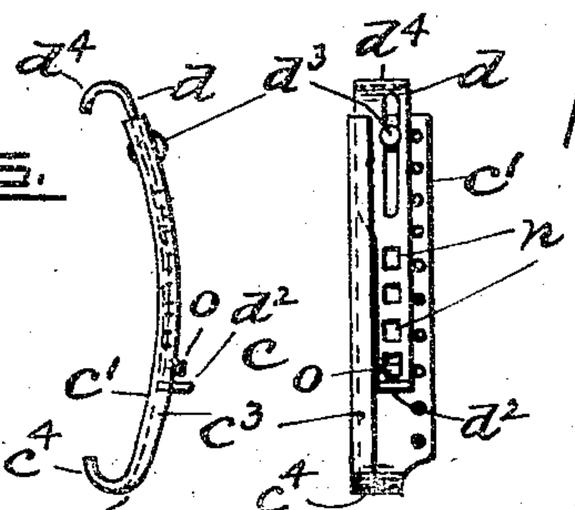


FIG. 6.

FIG. 5.

WITNESSES:

C. T. Hannigan.

Calvin E. Brown

INVENTOR:

Eugene Fuller.

By Geo. H. Remington.

Atty.

UNITED STATES PATENT OFFICE.

EUGENE FULLER, OF PROVIDENCE, RHODE ISLAND.

RUBBER SOLE-PROTECTOR FOR BOOTS AND SHOES.

955,509. Specification of Letters Patent. Patented Apr. 19, 1910.

Application filed October 28, 1909. Serial No. 524,139.

To all whom it may concern:

Be it known that I, EUGENE FULLER, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Rubber Sole-Protectors for Boots and Shoes, of which the following is a specification.

My invention relates to improvements in impervious sole-protectors capable of being detachably secured to the leather soles of boots and shoes, and it consists essentially of a rubber half-sole member possessing a degree of resiliency, constructed and adapted so that when in use it is in engagement with and supported by the extended outer edge part of the sole proper and terminates at the shank portion; and having the half-sole member provided with means for maintaining it in position on the sole, and further, having a yieldable packing positioned so as to exclude or prevent the entrance of water between the adjacent surfaces of the sole and half-sole members, all as more fully hereinafter set forth and claimed.

The object I have in view is to provide a simple, compact, inexpensive, easily and quickly applied article of footwear, which may be termed a detachable rubber half-sole, adapted to protect the bottom of the usual more or less pervious sole portion of boots and shoes from contact with wet or moist surfaces and thus prevent the absorption or penetration of moisture therethrough, while at the same time in no wise interfering with the usual ventilation or circulation of air through the upper portion of such boots and shoes.

In order to increase the durability and efficiency of the device, I prefer to make its normal form in a longitudinal direction such that in applying it to the sole of the shoe it will necessarily be flattened somewhat, thereby, too, increasing its resiliency and holding capacity, and also producing a small air space of cushioning chamber between the adjacent surfaces.

In the accompanying sheet of drawings, Figure 1 represents a partial side elevation of a shoe, showing (sectionally) my improved rubber sole-protector removably attached to the sole thereof, as in use. Fig. 2 is a side elevation of the device, as a whole, detached from the shoe. Fig. 3 is a corresponding top plan view. Fig. 4 is a longitudinal sectional view, in enlarged scale, taken on line 4 4 of Fig. 3, and showing its relation to the shoe's shank. Fig. 5 is a front view of a clasping or fastening device, in enlarged scale, adapted to be employed in connection with the rubber member; and Fig. 6 is a corresponding edge view.

A, again referring to the drawings, designates the invention or article of manufacture as a whole, which may be termed an impervious, resilient half-sole, adapted to be detachably secured to the usual sole proper, *e*, of a boot or shoe, and having its rear end provided with a suitable clasp or clamp, as *c*, or other analogous holding means, constructed to engage the usual shank portion, e^4, integral with said sole part *e*. The said half-sole member is quite shallow, and preferably made from rubber or a composition of rubber, molded and vulcanized in any suitable or well-known manner; its normal form being substantially as represented in Figs. 2 and 3. The sole part, *a*, is or may be practically uniform in thickness throughout, and provided with an inner lined surface and roughened outer bottom surface, substantially as employed in rubber overshoes, and (which is very important) is advantageously of abnormal, *i. e.*, deep curvature (as clearly shown in Fig. 2). I have discovered by experiments and tests that, by constructing the sole *a* with said abnormal curvature, the following advantages accrue: (1) When the half-sole is in use on a shoe-sole, the abnormal curvature permits the formation of an air-chamber *s* between the half-sole and the shoe-sole, which prevents sweating of the foot, inherent in the use of half-soles and rubber overshoes of ordinary construction, and (2) the bead a^2 will, in use, be caused to adhere more snugly to the upper edge of the leather sole. The outer peripheral edge of the sole *a* is extended upward and forms a comparatively thin, narrow side wall, a^1, terminating at the top in an inwardly projecting beaded or thickened free edge part, a^2, the latter being shown sectionally in Fig. 1. The rear end portion of member A is adapted to engage the shank or arch part, e^4, of a shoe, and is provided with a compressible, transverse rib or packing member, *b*, secured to or integral with the sole *a*.

In order to more securely hold and lock the member A in position and thus prevent it from being accidentally detached from the shoe sole and lost, I provide it with auxiliary holding means, *c* (Figs. 5 and 6), the

same as drawn, having a suitably shaped sheet metal base part, or plate, c^1, adapted to be placed in the sole-shaping mold containing the rubber stock, the vlucanizing process causing the parts to be united together. The said base or plate has its rear edge part reversely bent, thus producing the flange or lip c^3, and forming thereunder a narrow groove. One end, c^4, of the base is hook-shaped, thereby adapting it to hook over the edge of the shoe's shank. The base or plate is also provided on its under surface with a fixed lug, o, and stationary pin d^3. A companion member or second plate, d, also of sheet metal, is positioned beneath plate c^1 and slidably fitted in said groove, its outer or free end being bent to form a hook, d^4, disposed with respect to and adapted to cooperate with said hook c^4. The member d has a slot through which the pin d^3 extends, and a plurality of alining holes, n, adapted to receive said lug o. Upon seizing the bent end tongue d^2 of member d and springing the latter outwardly to disengage it from the lug o, the slidable member may then be readily moved in an endwise direction so as to bring its hook, d^4, nearer to or farther from the hook c^4, as desired. Upon releasing the tongue the member d springs back upon the base, its lug o then entering the corresponding hole n, thus locking the parts together in the adjusted position.

I prefer, as hereinbefore stated, to mold the member A so that its normal curvature (see Fig. 2) will be materially flattened or changed upon applying it to the sole of a shoe, thus bringing its inherent resiliency into action and causing the beaded edge to more snugly conform to and bear directly upon the outer edge portion of the shoe's sole e. At the same time the resiliency of the material has a tendency to draw the sole a away from the center portion of the sole e, thereby producing a shallow air space or cushion chamber, s, which provides a degree of elasticity in walking, increases the durability of the article, and produces a suction or partial vacuum effect which acts to further insure the frictional contact of the edge a^2 upon the adjacent top surface of the sole e. It may be added that the detachable rubber half-soles A may be made in pairs, right and left, and in various sizes and styles, corresponding with the numbers arbitrarily employed for designating the sizes of boots and shoes.

I do not broadly claim as my invention a detachable rubber sole. My improved sole is provided with means for securely clamping or locking it to the shank of the shoe, thus preventing it from becoming accidentally detached or unfastened when in service. The clamping device is also adjustable, thereby readily adapting the sole to shoe-shanks varying in width. This latter feature, in connection with the self-packing device and the constructional means employed for insuring the contraction of the sides a^1 and causing the bead a^2 to snugly engage the top of the permanent sole e of the shoe, renders my improved sole A more serviceable and efficient, while at the same time the air space s insures a greater degree of ease and comfort to the wearer.

I claim as my invention and desire to secure by United States Letters Patent:

A moisture-impervious half sole detachably securable to the sole of a boot, and means for clamping said half sole to the shoe-sole, comprising a metallic plate having one of its longitudinal edges bent downward to form a guiding-lip beneath said plate, said plate being also provided with a hooked end and, on its under surface, with a lug and a pin, said clamping-means also comprising a second plate of spring material disposed beneath said first plate and slidable within said guiding-lip, and formed, at one end, with a downturned tongue and, at the other end, with a hook, said second plate being also provided with a slot, within which works the said pin carried by the first plate, and with a plurality of perforations, into any one of which the lug carried by the first plate may enter.

In testimony whereof I have affixed my signature in presence of two witnesses.

EUGENE FULLER.

Witnesses:
GEO. H. REBINGTON,
CALVIN H. BROWN.