H. H. SCHWARTZ.

BOOT AND SHOE.

APPLICATION FILED SEPT. 11, 1909.

973,077.

Patented Oct. 18, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

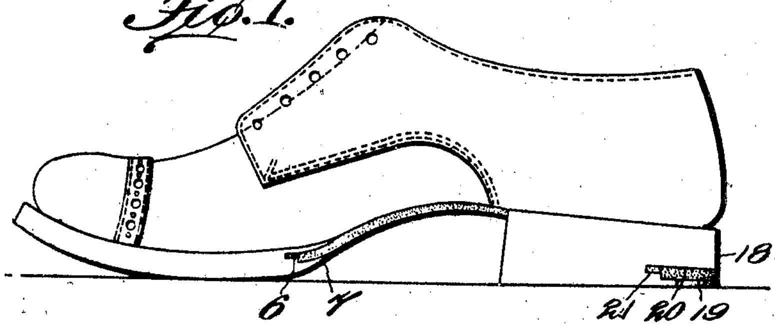


Fig. 2.

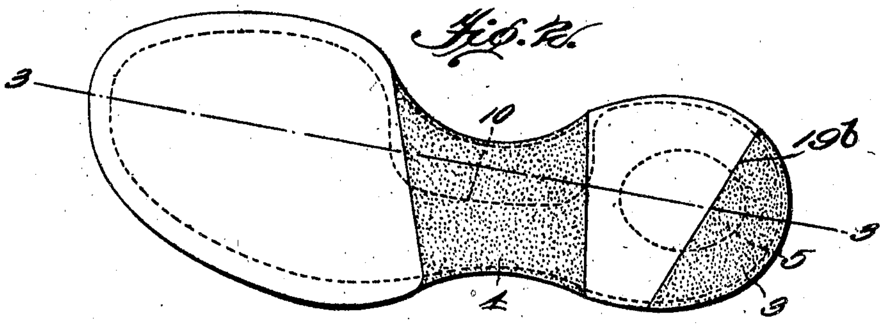
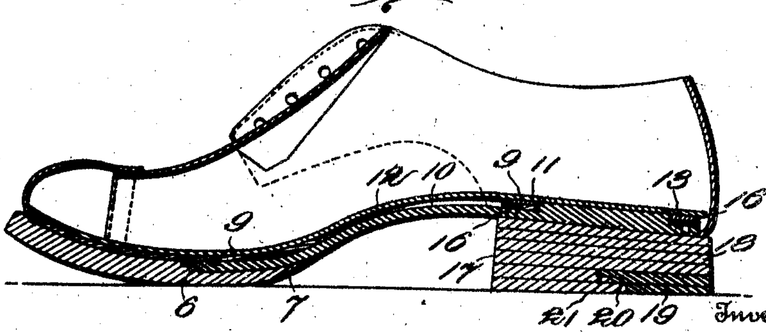


Fig. 3.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 4.

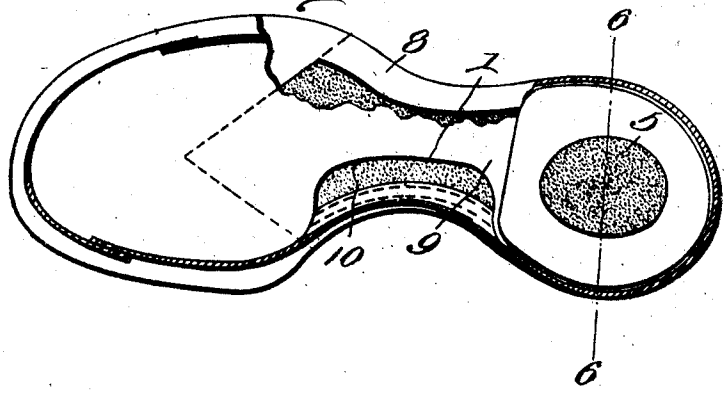


Fig. 5

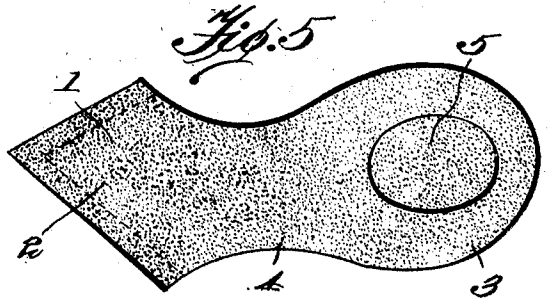
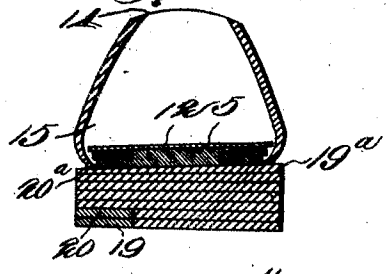


Fig. 6.



Witnesses

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BOOT AND SHOE.

973,077. Specification of Letters Patent. Patented Oct. 18, 1910.

Application filed September 11, 1909. Serial No. 517,329.

To all whom it may concern:

Be it known that I, HENRY H. SCHWARTZ, a subject of the Emperor of Russia, having filed first papers announcing my intention of becoming a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Boots and Shoes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in boots and shoes, and is especially designed to provide a shoe that will in a more perfect degree provide not only comfort but also the strengthening of the foot and ankle.

As is well known the foot and ankle consist of many delicate parts that support the entire weight of the body when walking or standing, and in the production of a shoe, in order to approach perfection, it is necessary to provide a shoe which will allow the free movement and expansion of the foot, as well as to provide a shoe that will properly support and brace the foot and ankle against unnatural strains and jars.

In order to accomplish these ends I have found by very careful study that there are several requisites essential to the proper production of such a shoe, some of the features of which consist of a thoroughly flexible connection between the heel and sole over which is disposed the central fulcrum of the foot; also the shape of the heel itself as well as the shape of the upper portion of the shoe inclosing the heel are very essential elements, incasing the rear portion of the foot disposed substantially on the line of weight of the body.

With these objects in view, the invention consists in arrangement and combinations of parts hereinafter described and more particularly pointed out in the claim, and while the invention is not limited to the exact details shown and described, still for the purpose of disclosure reference is had to the accompanying drawings illustrating a practical embodiment of the invention, in which drawings like numerals designate the same parts in the several views, and in which—

Figure 1 is a view in side elevation of my improved shoe. Fig. 2 is a bottom plan view of the same. Fig. 3 is a view in section along the line 3—3 of Fig. 2. Fig. 4 is a view in transverse section through the upper of the shoe, showing the interior in plan view with the insole removed and with the main insole and a portion of the upper broken away showing the rubber shank therebeneath. Fig. 5 is a plan view of the rubber shank or flexible connection between the heel and sole, and Fig. 6 is a sectional view on the line 6—6 of Fig. 4, looking in the direction of the arrows.

1 designates a flexible shank, preferably of molded rubber, disposed between the sole and heel of the shoe. This shank consists of a triangular-shaped forward end 2 and an oval-shaped rear end 3 joined by the central restricted portion 4 as shown in Fig. 5. The rear oval-shaped portion is adapted to rest upon the heel proper of the shoe, and this rear portion is provided with the raised portion 5 formed integral with the flexible connection and disposed immediately below the rounded bottom of the heel of the foot. This forward portion 2 of the flexible shank is slightly recessed on its underneath face, as at 6, Figs. 1 and 3, and is smoothly seated and cemented in a corresponding recess formed in the upper face of the sole. After having been firmly secured by a water proof cement the rubber shank may be sewed or otherwise more firmly secured to the sole, and the underneath layers of the leather sole extend rearwardly a sufficient distance, as at 7, to securely fasten the forward portion of the flexible shank in place.

The rear portion of the rubber shank is disposed above the leather heel, which is hollowed out to receive same. This leather heel is of particular construction and will be hereinafter described.

On the outside edge of the shoe, where there is some little strain, the rubber shank may be reinforced by a narrow leather strip 8 (Fig. 4) forming a continuation of the welt, extending back along the edge of the rubber shank to the heel.

The upper of the shoe, with its lining, is turned inwardly and is sewed in position to the welt, but on the inside edge of the rubber shank the upper and lining are directly stitched to the rubber shank.

The main insole 9 is affixed within the shoe, but it is cut away, as at 10, so as not to interfere with the flexibility of the shoe. The rear portion of this main insole is perforated, as at 11, to fit the rubber projection 5, and a finishing insole 12 is disposed above

the main insole, and if necessary for smoothness an insertion 13, provided with an aperture, may be slipped over the rubber projection 5 to build up the inside of the shoe so that the finishing insole will smoothly rest over said rubber projection 5.

It will be observed that the rear upper of the shoe curves forwardly, having an opening 14 at the top more restricted than the chamber 15 at the bottom, and by this construction the heel is allowed to freely spread when weight is placed thereon, while the upper portion snugly supports the foot immediately below the ankle bone.

16 designates stitching between the main insole and the rubber shank.

Referring to the heel proper of the shoe, it will be observed from Figs. 3 and 6 that the height of the heel at its neck 17 is greater than its height at its rear 18, and the height of the inner edge 19^a is greater than that of the outer edge 20^a, so that the ankle is kept straight in walking, and the central cushion 5 relieves any jar on the bones of the ankle.

The heel is built up of layers of leather as in the customary construction, but it is of the special configuration just referred to and is provided with a base insertion, running across the rear, consisting of a plurality of layers of rubber, preferably disposed at an angle, as shown at 19^b in Fig. 2, so that the cushioning effect on the tread surface of the heel will be more toward the rear and outer edge of the heel.

In the drawings two layers of rubber, 19 and 20, are shown, and the inner edge of these layers may be provided with a tongue and recess to fit within the corresponding tongue and recess on the rear edge of the complementary layer of leather, as shown at 21, and this construction holds the rubber insertion more firmly against displacement.

From the foregoing description it will be observed that I have produced a shoe providing proper flexibility between the sole and heel; properly constructed heel; means, such as the cushioning member 5, directly taking the weight from the heel of the foot and relieving the jar on the os calcis, a matter not provided for in any other shoe heretofore, and entirely different from the outside rubber heel tap. Also it will be observed that the particular contour of the upper, at the heel portion of the shoe, so incases the foot that when the shoe is laced up the whole portion of the foot immediately below the ankle bone and the instep is snugly incased, while the enlarged chamber, at the base of the heel, allows the soft parts of the heel of the foot to spread when pressure is exerted thereon from the weight of the body, especially when walking, the central cushion 5 taking up any jar, as before mentioned. This snug fit of the heel of the foot and the instep prevents the slipping of the foot forward, and also prevents the heel of the foot from slipping up and down. Also it will be observed that the method of mortising the rubber with the leather heel and sole, and especially the sole, prevents the displacement or overriding of the sole in pressing forward, or impact, in walking.

Having thus described the invention, what I claim is:—

In a boot or shoe, the combination with the sole and the heel, of a rubber shank disposed between the sole and the heel and forming a freely flexible support for the hollow of the foot, said shank being mortised to the top of the sole and extending a substantial distance in front of the rear edge of said sole, and the rear of the shank being supported above the heel of the shoe and provided with a rubber cushioning member molded integrally with said shank, said cushioning member being located directly above the central portion of the heel, substantially as described.

In testimony whereof, I affix my signature, in presence of two witnesses.

HENRY H. SCHWARTZ.

Witnesses:

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CHAS. A. MCDONOUGH.