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CUSHION HEEL.

APPLICATION FILED SEPT. 6, 1912.

1,060,751.

Patented May 6, 1913.

Fig. 1.

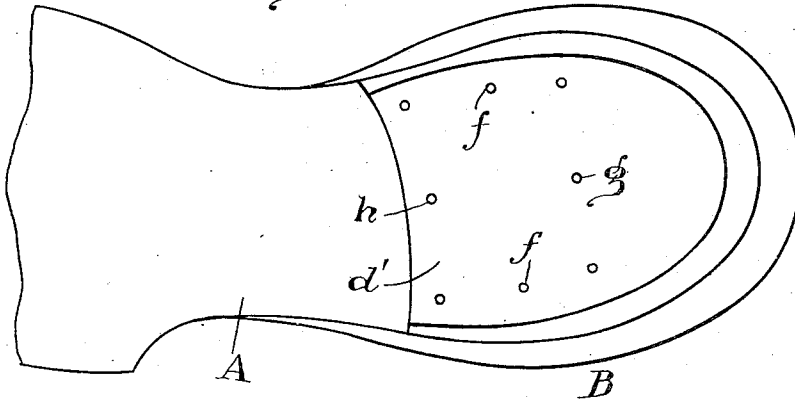


Fig. 2.

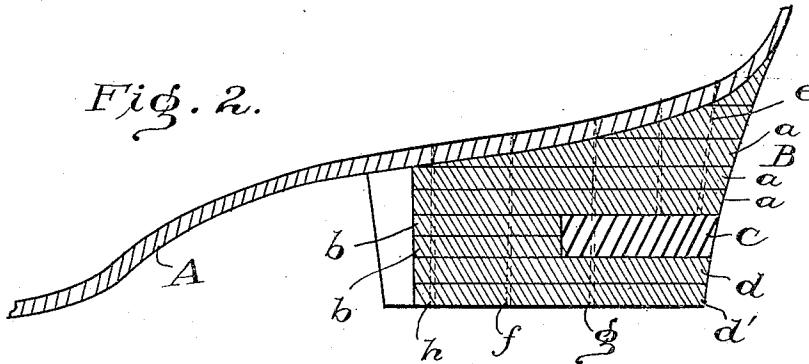
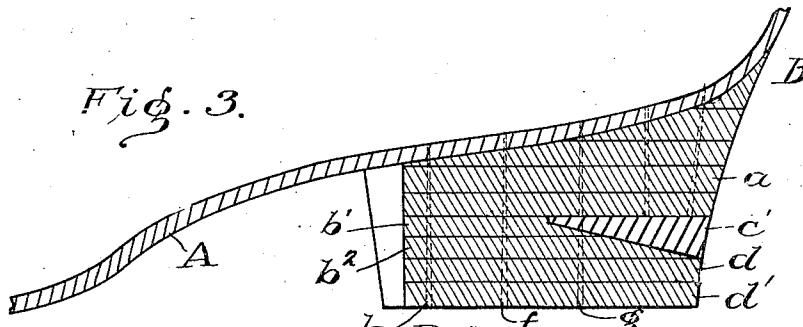


Fig. 3.



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CUSHION-HEEL.

1,060,751.

Specification of Letters Patent.

Patented May 6, 1913.

Application filed September 6, 1912. Serial No. 718,798.

To all whom it may concern:

Be it known that we, ROBERT S. GRAHAM and RAYMOND P. MORSE, both citizens of the United States, the said GRAHAM residing in the city of New York, borough of Manhattan, county and State of New York, and the said MORSE residing in the city of New York, borough of Brooklyn, county of Kings, and State of New York, have invented a certain new and useful Cushion-Heel, of which the following is a specification.

This invention is a cushion heel for footwear, and it appertains, more particularly, to a heel composed in part of a hard material and a soft or cushion material, the two materials being so combined and related that the lower part of the heel is free to have a limited movement with respect to the solid part and the cushion material.

The objects of the invention are, first, to enable the heel to be attached to the shoe by the ordinary heeling machinery now so extensively used in shoe factories; second, to minimize the quantity of rubber, or other cushion material, consistent with the attainment of the purposes of the invention; third, to so securely attach the several parts as to preclude their accidental separation even should the yieldable part of the heel become caught in the act of walking, and to provide for the expeditious and economical manufacture and attachment of the article.

The invention is embodied in a heel one part of which is composed of solid material so formed that the "top lift," or in reality the bottom member, is capable of a free or independent movement at the rear thereof, and the other part composed of cushion or yieldable material of a suitable character, such as rubber or rubber compound.

The manufacture of the heel, from a practical standpoint, and by existing machinery and in accordance with existing methods, involves the assemblage and attachment in two sections and with a top lift, the latter constituting a third section. The first section is attached as ordinarily practised in the art; the second section is formed to carry out this invention, *i. e.* by providing a bottom layer composed in part of solid material (leather) and in part of rubber or cushion material, after which the complete second section is attached by nailing

the solid part, including the half leather section, firmly to the first section, the nails being allowed to protrude, and finally the "top lift" (or bottom piece) is positioned and attached by the protruding parts of the nails.

In the accompanying drawings, we have illustrated different practical embodiments of the invention, but the constructions shown therein are to be understood as illustrative, only, and not as defining the limits of the invention.

Figure 1 is a bottom plan view of a heel constructed in accordance with this invention. Fig. 2 is a vertical section taken longitudinally through the heel illustrating one form of the part layer of cushion material. Fig. 3 is a vertical longitudinal section illustrating another form of the layer of cushion material.

A designates a portion of a shoe sole, and B is the heel. This heel is composed of relatively hard material and a layer or section of cushion material. The heel is attached in two or three sections, one of which is composed of a series of layers *a*. The second section is composed of a part layer or layers of hard material, as *b b* and a part layer of cushion material, as *c*, and a lift *d*, whereas the third section or top lift consists of a layer *d'*.

As shown in Fig. 2, the second section embodies a layer *c* of cushion material which is equal in thickness to two layers *b b* of leather, the two layers *b b* and the rubber layer *c* being each equal in area to one half the area of the lift *d*, although the relative proportions of the part *c* to the parts *b b* composing the second section may be varied as desired. Furthermore, the rubber section *c* may be equal in thickness to a layer *b* so that only one layer *b* need be used, but it is preferred to employ a cushion layer *c* substantially equal in thickness to the two leather layers *b b*. In the manufacture of the shoe, the first section composed of the layers *a a* are fastened together and attached to the sole at the heel portion in the ordinary way and by existing machinery. The second section consisting of the parts *b b c d* are assembled so that a cushion layer *c* is imposed directly against the layer *d* and the pieces *b b* are positioned one upon the other and against a part of the layer *d*. The cushion layer *c*

is attached in any suitable way as by cementing it to the layer *d*, whereas the layers *b b* are attached to the layer *d* by nailing the parts together, the ends of the nails protruding in the usual method of making heels by existing machinery.

It should be understood that the parts (*b b c d*) composing the second section should be assembled as is the second section of an ordinary heel. In the process of attaching the second section to the first section, said second section can be handled and applied with the same facility and advantage as the second sections of ordinary heels.

The nails which fasten the first section of the shoe are indicated at *e*, and these nails *e* are independent of the nails which attach the second section and the top lift or bottom layer *d* to the first section.

In carrying the present invention into practice, the second section and the top lift are not nailed in the ordinary way, but on the contrary nails *f, g, h* are employed, said nails being so positioned that the rear part of the layers *d d'* will be free or unattached. Nails *f* are at the respective sides of the heel, nails *h* are at the front edge thereof, whereas nails *g* are across the breast of the heel, all the nails *f, g, h* being forwardly of the rear part of the heel which is to remain free and unattached. Nails *h* are driven through the first and second sections at the forward part thereof; nails *f* are at the respective sides of the heel and are driven through the first and second sections, whereas nails *g* are driven through the first and second sections forwardly of the rear part of the layers *d d'*, said nails *g* being driven through the cushion layer *c*, but in this connection it is to be noted that the nails *f g h* are not driven home in attaching the second section to the first section the ends of the nails being allowed to protrude below layer *d* so that the protruding ends of the nails are utilized in fastening the top lift or bottom layer *d'* to the heel.

It is evident that the layers *b b d* of the second section will be attached solidly and firmly to the first section by the nails *f g h*, but the rear part of lifts *d d'* will be unattached so as to allow said rear parts of the two lifts to have a certain limited freedom of play, for the purpose of securing the desired cushion effect in connection with the layer *c*. The employment of a layer *c* which is equal to substantially one half the area of either of the lifts *a d d'* provides for economy in the use of rubber required to produce composite heels of this invention,

but at the same time the important advantage is secured in the use of the sections *b b* in connection with a half layer *c* of rubber, for the reason that the forward part of the heel may be nailed as firmly and solidly together as an ordinary leather heel, as a result of which the heel of this invention is capable of manufacture by existing heel machinery and in accordance with the well known methods, but at the same time the heel when attached is so secure and firm that it cannot become displaced accidentally, or torn off except by extremely rough usage.

In Fig. 2 the cushion layer *c* has a straight forward edge and it is of uniform thickness so that the forward edge of the layer *c* abuts squarely against the straight rear edges of layers *b b*, but in the embodiment shown in Fig. 3 of the drawings, the cushion layer *c'* is tapering, thus further reducing the quantity of rubber required. Accordingly, the layers *b' b''* are tapered at their rear edges in order that the tapering layer *c'* may substantially overlap the tapering edges of the layers *b' b''*. Otherwise the heel is constructed and attached in the manner and by the means hereinbefore described.

In connection with the salient features of economy of manufacture and security of attachment of the heel, it is desired to state that the rubber layer *c* or *c'* is fastened securely in place at its forward edge only by the row of nails *g* which are positioned at the breast of the heel, and thus the rubber layer cannot work loose or become detached from the heel.

Having thus fully described the invention, what we claim as new, and desire to secure by Letters Patent is:

A heel embodying an upper member composed of solid material, a layer composed partly of non-yielding material and partly of cushion material, both of said parts being in the same horizontal plane, one or more lifts below the two part layer, and attaching means extending into the bottom lift or lifts and the solid material of the two part lift and also through the forward part of the cushion material, leaving free or unattached that part of the bottom lift or lifts below the cushion material.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

ROBERT S. GRAHAM.
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Witnesses:

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