

July 20, 1926.

L. S. SIEGFRIED

1,592,839

HEEL

Filed Jan. 28, 1924

Fig. 1.

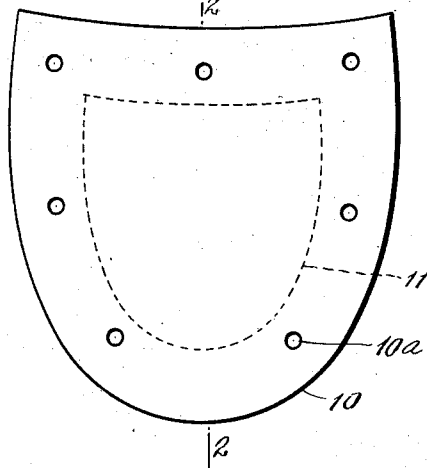
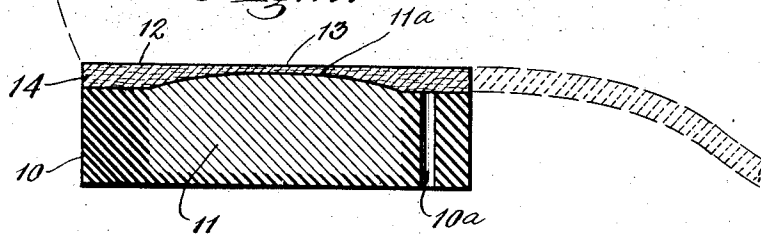


Fig. 2.



INVENTOR
Louis S. Siegfried
BY
Morris Spindler
ATTORNEY

Patented July 20, 1926.

1,592,839

UNITED STATES PATENT OFFICE.

LOUIS S. SIEGFRIED, OF BROOKLYN, NEW YORK.

HEEL.

Application filed January 28, 1924. Serial No. 688,916.

This invention relates to heels for boots or shoes. More particularly, it is directed to improvements in heels of this character known as rubber heels designed to ease and lessen the shock of contact.

The various types of rubber heels heretofore made have somewhat served this purpose but to a limited extent only by reason of the fact that so far as I am aware, no rubber heel has heretofore been made which conforms in mechanical functioning and structure to the mechanism in the body for resisting and absorbing shocks. The shock incident to the impact of the heel against hard surfaces, like pavements, registers itself up the spinal column. It is known that a shock absorbing mechanism is provided in the body for the purpose of overcoming or lessening any damage that may result from the ordinary shocks that necessarily occur in the normal functioning of the body, as for example in walking, running, jumping and the like. This body mechanism briefly consists in intervertebral discs conforming in shape to the shapes of the body of the vertebrae and interposed between each pair of vertebrae so as to contact with them. These intervertebral discs are composed of hard fibrous tissue termed annulus fibrosis which forms the protecting covering and which is possessed of a certain amount of resiliency. The interior of the disc comprises a softer, more resilient inner mass of tissue of pulpy nature termed the nucleus pulposus, which is the tissue that performs the shock absorbing function.

It has occurred to me that largely more effective and efficient results could be obtained by providing a rubber heel construction which shall conform to this physiological and anatomical structure so that the mechanical shock absorbing means provided by the rubber heel shall function as nearly as may be the same manner as the corresponding physiological and anatomical means.

The object, therefore, of my invention is to provide a rubber heel construction which shall perform the shock absorbing function in a highly efficient and effective manner, and which shall yet be simple in construction, comparatively cheap to manufacture and comfortable to the wearer.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements and arrangement of parts which will be exemplified in the construction hereinafter described and of which the scope of application will be indicated in the following claim.

In the accompanying drawing, in which is shown one of the various possible illustrative embodiments of this invention,

Fig. 1 is a bottom plan view of the heel embodying my invention; and

Fig. 2 is an elevational view in cross-section of the heel taken along line 2—2 of Fig. 1 and shown applied to a shoe.

Referring in detail to the drawing, my newly improved heel is seen to comprise an outer ring 10 of comparatively hard rubber of somewhat the same consistency as the rubber employed in rubber heels as heretofore made, and of the usual configuration and dimensions. This outer ring is provided with recesses 10^a for the nails or other means for securing the heel to the shoe. Enclosed and protected by this outer ring is the inner core 11 of softer, more elastic rubber having a high degree of resiliency. This inner core corresponds to the pulpy mass of the intervertebral discs above referred to and does the real work of taking up the shock, while the outer hard rubber 10 acts as a support and protector and to give body to the heel.

For the proper functioning of the heel it should be directly attached to the bottom sole of the shoe and not to the comparatively thick hard leather heel portion to which rubber heels as heretofore made are secured, since it is essential that the pressure of the heel of the foot should act directly upon the soft resilient inner core 11. To this end, in place of the hard leather heel, I preferably make the inner core arched as at 11^a and superimposed on the improved rubber heel a layer of soft leather 12 of uneven thickness, being thinnest at the portion thereof directly overlying the core 11 as at 13, and thicker at the outer portion overlying the outer ring of hard rubber 10. This layer 12 thus serves as the means for attaching the heel directly to the bottom sole of the shoe and at the same time interposes a relatively small thickness of soft material between the heel of the foot and the inner core of the rubber heel.

In the practice of my invention, the rub-

ber heel may either be made up complete with the layer 12 thereon and then secured directly to the shoe, or the heel could be made up without the layer 14 but the bottom sole of the shoe modified so as to have
5 at the heel portion the shape and comparative dimensions of the layer 12, so that in either event there shall be only a comparatively thin layer of soft leather interposed
10 between the rubber heel and the heel of the foot.

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

15 In a shoe construction, a heel unit of the character described comprising a soft, re-

silient rubber core, a hard, less resilient rubber shell integrally formed about the sides and bottom of said core, said shell having openings extending up from the bottom side thereof adapted to receive fastening means, said core being arranged to extend above the level of the shell, and a single top layer of pliable material of varying thickness forming a portion of the sole
20 of the shoe, said layer having its thinnest section adapted to receive and yieldingly transmit shocks to said core for absorption.

In testimony whereof I affix my signature.
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LOUIS S. SIEGFRIED.