No. 699,111. Patented Apr. 29, 1902.

J. H. MELAVIN.

CUSHIONED HEEL.

(Application filed Aug. 29, 1901.)

(No Model.)

FIG. 1.

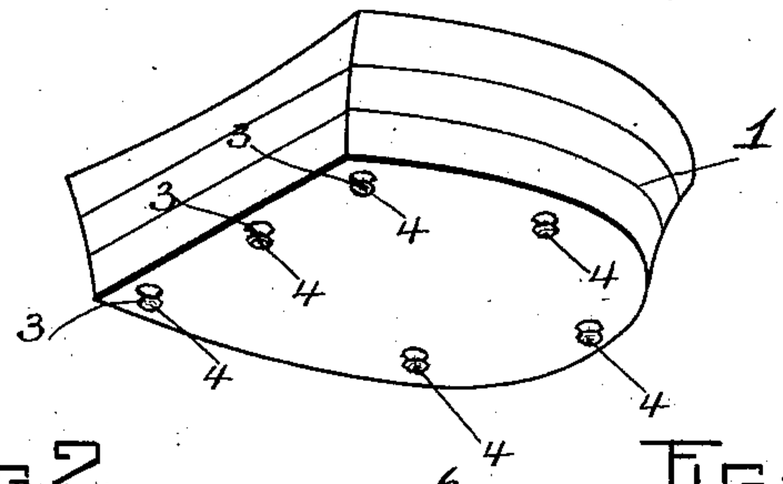


FIG. 3.

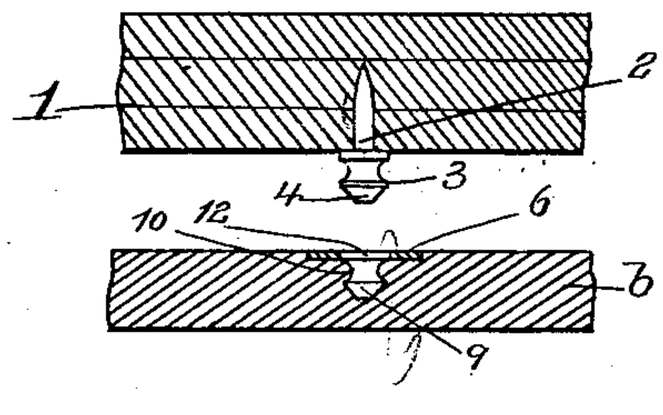


FIG. 2.

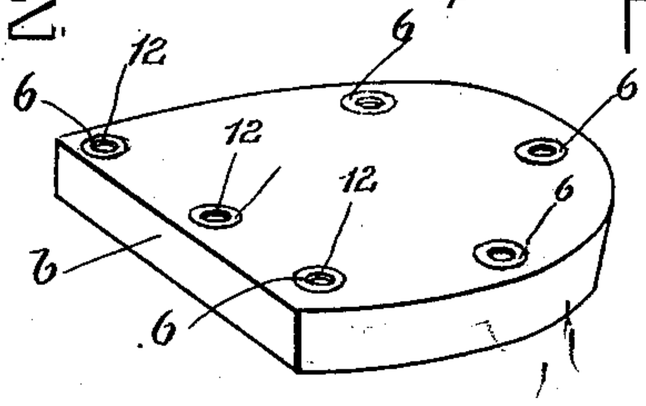


FIG. 4.

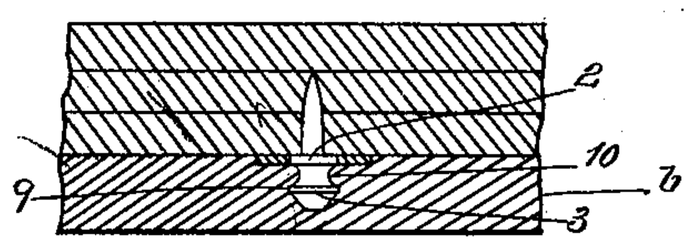


FIG. 5.

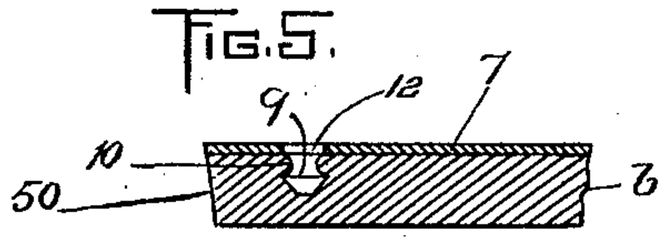


FIG. 6.

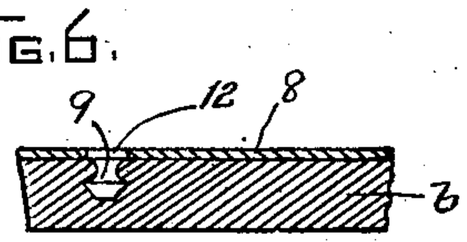


FIG. 7.

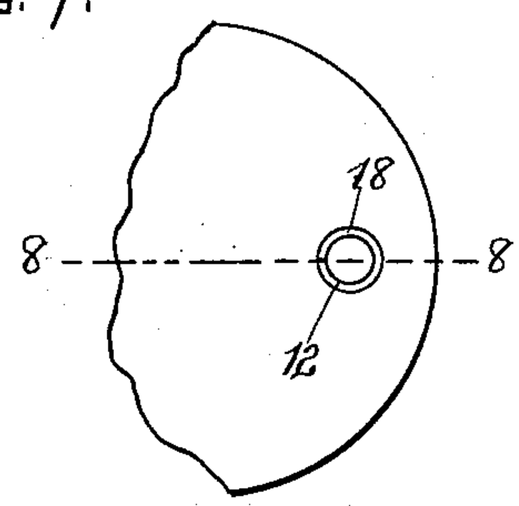


FIG. 9.

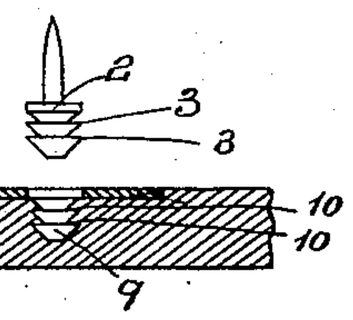
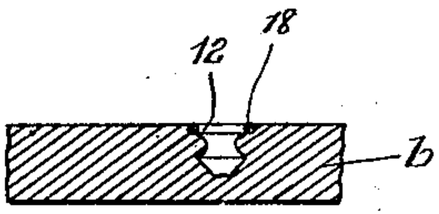


FIG. 10.

FIG. 8.



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UNITED STATES PATENT OFFICE.

JOHN H. MELAVIN, OF CAMBRIDGE, MASSACHUSETTS, ASSIGNOR OF ONE-FOURTH TO CHARLES F. BROWN, OF READING, MASSACHUSETTS.

CUSHIONED HEEL.

SPECIFICATION forming part of Letters Patent No. 699,111, dated April 29, 1902.

Application filed August 29, 1901. Serial No. 73,667. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. MELAVIN, of Cambridge, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Cushioned Heels, of which the following is a specification.

This invention has for its object to provide a secure and reliable invisible and protected connection between a relatively rigid base, such as a leather boot or shoe heel, and an elastic cushion, such as a rubber lift or tread-piece.

The invention consists in the improvement which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a perspective view of a heel adapted for attachment to an elastic tread-piece or cushion in accordance with my invention. Fig. 2 represents a perspective view of an elastic heel lift or cushion adapted for engagement with the heel shown in Fig. 1. Figs. 3 and 4 represent enlarged sectional views of portions of the heel and cushion shown in Figs. 1 and 2. Figs. 5 and 6 represent sectional views of modifications hereinafter referred to. Figs. 7, 8, 9, and 10 represent modifications hereinafter referred to.

The same reference characters indicate the same parts in all the figures.

In the drawings, 1 represents a boot or shoe heel of leather or other suitable relatively rigid material. 2 2 represent studs having shank portions inserted in the heel, the studs having shoulders 3, which are separated from the body of the heel, and substantially conical or wedge-shaped outer portions or heads 4. The shanks of the studs may be corrugated to enable them to firmly engage the heel when driven into the same or they may be screw-threaded for the same purpose.

b represents a heel-shaped cushion which comprises a main portion or body of any suitable elastic material or composition, elastic vulcanized rubber being preferred, and relatively rigid or inextensible material attached firmly to the top portion of the elastic body. The said inextensible material may be a series of independent metallic plates or washers 6, placed upon the upper surface of the elastic body and secured thereto by the process of vulcanization, as shown in Figs. 2, 3, and 4, or the said material may be a layer 7 of rubber treated so that it is rendered relatively inextensible by the vulcanizing process, said layer being shown in Fig. 5, or it may be a layer 8 of duck or canvas vulcanized to the upper surface of the body, as shown in Fig. 6.

In the elastic body are formed a series of sockets 9, which are formed to engage and interlock with the heads of the studs 2, said sockets having elastic walls which are integral with the said body. The entrances 12 of said sockets are formed in the above-described inextensible material, which surrounds said entrances. The lower ends of the sockets are closed, so that the bottom surface of the cushion is closed or imperforate. The elastic portions of the sockets are contracted at 10, immediately below the said inextensible material, to engage the shoulders 3 on the studs, and are enlarged below the contracted portions 10, as shown in Figs. 3, 4, 5, and 6. The contracted portions 10 are of less diameter than the socket-entrances 12, and the latter are of larger diameter than the projecting portions of the studs. The cushion *b* is attached to the body of the heel by forcing the sockets onto the projecting portions of the studs 2, the said studs expanding the contracted portions 10 of the sockets and entering the enlarged portions of the sockets below the said contracted portions, the shoulders of the studs engaging said contracted portions. When the cushion is thus attached, the inextensible mouths of the sockets prevent a sufficient extension of the elastic contracted portions 10 of the sockets to permit their ready removal from the shoulders 3 of the studs, said inextensible material thus preventing the cushion from being pulled or wrenched off from the studs by any ordinary usage, the result being a firm and intimate connection between the cushion and the heel. Said connection is easily and quickly effected and is extremely secure, because of the fact that the contracted stud-engaging portions of the sockets are controlled by inextensible material affixed to the elastic body

of the cushion and forming the mouths of the sockets. Said inextensible material is in close proximity to the contracted portions 10 of the sockets and limits and to a certain extent controls the extensibility of the said contracted portions. The sockets can be disengaged from the studs by independently tipping or twisting each socket; but it is practically impossible to remove the cushion from the studs *w* while the cushion is substantially parallel with the bottom surface of the heel-body. The connection effected by the confined cushion between the sockets prevents an independent tipping movement of either socket. Hence it is practically impossible to remove the sockets from the studs so long as the cushion remains intact. In case, however, the cushion is cut to sever the connection between the sockets each socket can be readily tipped or wrenched from its stud, so that when the cushion has become useless by wear it may be cut and removed piecemeal from the studs with the socket members, the studs being then ready to engage the sockets of a new cushion.

In Figs. 7 and 8 I show a modification in which the inextensible material is in the form of a wire ring 18, surrounding the entrance to the socket 9.

In Figs. 9 and 10 I show a modified form of stud-head and socket, the head being provided with a plurality of shoulders 3, which are formed to engage a corresponding number of contracted portions 10 in the socket.

In all cases I make the socket of smaller diameter than the stud-head, so that its elastic wall will closely hug the head.

I claim—

1. As an article of manufacture, a cushion composed of an elastic body provided with a plurality of sockets each having an elastic wall integral with said body, a closed bottom and a relatively rigid or inextensible entrance, the said elastic walls having contracted stud-engaging portions, the extensibility of which is reduced by the said inextensible entrances, the diameter of said entrances being greater than that of said contracted portions.

2. As an article of manufacture, a cushion composed of an elastic body provided with a plurality of sockets each having an elastic wall and a closed bottom and relatively rigid or inextensible reinforcing material firmly secured to the elastic body and forming entrances of the sockets, the elastic walls of the sockets having contracted stud-engaging portions, the extensibility of which is limited by said inextensible material.

3. The combination of a supporting-base, a plurality of socket-engaging stud members attached thereto and projecting therefrom, and a cushion composed of an elastic body provided with a plurality of sockets each having an elastic wall which is integral with said body, a closed bottom and a relatively rigid or inextensible entrance, the said elastic walls having contracted stud-engaging portions, the extensibility of which is reduced by the said inextensible entrances, the diameter of said entrances being greater than that of said contracted portions.

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

JOHN H. MELAVIN.

Witnesses:
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C. F. BROWN.