

No. 850,327.

PATENTED APR. 16, 1907.

I. TAUBER.
PNEUMATIC TREAD FOR BOOTS AND SHOES.
APPLICATION FILED NOV. 16, 1906.

Fig. 1.

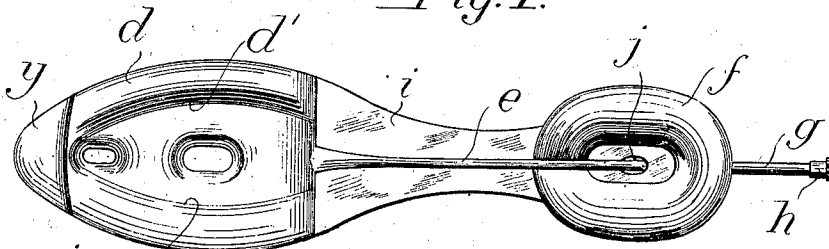


Fig. 2.

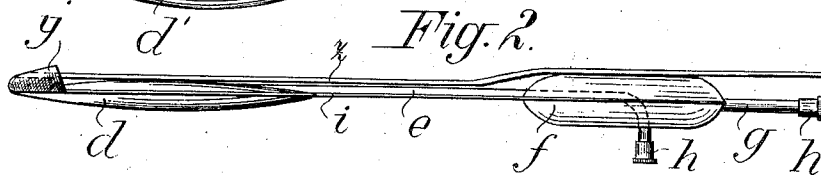


Fig. 3.

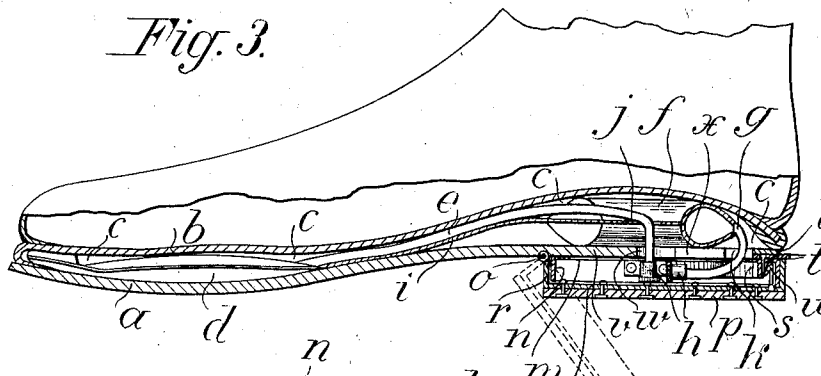


Fig. 4.

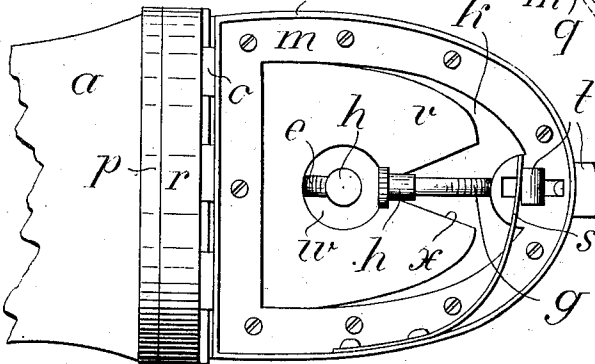
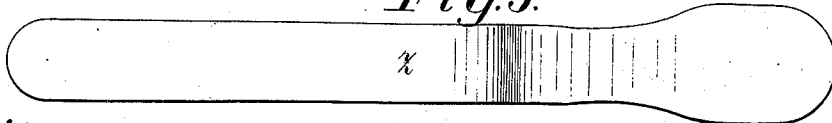


Fig. 5.



Witnesses
Edwin L. Jewell
R. H. Bishop

Inventor
Isidor Tauber
By W. Schoenborn
Attorney

UNITED STATES PATENT OFFICE.

ISIDOR TAUBER, OF VIENNA, AUSTRIA-HUNGARY.

PNEUMATIC TREAD FOR BOOTS AND SHOES.

No. 850,327.

Specification of Letters Patent.

Patented April 16, 1907.

Application filed November 16, 1906. Serial No. 343,707.

To all whom it may concern:

Be it known that I, ISIDOR TAUBER, a subject of the Emperor of Austria-Hungary, residing at Vienna, Austria-Hungary, have invented certain new and useful Improvements in Pneumatic Treads for Boots or Shoes, of which the following is a specification.

This invention relates to a pneumatic tread for boots or shoes consisting of two separate air-cushions, each provided with a flexible tube and valve, so that the cushion, which lies under the sole of the foot, may be less inflated, and therefore less elastic, than the cushion which lies under the heel, as is necessary for satisfactory walking without producing weariness. The air-cushions are preferably connected together by a piece of fabric.

In order to introduce this tread into the shoe or boot, the heel must have a cavity which may accommodate the valves and tubes of the air-cushions, so that these valves and tubes may not be in the way of the wearer. This cavity, which is in communication with the interior of the shoe or with a cavity between the sole and the inner sole adapted to receive the pneumatic tread and is covered by a flexible extension of the sole, must be accessible. For this purpose the heel is made in two parts, one of which is connected with the sole and contains the cavity for reception of the tubes and valve, while the other is movably connected with the first and can be opened.

The accompanying drawings show one form of the invention.

Figure 1 is a plan, and Fig. 2 a side elevation, of the pneumatic tread. Fig. 3 is a sectional elevation of a shoe containing the tread, the open position of the movable part of the heel being shown in dotted lines. Fig. 4 is an under side plan of the heel drawn to an enlarged scale, the movable part of the heel being fully open. Fig. 5 is a plan of the implement used in introducing the tread into the cavity of the sole, its application being illustrated in Fig. 2.

The tread may either be laid upon the inner sole *b* or, as shown, be inserted into a cavity *c*, provided for the purpose between the sole *a* and the inner sole *b*. The tread consists of a sole-cushion *d*, having a flexible tube *e*, and a heel-cushion *f*, having a flexible tube *g*. Each of these tubes has an inflating-valve *h* of known kind. The two cushions are preferably connected by a piece of

fabric *i*, which lies under the instep of the foot. The flexible tube *e* is connected with this fabric *i* and extends through the opening *j* of the ring-shaped heel-cushion *f* in order that its end may be accommodated, together with the tube *g* of the heel-cushion, in the cavity of the heel.

The heel is made of two parts—an upper part *l*, which is rigidly connected with the sole, has an opening *k*, and is provided with a frame *m*, screwed to it, and having a downwardly-extending rim *n*, and a lower part *p*, which turns on a hinge *o*, fixed to the upper part, and consists of one or more pieces of leather and of a similarly-shaped plate *q*, provided with an upwardly-extending rim *r*. These parts *l* and *p* are normally held together by a catch *t*, which slides in one of them under pressure of spring *s* and engages a hook *u*, fixed in the other part. By pressing this catch from outside the heel the two parts can be disengaged and the lower part opened to make the opening *k* accessible. In order that the tread may not shift and may not protrude into the cavity of the heel and the valves may not inconvenience the heel of the foot in walking, a part *v* of the sole extends over the heel-cavity and has a perforation *w* and a notch *x* for conveniently introducing the ends of the flexible tubes. This part is curved at the sides, so that the opening *k* may be free in introducing or removing the tread.

In order that the sole-cushion *d* may not be too strongly inflated—that is to say, may have a comparatively flat form—it is subdivided by quilted seams, such as *d'*, into several parts in communication with each other.

At the toe end of the tread is a pocket *y*, of rubber, leather, linen, or the like. While the tread is still deflated the end of a flat blade *z*, Fig. 5, is inserted into this pocket, and with the aid of this blade the tread is pushed into the cavity *c* through the opening *k* when the part *p* of the heel has been opened. After the blade has been withdrawn the tread is inflated, the valves *h* closed, and the ends of the flexible tubes *g* are packed away in the cavity of the heel, which is then closed. The joint between the movable and fixed parts of the heel is made water-tight by a coating of some easily-removed material, such as paraffin.

I claim—

1. A boot or shoe having a pneumatic tread comprising separated sole and insole

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thereby forming between them a recess, a pneumatic cushion inserted between the sole and insole in the forward part of the shoe, a second pneumatic cushion inserted between the insole and the heel-seat, fluid-supply connections for said cushions, a hollow hinged heel member having a recess therein adapted to receive said supply connections and means for securing said heel member in place on the boot.

2. A boot or shoe with a pneumatic tread, comprising separated sole and insole thereby forming between them a recess arranged to receive a separate pneumatic cushion in the forward and the heel section of the shoe, said recess at the heel-section having an aperture extending outward, a separable heel member arranged to cover said aperture normally and to be removed so that said cushions may be inserted through said aperture.

3. A boot or shoe with a pneumatic tread,

comprising separated sole and insole thereby forming between them a recess arranged to receive a separate pneumatic cushion in the forward and the heel section of the shoe, said recess at the heel-section having an aperture extending outward, a heel consisting of an upper section connected with the sole and having a recess therein and an opening connected with the recess formed between the heel-seat of the sole and the insole, and a hollow lower heel-section arranged to be detachably connected with the upper section and having a space therein to receive pneumatic connections for supplying air to the cushions.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ISIDOR TAUBER.

Witnesses:

JOSEF RUBARSCHZ,
ALVESTO S. HOGUE.