(No Model.)

2 Sheets—Sheet 1.

G. E. SWAN.

SPRING HEEL FOR BOOTS OR SHOES.

No. 301,534. Patented July 8, 1884.

Fig. 1.

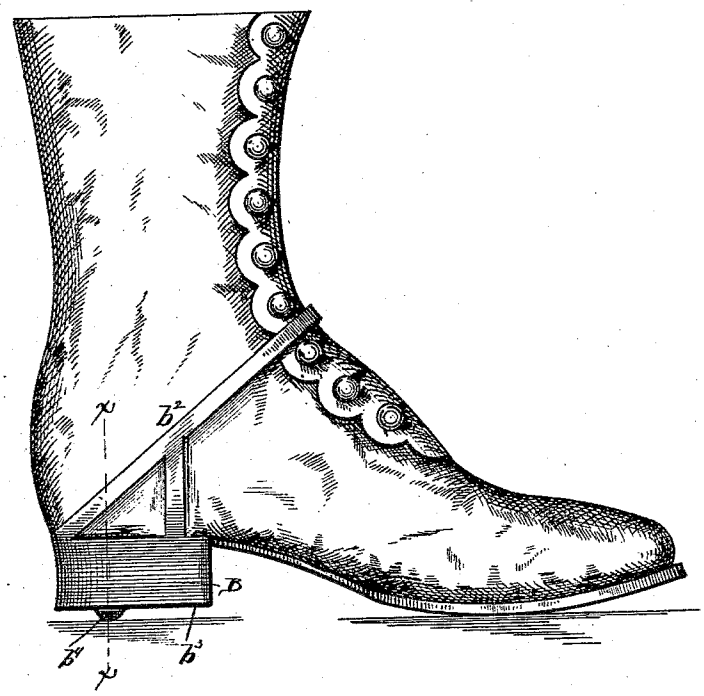


Fig. 2.

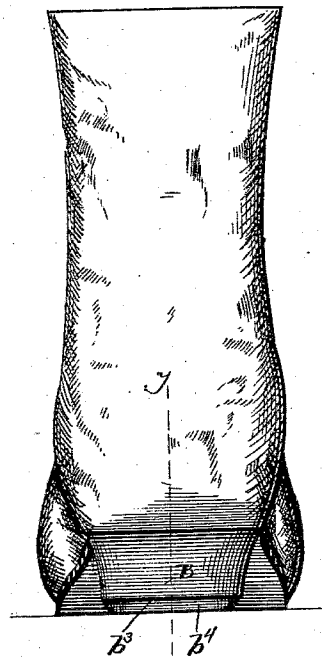


Fig. 3.

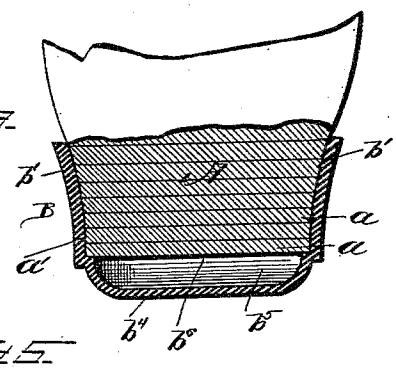
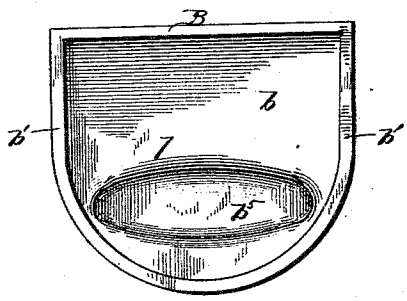


Fig. 5.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

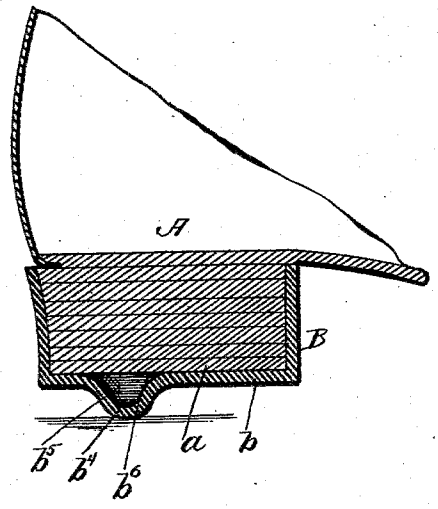


Fig. 6.

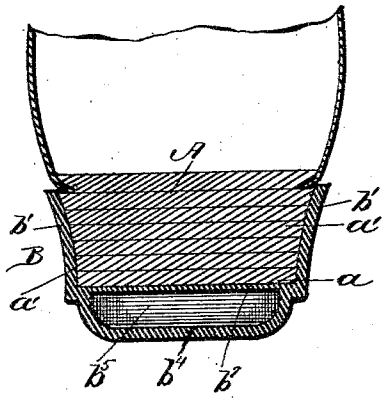


Fig. 7.

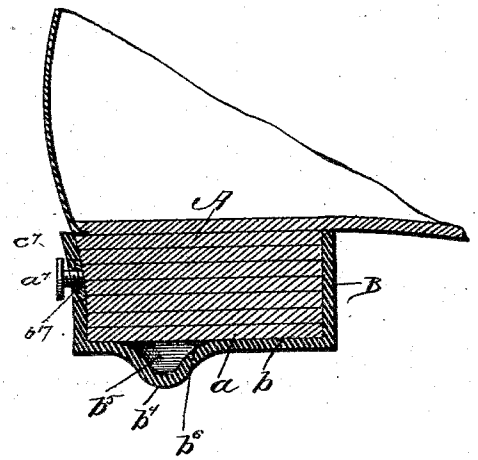
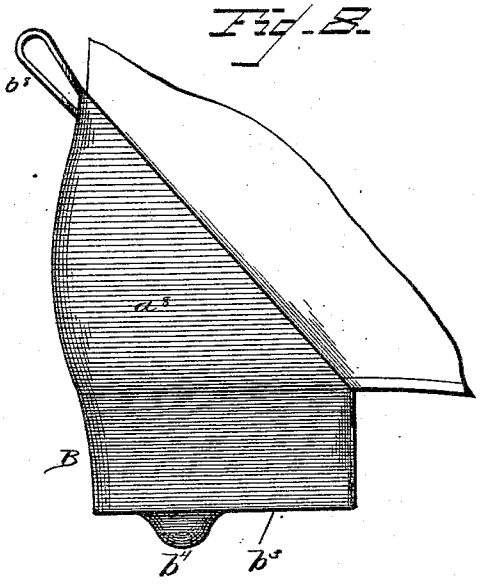


Fig. 8.



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UNITED STATES PATENT OFFICE.

GEORGE E. SWAN, OF BEAVER DAM, WISCONSIN.

SPRING-HEEL FOR BOOTS OR SHOES.

SPECIFICATION forming part of Letters Patent No. 301,534, dated July 8, 1884.

Application filed February 21, 1884. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. SWAN, a citizen of the United States, residing at Beaver Dam, in the county of Dodge and State of Wisconsin, have invented certain new and useful Improvements in Spring-Heels for 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 that class of spring or elastic devices which are secured or attached to the heels of boots and shoes, to impart ease and elasticity to the step of the wearer.

The object of my invention is to provide a device of this class which will possess superior advantages in point of simplicity, durability, and general efficiency, and which can be readily connected with or attached to the heel, or disconnected from the same with facility and convenience.

To this end my invention consists, substantially, in providing a casing or its equivalent, formed of rubber or other suitable elastic material, and adapted to be applied to the heel of a boot or shoe, said casing being provided with a projection or protuberance on its under contact-surface and with a corresponding cavity in its inner surface. By this arrangement, in walking, the said projection will come in contact with the pavement before the full surface of the heel strikes, and will be depressed up within the said cavity, when as soon as the foot is again lifted its elasticity will immediately return it to its normal position.

In the drawings, Figure 1 is a side elevation of a shoe provided with my invention. Fig. 2 is a rear elevation of the same. Fig. 3 is a detail vertical transverse sectional view taken through the same on the line x x, Fig. 1. Fig. 4 is a corresponding detail sectional view taken vertically and longitudinally on the line y y, Fig. 2. Fig. 5 is a top view of my improved spring attachment detached and shown in detail. Fig. 6 is a vertical transverse sectional view in detail, illustrating a modification. Fig. 7 is a sectional view illustrating a modification. Fig. 8 is a side elevation illustrating another modification.

Corresponding parts in the several figures are denoted by the same letters of reference.

Referring to the drawings, A designates a boot or shoe heel, which may be of any ordinary or suitable shape and construction, and is, when specially adapted for use in connection with my invention, preferably of a less height than is otherwise customary.

B designates the spring casing or attachment, which comprises a bottom portion, b, adapted to come under the contact-surface a of the heel. This casing is formed of rubber or other suitable elastic material by casting, molding, or in any other desired manner. It conforms to the size and contour of the heel, and is provided with side walls, b', which clasp the side surfaces, a', of the heel, and may by their own elasticity retain the casing in position upon the heel and against accidental displacement. Suitable elastic strips, b^2, may, however, be provided upon the casing, to extend over the body of the shoe, and serve as an additional safeguard against accidental displacement of the casing. From the contact-surface b^3 of the portion b is provided a projection or protuberance, b^4, and a corresponding cavity, b^5, is provided in the inner surface, b^6, of this portion b. This protuberance and corresponding cavity may be of any suitable shape, and may be disposed at any suitable point in relation to the contact-surface. The said protuberance is however preferably of ovolo-convex form, and is disposed transversely at about the center or two-thirds rearwardly of the said contact-surface. The cavity in the inner surface is therefore convex, this concavo-convex formation being illustrated in the accompanying drawings, and being the form I prefer to use in carrying out my invention.

In the modification shown in Fig. 6 the cavity b^5 is covered by a wall or layer, b^7, by which construction all liability of the concavity receiving dust, dirt, or other obstructions is obviated.

The operation and advantages of my invention will be readily understood and appreciated. My improved spring attachment is adapted to be readily adjusted to its position upon the heel, and will be found specially useful for waiters and other persons who are upon their feet much of the time. It can of course be worn indoors and out, and will impart to the

step of the wearer an easy, elastic, and noiseless movement, besides obviating any shock or jar experienced when walking upon stone pavements. In walking, the elastic protuberance will come in contact with the ground before the full contact-surface of the heel, and will be depressed up within the concavity, from which it will spring to its normal position as soon as the foot is lifted.

I do not limit myself to the exact construction and arrangement herein shown and specified, but reserve the right of all modifications which properly fall within the spirit and scope of my invention. For instance, the side walls of the casing may be dispensed with, and the bottom portion thereof may be connected to the heel by any suitable means. My invention is also well adapted to be applied to the soles of boots and shoes; or it may be applied in the construction of the ordinary rubber overshoes now commonly in use.

In the modification shown in Fig. 7 the casing is secured to the heel by means of a small set-screw, a^7, at the back, which works through a screw-threaded perforation, b^7, in a metallic plate, c^7, secured at the inside of the casing.

In another modification, as shown in Fig. 8, the casing is extended, as shown at a^8, above the heel, and is provided with a loop, b^8, by which it can be pulled on, this form of casing being adapted to retain its position by its own elasticity.

It is also evident that in some cases the casing could be secured permanently to the heel by cement or other suitable means.

I claim as my invention—

1. As an improved article of manufacture, a spring or cushion attachment adapted to be secured, substantially as described, over the bottom surface of the heel of a boot or shoe, and comprising a flat contact-surface, from which projects an elastic ridge, this ridge being depressed in walking before the flat contact-surface of the attachment comes in contact with the ground, substantially as set forth.

2. The combination, with the solid heel of a boot or shoe, of an elastic attachment secured to the same, substantially as described, and covering the bottom of the heel, and provided with the transverse hollow ridge adapted to be depressed in walking, substantially as set forth.

3. The herein-described spring-heel attachment for boots and shoes, comprising the sides and an elastic bottom portion formed with an exterior ovolo-convex ridge or protuberance extending transversely and with a corresponding interior concavity, substantially as set forth.

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

GEORGE E. SWAN.

Witnesses:
R. V. BOGERT,
FRANK J. DOOLITTLE.