A. L. RUNYAN.

RESILIENT HEEL FOR FOOTWEAR.

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1,299,037. Patented Apr. 1, 1919.

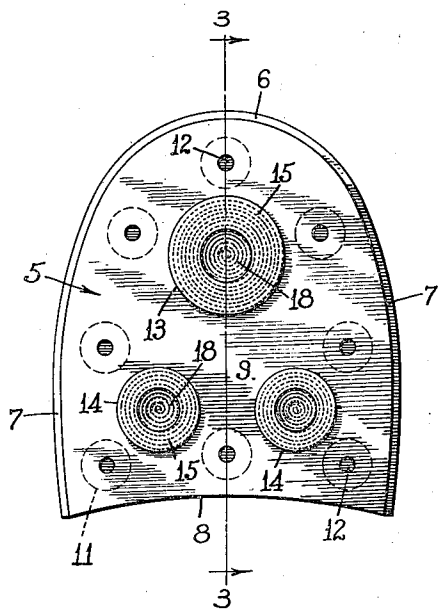


Fig. 1.

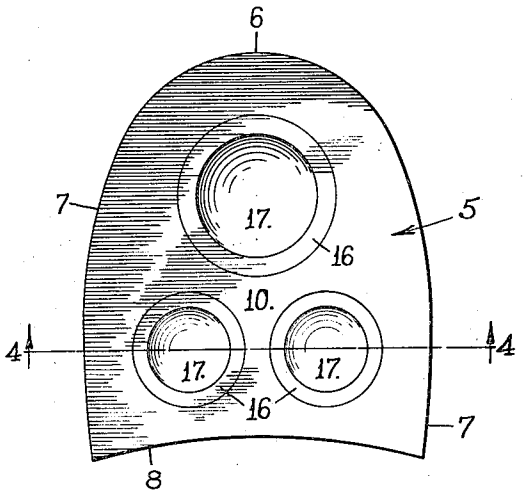


Fig. 2.

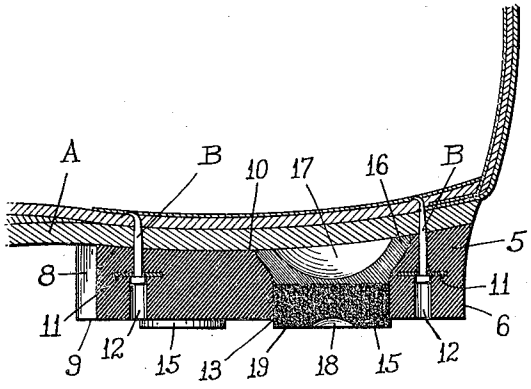


Fig. 3.

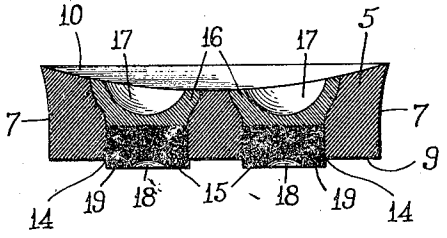


Fig. 4.

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UNITED STATES PATENT OFFICE.

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RESILIENT HEEL FOR FOOTWEAR.

1,299,037. Specification of Letters Patent. Patented Apr. 1, 1919.

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To all whom it may concern:

Be it known that I, ARTHUR L. RUNYAN, a citizen of the United States, residing at Omaha, in the county of Douglas and State of Nebraska, have invented certain new and useful Improvements in Resilient Heels for Footwear, of which the following is a specification.

My invention relates to resilient heels for use on footwear. It is the object of my invention to provide a heel of resilient material, attachable to any ordinary shoe or boot, and provided with separate, air-cushioned, cupped, anti-slipping and wear-resisting calks extending through the body of the heel and provided with enlarged inner head-portions preventing displacement thereof from the heel-body when the latter is in place upon the shoe.

A structure embodying my invention is illustrated in the accompanying drawings, in which Figure 1 is a bottom view of the heel, Fig. 2 is a plan view thereof, Fig. 3 is a longitudinal section on the line 3—3 of Fig. 1, including a portion of the shoe to which the heel is attached, and Fig. 4 is a transverse section on the line 4—4 of Fig. 2.

The heel shown in the drawings is of the form commonly used on men's shoes, and comprises a body 5 preferably of resilient material such as rubber or rubber composition, having convex curvilinear rear and lateral edges 6 and 7, a concave curvilinear front edge 8, a substantially flat bottom surface 9, and a slightly concave upper surface 10, the latter conforming to the usual shape of the heel-portion A of a shoe-sole. A plurality of small metal washers 11 are embedded in the body 5 approximately midway between the bottom and top surfaces 9 and 10, lying parallel to said bottom surface, and being near and uniformly spaced from the edges 6, 7 and 8 of the body. From the bottom surface 9 holes 12 extend vertically to the washers, the same receiving the usual nails B for securing the heel to the shoe, the nails being driven to a depth such that heads thereof will engage the washers 11, as shown in Fig. 3. In the central portion of the heel-body there are a plurality of calk-receiving openings extending through the same from the lower surface 9 to the upper surface 10 thereof. In the structure shown there is a single large opening 13 lying in the plane of the line 3—3 and positioned near the rear edge 6 of the body, and two smaller openings 14 intersected axially by the plane 4—4 and lying near the front edge 8 equidistant laterally from the central longitudinal plane 3—3. The lower portions of said openings 13 and 14 are cylindrical and form guiding portions for the calks, and the upper portions thereof are enlarged or belled out to an approximately sphero-segmental form. The calks are formed separately from the body 5 and inserted therein prior to the use thereof. Each calk has a cylindrical lower body or tread-portion 15 and an enlarged or belled head-portion 16, adapting the same to fit snugly within the respective portions of the openings through the body, and the upper edges of the head-portions 16 are shaped to conform with the surface 10 of the heel-body. The upper sides of the head-portions 16 are hollowed out to form air-pockets 17, and the lower ends of the portions 15 extend normally slightly below the lower surface 9, the centers of said lower ends of the portions 15 being preferably slightly hollowed or cupped as shown at 18 in Figs. 3 and 4. The calks are formed of resilient material such as rubber, the tread-portions 15 preferably being reinforced by strips 19 of fabric or the like disposed edgewise to the bottom surface of the calk in the form of a spiral roll, as indicated in Fig. 1. The fabric reinforcing terminates below the bottoms of the air-pockets 17, so that the cup or bell at the upper end of each calk consists solely of the resilient material, while the lower cylindrical portion is relatively inelastic.

The heel is preferably secured to the shoe by cement applied to the upper surface 10, in addition to being held by the nails B. When the heel is in place upon the shoe as shown in Fig. 3, the air-pockets 17 are closed so that air is confined therein. It will be seen that the projecting cupped lower ends of the calks form anti-slipping devices, tending to make the heel cling to the surface of a floor pavement or the like; that the fabric reinforcing makes the calks very durable and wear-resisting, and tends to prolong the life of the heel as a whole; that the air confined in the pockets 17 forms a pneumatic cushion which is in effect interposed between the calk and the shoe; and that the enlarged or belled head-portions of the calks effectively prevent disconnection of the calks from the heel when the same is in place upon the shoe, although the calks are separate

from and not otherwise attached to the body of the heel.

Now, having described my invention, what I claim and desire to secure by Letters Patent is:

1. A resilient heel having an opening enlarged at the upper portion, and a calk fitted in the opening and having an enlarged upper resilient portion provided with pneumatic cushion forming means, the lower portion of the calks being relatively inelastic and guided in the lower portion of the opening.

2. A resilient heel having an opening enlarged at the upper portion and provided at the lower portion with substantially vertical walls forming a guiding portion and a calk fitted in the opening and having an enlarged upper resilient portion provided with pneumatic cushion forming means, the lower portion of the calk being relatively inelastic and having vertical side faces guided in the lower portion of the opening.

3. A resilient heel comprising a body portion having an opening extending through it and engaged at the upper portion and having a lower guiding portion and a calk consisting of a belled resilient head portion fitting the enlarged upper portion of the opening and provided in its upper face with a concavity adapted to form a pneumatic cushion, the lower portion of the calk being relatively inelastic and guided in the lower portion of the opening.

4. A resilient heel comprising a body provided with a vertical opening consisting of a cylindrical lower portion and a sphero segmental upper portion and a calk having a substantially cylindrical lower portion and a belled resilient head portion fitting the enlarged portion of the opening and provided in its upper face with a concavity adapted to form a pneumatic cushion, the lower portion of the calk being relatively inelastic and guided in the lower portion of the opening.

ARTHUR L. RUNYAN.