

G. E. SWAN.
 HEEL SPRING.-
 APPLICATION FILED DEC. 23, 1909.

969,001.

Patented Aug. 30, 1910.

FIG. 1

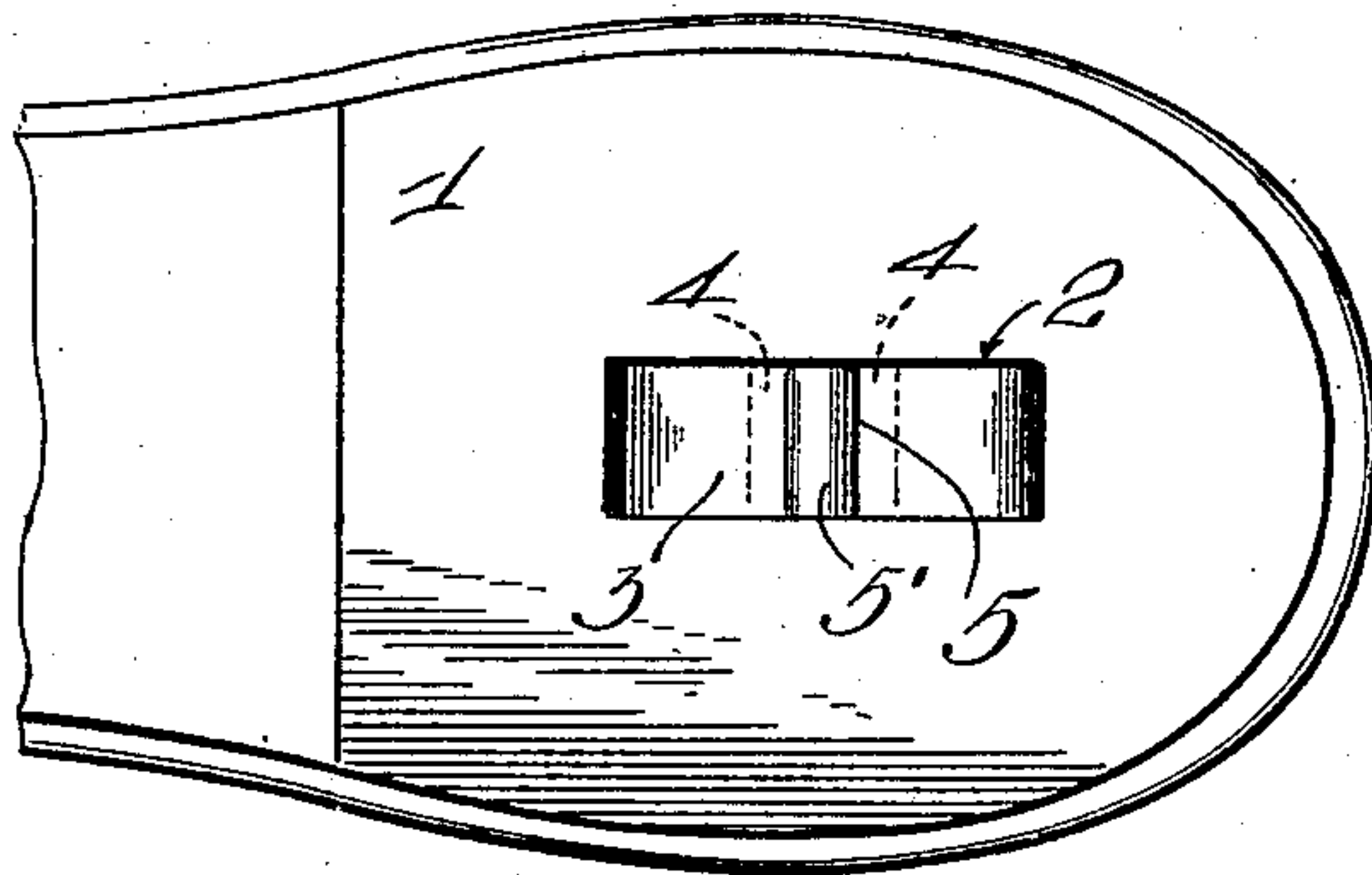


FIG. 2

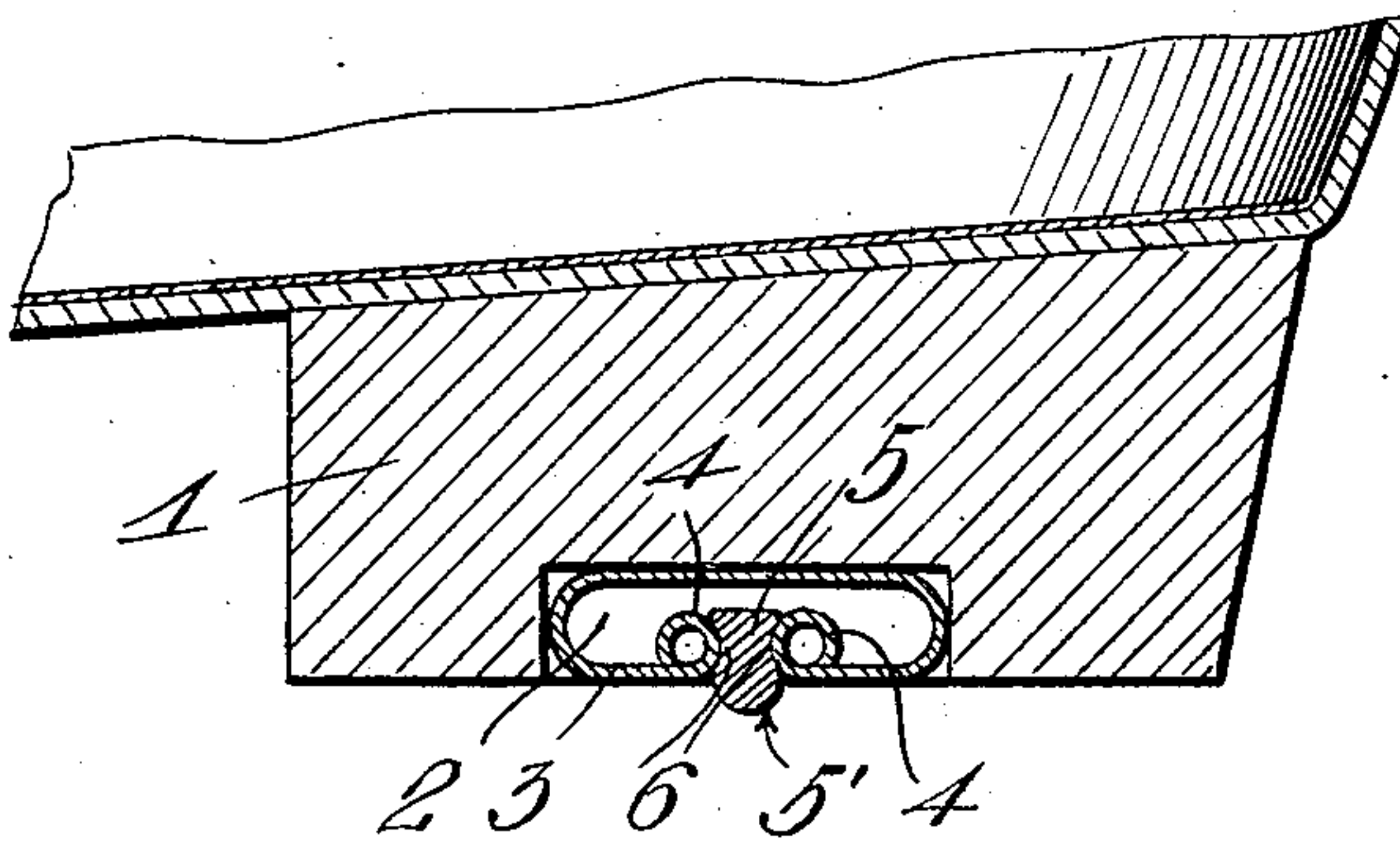
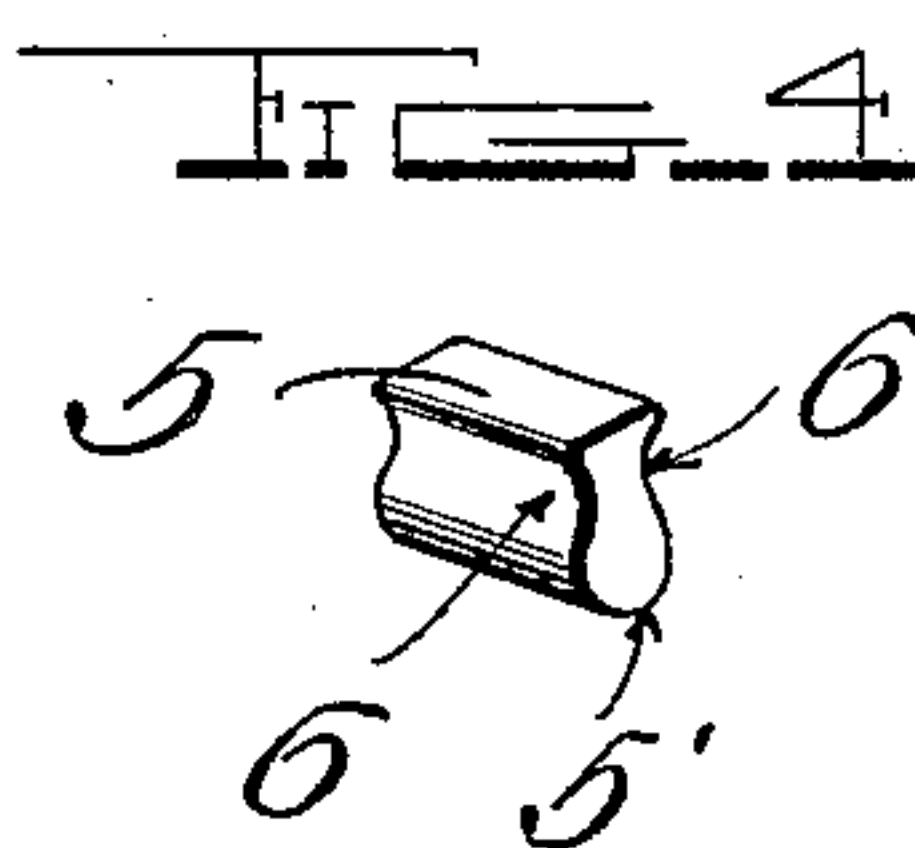
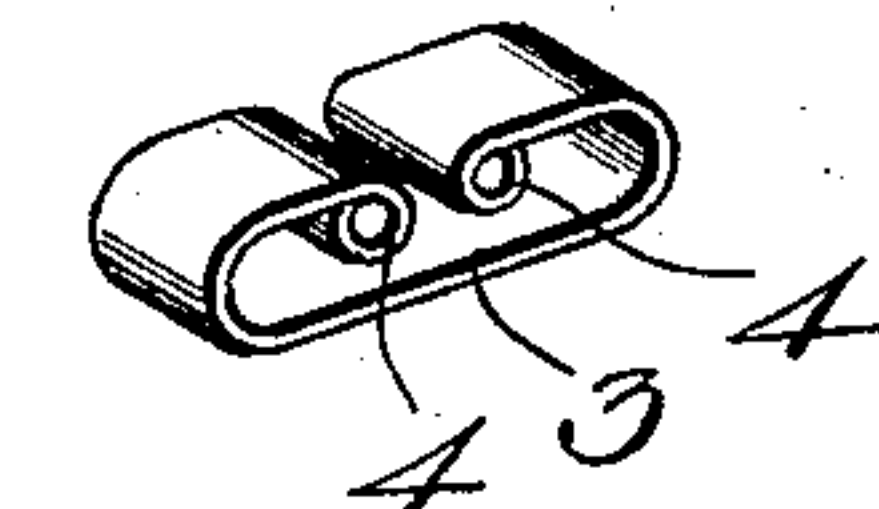
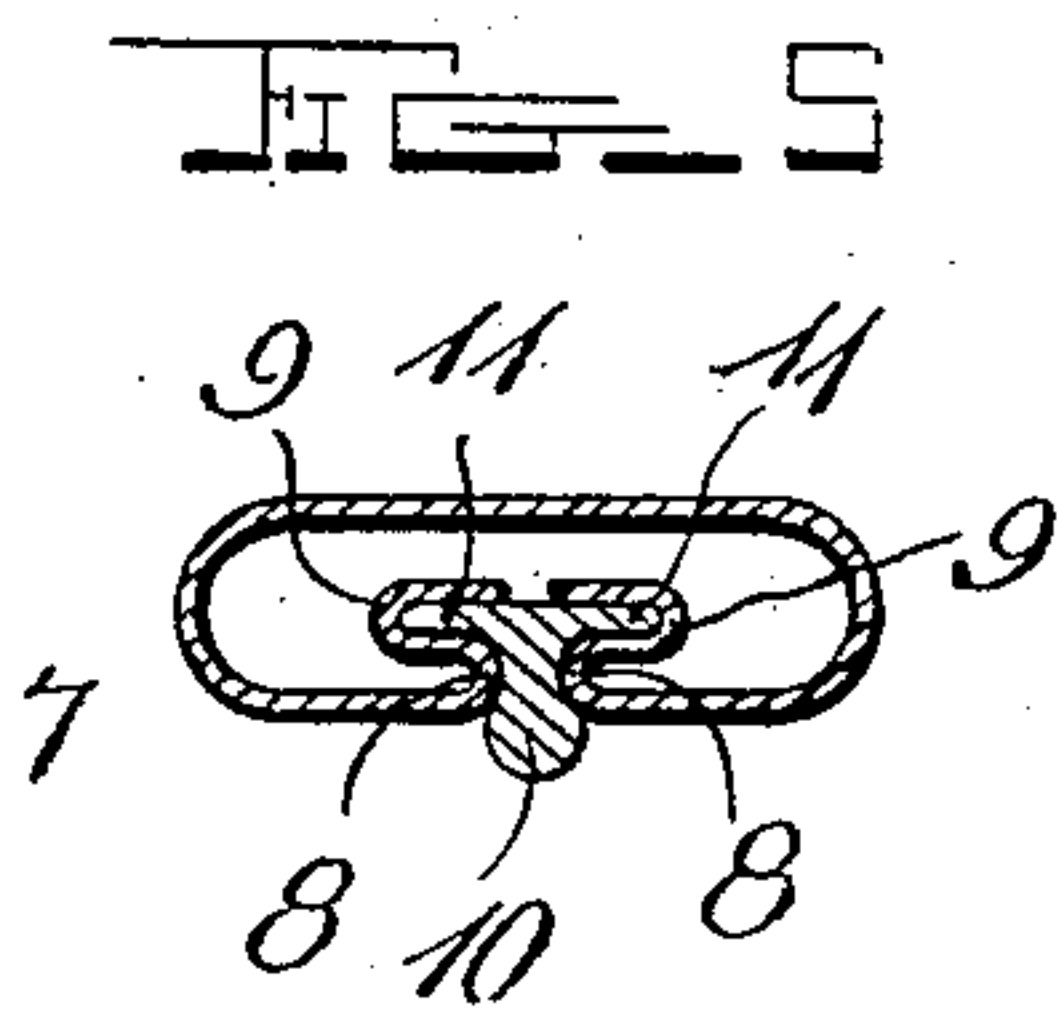


FIG. 3



Witnesses

E. Greenwell
G. H. Griesbauer

Inventor

G. E. Swan

by *A. B. Wilson & Co.*
 Attorneys

UNITED STATES PATENT OFFICE.

GEORGE E. SWAN, OF BEAVER DAM, WISCONSIN.

HEEL-SPRING.

969,001.

Specification of Letters Patent.

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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 Heel-Springs; and I do 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 improvements in heel springs.

One object of the invention is to provide a spring adapted to be set into the heel of a shoe to form a cushion which will absorb all jars and shocks and form a yielding or elastic tread for the heel.

Another object is to provide a spring or cushion of this character having a detachable tread or ground engaging element which may be readily removed when worn and replaced by another element.

With the foregoing and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a plan view of a heel and portion of a shoe sole showing my improved spring applied thereto; Fig. 2 is a central vertical longitudinal section of the same; Fig. 3 is an inverted perspective view of the spring removed from the heel; Fig. 4 is a similar view of the ground engaging lug of the spring. Fig. 5 is a vertical longitudinal section of a modified form of the spring.

Referring more particularly to the drawings, 1 denotes a shoe heel in the center of which is formed an oblong recess 2, in which is arranged my improved heel spring or cushion.

My improved heel spring or cushion comprises a body portion formed of an elliptically shaped spring 3, the ends of which are bent into the form of coils or loops 4, as shown. The spring 3 is formed from a strip of spring steel of suitable width and thickness, and the coils or loops 4 on the ends of the spring are spaced a suitable distance apart to receive a ground engaging element hereinafter described.

The ground engaging element of the spring consists of a block or lug 5 which is

preferably formed of steel and has a rounded outer edge 5'. In the opposite sides of the block or lug are formed longitudinal grooves or recesses 6 which are engaged by the rounded inner portions of the coils or loops 4 on the ends of the spring 3, whereby said lug is secured to the spring and is thereby held in position to yieldingly support the weight of the person wearing the shoe.

The spring 3 is secured in the recess 2 of the heel in any suitable manner and it will be noted that when the spring is in position the lower side of the same is normally flush with the bottom of the heel, and that only the rounded lower edge or tread surface of the lug projects beyond the bottom of the heel. By this arrangement, the lug is the only part of the device which will become worn by use and when worn out the lug may be readily removed and another arranged in place thereof.

In Fig. 5 of the drawings is shown a slightly modified form of the device, in which the spring 7 has its ends bent to form lug engaging loops 8 and lug retaining recesses 9. The ground engaging elements or lugs 10 of this form of the device are provided on their inner ends with laterally projecting flanges 11, which are adapted to be engaged with the recesses 9 formed by the ends of the spring. When pressure from the weight of the person walking is applied to the lug, the spring will yield and thus provide a cushion tread.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention as defined in the appended claims.

Having thus described my invention, what I claim is:—

1. A cushioning device of the character described comprising an elliptically shaped spring adapted to be secured in the heel of a shoe, and a ground engaging lug secured between the ends of said spring to yieldingly support the weight of a person, thus providing a cushion tread for the heel.

2. In a shoe heel cushioning device of the character described, a heel having formed

therein a recess, an elliptically shaped spring secured in said recess, said spring having in its outer ends holding coils or loops, and a ground engaging lug arranged between the ends of the spring and held in position by said loops to yieldingly support the weight of the person wearing the shoe.

3. In a shoe heel cushioning device of the character described, a heel having formed therein a recess, an elliptically shaped spring secured in said recess, said spring having lug holding coils and recesses formed in its outer end, a ground engaging lug arranged between the ends of the spring, said lug having a rounded tread surface, and longitudinal grooves formed in its opposite sides, said grooves being adapted to be engaged by the coils in the ends of the spring, whereby the lug is detachably secured in position to yieldingly support the weight of the person wearing the shoe.

4. In a shoe heel cushioning device of the character described, a heel having formed therein a recess, an elliptically shaped spring secured in said recess, said spring having lug holding coils and recesses formed in its outer end, a ground engaging lug arranged between the ends of the spring, said lug having a rounded tread surface, longitudinal grooves and laterally projecting flanges on its opposite sides, said grooves and flanges being adapted to engage the loops and recesses formed by the ends of the spring, whereby the lug is detachably secured in operative position.

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

GEORGE E. SWAN.

Witnesses:

CHAS. C. MILLER,
M. MILLER.