

1,218,391.

Patented Mar. 6, 1917.

Fig. 1.

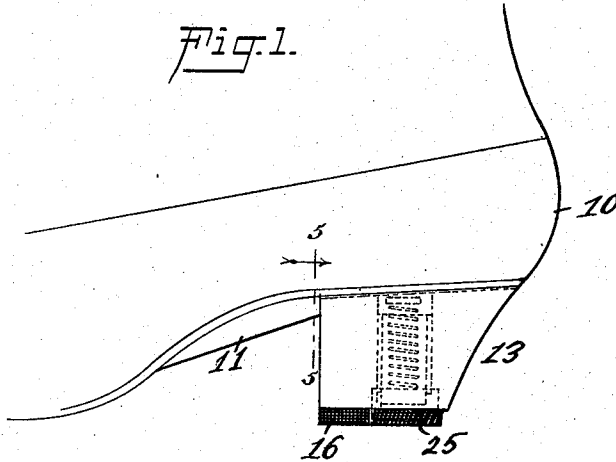


Fig. 2.

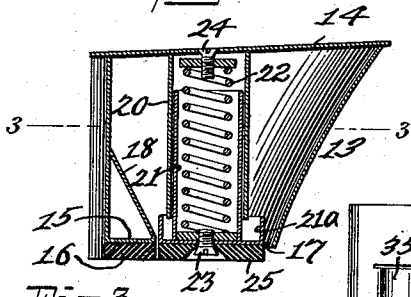


Fig. 3.

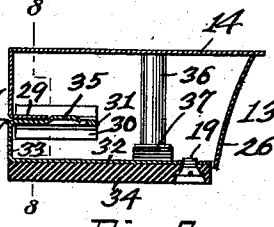


Fig. 4.

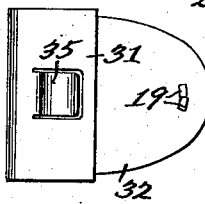
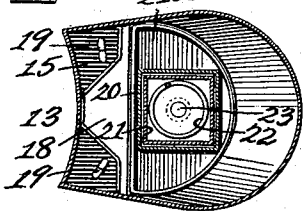


Fig. 6.

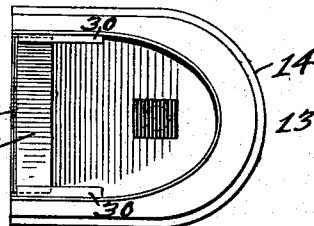


Fig. 7.

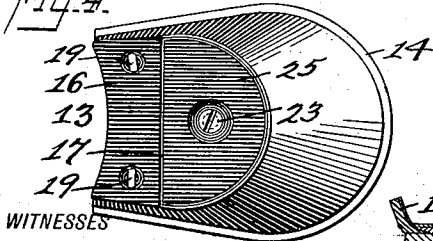


Fig. 8.

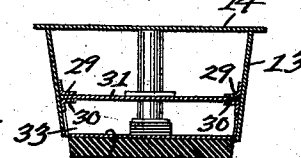
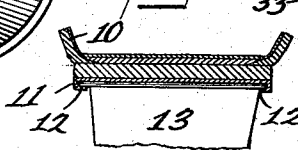


Fig. 9.



WITNESSES

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SPRING-HEEL.

1,218,391.

Specification of Letters Patent.

Patented Mar. 6, 1917.

Application filed June 7, 1916. Serial No. 102,185.

To all whom it may concern:

Be it known that I, ARTHUR S. GAY, a citizen of the United States, and a resident of Everett, in the county of Snohomish and State of Washington, have invented certain new and useful Improvements in Spring-Heels, of which the following is a specification.

My invention relates to spring heels for shoes, and one of the main objects thereof is to provide resilient means for taking the load at the rear of the heel to prevent strain on the spine of a wearer while at the same time affording a firm support when the foot is flat on the ground.

A further object is to provide such resilient means in a readily detachable form whereby a wearer may, whenever desired, remove the same from the shoe for substituting new taps or lifts for old worn ones, or for other reasons.

A further object is to provide resilient means which not only serve as cushions but which also serve as the holding means for the tap or lift portion, thereby simplifying the construction and reducing the cost of manufacture.

My invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which like characters refer to like parts in each of the views, and in which:—

Figure 1 is a side view of the rear portion of a shoe provided with one embodiment of my invention;

Fig. 2 is an enlarged vertical section taken through the heel thereof;

Fig. 3 is a section taken on the line 3—3 of Fig. 2;

Fig. 4 is a bottom plan view of the heel;

Fig. 5 is a section taken on the line 5—5 of Fig. 1;

Fig. 6 is a view similar to Fig. 2 but showing a modification thereof;

Fig. 7 is a bottom plan view thereof with the tap or lift removed;

Fig. 8 is a section taken on the line 8—8 of Fig. 6; and

Fig. 9 is a top plan view of the tap carrier detached from the shoe.

Referring to the drawings, 10 represents a shoe having no permanent heel thereon, a heel holder plate 11 being held to the bottom of the shoe in any manner and provided with an inwardly opening channel 12 at its edge, Fig. 5, for the reception of a heel shell

13, of aluminum or other suitable material, having a top plate 14 the edge of which is adapted to be inserted into the channel 12 to hold the heel in place, a close fit of these parts probably being sufficient but I may supplement this by means of screws or equivalents.

The shell 13 is provided with a relatively short bottom plate 15 to which is secured a tap or lift 16 of the same size and shape in plan, thereby providing an open space 17 to the rear of said plate and tap, a brace 18 being shown as a strengthener, and it will be noted that the rear of the shell does not extend below the said plate 15, and it will be further noted that the tap 16 is held in place by means of bifurcated or cotter pins 19.

Secured to the under side of the top plate 14 is a dependent tube 20 telescoped over a similar tube 21 secured to a cup-shaped member 21^a normally held in the horizontal plane of the short plate 15 and within the space 17 by means of a coil spring 22 detachably held thereto and to the top plate 14 as by screws 23 and 24, said spring being of such a length as to normally resist both directions of movement of the member 21, and a tap 25 is provided for the latter of the same thickness as the tap 16. While I have shown the taps 16 and 25 in the same horizontal plane, there is no reason why I could not, if desired, have the tap 25 in a lower plane in order to take the major portion of the load in a yielding manner, this being arbitrary as will be understood.

In the modification shown in Figs. 6 to 9, inclusive, the shell 26 has the flanged top plate 14 but the forward side of said shell is cut away as shown at 27 to provide an open space 28, the material of this forward side being bent rearwardly into a horizontal plane at 29 to form, with angle brackets 30, guideways for a member 31 of a tap carrier plate 32 joined thereto by means of a vertical member 33, this element being of spring metal and having a tap 34 detachably secured thereto in any desired manner, and the member 31 is provided with a spring tongue 35 adapted to engage with the inner edge of the member 29 to prevent accidental withdrawal of said member 31.

In this form I provide a post 36 provided, at its lower end, with a resilient cushion 37 serving to limit the upward movement of the rear free end of the tap carrier 32 in

a yielding manner, but the element of which the tap carrier forms a part is made of sufficient strength to yield in some degree when a part of the load is brought to bear
5 thereon and in full degree when the full load is carried thereby.

From the foregoing it will be seen that I provide a resilient heel not relying on rubber, as with the rubber heels now in use,
10 both forms of the heel having the common features of detachable connection with the shoe, of yielding at the rear of the heel, and of the ability to substitute new taps for worn taps, and one form has the further
15 advantage of being enabled to have the entire tap carrier removed from the heel proper, whereas the other form permits such removal of only the rear heel tap carrier.

While I have shown certain details of construction it will be understood that I do not confine myself thereto but may make changes thereover, providing that such changes come within the scope of the invention and of the appended claims.

25 Having fully described my invention,

what I claim as new, and desire to secure by Letters Patent, is:—

1. A shoe heel, comprising a rigid shell of heel shape, a lift carrier connected therewith, means for preventing upward movement of the forward portion of said carrier within said shell, and resilient means for yieldingly resisting upward movement of the rearward portion of said carrier and acting to prevent the lower rear edge of
30 said shell from reaching the ground in walking.

2. A shoe heel, comprising a shell of heel shape and composed of rigid material, and cut away at the lower front portion thereof,
40 horizontal guides in said shell above said cut away portion, a lift carrier composed of a horizontal member held in said guides, a front vertical member, and a horizontal
45 lower member conforming to the shape of said shell, said carrier being composed of spring material, and means for limiting upward movement of the lift carrier within said shell.

ARTHUR STAFFORD GAY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."