RESILIENT HEEL SUPPORT

Figures 1 to 5 illustrate different views of the resilient heel support.

Inventor: Marcel Nadaud

By Caesar and Rivise

Attorneys.
This invention relates to a resilient heel support and has as its objective the provision of a new and improved device of this general class.

It is known that in the process of walking the placing of the heel of a shoe upon the ground causes an impact or shock which when repeated many times has a tiring and discomforting tendency. Also, it is desirable that the heel be provided with a soft cushioning device in order to promote both comfort and better foot health.

While it is known to provide cushioning devices upon or for use with the heel of a shoe, the prior devices heretofore used have tended to become worn through constant depression and release of the compressible device and furthermore have had a tendency to create a resistance directly proportional to the downwardly applied force of the heel of a foot, or in other words, to provide a resistance in an increasing amount depending upon the weight applied to it.

It is therefore an object of the present invention to provide an improved resilient heel support which will exert a constant resilient force over a wide range and which also will not tend to become worn or to grow in resistance with continued use.

Yet another object of the present invention is to provide a resilient heel device which can be easily applied so as to be contacted by the heel of a wearer, the device being capable of either being built into the shoe or being capable of being applied at a later time.

Still another object of the present invention is to provide a resilient heel support which is relatively simple in construction and economical in manufacture and use.

Yet another object of the present invention is to provide a resilient heel support which will yield under the pressure of the heel, thus absorbing the shocks of the heel, giving more suppleness to the walk and thus increasing comfort.

Still another object of the present invention is to provide a resilient heel support which is of relatively simple manufacture, which can be easily and safely fastened to a shoe and which can be applied to a shoe without any modification of the same.

The foregoing as well as other objects of the invention are achieved by providing a resilient heel support which includes a rigid or semi-rigid plate associated with and supported by a spring blade that is adapted to lie beneath the rigid or semi-rigid plate. The spring blade has a longitudinal plane parallel to and in contact with the heel of a shoe and is fastened upon the inner surface of the heel of the shoe. The spring blade further includes an upwardly and inwardly inclined part having a rear end which rests upon the undersurface of the rigid plate and may move freely with respect to the plate when the spring blade is elongated under pressure of the foot of a wearer.

The rigid plate is secured to the spring blade at the end thereof in a cantilever type arrangement in order to permit the absorption of downward pressure upon the same.

Other objects and many of the attendant advantages of the present invention will be readily appreciated as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings wherein;

FIG. 1 is a perspective view of the resilient heel support of the present invention taken generally from the top thereof;

FIG. 2 is a perspective view of the resilient heel support of FIG. 1 taken generally from the bottom thereof;

FIG. 3 is a view partly in section showing the resilient heel support of the present invention secured in place in a shoe during the manufacture thereof;

FIG. 4 is an enlarged detailed view showing the attachment of the rigid plate and the spring blade; and

FIG. 5 is an enlarged detailed view similar to FIG. 4 but showing an alternative form of attachment of the plate and the spring blade.

Referring now to the various figures of the drawings wherein like reference characters refer to like parts, there is shown at 10 a resilient heel support embodying the present invention. The resilient heel support 10, as shown in FIGS. 1 and 2, basically comprises a rigid or semi-rigid plate 11 which is secured to and supported by a spring blade 12.

The rigid plate 11 is of a configuration generally in a shape which conforms to a heel. Both the rigid plate 11 and the spring blade 12 may be of metal or plastic or other materials well known to the art. The rigid plate 11 and the spring blade 12 are joined together along lateral edge 13 by means of rivets 13A.

As shown in FIG. 2, the spring blade 12 is narrower than the rigid blade 11 and is generally of a constant width and terminates rearwardly in an arcuate edge.

It is to be understood that the configuration of both the rigid plate 11 and the spring blade 12 may be varied in thickness, width and length in accordance with intended use and also as determined by the configuration of the shoe with which the resilient heel support of the present invention is to be used. For instance, the dimensions may be varied so that the present invention may be usable with men's, women's or children's shoes.

As shown in FIG. 3, the spring blade 12 includes a plane part 19A and an inclined part 19B. As further shown in FIG. 3, the plane part 19A of the spring blade 12 is adapted to lie flush against a sole inside the shoe 4 or the plane part 19A may lie in the insole 21 of the shoe 4.

As further shown in FIG. 3, the inclined section 19B is inclined upwardly or inwardly toward the rigid plate 11 and actually terminates forwardly in a lip 19C which will slip or slide with respect to the undersurface of the plate 11 when the weight of a heel or other compressive force is applied thereto.

As best shown in FIGS. 2 and 3, the plane part 19A and the inclined section 19B are essentially distinguishable by virtue of a fold line or line of demarcation 19D.

As shown in FIG. 2, part 19A includes two small holes 5 in order to receive pegs or nails 6 for securing the present device upon a heel 7 of shoe 4. As shown in FIGS. 1 and 3, the rigid plate 11 includes enlarged openings 8 in order to permit the passage completely therethrough of the peg or nail 6.

It is thus seen that the resilient heel support 10 of the present invention may be secured upon the heel 7 by positioning of the same in the appropriate place and then applying pegs or nails 6 so that they pass completely through enlarged openings 8 and may be hammered down into the heel 7 so that the spike portion of the peg or nail 6 passes essentially through opening 5 with the head of the pegs 6 resting immediately upon the upper or inner surface of the plane part 19A of the spring blade 12.

As shown in FIG. 4, the forward edge of the rigid plate 11 is slightly flattened out into a flange 11A for purposes of facilitating the joining of rigid plate 11 to the plane portion 19A of the spring blade 12. As shown in FIG. 5, the spring blade 12 may include a flattened section 19E instead of the rigid plate 11 in order to facili-
tate the making of the joint between the rigid plate 11 and the spring blade 12.

It is thus seen that the spring blade 12, because of its form and the position of its supporting points, undergoes stress and elongation whenever a crushing or compressive force is applied upon the rigid plate 11.

It is to be further noted that any forces, stresses or shocks imposed upon the rigid plate 11 are absorbed by the progressive counterpressure set up by the interaction of the lip 19-C upon the undersurface of the rigid plate 11. As the force applied to the rigid plate 11 increases, the lip 19-C slides backwardly with respect to the underside of the rigid plate 11 thereby elongating the spring blade 12. Also, a constant counterpressure to the applied force is established which remains constant over a wide range of applied forces.

As previously noted, the resilient heel support of the present invention may be simply applied either to an existing shoe or to a shoe during manufacture by the application of pegs or nails 6 through the holes 8 and 8. Furthermore, the nails or pegs 6, and particularly the heads thereof cannot be torn out or worn away as much as they are mounted beneath the undersurface of the rigid plate 11 and sunk deeply into the body of heel 7.

Obviously many modifications and variations of the present invention are possible in the light of the above teachings. It is, therefore, to be understood that within the scope of the appended claim, the invention may be practiced otherwise than as specifically described.

What is claimed as the invention is:
A resilient heel support in combination with a shoe having a heel and an innersole, said heel support comprising in combination a stationary rigid top plate supported on a flexing spring blade positioned on said innersole, said rigid plate lying essentially in a single plane and having an upper surface, a lower surface, a forward edge and a rearward edge, said spring blade having a front edge and a back edge, said spring blade having front and back parts meeting in a fold line and being inclined with respect to each other, said front part being defined by said front edge and said fold line with said back part being defined by said back edge and said fold line, said spring blade being secured to said rigid plate by securement of said front edge and forward edge, said front part being inclined rearwardly away from said rigid plate and said back part being inclined rearwardly toward said rigid plate with said back edge freely resting in actual contact against the lower surface of said rigid plate, said front part being adapted to lie flush against said innersole whereby when pressure is applied downwardly against the upper surface of said rigid plate, said back part of said spring blade will slide rearwardly relative to said rigid plate in actual contact therewith to create a constant counter-pressure over a wide range of applied pressures.

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JORDAN FRANKLIN, Primary Examiner.
FRANK J. COHEN, Examiner.