May 17, 1932. G. M. LEACH 1,858,833

SPRING SHOE ATTACHMENT

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Fig. 1

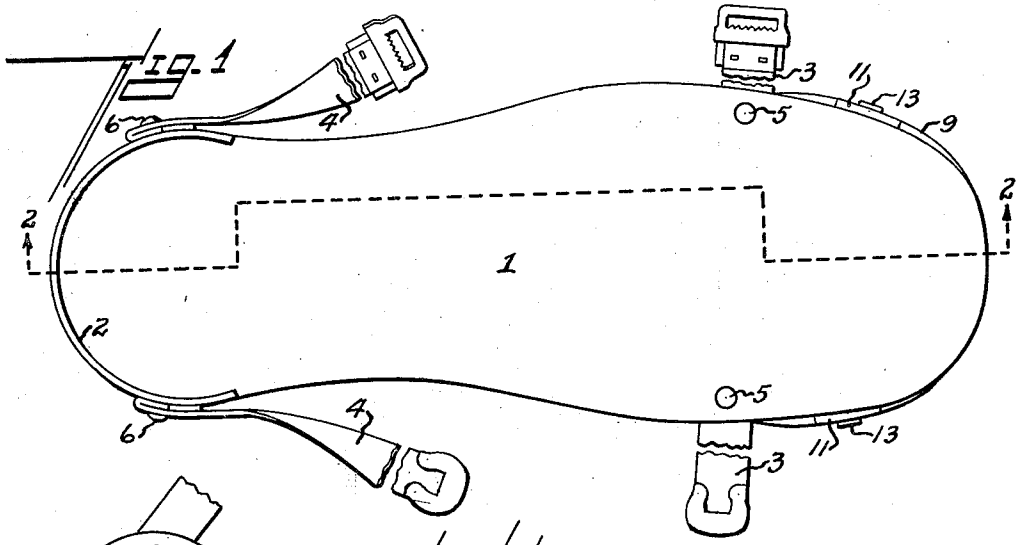


Fig. 3

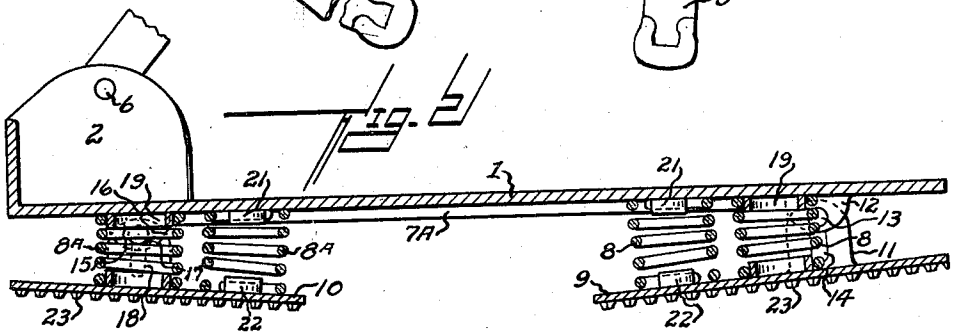
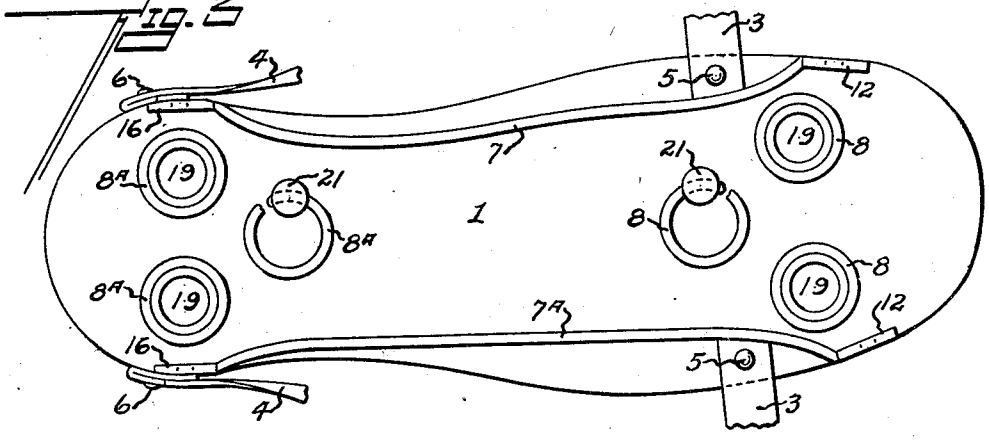


Fig. 2



INVENTOR:
Guy M. Leach.
BY Grover McGill,
ATTORNEY.

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Fig. 4

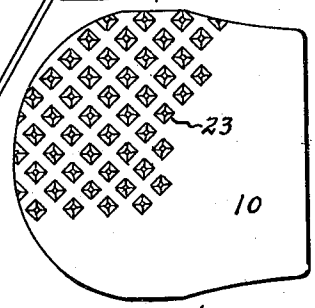


Fig. 5

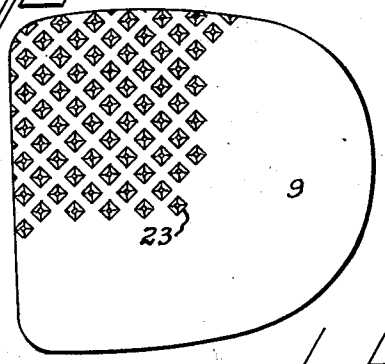


Fig. 6

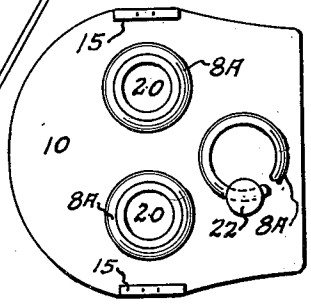


Fig. 7

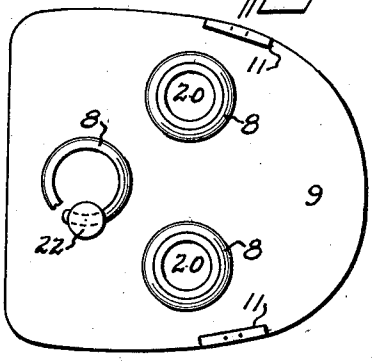


Fig. 8

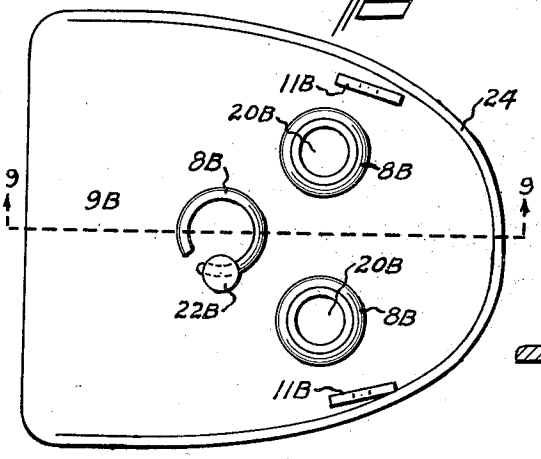
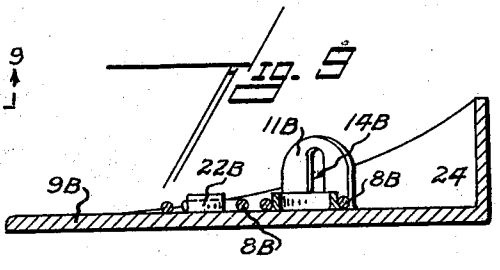


Fig. 9



INVENTOR:
Guy M. Leach.
BY Grover Castill,
ATTORNEY.

Patented May 17, 1932 1,858,833

UNITED STATES PATENT OFFICE

GUY M. LEACH, OF DETROIT, MICHIGAN

SPRING SHOE ATTACHMENT

Application filed July 22, 1930. Serial No. 469,660.

This invention relates to improvements in devices adapted to be attached to the shoes, and the purpose of my invention is to provide a device of this character which is composed of an upper plate member formed so as to conform to the sole of the shoe, and having permanently connected straps thereto, whereby the member may be readily buckled to the shoe in a comfortable and suitable manner.

This member is supported by a front and rear casting member, each of which have pivotal connection with the plate member, and a plurality of coil springs interposed between the inner surfaces of the front casting member and the plate member, and also a similar number of springs between the inner surfaces of the rear casting member and the plate member.

The primary object of my invention is to provide relief and comfort to those where circumstances make it necessary to stand upon hard surface floors, such as concrete and the like, for long periods of time in accomplishing their daily task. The springs of the device afford an effective cushion, thus relieving the spinal organs of the body and preventing much fatigue and rheumatic difficulties and other maladies resulting from this cause. From the standpoint of preserving one's health, the importance and great value of the invention can not of course be overestimated.

Another advantage of my invention is that with but a slight modification of one portion thereof the same may be very advantageously used in the work of laying asphalt paving surfaces. The particular construction of the device protects the feet from the intensely heated material, and it is also arranged so that the shoes will not penetrate the asphalt in excess of the surface thereof, and thereby prevent any difficulty in walking upon the same.

My invention is not confined solely to the one purpose, it may be extensively utilized as a toy, supplying much amusement and attractiveness for children. For this purpose the same principle may be largely carried out, and the price would be consistent with the market in this line.

The invention possesses further advantages, all of which will be clearly revealed during the course of the detailed description to follow, illustrated within the accompanying drawings, and more particularly pointed out in the appended claim.

While the invention consists of a right and a left shoe attachment, the latter is referred to throughout the drawings, and in which:

Figure 1 is a top plan view of the complete left attachment of the device.

Figure 2 is a longitudinal section taken substantially upon line 2—2 of Figure 1.

Figure 3 is an underneath view of the upper plate member of the device.

Figure 4 is an underneath view of the rear lower member, while Figure 5 is a similar view of the lower front member.

Figure 6 is a top plan view of the rear lower member, and Figure 7 is a similar view of the lower front member.

Figure 8 is a top plan view of a modified lower front member of the device for use in asphalt paving work.

Figure 9 is a longitudinal section taken substantially upon line 9—9 of Figure 8.

The right and left units of my invention are identical in construction and operation, and it is herewith understood that the following detailed description accordingly has reference to both units.

The invention comprises a principal member having a plate portion 1, and shaped so as to conform to the sole of a shoe, and as indicated in Figure 1. Portion 2 of the said member extends as shown and forms a heel support for the connecting shoe, with complete toe straps 3 and also heel straps 4. Straps 3 are respectively secured to portion 1 by rivets 5, while straps 4 are respectively secured to portion 2 by rivets 6. Rivets 5 and 6 have countersunk heads so as to leave a perfectly smooth surface where the device contacts the shoe.

Portion 1 is rigidly reinforced by ribs 7 and 7A, which are formed upon the underneath surface of the same and in parallel relation as indicated in Figure 3.

The weight of the body is carried upon a plurality of coil springs 8 and 8A, and with

particular reference to Figure 2 it is observed that front member 9 and rear member 10 are employed, with coil springs 8 interposed between the forward end of portion 1 and member 9, and coil springs 8A interposed between the rear end of portion 1 and member 10. Members 9 and 10 have pivotal connection with portion 1 in the following manner: Member 9 has integral ears 11 which engage similar ears 12 of portion 1 by means of rivets 13, and the said rivet stationary with ear 12, and permitting oscillating movement of member 9 by virtue of elongated slot 14 in the ears 12, while member 10 has integral ears 15 which engage similar ears 16 of portion 1 by means of rivet 17, and this rivet stationary with ear 15, and by virtue of elongated slot 18 oscillating movement is effected relative to portion 1 and member 10.

Coil springs 8 and 8A are retained in their respective position in relation to portion 1 and members 9 and 10 by means of bosses 19 of portion 1, and similar bosses 20 of members 9 and 10.

The action of members 9 and 10 is limited by means of lugs 21 of portion 1, and similar lugs 22 of the said members, and with reference to Figures 3, 6 and 7 it is clearly seen that each of the lugs 21 and 22 is provided with a laterally extending opening through which passes one end of one of the respective coil springs of the device.

By referring to Figures 4 and 5 it is seen that the entire underneath surface of members 9 and 10 has diagonally disposed checkered surface 23, the purpose of which is understood.

With reference to Figures 8 and 9, it will be understood that the device may be very effectively used in laying asphalt paving by substituting member 9 with member 9B, the latter having similar elements to member 9 as follows:

Coil springs 8B, bosses 20B, lug 22B, integral ears 11B, and checkered surface 23B. It is also noted that member 9B is of greater width and length than member 9, and also has tapering flange 24 formed as a part of the same, and rendering the device readily applicable for this work.

The aforesaid plate member and the lower members 9 and 10 of the device may be composed of pressed steel or of aluminum cast metal, the latter being preferable owing to low cost of production, and also effecting a great saving of weight in these elements without sacrificing strength and durability.

My invention is very substantially constructed, and with ordinary care it will endure for an indefinite period of time, and while I have herein set forth one precise embodiment of the invention, the same is nevertheless susceptible to certain minor changes in the details of construction, or of design, however in the event of the necessity of any of the changes so indicated during any probable further development of the device for the market, a departure from the general principle as disclosed would of course be consistently avoided.

Still another advantage of my invention, and one of no less importance than those heretofore related is that due to the extreme simple method of design and construction employed, it may be manufactured at a low cost and thereby effecting a correspondingly low selling price adding much to the merit of the device particularly from a commercial viewpoint.

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

In a device of the character described, a principal upper member for the same, the said member being formed as a plate adapted to conform to the sole of a shoe, an upwardly extending heel support formed integral with the said plate, front and rear members for the device disposed underneath the said plate, depending ears integral with the said plate and upon the underneath surface thereof at the front and rear of the same, and similarly formed ears integral with the said underneath members to respectively engage the first-named ears, each of the last-named ears being provided with an elongated slot, and all ears adapted to oscillate relative to each other, and a plurality of springs interposed between the aforesaid plate and the said underneath members, for the intended purpose.

In testimony whereof I hereunto affix my signature.

GUY M. LEACH.