Feb. 24, 1970 W. R. CAINE 3,496,656

SPRING LOADED SHOE FIXTURES

Filed Nov. 20, 1967

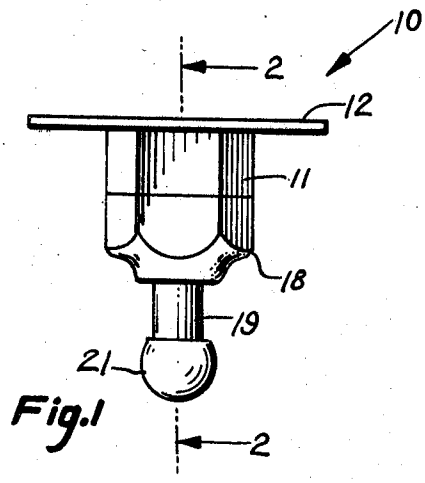


Fig.1

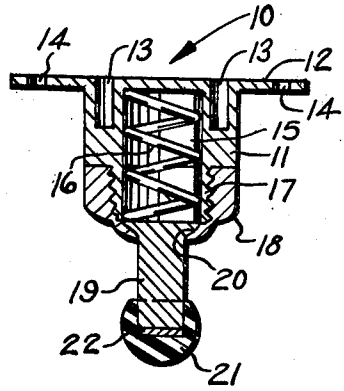


Fig.2

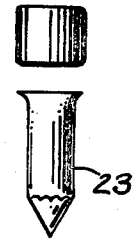


Fig.4

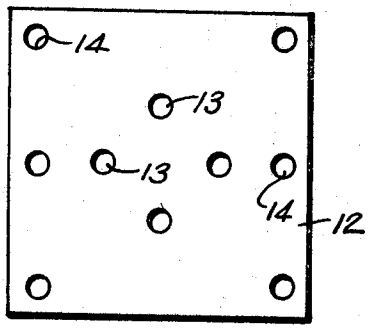


Fig.3

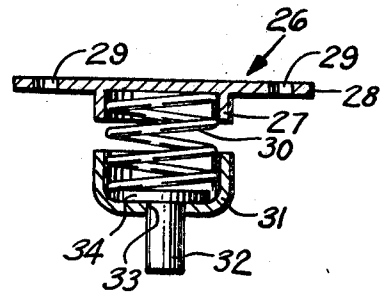


Fig.5

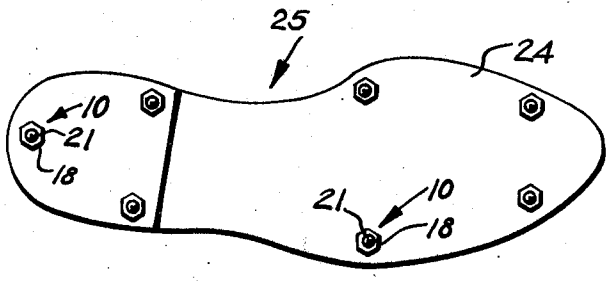


Fig.7

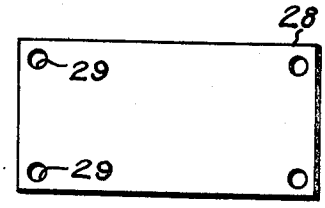


Fig.6

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3,496,656

Patented Feb. 24, 1970

3,496,656

SPRING LOADED SHOE FIXTURES

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Filed Nov. 20, 1967, Ser. No. 684,375

Int. Cl. A43b 5/00

U.S. Cl. 36—67 3 Claims

ABSTRACT OF THE DISCLOSURE

A device which is used in plurality and is attached to the soles of shoes having a base member which is attached by its flange to the sole of a shoe. Screws are used to secure the base member and its associated flange to the sole of the shoe and an opening within the base extends through the externally threaded extension and carries a coil spring which urges against the head of a rubber tipped pin, the pin extending from an internally threaded member which is threaded onto the extension of the base of the device, the pin when riding against the internally enclosed spring as the pressure is applied to the pin allows the pin to slide into the device and when pressure is released from pin, the spring urges outwards against the head of the pin to again seat the head of the pin and cause a lifting reaction through the shoe.

This invention relates to shoe attachments, and more particularly to a spring-loaded fixture for shoe soles and the like.

It is therefore the main purpose of this invention to provide a spring loaded shoe fixture which will be used in plurality on the soles of shoes and will thus impart a springiness to the wearers' feet.

Another object of this invention is to provide a shoe fixture which will have a flanged base member which will be secured to the sole and will have an externally threaded extension which threads into a flange member carrying a slidable pin.

A further object of this invention is to provide a shoe fixture which will have a flanged base member which will two elements, in order to accommodate modified pins if desired.

Other objects and advantages of the invention will become apparent from a consideration of the following detailed description taken in connection with the accompanying drawing wherein a satisfactory embodiment of the invention is shown. However, it is to be understood that the invention is not limited to the details disclosed but includes all such variations and modifications as fall within the spirit of the invention and the scope of the appended claims.

In the drawing:

FIGURE 1 is a side view of the present invention shown in elevation;

FIGURE 2 is a cross-sectional view taken along the lines 2—2 of FIGURE 1;

FIGURE 3 is an enlarged top plan view of FIGURE 1;

FIGURE 4 is a side elevation of the modified spike for use in the present invention;

FIGURE 5 is a cross-sectional side view in elevation showing a mdified form of the main embodiments of the present invention;

FIGURE 6 is a top plan view of FIGURE 5; and

FIGURE 7 is a bottom plan view of a shoe with the present invention installed thereto.

According to this invention, a spring loaded shoe fixture **10** is provided with a base member **11** having a flange **12**, the base member **11** being provided with a plurality of spaced apart openings **13** while the flange **12** is provided with a plurality of spaced apart openings **14**. Openings **13** and **14** of fixture **10** provide means for securing fixture **10** with tap screw fasteners to a shoe. A central bore **15** of base member **11** carries a compression coil spring **16** which extends into extension **17** of a flared member **18**. Extension **17** of base member **11** is externally threaded and threads into the internally threaded flared member **18** and thus forms a closed housing. A counter-sunk headed pin **19** has the head portion resting in a counter-sunk recess **20** within flared member **18** when fixture **10** is not in use and a rubber tip **21** is received on the lower end of pin **19**. A steel plate **22** is secured within rubber tip **21** and abuts with the lower extremity of pin **19**.

Looking now at FIGURE 4 of the drawing, one will see a modified form of spike **23** which may be used in place of pin **19** if so desired.

As will be seen in FIGURE 7 of the drawing the sole **24** of shoe **25** is provided with a plurality of spring loaded shoe fixtures **10** which are spaced properly apart to effect proper usage of fixtures **10**.

In use, a plurality of shoe fixtures **10** are secured to sole **24** of shoe **25** by a screw fastener (not shown) within the openings **12** and **13** and when the users foot comes in contact with the ground or other surface the pin **19** urges upwards against spring **16** and when the foot is raised the spring **16** again urges the head of the pin **19** downwards again into the counter-sunk recess **20**. It will be understood that the spring **16** urging against the pin **19** at its upper extremity will impart a springiness to the shoe of the wearer.

Looking now at FIGURE 5 of the drawing, one will see a modified version of shoe fixture **26** which is composed of a cup **27** having a flange **28** in which there are a plurality of spaced apart openings **29** for receiving suitable fasteners for attachment to a shoe. A compression coil spring **30** is carried within the cup **27** and is secured at its upper extremity thereto. The lower extremity of spring **30** is carried within a similar diameter cup **31** in which a pin **32** extends from the opening **33**. Pin **32** is provided with a flat head **34** for bearing with and against the lower extremity of spring **30**.

This modified form of spring loaded shoe fixture **26** operates in a similar manner as that heretofore described in the main embodiment of the present invention except that when in neutral position a space separates the edges of the two caps **27** and **31**.

It will be noted that shoe fixtures **10** and **26** may be secured to shoe **25** in any manner desired.

What I now claim is:

1. A sport shoe having a ground connecting surface, a plurality of spring loaded shoe fixtures attached to said surface, each fixture comprising a substantially cylindrical base member having an axial bore formed therein open at one end and closed at the other, a flange portion on the base member at the closed end thereof and secured to said surface, an externally threaded extension on the base member at the open end thereof, an internally threaded member threadingly secured to said extension of said base member and forming a cap therefor, said internally threaded member having a centrally located circular opening smaller than said bore, a pin having a circular head and cylindrical shank, said head being substantially the size of said bore and slidingly received therein and said

shank being substantially the size of said circular opening and extending therethrough, and a compression spring within said bore between said closed end and said pin head.

2. The pin of claim 1 comprising a sharp pointed end.

3. The pin of claim 1 comprising a rounded tip.

References Cited

UNITED STATES PATENTS

294,829	3/1884	West	36—67.5 X
2,383,267	8/1945	Malmqvist	36—67.5 X
2,421,072	5/1947	Kramer	36—67.5
2,408,617	10/1946	Ferrar	36—7.8
2,837,840	6/1958	Kerpel	36—7.8

FOREIGN PATENTS

203,631	10/1908	Germany.
1,036,396	4/1953	France.

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