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(54) **SAFETY SHOE PADS**

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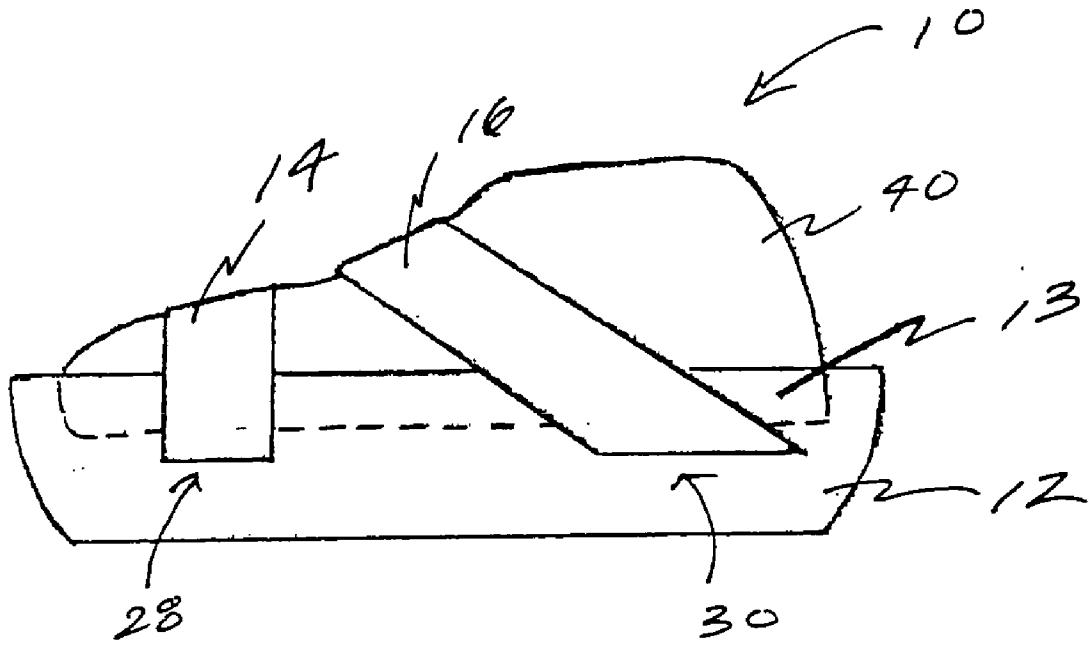
(57) **ABSTRACT**

A shoe pad to be worn by rooftop workers, such as roofing material installers, for added safety. A pad, made from a unitary cut or mold of sponge-like and firm material, such as composite or foam rubber, is designed to nearly mirror the shape of a worker's shoe or boot, such that a conventional shoe or boot may be inserted within the same. The pad is placed under a worker's shoe or boot, and secured with a plurality of adjustable straps. The pad may be safely secured to a worker's shoe or boot by tightening the adjustable straps, preparing the device for use.



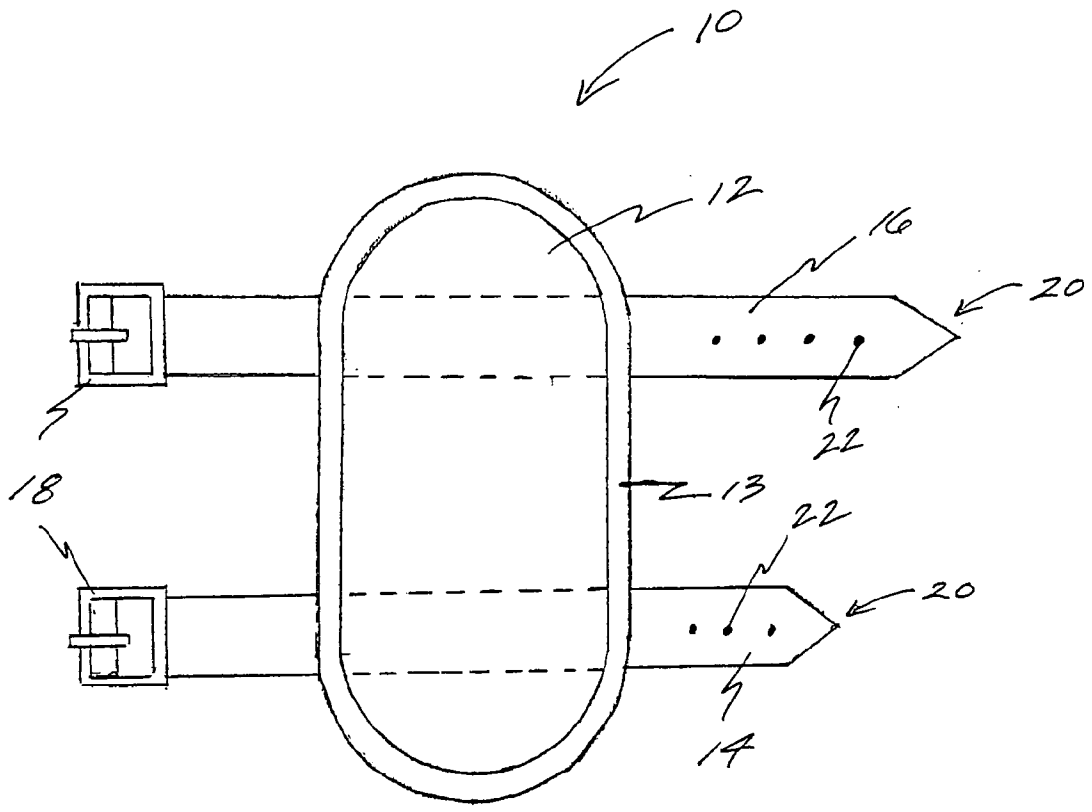



FIGURE 1

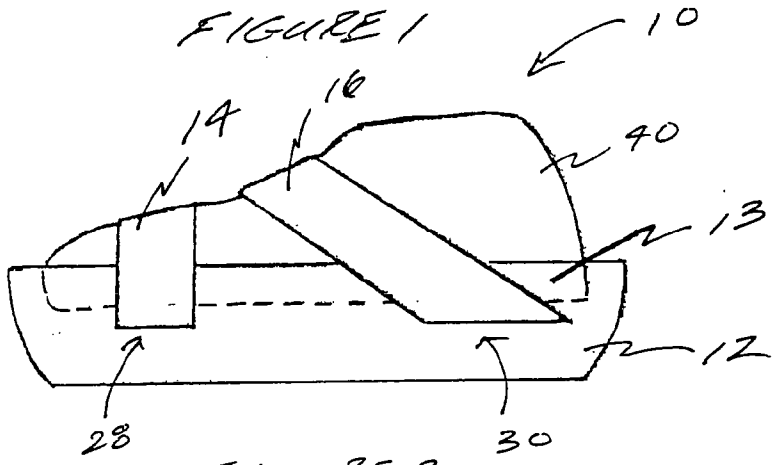



FIGURE 2

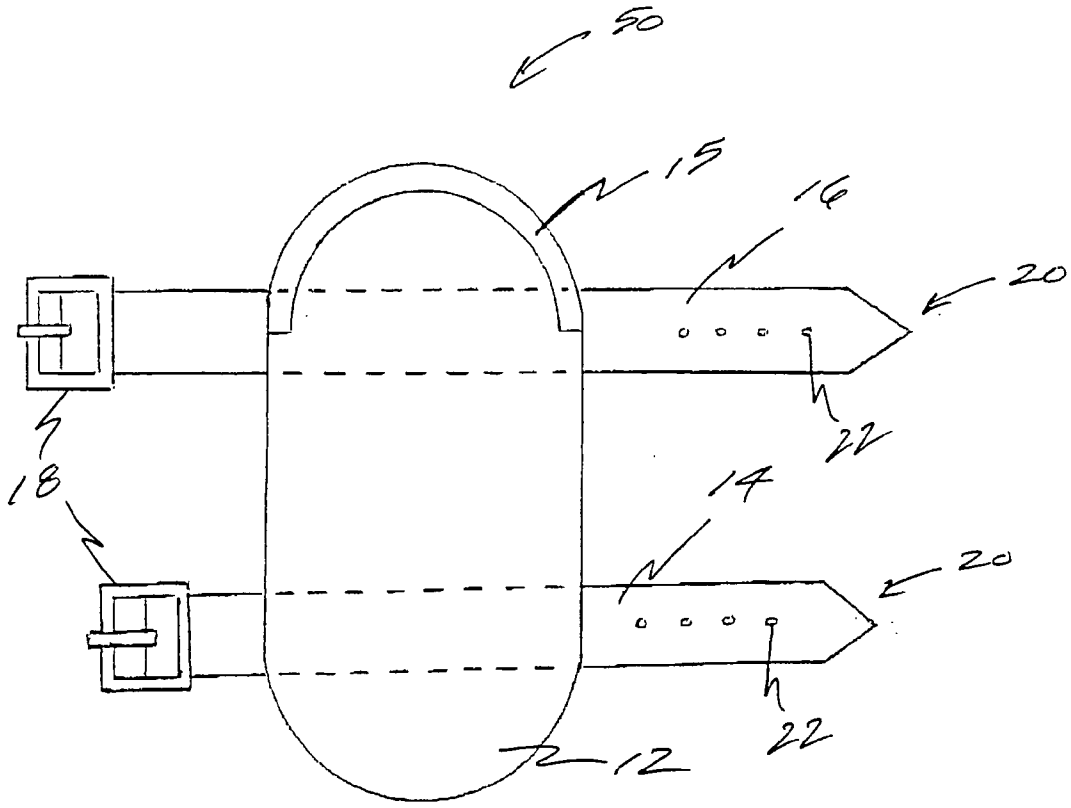



FIGURE 3

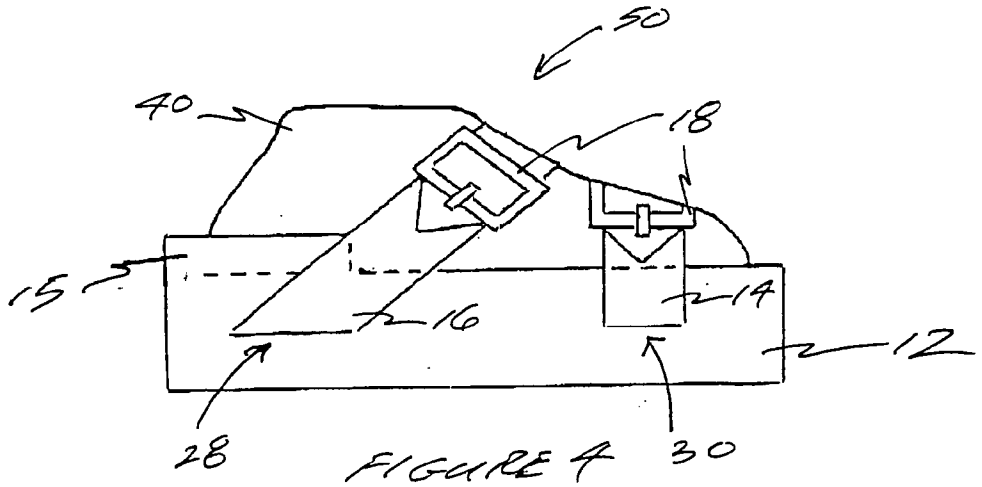



FIGURE 4

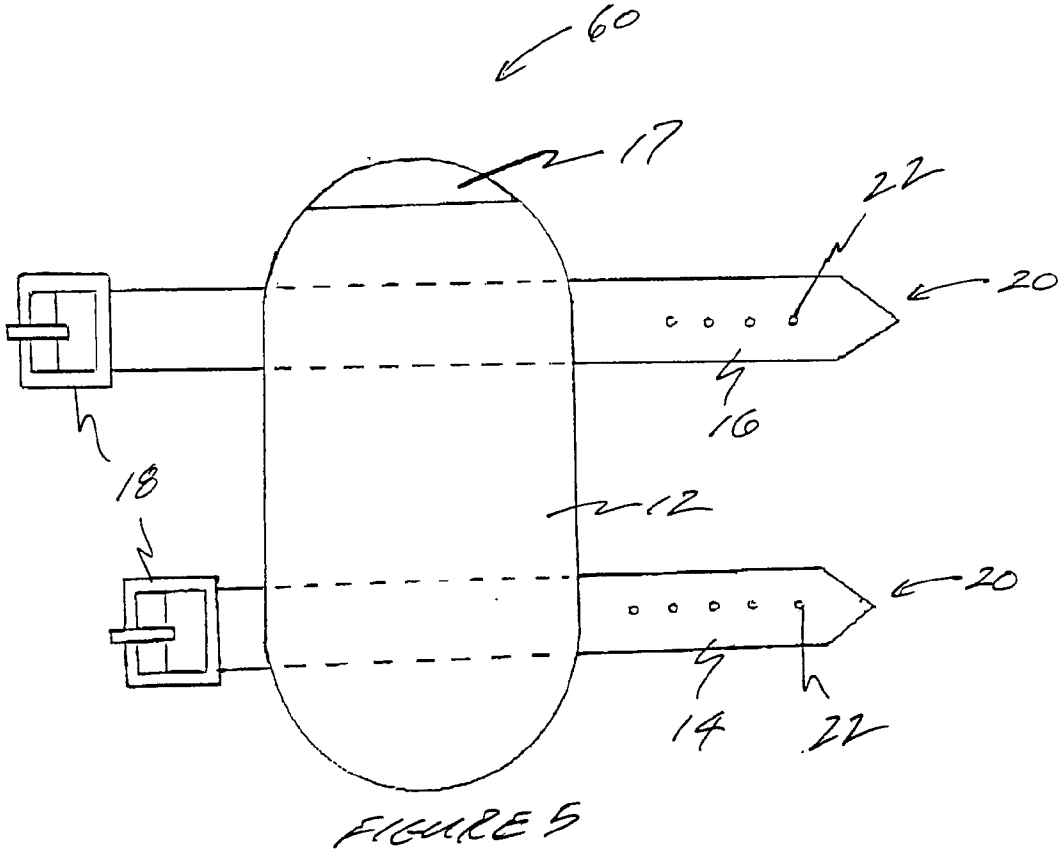



FIGURE 5

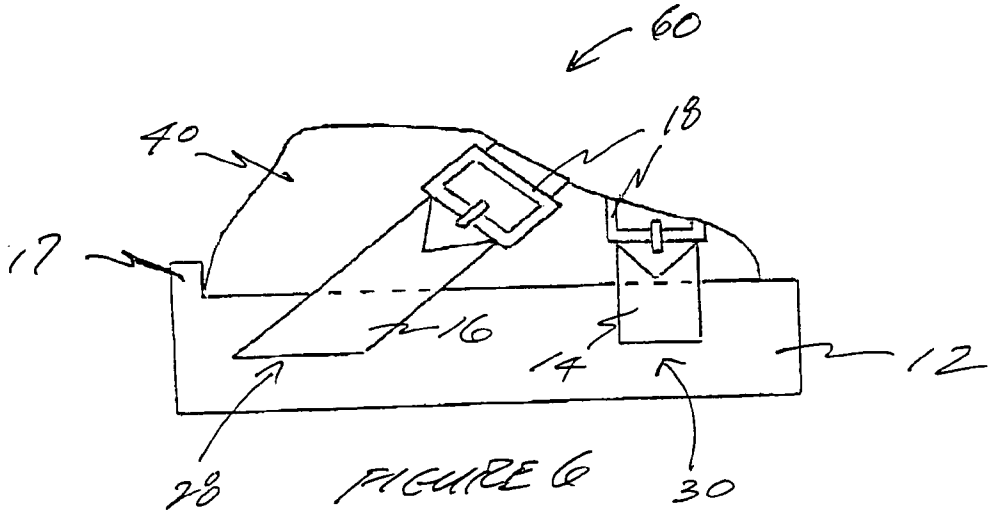



FIGURE 6

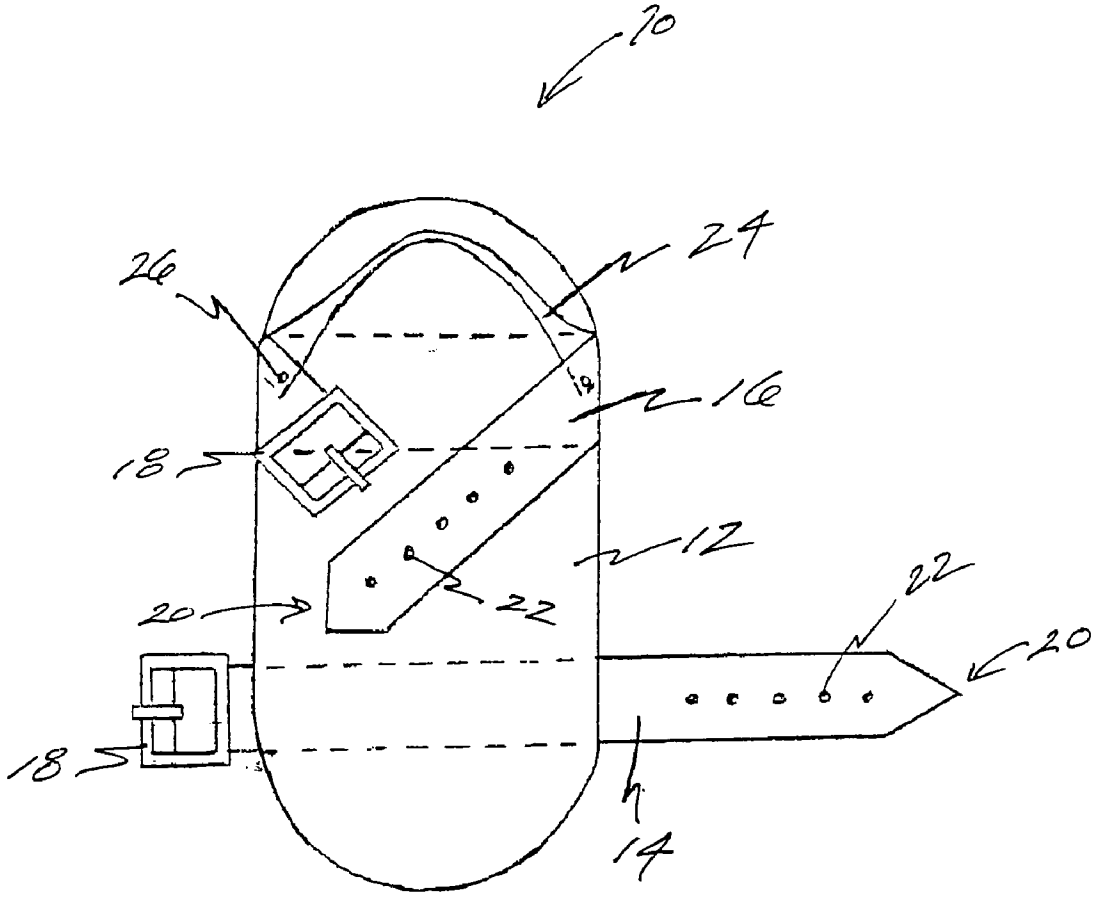



FIGURE 7

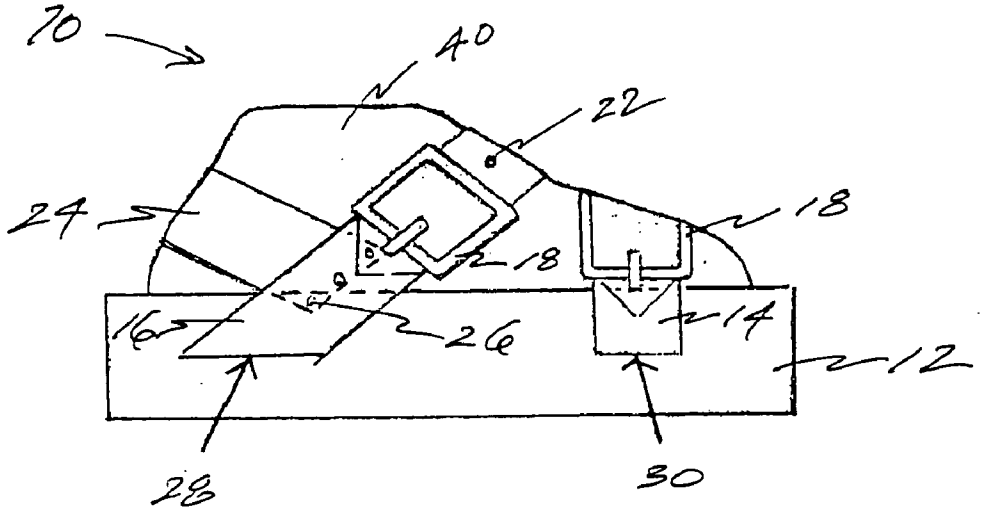



FIGURE 8

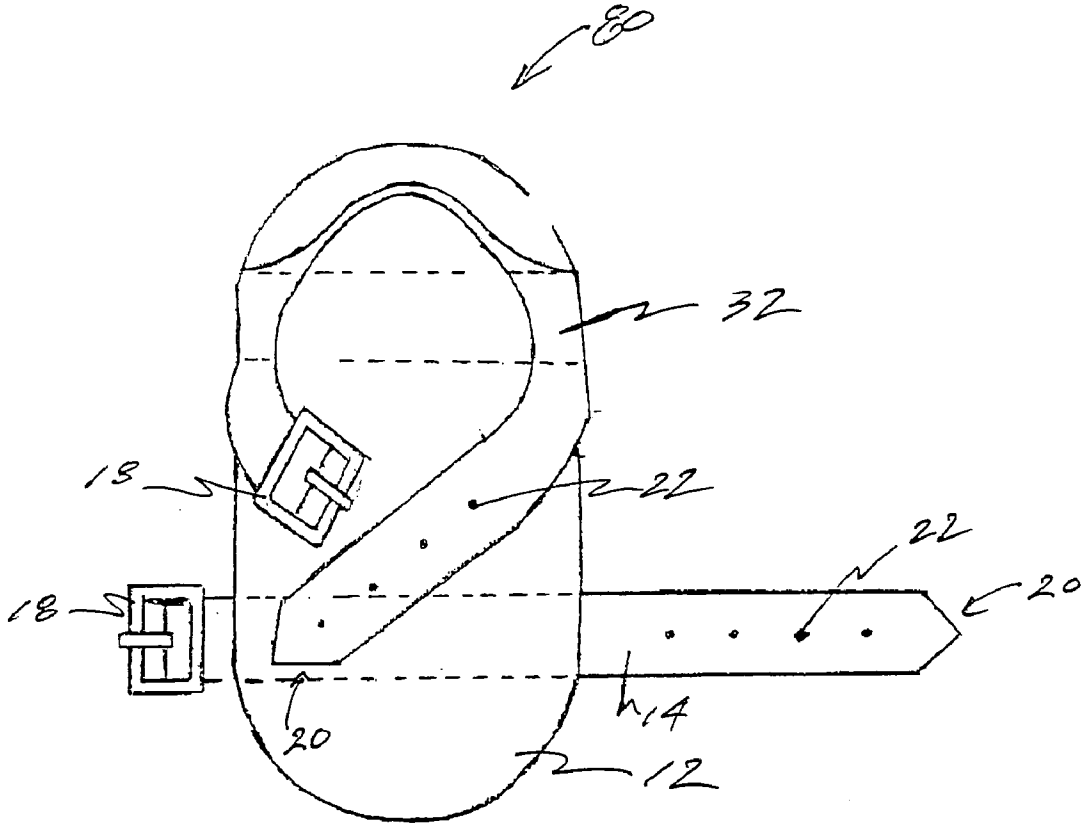



FIGURE 9

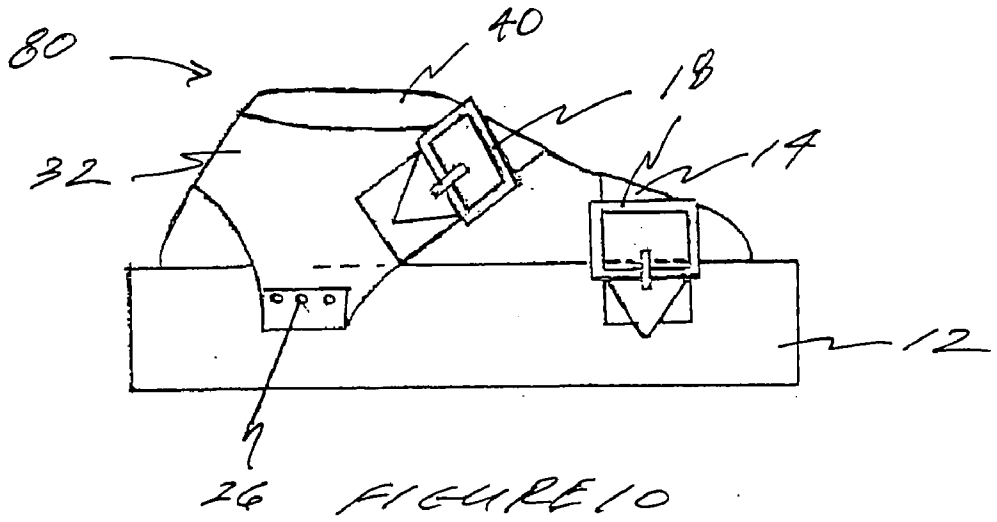



FIGURE 10

# SAFETY SHOE PADS

## RELATED APPLICATIONS

[0001] This application claims priority from U.S. Provisional Patent Application No. 60/393,326, filed Jul. 1, 2002, which is hereby incorporated by reference for its supporting teachings.

## FIELD OF THE INVENTION

[0002] The present invention relates generally to outer footwear worn by rooftop workers, such as roofing material installers, who perform work on surfaces with relatively steep pitches. Specifically, the present illustrated embodiments describe a form of outer footwear that is designed to aid a rooftop worker in more safely and effectively performing his/her labor by allowing him/her to negotiate a steep surface with minimal foot slippage or heat transfer, and with minimal shingle, or other surface, scarring. BACKGROUND OF THE ILLUSTRATED EMBODIMENT(S) AND PRIOR ART

[0003] Rooftop workers are subject to a myriad of risks while performing their labors. Among these risks are the ever present concerns of slipping and falling off of a roof or similar structure, and developing foot pain, or other medical complications, due to excessive heat transfer from the work surface. To mitigate these risks, there are several methods or tools utilized by rooftop workers to protect against slippage and to reduce the transfer of heat from the roof, or similar, surface to the foot of the worker. For example, rooftop workers often utilize ropes or straps to secure themselves to the structure upon which they are working. In addition, they wear soft-soled shoes to increase traction. However, these typical and well-known methods have inherent problems.

[0004] Using ropes to secure a worker to a roof, or "tying off" as it is regularly referred to, does not protect a worker from the initial slip and fall. In effect, an injury may have already occurred through the act of slipping and falling on a roof surface before a worker falls from the structure. Furthermore, tying off is a tedious and cumbersome duty, and one that many rooftop workers simply ignore. It is well recognized that most roofers do not tie off unless explicitly required to do so by a job foreman or OSHA representative. As a result, many injuries occur at the point of a slip as well as at the point of a fall from the work structure.

[0005] In addition, many soft-soled shoes do not adequately provide the level of traction required to prevent slipping when a worker is carrying a heavy load or bending in an unusual or physically awkward or unbalanced position. Further, soft-soled shoes do not prevent a transfer of heat from the work surface to the foot of the worker and contribute to extreme discomfort and resulting medical complications. Soft-soled shoes often require the worker to remove granules of asphalt based shingles from the shoes after working on a roof to install the same. The accumulation of these granules can create an unsafe condition by coating the underside of the shoe and eliminating the traction element from the soft sole, thereby increasing the chance for a worker to slip and fall.

[0006] Shingle scarring is also a common problem for installers of asphalt, and other types of, roofing shingles. As the shingle surfaces heat up due to solar exposure, the bond between the shingle underlayment and the coating of asphalt granules begins to soften. As a result, in hot climates, the surface of the shingles may become easily scarred or damaged where a worker has trodden on the same. This occurs primarily because the shoes of the worker do not adequately adhere to the surface of the shingle to prevent slippage. As the workers shoe slips and slides across the shingle, the surface of the shingle becomes scarred or damaged.

[0007] Thus, it can be clearly recognized that there is a need for a device designed to provide the worker with the traction required to prevent, or drastically reduce, the amount of slippage resulting from work performed on steep pitched surfaces, and to prevent, or drastically reduce, the amount of heat transferred from the work surface to the foot of the worker. It is also clearly recognized that there is a need for a similar device that is designed to prevent shingle scarring or damage resulting from worker slippage.

## SUMMARY OF THE ILLUSTRATED EMBODIMENT(S)

[0008] The present invention relates generally to outer footwear worn by rooftop workers, such as roofing material installers, who perform work on surfaces with relatively steep pitches and, often, slippery points of contact. Specifically, the present illustrated embodiments describe a form of outer footwear, or shoe pad, that is designed to aid a rooftop worker in safely performing his/her labor by allowing him/her to move about a steep surface with minimal foot slippage or heat transfer. The present illustrated embodiments describe a pad within which conventional shoes or boots may be inserted.

[0009] More particularly, a unitary cut or mold of sponge-like and firm material, such as composite or foam rubber, is designed to roughly mirror the shape of a worker's shoe or boot. The unitary material is placed under a worker's shoe or boot, and secured with a series of adjustable straps. The unitary material may be snugly secured to a worker's shoe or boot by tightening the adjustable straps, preparing the device for use.

[0010] Additional features and advantages of the invention will be set forth in the detailed description which follows, taken in conjunction with the accompanying drawings, which together illustrate by way of example, the features of the invention.

## BRIEF DESCRIPTION OF THE FIGURES

[0011] The prior features of the summary of the illustrated embodiment(s) will become more evident upon examination of the following detailed description in conjunction with the following figures, wherein like element numbers represent like elements throughout:

[0012] **FIG. 1** represents a top view of an unbuckled embodiment of the present invention;

[0013] **FIG. 2** represents a side view of a buckled embodiment of the present invention of **FIG. 1**;

[0014] **FIG. 3** represents a top view of an unbuckled embodiment of the present invention;

[0015] **FIG. 4** represents a side view of a buckled embodiment of the present invention of **FIG. 3**;

[0016] **FIG. 5** represents a top view of an unbuckled embodiment of the present invention;

[0017] **FIG. 6** represents a side view of a buckled embodiment of the present invention of **FIG. 5**;

[0018] **FIG. 7** represents a top view of an unbuckled embodiment of the present invention;

[0019] **FIG. 8** represents a side view of a buckled embodiment of the present invention of **FIG. 7**;

[0020] **FIG. 9** represents a top view of an unbuckled embodiment of the present invention; and

[0021] **FIG. 10** represents a side view of a buckled embodiment of the present invention of **FIG. 9**.

## DETAILED DESCRIPTION OF THE ILLUSTRATED EMBODIMENT(S)

[0022] For the purpose of promoting an understanding of some of the principles of the illustrated embodiment(s), reference will now be made to exemplary embodiment(s) that are illustrated in the figures, and specific language will be used to describe the same. It will nevertheless be understood that no limitation of the scope of the claims is thereby intended. Any alterations and further modifications of the inventive features illustrated herein, and any additional applications of these principles, which would occur to one skilled in the relevant art after having possession of this disclosure, are to be considered well within the scope of this invention. Reference will now be made to all of the **FIGS. 1 through 10**, of the present invention, wherein like element numbers represent like elements throughout.

[0023] Referring to **FIG. 1**, an embodiment of the present invention **10** is shown and described in top plan view. A unitary cut or mold of sponge like material, such as composite or foam rubber, forms a unitary base **12** of the present invention **10**. The design of the unitary base **12** generally follows an oval pattern, which conforms to the general contour and shape of a worker's shoe or boot. For the embodiment presently described, a rim **13** is shown as surrounding the entire circumference of the unitary base **12** and forms a raised lip within which a worker's shoe or boot may rest. In addition, two straps **14, 16** are illustrated as passing through the unitary base **12** for securing a worker's shoe or boot upon the unitary base **12**. A toe strap **14** is inserted through a first end of the unitary base **12**, and a crown strap **16** is inserted through a second end of the unitary base **12**. Both the toe strap **14** and the crown strap **16** contain a buckle **18** and a lead **20** for connecting opposite ends of the straps **14, 16**, and for securing a worker's shoe or boot within the unitary base **12**. Eyelets **22** are formed within each strap **14, 16** for facilitating the buckle **18** connection(s).

[0024] Referring now to **FIG. 2, a** side view of the embodiment of the present invention **10** as depicted in **FIG. 1** is shown and described. Two slits **28, 30** are formed within and through the unitary base **12** to allow the straps **14, 16** to pass through the unitary base **12**. A toe strap slit **28** is formed within and through a first end of the unitary base **12** for receiving the toe strap **14**, and a crown strap slit **30** is formed within and through a second of the unitary base **12** to receive the crown strap **16**. The toe and crown straps **14, 16** may not be secured to the unitary base **12**, or secured with an adhesive, stitching, rivets, mold, or other similar mechanical connection. A worker's shoe or boot **40** may be strapped to the unitary base by pulling the straps **14, 16** tight across the shoe or boot **40**, and buckling the straps **14, 16** down with the buckle **18** to lead **20** connection. Preferably, the shoe or boot **40** will fit snugly against the rim **13** so as to minimize movement of the shoe or boot **40** within unitary base **12** of the present invention **10**.

[0025] Referring now to **FIG. 3**, an embodiment of the present invention **50** is shown and described in top plan view. For the embodiment presently described, a partial heel rim **15** is shown as surrounding only a heel end portion and circumference of the unitary base **12** and forms a raised lip within which a worker's shoe or boot may rest.

[0026] Referring now to **FIG. 4, a** side view of the embodiment of the present invention **50** as depicted in **FIG. 3** is shown and described. The worker's shoe or boot **40** may be strapped to the unitary base **12** by pulling the straps **14, 16** tight across the shoe or boot **40**, and buckling the straps **14, 16** down with the buckle **18** to lead **20** connection. Preferably, the shoe or boot **40** will fit snugly against the partial heel rim **15** so as to minimize movement of the shoe or boot **40** within unitary base **12** of this embodiment **50**.

[0027] Referring now to **FIG. 5**, an embodiment of the present invention **60** is shown and described in top plan view. For the embodiment presently described, a heel stop **17** is shown as protruding above only a small radius of the heel end portion and circumference of the unitary base **12**, and forms a raised lip against which a worker's shoe or boot may rest.

[0028] Referring now to **FIG. 6, a** side view of the embodiment of the present invention **60** as depicted in **FIG. 5** is shown and described. The worker's shoe or boot **40** may be strapped to the unitary base **12** by pulling the straps **14, 16** tight across the shoe or boot **40**, and buckling the straps **14, 16** down with the buckle **18** to lead **20** connection. Preferably, the shoe or boot **40** will fit snugly against the heelstop **17** so as to minimize movement of the shoe or boot **40** within unitary base **12** of this embodiment **60**.

[0029] Referring now to **FIG. 7**, an embodiment of the present invention **70** is shown and described in top plan view. For the embodiment presently described, an additional heel strap **24** is shown as integrally connected to the crown strap **16** with rivets **26**, or a similar form of fastener. The heel strap **24** forms an additional support and strap against which the heel of a worker's shoe or boot **40** may rest.

[0030] Referring now to **FIG. 8, a** side view of the embodiment of the present invention **70** as depicted in **FIG. 7** is shown and described. The worker's shoe or boot **40** may be strapped to the unitary base **12** by pulling the straps **14, 16** tight across the shoe or boot **40**, and buckling the straps **14, 16** down with the buckle **18** to lead **20** connection. Preferably, the shoe or boot **40** will fit snugly against the heel strap **24** so as to minimize movement of the shoe or boot **40** within unitary base **12** of this embodiment **70**.

[0031] Referring now to **FIG. 9**, an embodiment of the present invention **80** is shown and described in top plan view. For the embodiment presently described, a universal strap **32** is shown as a unitary strap designed to wrap around the heel portion of the shoe or boot **40** and also across the top of the shoe or boot **40** so as to firmly secure the shoe or

boot **40** within the unitary base **12** of this embodiment **80**. The universal strap **32** forms an additional level of support, with fewer strap joints, against which the heel of a worker's shoe or boot **40** may rest.

[**0032**] Referring now to **FIG. 10, a** side view of the embodiment of the present invention **80** as depicted in **FIG. 9** is shown and described. The worker's shoe or boot **40** may be strapped to the unitary base **12** by pulling the straps **14, 32** tight across the shoe or boot **40**, and buckling the straps **14, 32** down with the buckle **18** to lead **20** connection. Preferably, the shoe or boot **40** will fit snugly against a heel portion of the universal strap **32** so as to minimize movement of the shoe or boot **40** within unitary base **12** of this embodiment **80**. The universal strap **32** is secured to the unitary base **12** with rivets **26**, snaps, or a similar form of fastener.

[**0033**] Remarks about the Illustrated Embodiment(s)

[**0034**] The illustrated embodiment(s) have taught several improvements over the prior art that will be readily understood by a skilled artisan after review of the present disclosure. For example, it has been discussed that the unique combination of straps and a unitary base material, made from composite or foam rubber, will allow a rooftop worker to more safely move about a roof, or similar steep pitched surface, will reduce damaging heat from transferring through the shoes or boots of a worker, and will reduce the amount of scarring or damage to roofing materials.

[**0035**] Based on the reasons outline above, the present invention may serve to reduce costs to roofing contractors by reducing the amount of replacement material(s) needed to compensate for scarred or damage roofs. In addition, the present invention may drastically reduce the incidence of slip related injuries for rooftop workers, and may reduce the incidence of heat induced foot problems and pain incurred by these workers.

[**0036**] It is pointed out, if it has not already been made clear, that the backbone of the illustrated embodiment(s) is the ability of the present invention to allow a roof-top worker to more safely install materials, carry materials, and simply move about a roof or similar steep pitched surface.

[**0037**] Variations of the Illustrated Embodiment(s)

[**0038**] It is understood that the above-described arrangements are only illustrative of the application of the principles of the present invention. Numerous modifications and alternative arrangements may be devised by those skilled in the art without departing from the spirit and scope of the present invention and the appended claims are intended to cover such modifications and arrangements.

[**0039**] For example, although the illustrative embodiment(s) have/has described the use of an oval shaped unitary base, the present invention also contemplates the use of a rectangular or oblong shaped base. In addition, although the presently illustrated embodiments describe the use of composite and/or foam rubber base materials, a water-resistant material may also be utilized within the scope of the present invention. Any material of similar density and performance as composite or foam rubbers may be implemented as the base material for the present invention.

[**0040**] Also, any number of methods for fastening the straps to the unitary base, including but not limited to stitching, snaps, rivets, adhesive, silicon, and Velcro, are envisioned within the scope of the present invention. Silicon or a similar flexible form of adhesive is preferred in order to compensate for the stresses of wear on the unitary base. Any number of connectors for securing the straps to one another, including but limited to buckles, D-buckles, nylon straps, snaps, Velcro, and buttons, are also envisioned within the scope of the present invention.

[**0041**] Thus, while the present invention has been shown in the drawings and fully described above with particularity and detail in connection with what is presently deemed to be the most practical and preferred embodiment(s) of the invention, it will be apparent to those of ordinary skill in the art that numerous modifications, including, but not limited to, variations in size, materials, shape, form, function, and manner of operation, assembly, and use may be made, without departing from the principles and concepts of the invention as set forth in the claims.

What is claimed is:

**1**. A safety shoe pad, comprising:

a) a unitary base, designed to receive and retain a shoe;

b) a toe strap, including toe strap fasteners, which toe strap passes through and is secured to a first end of the unitary base;

c) a crown strap, including crown strap fasteners, which crown strap passes through and is secured to a second end of the unitary base; and

d) wherein the toe strap fasteners and crown strap fasteners releasably secure the toe strap and crown strap respectively over and about the shoe.

**2**. The safety shoe pad of claim 1, wherein the unitary base further contains a raised rim, integrally attached to an outer circumference of a top surface of the unitary base, which raised rim is designed to retain the shoe in the shoe pad.

**3**. The safety shoe pad of claim 1, wherein the unitary base is made from a uniform cut of foam rubber.

**4**. The safety shoe pad of claim 1, wherein the unitary base is made from a uniform cut of composite rubber.

**5**. The safety shoe pad of claim 1, wherein the unitary base is made from a uniform cut of sponge rubber.

**6**. The safety shoe pad of claim 1, wherein the unitary base is in the general shape of an oval.

**7**. The safety shoe pad of claim 1, wherein the unitary base is in the general shape of a rectangle.

**8**. A safety shoe pad, comprising:

a) a unitary base, designed to receive and retain a shoe;

b) a toe strap, including toe strap fasteners, which toe strap passes through and is secured to a first end of the unitary base;

c) a crown strap, including crown strap fasteners, which crown strap passes through and is secured to a second end of the unitary base; and

d) a heel strap, integrally attached to the crown strap, which heel strap is designed to secure a heel portion of the shoe; and

e) wherein the toe strap fasteners and crown strap fasteners releasably secure the toe strap and crown strap respectively over and about the shoe.

**9**. The safety shoe pad of claim 8, wherein the unitary base is made from a uniform cut of foam rubber.

**10**. The safety shoe pad of claim 8, wherein the unitary base is made from a uniform cut of composite rubber.

**11**. The safety shoe pad of claim 8, wherein the unitary base is made from a uniform cut of sponge rubber.

**12**. The safety shoe pad of claim 8, wherein the unitary base is in the general shape of an oval.

**13**. The safety shoe pad of claim 8, wherein the unitary base is in the general shape of a rectangle.

**14**. A safety shoe pad, comprising:

a) a unitary base, designed to receive and retain a shoe;

b) a toe strap, including toe strap fasteners, which toe strap is secured to a first end of the unitary base;

c) a crown strap, including crown strap fasteners, which crown strap is secured to a second end of the unitary base; and

d) wherein the toe strap fasteners and crown strap fasteners releasably secure the toe strap and crown strap respectively over and about the shoe.

* * * * *