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(54) **SKI BOOT SHIN PAD**

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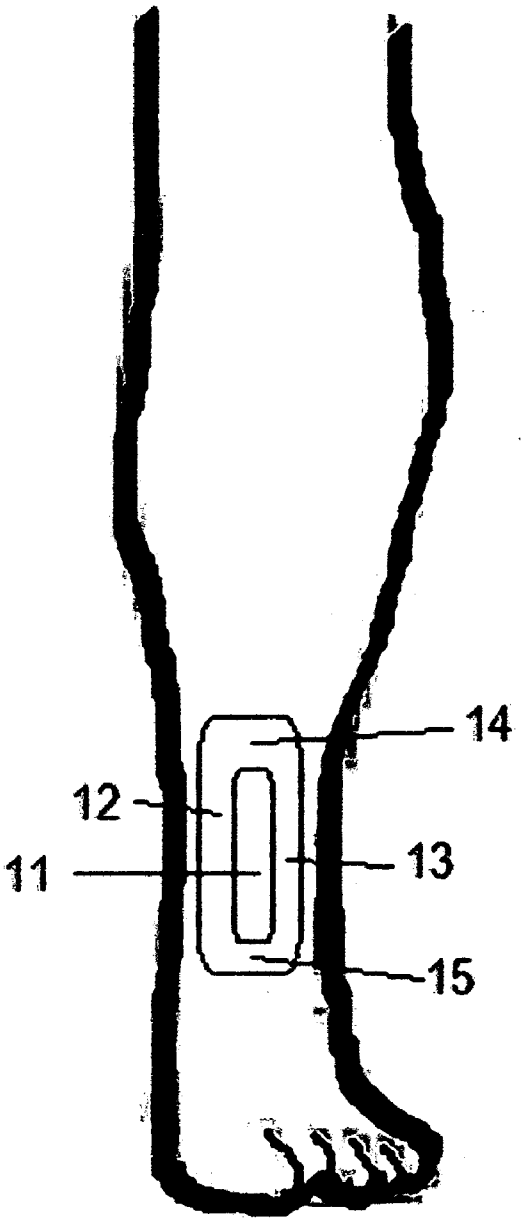
(57) **ABSTRACT**

A shin pad for use in a ski boot is disclosed. The shin pad comprises a sheet of compressible material with a void, like a doughnut hole, in the middle. The shin pad is placed on the shin with the hole placed over an area of the shin which is to be protected from pressure and friction. The material of the pad covers an area of the shin surrounding the area to be protected.



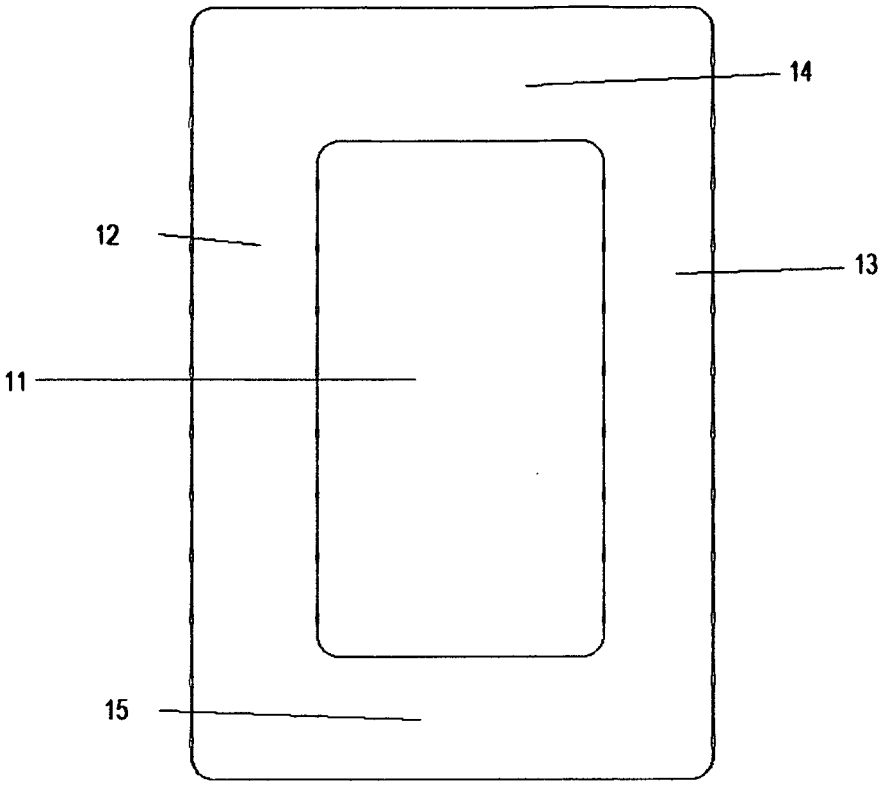


Fig. 1

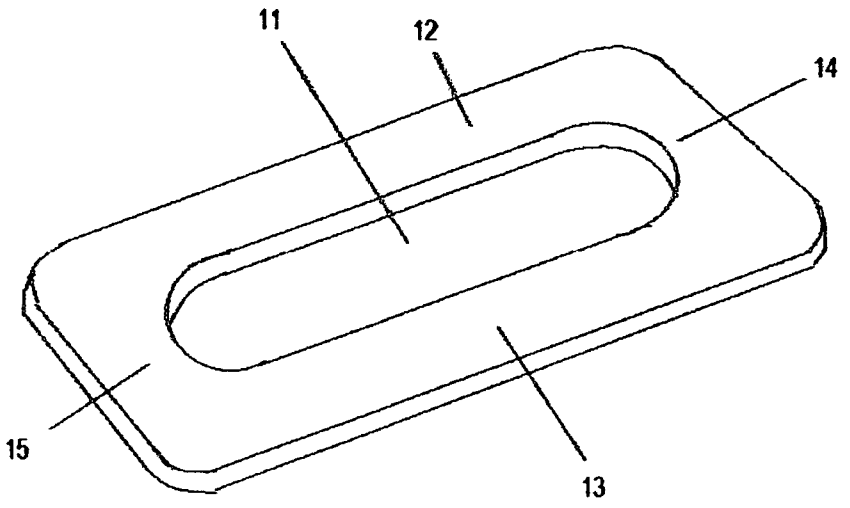


Fig. 2

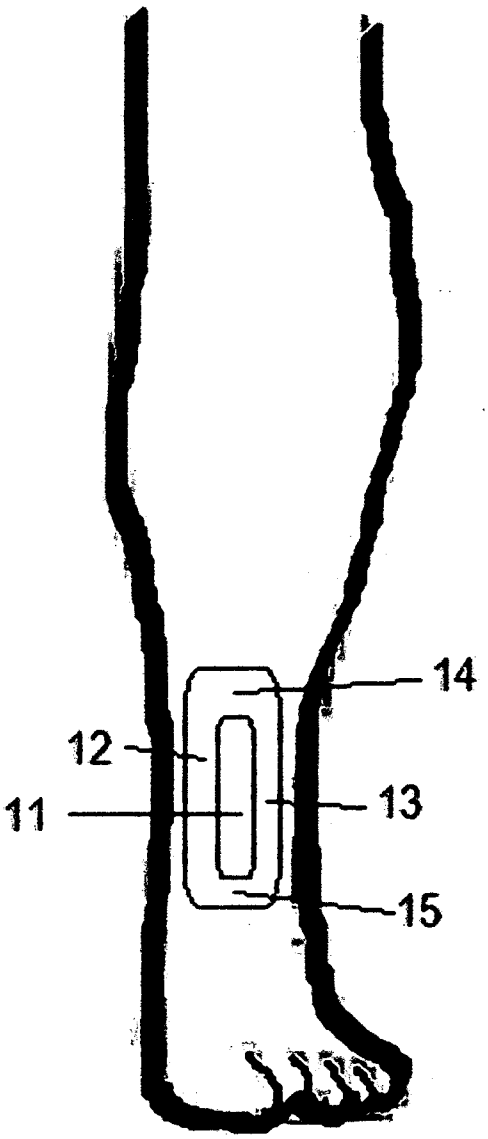


Fig. 3

SKI BOOT SHIN PAD

BACKGROUND AND FIELD OF THE INVENTION

[0001] Skiers and snow boarders experience a great deal of pressure and friction on the anterior portion of the lower leg while skiing or snow boarding. In order to effectuate turns and maintain balance, an active skier or boarder is constantly and repeatedly changing position while exerting varying degrees of forward pressure with the lower leg on the inner surface of the front upper portion of the boot. As body position changes, the leg is constantly shifting position within the boot. This results in great pressure and friction between the shin and the boot.

[0002] During skiing and snow boarding, dynamic pressure is exerted by the lower leg against the inside front portion of the boot, and thereby transmitted from the boot through the binding and to the ski or snow board. This pressure is necessary to make the ski or board turn and maintain course effectively. Ski and snow board boots are typically designed with an inner lining constructed of compressible material to provide some padding against the unavoidable shock and friction imposed on the leg and foot. However, the liner of the boot cannot be so soft as to overly compromise the transmission of force from the leg, through the boot, the binding, and ultimately to the ski or board. This padding and shock absorption function of the inner liner is limited by need to maintain sufficient rigidity to properly transmit force. Socks and other garments may provide some additional layers of padding. However, for some skiers and boarders, these garments provide only minimal protection. After a few hours of activity, painful bruising and abrasion may develop on the skin and anterior musculature in the shin area of the lower leg.

[0003] It is therefore desirable to provide additional protection against pressure and friction on the anterior lower leg. Some skiers apply tape, band aids or mole skin to reduce abrasion but this provides only minimal relief or no relief at all. Shin pads have been previously marketed for this purpose. A typical shin pad in previous use is a simple sheet of foam padding that is placed between the shin and the boot. While such foam pads do provide added shock absorption, it has been discovered that a pad with a void in the material overlying a portion of the shin provides drastically improved or complete relief from the pain of bruising and abrasion.

BRIEF DESCRIPTION OF THE DRAWINGS

[0004] FIG. **1** is a top plan view of a shin pad.

[0005] FIG. **2** is a perspective view of a shin pad.

[0006] FIG. **3** shows a shin placed on the shin of a skier.

DETAILED DESCRIPTION OF THE INVENTION

[0007] The present invention provides a shin pad for use inside a ski boot or snow board boot. The shin pad is comprised of a sheet of compressible material with a void, similar to a doughnut hole, in the material at or near the center. The pad is placed on the shin so that the hole overlies the area of the shin in which the skier desires to alleviate pain. In this fashion, the pad absorbs pressure in the surrounding area and eliminates some or all of the pressure directly to the area to be protected. Some skiers, such as those with narrow lower legs or heavier or more aggressive skiers may gain added relief by stacking two shin cushions together on one leg to provide a double thickness of padding.

[0008] The shin pad of the present invention may be constructed of any suitable material which is compressible to absorb pressure. It is also desirable that the material be somewhat resilient so that it regains some of its original thickness when not under pressure. Different degrees of absorption may be achieved by using material of different compressibility. Examples of suitable materials include, but are not limited to, closed cell foam, gel, neoprene or other soft rubber, and closed air cells. In a preferred example, the shin pad is made ethylene vinyl acetate (EVA) foam. This material is readily available from many manufacturers.

[0009] The shin pad may be shaped from a sheet of compressible material by any suitable means, such as die cutting, laser cutting, or water jet cutting. A preferred method is die cutting and shin pads of the present invention have been produced by die cutting sheets of EVA foam in accordance with well known manufacturing methods.

[0010] The shin pad may be any practical planar shape and size that provides adequate coverage of the leg and the area of the shin to be protected. The shape of the void in the central area may likewise be any practical shape that permits the pad to cover the shin surrounding the protected area while leaving the protected area uncovered. In a preferred embodiment, the shin pad is substantially rectangular and the central void is substantially rectangular or oval. The size of the shin pad and the central hole may be any practical dimension that provides adequate coverage of the leg and the area of the shin to be protected. The length and width of different shin pads may vary greatly to accommodate varying length and thickness of skiers' legs. A typical shin pad of practical dimensions may be substantially rectangular having a length up to about 175 millimeters and width up to about 90 millimeters, with the central hole in material having a length up to about 120 millimeters and width up to about 40 millimeters.

[0011] The present invention provides a shin pad comprising a planar sheet of compressible material having a shape defined by an outer perimeter and having a void in the material having a shape defined by an inner perimeter. In one embodiment, the width of the inner perimeter is between approximately 20-40 millimeters, the width of the outer perimeter is between approximately 70-90 millimeters, the length of inner perimeter is between approximately 90-120 millimeters, and the length of outer perimeter is between approximately 135-175 millimeters. In a preferred embodiment, the width of the inner perimeter is approximately 30 millimeters, the width of the outer perimeter is 81 millimeters, the length of inner perimeter is approximately 105 millimeters, and the length of outer perimeter is approximately 155 millimeters. In a particularly preferred embodiment, the shin pad comprises a substantially rectangular planar sheet of compressible material having a width of approximately 81 millimeters and length of approximately 155 millimeters, and having a void in central portion of material with a width of approximately 30 millimeters and length of approximately 105 millimeters. The shin pad may be made from compressible material selected from the group consisting of closed cell foam, gel, neoprene, soft rubber, and closed air cells. In a preferred embodiment, the shin pad the compressible material comprises EVA foam.

[0012] FIG. **1** shows a top plan view of a shin pad of the present invention. The shin pad is a sheet of compressible material that has a void (**11**) located centrally which is surrounded by a first lateral section (**12**), a second lateral section (**13**) an upper section (**14**) and a lower section (**15**) which

together form a perimeter around the void. The shin pad shown in FIG. **1** is substantially rectangular, but may be any other suitable planar shape with a centrally located void in the material.

[0013] FIG. **2** is a side perspective view of the shin pad shown in FIG. **1**.

[0014] FIG. **3** shows a shin pad placed on the shin of a skier. The void is placed over the area of the shin which is desired to be protected from bruising and abrasion. By placing the shin pad in this fashion, the pressure exerted by the boot is distributed and absorbed by the lateral (**12**, **13**), upper (**14**) and lower (**15**) sections of the pad. Pressure is thus significantly reduced or eliminated on that area of the shin which is exposed within the void. When pressure is relatively low, there may actually be no contact between the boot and the shin within the void, thus completely eliminating pressure and abrasion. This effect may be enhanced by using material with a lesser degree of compressibility. Additionally, as noted, two or more shin pads may be stacked together to increase the thickness of padding.

[0015] The present invention has been described herein with reference to various embodiments, but the invention is not limited to the embodiments described, and is intended to encompass other embodiments which may be covered by the claims.

1. A shin pad consisting essentially of a planar sheet of compressible material having a shape defined by an outer perimeter and having a void in the material having a shape defined by an inner perimeter.

2. (canceled)

3. (canceled)

4. A shin pad consisting essentially of a substantially rectangular planar sheet of compressible material having a width of approximately 81 millimeters and length of approximately 155 millimeter, and having a void in central portion of material with a width of approximately 30 millimeters and length of approximately 105 millimeters.

5. A shin pad of claim **4**, wherein the compressible material is selected from the group consisting of closed cell foam, gel, neoprene, soft rubber, and closed air cells.

6. A shin pad of claim **5**, wherein the compressible material comprises EVA foam.

7. A shin pad of claim **1**, wherein the inner perimeter has a width between approximately 20-40 millimeters and a length between approximately 90-20 millimeters, and the outer perimeter has a width between approximately 70-90 millimeters and a length between approximately 135-175 millimeters.

8. A shin pad of claim **7**, wherein the inner perimeter has a width between approximately 30 millimeters and a length between approximately 105 millimeters, and the outer perimeter has a width between approximately 81 millimeters and a length between approximately 155 millimeters.

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