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(54) **BOOT BINDING**

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(57) **ABSTRACT**

A boot including a binding mechanism (60) for attachment to a motive device such as a snowboard (195), the motive device including a body and anchor means such as an array of bolts (50) attached to an upper surface of the body, the anchor means including at least one decent such as a bolt head (53) spaced from the body and having an underside surface (54), the boot including a base (7) having a footbed (4) on which a user's foot may directly or indirectly rest and a sole member (6) spaced from the footbed and lying substantially in a plane. The sole member includes one or more openings (9) to one or more recesses or cavities (8) in the base; the boot is engageable to the anchor means by engagement means (112) on or preferably in the base; and the engagement means includes reciprocating means such as slider (95) operable to toggle between: a non-engaged position whereby there is non-engagement between the anchor means and the engagement means; and an engaged position whereby the base is releasably locked onto the motive device.

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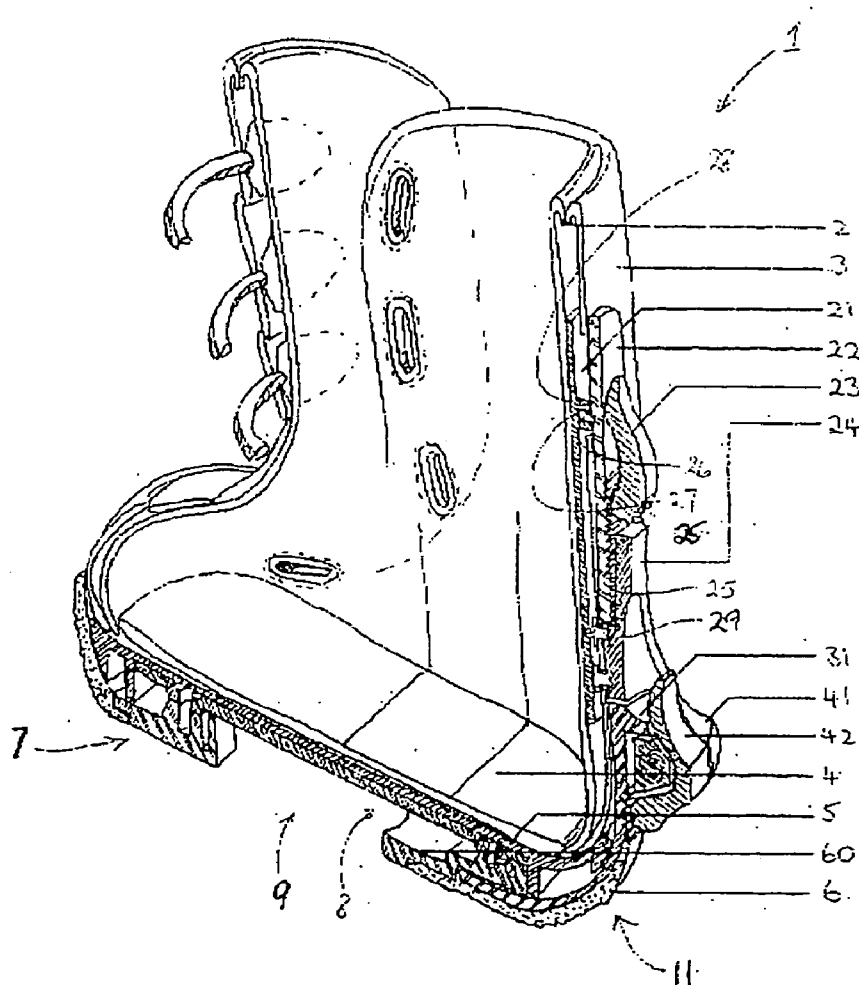
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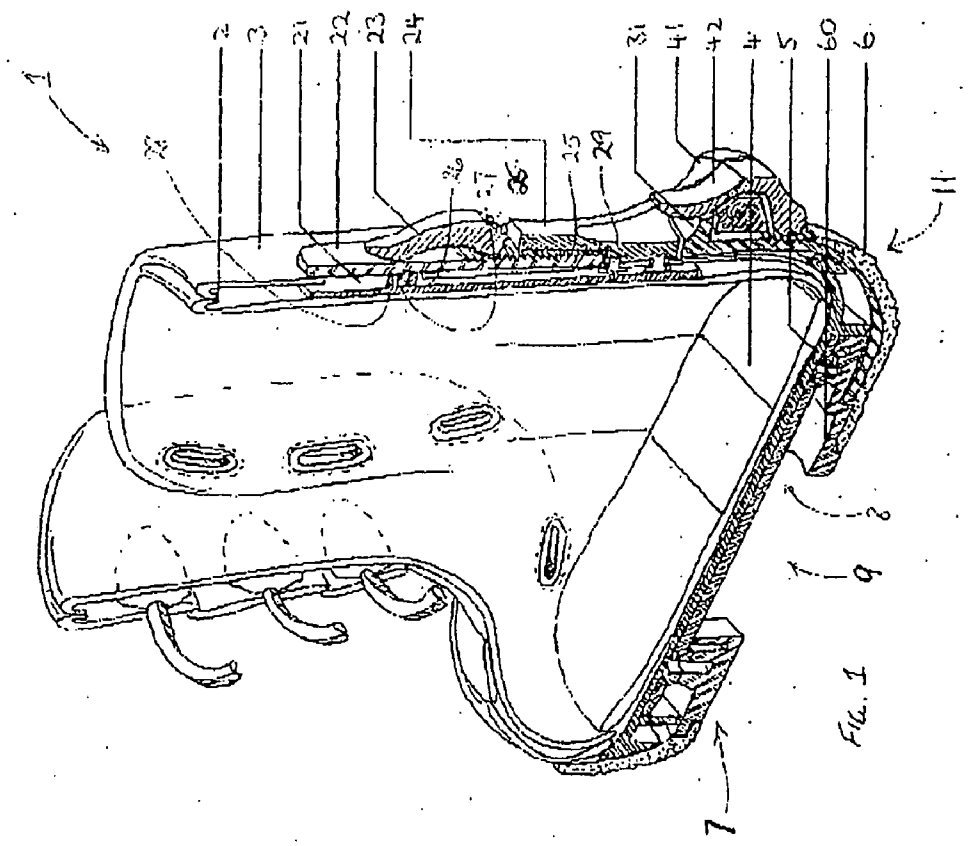


FIG. 1

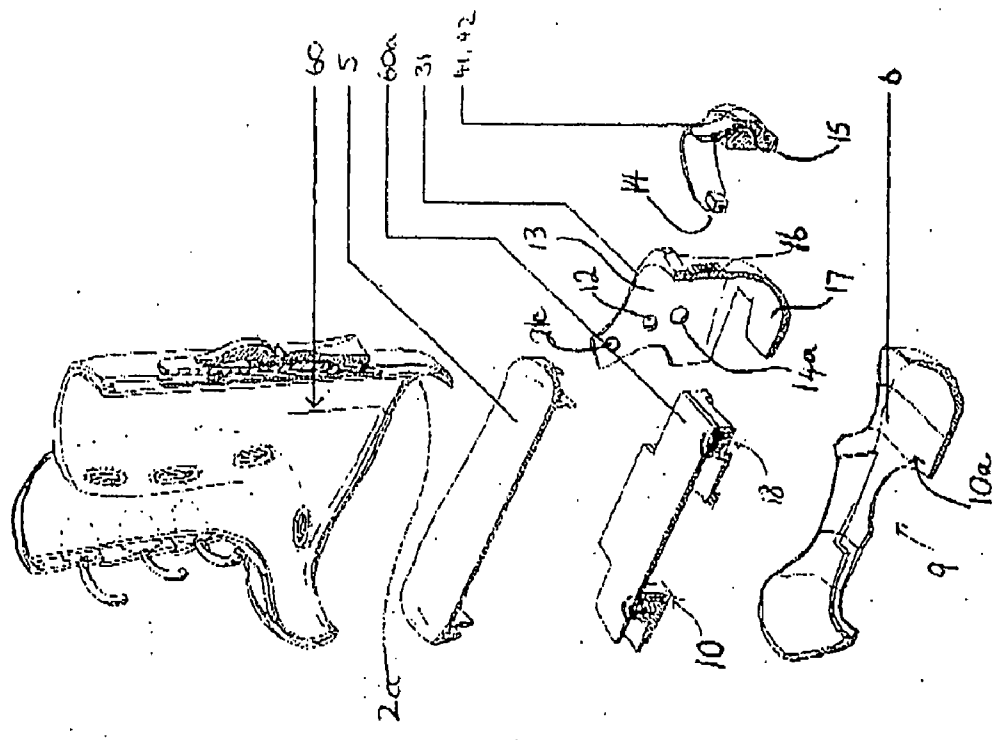
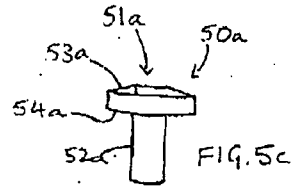
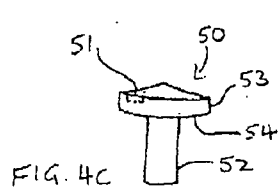
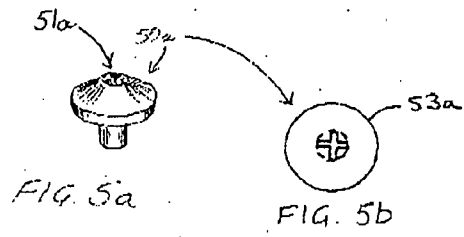
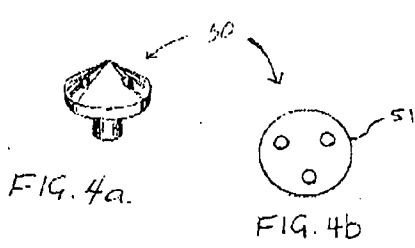
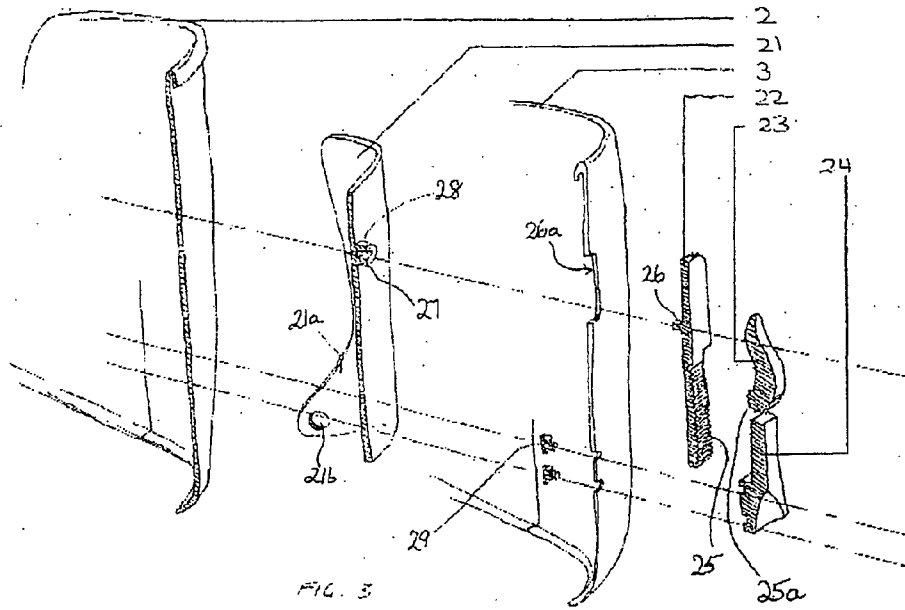


FIG. 2



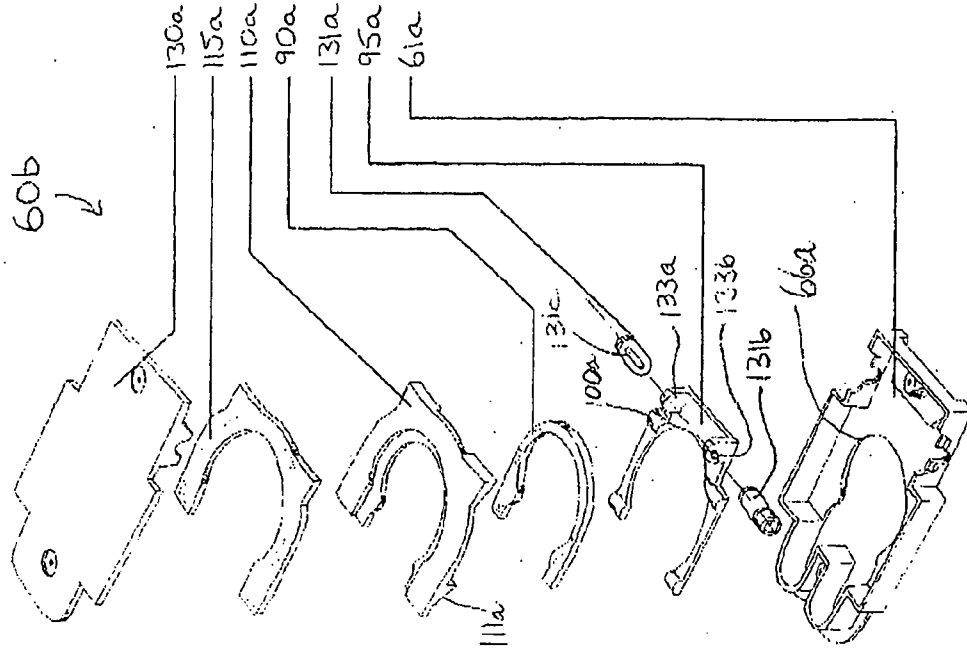


FIG. 7

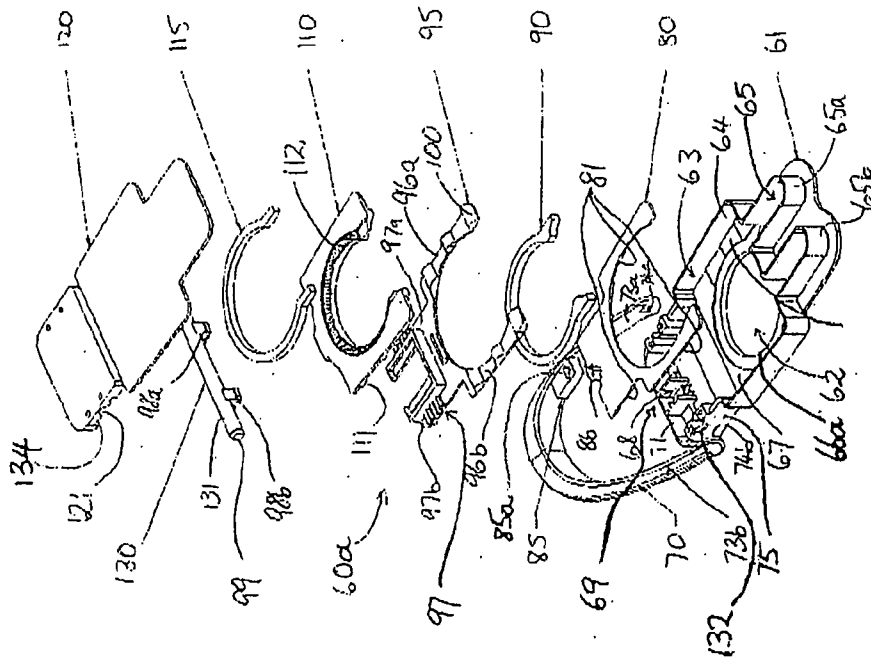


FIG. 6

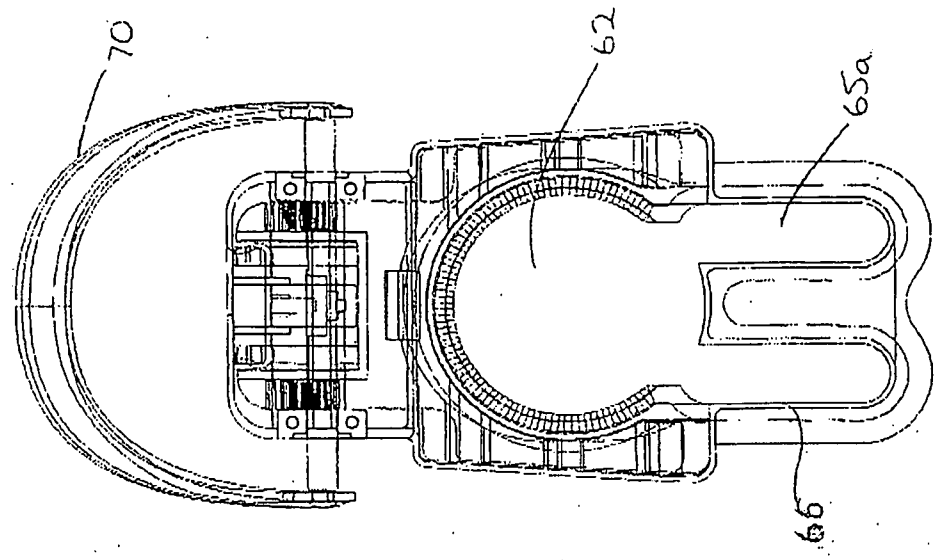


FIG. 12

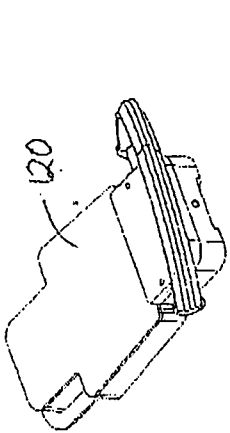


FIG. 11a

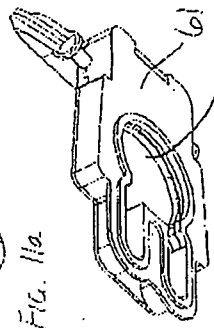


FIG. 11b

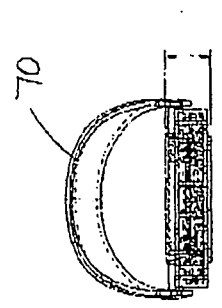


FIG. 11c

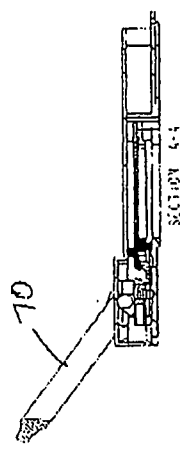


FIG. 8

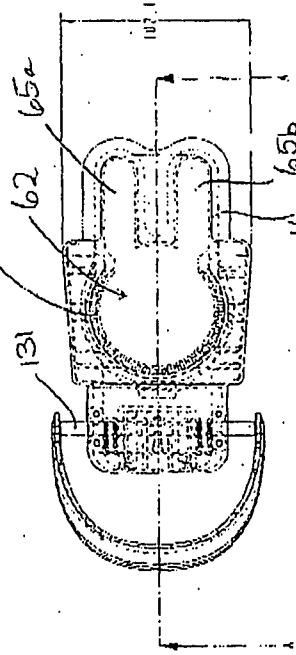


FIG. 9

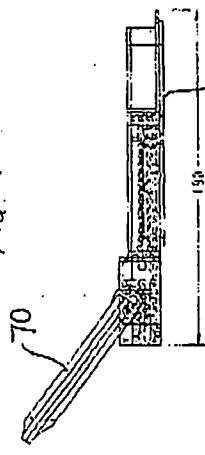
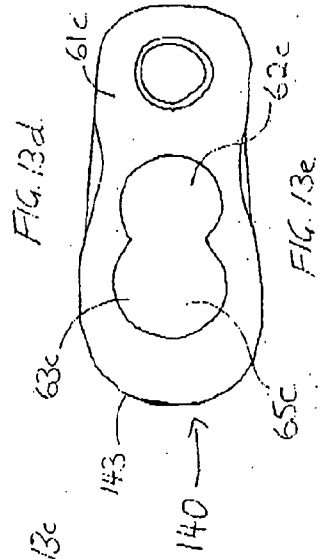
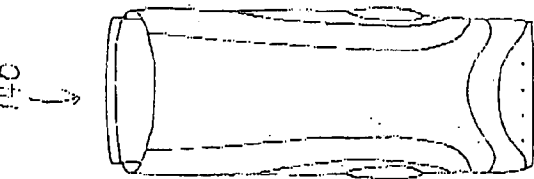
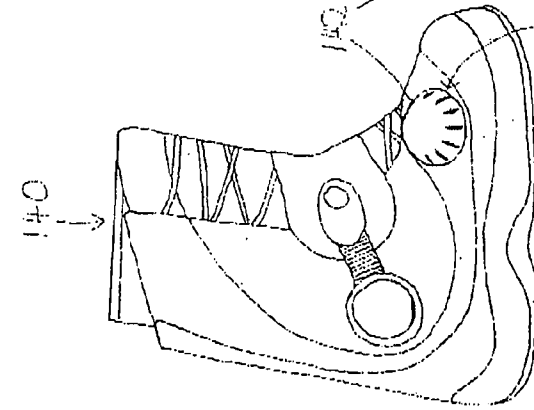
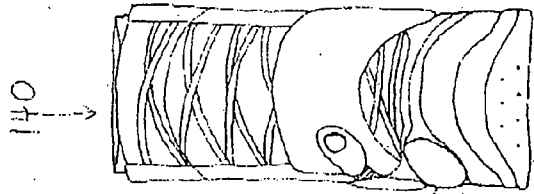
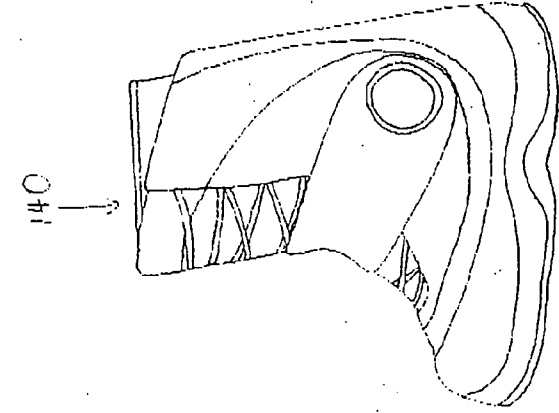


FIG. 10



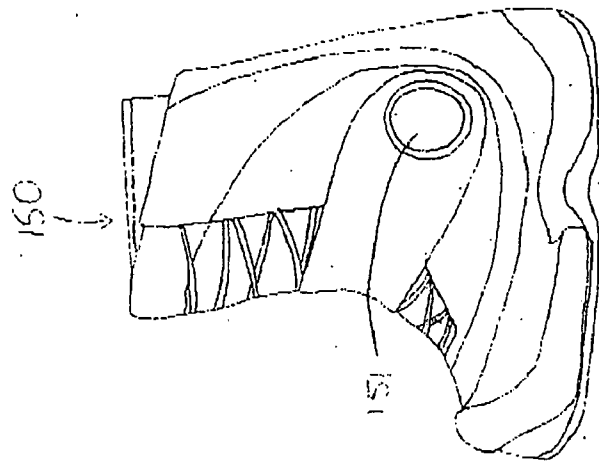


FIG. 14a

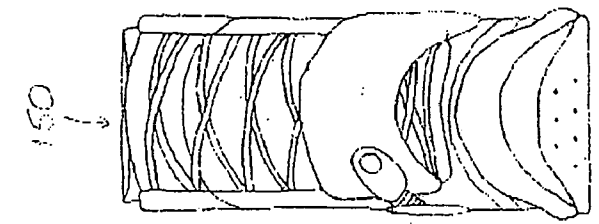


FIG. 14b

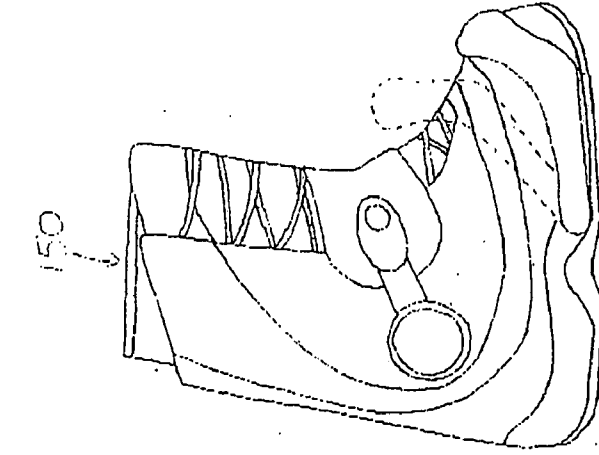


FIG. 14c

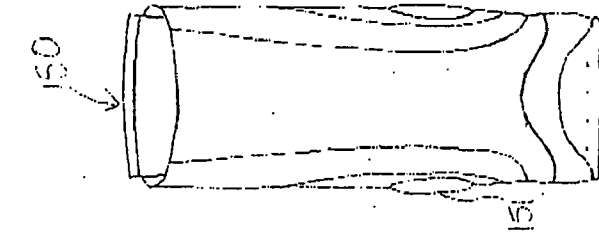


FIG. 14d

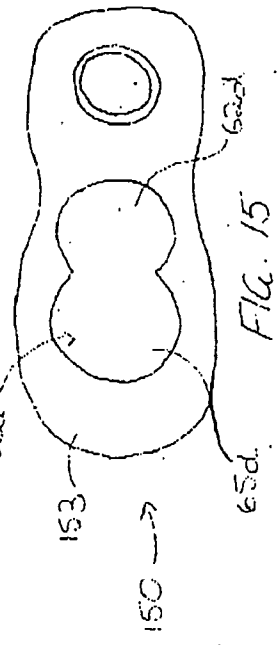


FIG. 15

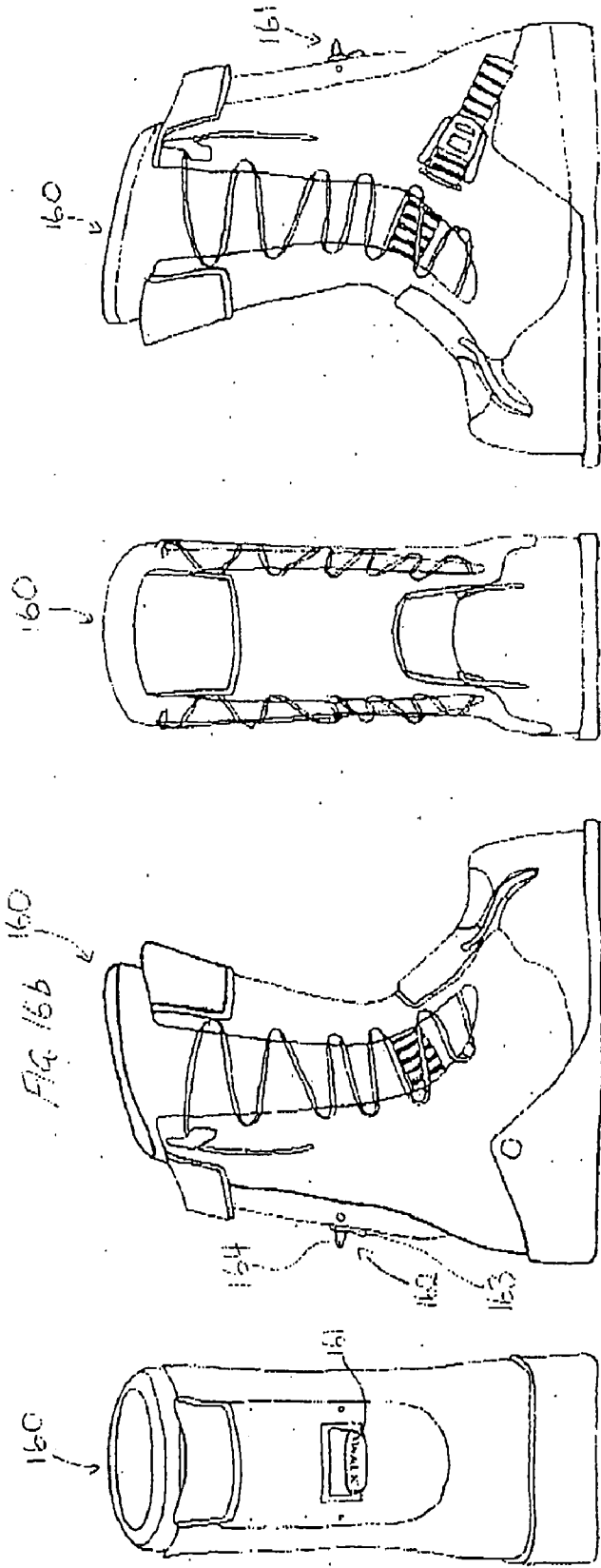


FIG. 16d

FIG. 16c

FIG. 16b

FIG. 16a

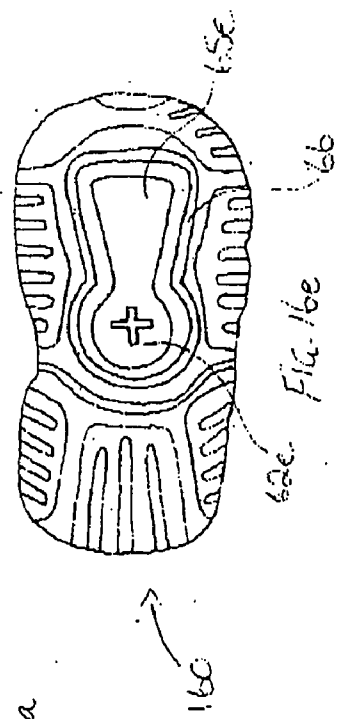


FIG. 16e





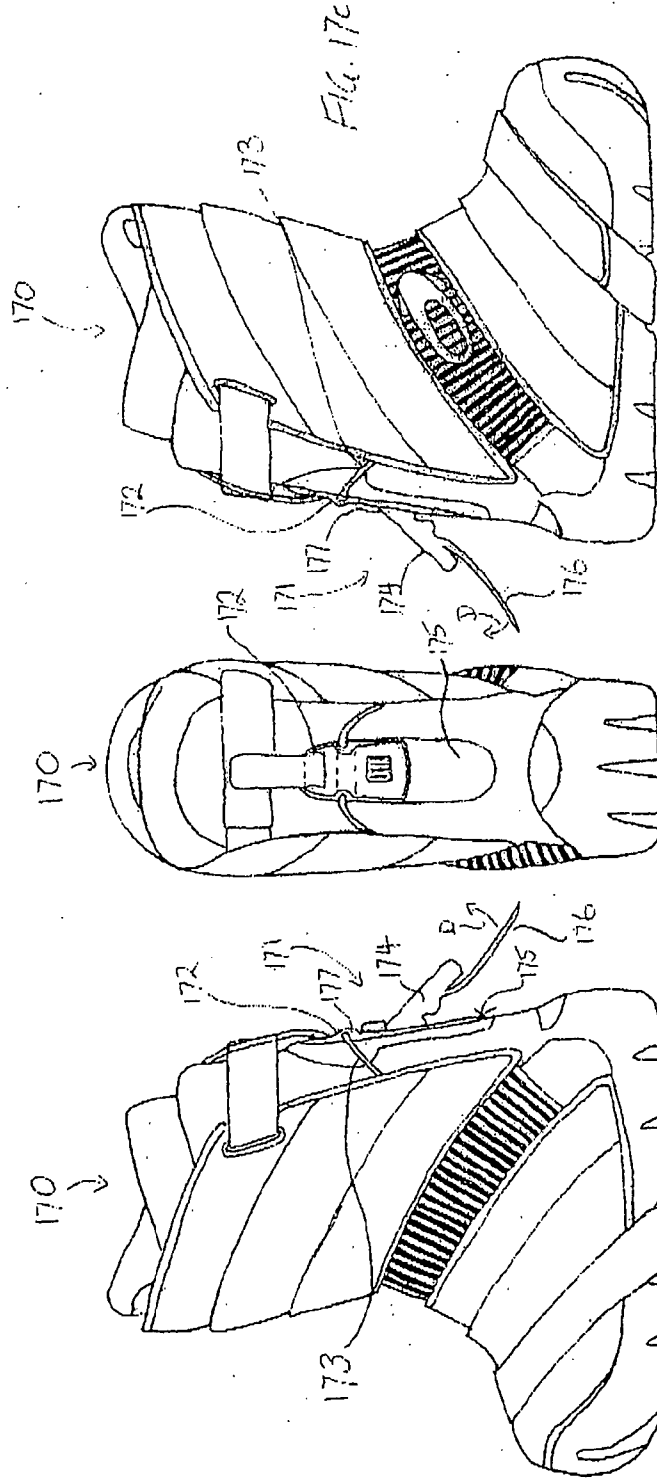
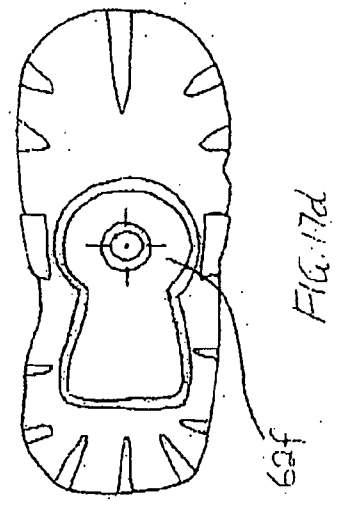


FIG. 17b

FIG. 17a



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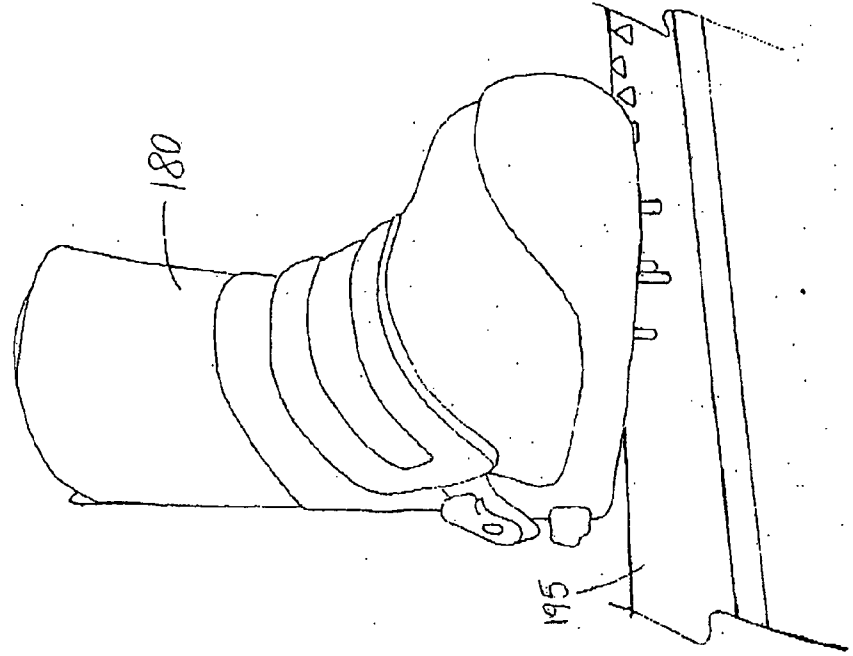


FIG. 18b

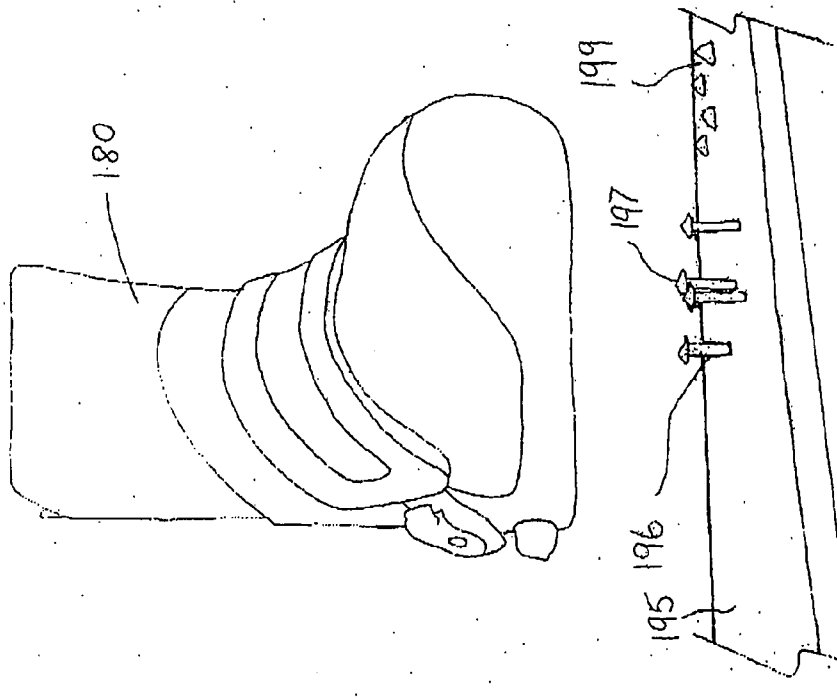


FIG. 18a

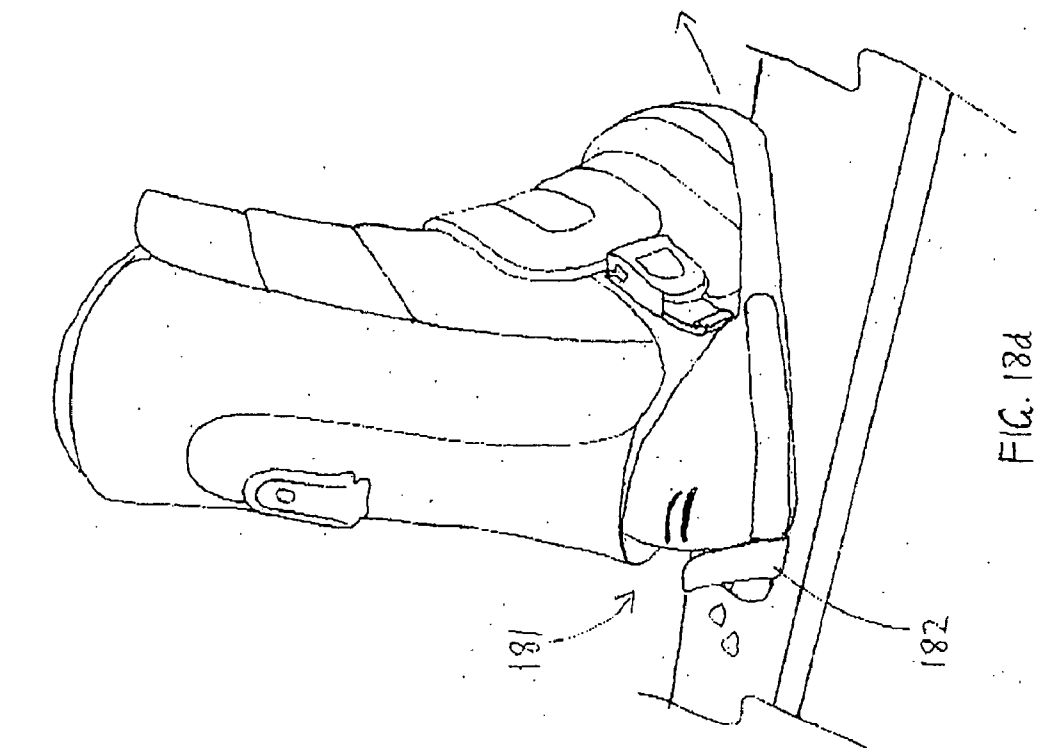


FIG. 18d

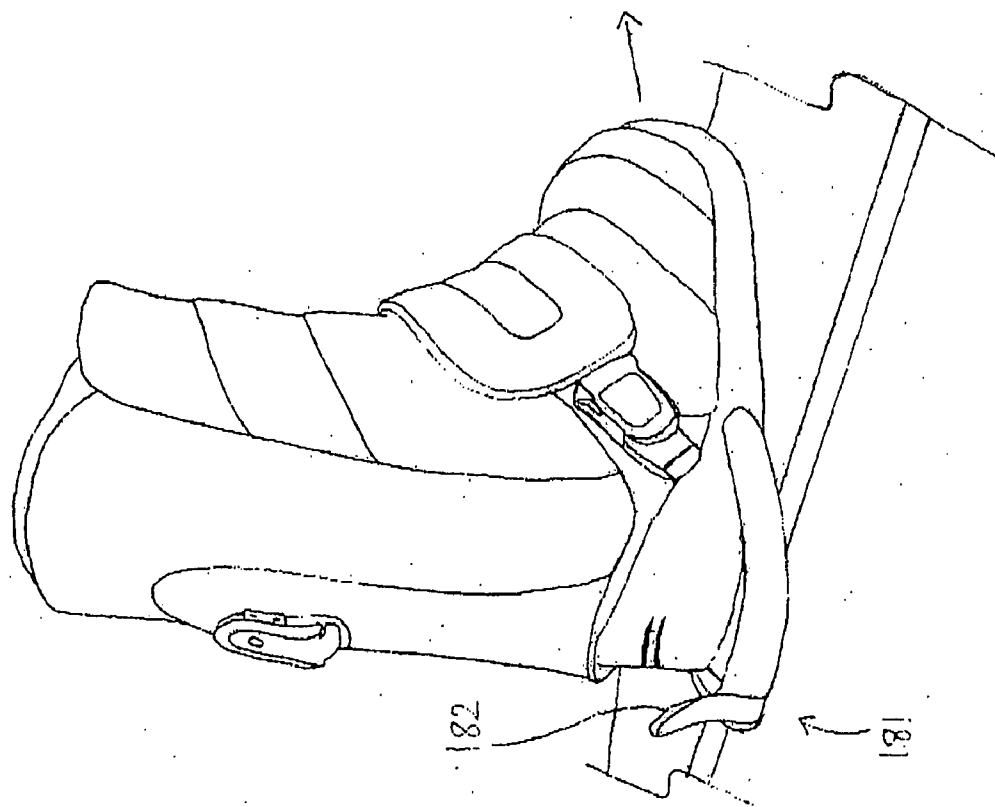


FIG. 18c

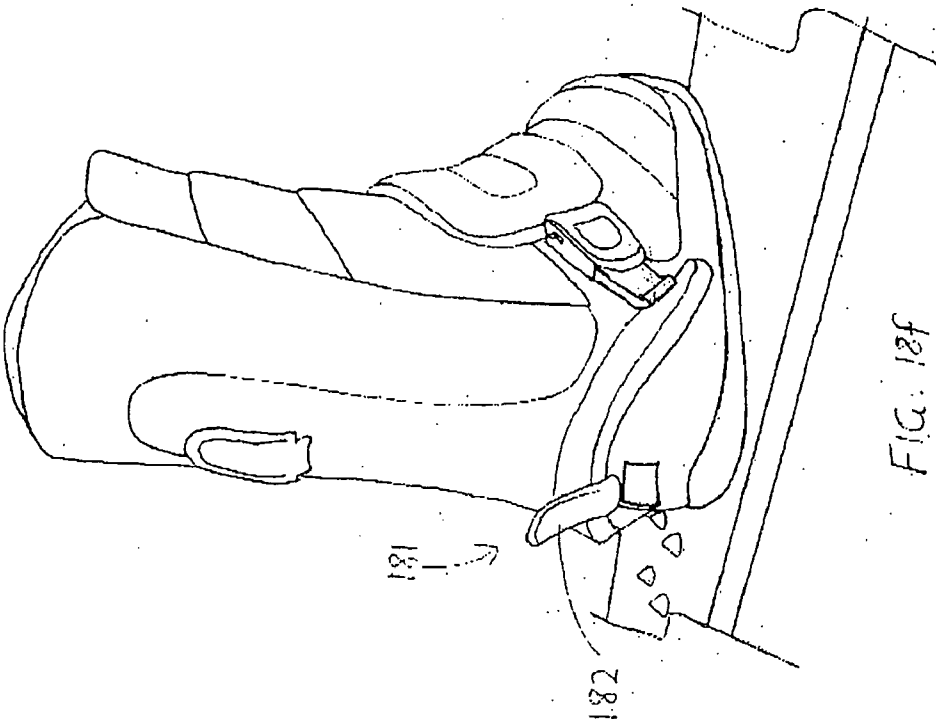


FIG. 18f

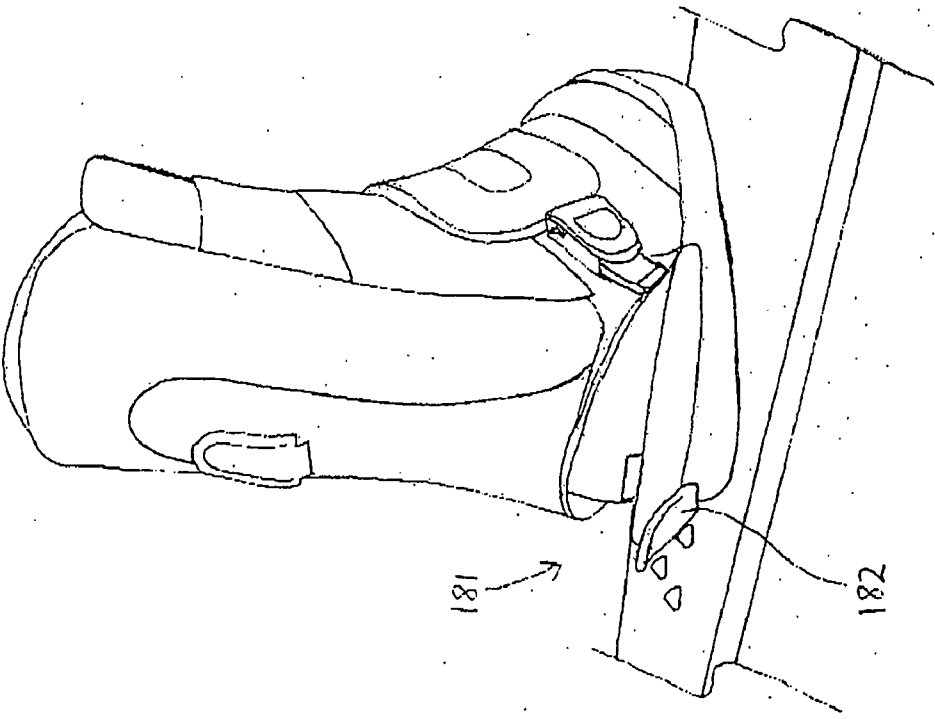


FIG. 18e

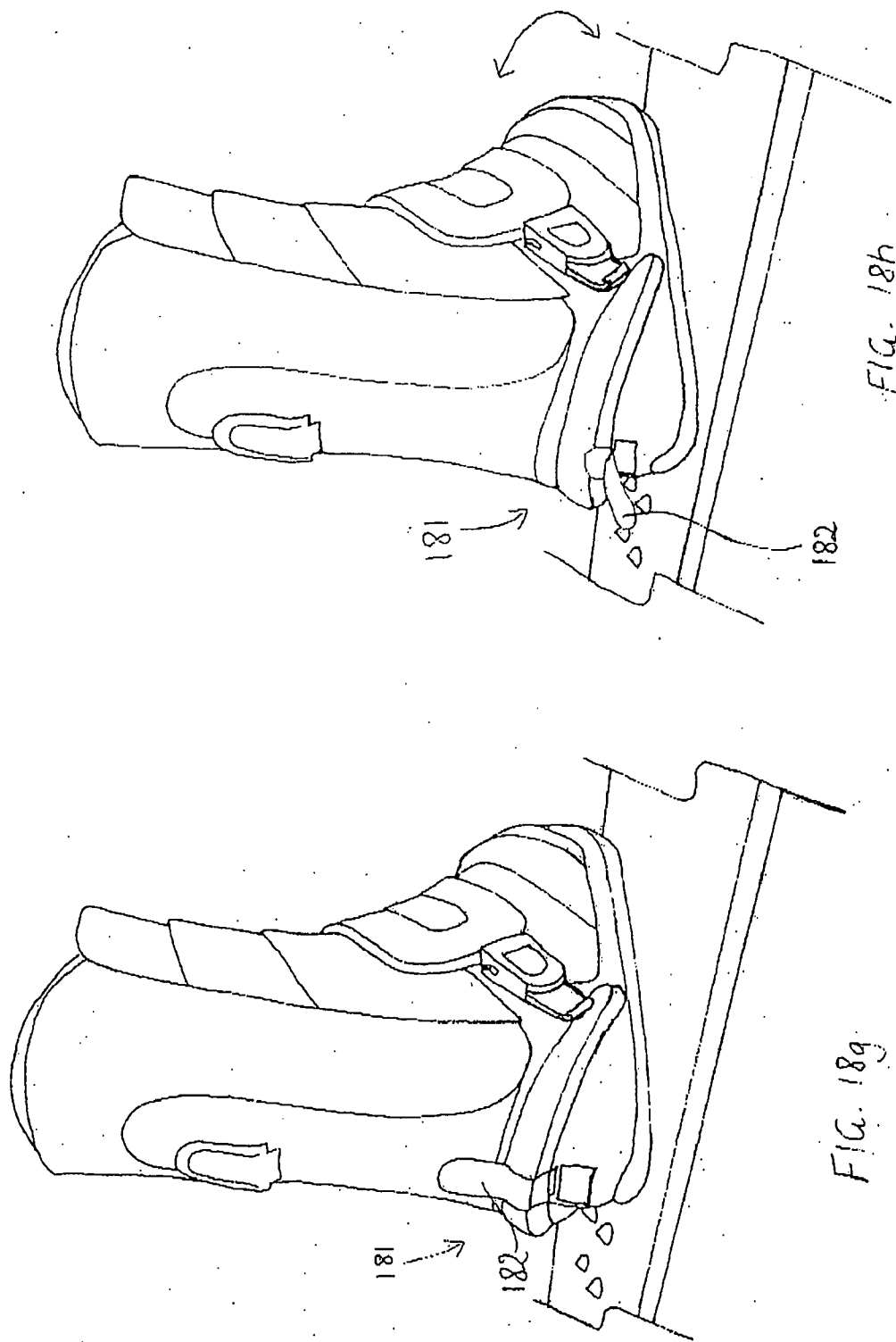
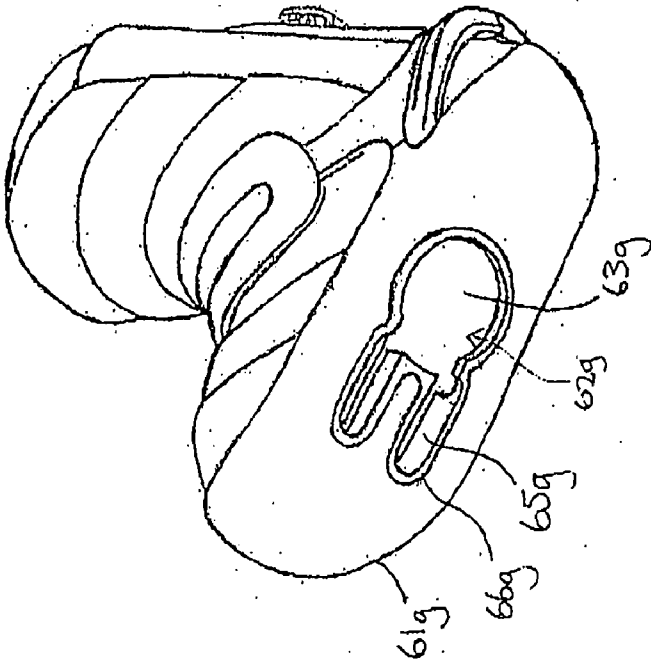
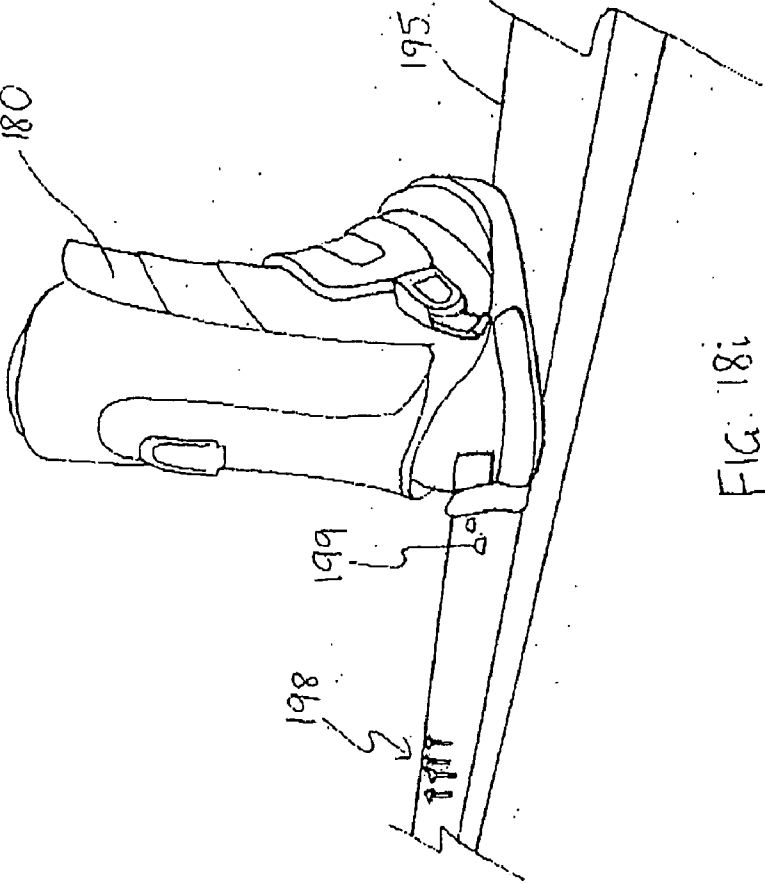


FIG. 18h

FIG. 18g



**BOOT BINDING**

FIELD OF INVENTION

[0001] This invention relates to a boot for attachment to a motive device such as a sliding or rolling device. More particularly, this invention relates to a boot for a sliding or rolling device such as a snow hoard.

BACKGROUND ART

[0002] The following references to and descriptions of prior proposals or products are not intended to be, and are not to be construed as, statements or admissions of common general knowledge in the art. In particular, the following prior art discussion does not relate to what is commonly or well known by the person skilled in the art, but assists in the understanding of the inventive step of the present invention of which the identification of pertinent prior art proposals is but one part.

[0003] For convenience, this invention will be described primarily with exemplary reference to snowboard binding systems, although the skilled person will readily appreciate that various other, mainly sporting, applications may be made of the invention without departing from the spirit and scope of the invention.

[0004] Descriptions of boot binding systems for snowboards currently available may be found in U.S. Pat. No. 5,261,689, U.S. Pat. No. 5,356,170 and U.S. Pat. No. 5,722,680 (Dodge, et al). These documents disclose a boot binding with a base to the supported on a snowboard. The base includes a circular opening in its centre which receives a disk shaped base plate. The base or hold-down plate may be secured to the hoard in several different positions on the board with the binding base assuming any position by rotation with respect to the hold-down plate. The hold-down plate is secured by screws received in holes in the hoard. This presents a problem in the various situations, sometimes unpredictable, when a user needs to adjust the orientation of the boot binding. This most obviously occurs preparatory to the user mounting a chairlift where the orientation of the boot binding would, if possible, be desirably changed to enable the user to sit comfortably and safely on the chairlift. Shortly before or alter the user alights from the chairlift, the boot binding is then adjusted to the orientation desired for snowboarding. However, this does not happen in practice because of the difficulty involved in such adjustments. The snowboarder must be resigned to travelling on the chairlift in an awkward position because convenient adjustment is not possible.

[0005] Another example where the difficulty of adjustment of the orientation of the boot binding presents itself is where the user desires to skate along. Such situations may arise where the slope is insufficiently steep to enable down-hill snowboarding or a slight incline must be traversed to get to the next downhill slope. Casual users who hire snowboarding gear from a ski hire store are generally required to decide on their feet position before they even get unto the ski slopes. Normally an experienced operator will adjust the boot bindings on the casual user's behalf. If the casual user discovers that a slightly or even radically different orientation would be more comfortable or may even prevent injury, the casual user has little option but to persist with the binding orientations set by the hire store operator. Even if a screwdriver is available on the slopes, ski hire equipment may be difficult to adjust due

wear-related burring of the tool-engaging portions of the screws, nuts or bolts used to secure the base plate, not to mention the difficulties associated with the adjustment of ice-encased cold metal parts using cold hands.

[0006] The Applicant has previously described an improvement over curt-Lastly available snowboard binding arrangements in an International Patent Application having Publication No. WO 2005/014126 (Fletcher). This document describes a snowboard binding (3) including a binding base (11) having an aperture (14) therein for receiving a snowboard disc (50) used to secure the binding base to the snowboard (1). The perimeter of the aperture (14) includes a variable gap (22) and a clamp (104) is used to vary the size of the gap to enable movement ape binding base relative to the disk. The advantage of this arrangement over other prior art was the ability to easily adjust the snowboard boot's orientation by simply releasing the clamp and reorienting the binding base on the disc. One disadvantage of this and previous prior art proposals is that the disc arrangement did not allow snow to be cleared from the sole. The snow can tend to collect and compact around the binding disc and it is not easily cleared.

[0007] The prior art descriptions referred to above do not allow a user to conveniently and releasably secure the boot on a sliding or rolling device such as a snowboard without the aforementioned difficulties associated with in situ manipulation.

[0008] An object of the present invention is to ameliorate the aforementioned disadvantages of the prior art or to at least provide a useful alternative thereto.

STATEMENT OF INVENTION

[0009] Accordingly, in one aspect of the invention there is provided a boot for attachment to a motive device, the motive device including a body and anchor means attached to an upper surface of the body, the anchor means including at least one detent spaced from the body and having an underside surface, the base of the boot including a footbed on which a user's foot may directly or indirectly rest characterized in that:

[0010] the base further includes a sole member spaced from the footbed and lying substantially in a plane;

[0011] the sole member includes one or more openings to one or more cavities in the base between the footbed and the sole member, the one or more openings for receiving the anchor means;

[0012] the boot is engageable to the anchor means by engagement means on or in the base; and the engagement means includes reciprocating means operable to toggle between:

[0013] a non-engaged position whereby there is non-engagement between the anchor means and the engagement means; and

[0014] an engaged position whereby the base is releasably locked onto the motive device.

[0015] The motive device may include any suitable device for moving the wearer of the boot along, through or across a stratum, surface or medium. The motive device may be capable of sliding or rolling. The motive device may be a ski, snowboard, rollerboard, grass ski or the like. However, without limiting the foregoing, the invention is most suitably adapted to snowboarding. Accordingly, whilst the body may be plastic molded or metal cast in any of a variety of shapes, most typically the body will be substantially planar with at least one upturned, curved end corresponding to the front of

the device. The device may be made of plastic, metal; cellulosic material such as layered wooden panels adhered with resin, fiberglass or any combination of the foregoing, keeping in mind that the temperatures that the device may be subject to in use could be around 0° C. or less for devices used in the snow and around 40° C. or more for devices used on potentially hot surfaces when exposed to intense sunlight, such as bitumen or concrete.

**[0016]** The anchor means may include any suitable physical recess and/or protrusion, magnetic or other detail or engaging device adapted to engage the engagement means. Preferably, the engagement means includes at least one lateral feature (Or engagement to a complementary lateral or recess feature on or in the boot. The anchor means may include at least one upper overhanging portion having an underside surface. The anchor means may include any physical or magnetic anchoring feature adapted to engage the boot.

**[0017]** In prior snowboarding devices, there is typically provided two sets of three or four threaded bores centrally located and corresponding to the intended locations of the user's boots. The prior art anchor means may accordingly include one or more correspondingly threaded bolts which are used to secure a board engaging member, typically a disc shaped plate such as that identified by reference numeral 50 in the Applicant's international application having Publication No. WO 2005/014126 referred to above.

**[0018]** Advantageously, in the present invention the disc may be dispensed with and the anchor means may comprise a set of one or more bolts. However, it will be appreciated by the skilled person that other anchor configurations may, in some circumstances, be desirable. Such configurations may utilize the securing option offered by the threaded bores found in standard and existing gram/boards. The bores may be used to mount an anchor to the device that uses threaded fasteners to secure the anchor to the device.

**[0019]** Preferably, the anchor means comprises a shaft or base that spaces the upper detent, such as the overhanging portion, from the upper surface of the body. Where the anchor means includes one or more bolts, the bolts may include a shaft optionally threaded and terminating at their respective upper ends with a bolt head. The bolt head may be axially asymmetrical so that the overhanging portion overhangs on only one side of the shaft or anchor base or at least does not completely surround the top end of the shaft. Alternatively, the overhanging portion may be coaxial with the shaft or anchor base and may have a larger footprint than the shaft or anchor base.

**[0020]** Preferably, the overhanging portion is generally round or elliptical, but may be polygonal in plan view in the manner of a typical bolt head, such as a hexagonal bolt head. The bolt head may be plate-shaped or may be beveled or tapered in some manner. For example, the bolt head may be circular in plan view and conical or frustoconical in general shape. In such arrangements, the anchor means may include key means to enable manipulation by a suitably adapted tool. For example, where the anchor means includes one or more bolts, the or each bolt head may include one or more recesses to co-act with a tool such as a screw driver or Allen key. The key means may require a specialized tool to prevent unauthorized interference or removal. The skilled person will appreciate that other fastening means, such as screws may also be used, provided that they have the necessary overhanging portion.

**[0021]** The underside surface of the overhanging portion may be flat, curved and/or inclined. The underside surface may include improved friction or gripping surface features, such as ribs, grooves, ridges, or irregular lines, protrusions or dimples, whereby to provide improved friction grip. Preferably, the underside surface is slightly outwardly, upwardly curved to more easily permit a corresponding engaging member to slide around or maim the underside surface until it comes into abutment at a settled and desired position.

**[0022]** The anchor means may be effective to remove compacted snow, ice and other debris from the opening(s) and cavity or cavities. The anchor means may be advantageously configured to scrape such debris from the opening(s) and cavity or cavities. For example, the overhanging portion may be configured to operate in the manner of a pick. Accordingly, the present invention may provide effective means to remove debris in a manner that prior art arrangements are not equipped to emulate. In a preferred embodiment, the anchor means comprises one or more bolts with bolt heads having peripheral edges well adapted to enable a wearer of the boot to scrape debris from the interior spaces of the boot base.

**[0023]** The boot is preferably ankle high with sold support around the ankle region typical of ski, snowboarding, rollerboarding or rollerblading boots.

**[0024]** The footbed may include an insert, but preferably is a panel on which a wearer's foot directly rests and forms part of the structure of the base. The sole member refers to the ground-engaging panel or layer on the underside of the base and preferably includes tread or grip surface features. The sole member may be formed from a rubber, plastic leather, synthetic woven material or metal components and optimally a combination of two or more of these materials. In particular, the portion of the sole member defining the opening is made from a hard and abrasive-resistant material, such as light weight metal such as Aluminum or a light metal alloy, or plastic such as polypropylene or polycarbonate. Alternatively, the periphery of the opening may be defined by a downward wall forming an extension of the lower casing molding and the sole member made of rubber or other soft material may be formed or adhered to the lower casing around the downward depending wall defining the opening.

**[0025]** The base of the boot may be a unitary structure. The base may be integrally formed during manufacturer, such as by injection molding. The base may be made from suitable materials, such as rubber and/or plastic materials, preferably with good low temperature tolerance and performance such as where the device is to be used in snow or good high temperature tolerance and performance such as where the device is to be used in hot conditions.

**[0026]** Alternatively, the base may be a modular structure comprising separately formed components contained in a base casing the base casing may include a casing top supporting or forming at least part of the foot bed and the base casing may further include the sole member. The foot bed may be a separate, softer cushioned layer positioned above the casing top. The casing top may be a rigid and/or semi-flexible, substantially planar member. The casing top may extend substantially the full width and length of the base, so that the casing top may have a similar footprint to that of the boot base. The casing top may be made from a suitable plastic material.

**[0027]** The engagement means may be external to the boot and may directly or indirectly bear against the sole member in the engaged position. For example, the engagement means may include a slidable member or slide that may be located in



use under the sole member and in the engaged position may bear against the underside of the sole member so that the base is caused to clamp upwardly against the underside surface or detent of the anchor means.

**[0028]** The engagement means is preferably mounted and/or contained on or in the boot. The base may also include the engagement means. Preferably, the base includes the slide. The slide may be moveable within a region, zone or plane substantially parallel to the sole member plane. The slide may be moveable between the non-engaged position and the engaged position. In the engaged position, the anchor underside surface or detent may abut the base. The engagement means is preferably located primarily in the base. However, the reciprocating means may be actuable from a position outside the base. For example, the reciprocating means may include actuation means in the form of slide, dial, handle, button or lever means adapted to toggle the reciprocating means between the non-engaged and engaged positions.

**[0029]** The actuation means may be located on the bridge, ankle area or on the heel of the boot. Preferably, the actuation means is located on the heel of the boot. Preferably, the actuation means includes a lever. The lever may be adapted to rotate about a pivot point, a pair of spaced pivot points, a pair of spaced, coaxial pivot points or may be adapted to slide whereby to activate the reciprocating means. Preferably, the actuating means is a pivotal lever located in and/or on the boot heel. Preferably, the actuating means is released to the non-engaged position by upward movement, so that, for example, the boot may release the snow hoard if the snow hoarder falls and slides feet-first down a slope.

**[0030]** The slide is preferably interposed between the casing top and the sole member. Movement of the slide through the slide plane is actuated by the actuating means. The movement of the actuating means is operable to cause the slide to travel through its plane or to move from one horizontal plane to another, substantially horizontal, plane. This movement may be achieved by any one of a number of mechanisms which will occur to the skilled person. In one example, the reciprocating means may include a rack and pinion arrangement. Preferably, the slide includes the rack. Still more preferably, the pinion is mounted on or forms part of a rotatable member operable by the user when the engagement means is in the non-engaged or the engaged position. Preferably, the rotatable member is the lever means adapted to rotate the pinion whose teeth co-operate with a rack on the slide. The rack may be integrally molded with the slide.

**[0031]** The reciprocating means may include cam and/or ramp means to vertically shill the reciprocating means between the engaged and non-engaged positions by moving the slide horizontally through a first plane over ramp or cam means whereby to vertically lift or drop the slide relative to the first plane so that the slide vertically moves and slides into a different plane. The cam may be mounted on a rotatable member and comprise a rotatable eccentric bearing surface. Alternatively, the cam or ramp means may be located on different co-operating components, such as the slide and the sole member or another component of the base whereby to force the slide to ride up or down to toggle between the engaged and non-engaged positions.

**[0032]** The opening in the sole member is preferably adapted to receive the anchor means, at least to the extent of the overhanging portion or other detent. The engagement means may be in the form of a spring-release mechanism, such as may be found in cycling pedal cleats or nordic ski

bindings where a spring loaded detent means traps a boot mounted bar or flange and may be released by deflection of the spring biased detent. Such a spring loaded detent mechanism is preferably adapted to engage the anchor means, such as one or more bolt heads. Preferably, the opening includes at least one entry/exit track or passage and a locking aperture. The entry/exit track or passage may be used to permit the anchor means to enter the base cavity. The anchor means may then be adapted to move along a direction generally parallel to the plane of the sole member into the locking aperture wherein a base member slides underneath the overhanging portions or other detent means. The slide may then by forced underneath the locking base member to lift the locking base member into engagement with the overhanging portions by forcing the slide member to ride up the ramp or cam means. Preferably, the engagement means is releasable by the actuation, or release from a locked position, of the actuation means mounted on the boot. Preferably, the engagement means is located external to the base.

**[0033]** In a particularly preferred form of the invention, the boot comprises a highback mechanism to allow a user to vary the inclination of the rear wall ankle support relative to the vertical to suit the user's requirements. The highback mechanism may include a variety of mechanisms including components such as a hinged and/or spring biased pivotable wall. The highback mechanism preferably includes a rear wall against which a rotatable cam or ramped slide operates to bear against an inclinable wall. The highback mechanism is preferably located within the rear ankle wall cavity at the heel of the boot and has an actuation means, such as a lever, dial, button or slide accessible to the user to actuate the highback mechanism.

#### BRIEF DESCRIPTION OF THE DRAWINGS

**[0034]** Preferred features of the present invention will now be described with particular reference to the accompanying drawings. However, it is to be understood that the features illustrated in and described with reference to the drawings are not to be construed as limiting on the scope of the invention. In the drawings:

**[0035]** FIG. 1 is a schematic section view of a boot according to a first embodiment of the present invention;

**[0036]** FIG. 2 is an exploded view of an actuation means according to the first embodiment shown in FIG. 1;

**[0037]** FIG. 3 is an exploded view of a high back mechanism according to the first embodiment shown in FIG. 1;

**[0038]** FIG. 4a is a schematic perspective view of a bolt anchor according to a second embodiment of the present invention;

**[0039]** FIG. 4h is a schematic to plan view of the bolt anchor shown in FIG. 4a;

**[0040]** FIG. 4c is a schematic side elevation of the bolt anchor shown in FIG. 4a;

**[0041]** FIG. 5a is a schematic perspective view of a bolt anchor according to a third embodiment of the present invention;

**[0042]** FIG. 5b is a schematic top plan view of the bolt anchor shown in FIG. 5a;

**[0043]** FIG. 5c is a schematic side elevation of the bolt anchor shown in FIG. 5a;

**[0044]** FIG. 6 is an exploded view of the engagement means and boot base according to a fourth embodiment of the present invention;

[0045] FIG. 7 is an exploded view of the engagement means and boot base according to a fifth embodiment of the present invention;

[0046] FIG. 8 is a side section view of the fourth embodiment shown in FIG. 6;

[0047] FIG. 9 is a top plan elevation of the fourth embodiment in FIG. 8;

[0048] FIG. 10 is a side elevation of the fourth embodiment shown in FIG. 8;

[0049] FIG. 11a is an upper perspective view of the fourth embodiment shown in FIG. 8;

[0050] FIG. 11b is a lower perspective view of the fourth embodiment shown in FIG. 8;

[0051] FIG. 11e is an end elevation of the fourth embodiment shown in FIG. 10 from the direction of the heel;

[0052] FIG. 12 is a top plan section view of the fourth embodiment shown in FIG. 9;

[0053] FIG. 13a is a rear view of a boot according to a sixth embodiment of the present invention;

[0054] FIG. 13b is a right side view of the boot according to the sixth embodiment shown in FIG. 13a;

[0055] FIG. 13c is a front view of the boot according to the sixth embodiment shown in FIG. 13a;

[0056] FIG. 13d is a left side view of the boot according to the sixth embodiment shown in FIG. 13a;

[0057] FIG. 13e is an underside view of the boot according to the sixth embodiment shown in FIG. 13a;

[0058] FIG. 14a is a rear view of a boot according to a seventh embodiment of the present invention;

[0059] FIG. 14b is a right side view of the boot according to the seventh embodiment shown in FIG. 14a;

[0060] FIG. 14c is a front view of the boot according to the seventh embodiment shown in FIG. 14a;

[0061] FIG. 14d is a left side view of the boot according to the seventh embodiment shown in FIG. 14a;

[0062] FIG. 15 is an underside view of the boot according to the seventh embodiment shown in FIG. 14a;

[0063] FIG. 16a is a rear view of a boot according to an eighth embodiment of the present invention;

[0064] FIG. 16b is a right side view of the boot according to the eighth embodiment shown in FIG. 16a;

[0065] FIG. 16c is a front view of the boot according to the eighth embodiment shown in FIG. 16a;

[0066] FIG. 16d is a left side view of the boot according to the eighth embodiment shown in FIG. 16a;

[0067] FIG. 16e is an underside view of the boot according to the eighth embodiment shown in FIG. 16a;

[0068] FIG. 17a is a left side view of a boot according to a ninth embodiment of the present invention;

[0069] FIG. 17b is a rear view of the boot according to the ninth embodiment shown in FIG. 17a;

[0070] FIG. 17c is a right side view of the boot according to the ninth embodiment shown in FIG. 17a;

[0071] FIG. 17d is an underside view of the boot according to the ninth embodiment shown in FIG. 17a;

[0072] FIG. 18a is a front perspective view of a boot according to a tenth embodiment of the present invention shown above a motive device in the form of a snowboard;

[0073] FIG. 18b is a rear perspective view of the boot according to the tenth embodiment resting on the snowboard;

[0074] FIG. 18c is a rear perspective view of the boot according to the tenth embodiment slid forward into a mounting position on the snowboard;

[0075] FIG. 18d is a rear perspective view of the boot according to the tenth embodiment in the mounting position in which the boot may be rotated freely about a vertical axis;

[0076] FIG. 18e is a rear perspective view of the boot according to the tenth embodiment in the mounting position in which actuation means in the form of a handle is lifted to engage the boot on the snowboard;

[0077] FIG. 18f is a rear perspective view of the boot according to the tenth embodiment in the engagement position in which the handle is lifted from its lowermost position to its uppermost position;

[0078] FIG. 18g is a rear perspective view of the boot according to the tenth embodiment in which a clip is flipped upwardly to lock the handle in the engaged position;

[0079] FIG. 18h is a rear perspective view of the boot according to the tenth embodiment in which the clip is flipped downwardly to unlock the handle, the handle is rotated downwardly to an unengaged position so that the boot may be rotated about the vertical axis for adjustment relative to the snowboard;

[0080] FIG. 18i is a front and lower perspective view of the boot according to the tenth embodiment; and

[0081] FIG. 18j is a perspective view of the boot according to the tenth embodiment on the snowboard.

#### DETAILED DESCRIPTION OF THIS DRAWINGS

[0082] The following description of preferred embodiments of the invention will be described with reference to snowboard boots. However, the skilled person will appreciate that the invention has wider application to other boot binding systems, such as may be found in downhill, Nordic and grass skiing.

[0083] It will be appreciated that each of the items shown in FIGS. 1, 2 and 3 are generally bi-symmetrical along a central longitudinal vertical plane of the boot 1 generally corresponding to the section shown in each of the drawings.

[0084] Referring to FIG. 1, there is shown a boot 1 according to a first embodiment of the present invention including an inner boot liner 2 and an outer boot layer 3. Interposed between the inner boot liner 2 and outer boot layer 3 extending from the heel 11 upwards to support the user's Achilles region is an integrated internal high back plate 21 providing reinforcing to the user's ankle. The high back 21 is adjustable to vary the angle of inclination relative to the vertical and includes an outer high back slider 22 having a high back pinion 25 cooperable with a high back adjustment ratchet lever 23 that is pivotable to vary the positioning of the internal high back 21. The pinion 25a is cammed or elliptical whereby, on rotation of the lever 23 to apply variable force towards or away from the highback slider rack 25. The high back slider 22 includes a lug or protrusion 26 cooperable with a raised groove 27 defined by side walls 28 to space the internal face of the high back slider 22 from the outer facing surface of the internal high back 21. To guide the reciprocal movement of the internal high back plate 21, additional lower spacers 29 extend from the high back mechanism exterior casing 24 which casing also journals support for pivot pins (not shown) about which the ratchet lever 23 rotates.

[0085] The base 7 of the boot 1 includes a leveling spacer 5 providing a casing top for the base 7. The base 7 contains an engagement mechanism 60 actuated by a mechanical lever arm 41 having a lever arm lock 42, each supported on a heel cup molding 31 as will be described in greater detail with reference to FIG. 2. The leveling spacer 5 supports a foot bed

4. The base 7 defines a cavity 8 in communication with an opening 9 for receiving anchor means (not shown) mounted to a riding platform such as a snowboard (not shown). The base 7 includes a body structure 10 onto which is inlaid a rubberized sole 6.

[0086] The internal mechanism assembly 60 includes the heel cup molding 31 which is mounted for pivoting to an inner boot 2 casing through apertures 12 in a side wall 13 of the heel cup molding 31. The lever arm 41 has, at its remote end, a spindle 14 that cooperates with a corresponding aperture 14a in the side wall 13.

[0087] The lever arm/lock 41,42 includes a cammed bearing pinion 15 cooperable with a rack 16 formed in the rear wall of the heel cup molding 31. By the action of the lever arm 41, the heel cup molding 31 rotates about the axis of aperture 14a and spindle 14 to reciprocally translate the curved base 17 substantially through a horizontal plane, for example parallel to the plane in which the leveling spacer 5 lies. The curved base 17 drives an engagement slider 18 mounted on ramps 10a formed in the body structure 10 to shift the engagement slider between respective substantially parallel and horizontal upper and lower planes to achieve engagement or disengagement with the anchor means.

[0088] With reference to FIG. 3, the high back mechanism is shown in further detail in which the internal high back 21 includes a side wall pivot arm 21a mounted through its aperture 21b by a pin (not shown) to an aperture 21c (shown in FIG. 2) located in the heel cup side wall 13. The protrusion 26 cooperates with the groove 27 and the groove walls 28 of the high back 21. The travel of the protrusion 26 and the groove walls 28 is limited by a slot 26a formed within the upper heel section of the outer boot layer 3.

[0089] It can therefore be seen that as the highback slider 22 reciprocates substantially along a vertical path (limited by the upper and lower extent of the slot 26a) by the operation of the canned pinion 25a of the high back ratchet 23. This causes the internal high back 21 to vary in its vertical inclination by rotation about aperture 21b to enable adjustment of the high back 21 by a user.

[0090] Referring now to FIGS. 4a-5c, there is shown two alternative forms of anchor means in the form of bolts 50,50a. Other anchor means are also envisaged within the scope of the invention as described in the preferences above.

[0091] The bolt 50 shown in FIGS. 4a-4c has a conical head 53 requiring a customized tool to engage apertures 51 molded or cast in the upper surface of the bolt head 53. The bolt 50 has a downwardly depending shaft 52.

[0092] The bolt head 53 of the conical headed bolt 50 includes a curved underside surface 54 to permit improved sliding cooperation of an engagement slider with that surface 54. The underside surface 54 may have gripping surface features, such as radiating ribs or grooves whereby to grip the upper surface of an engaging member.

[0093] With reference to both bolts 50,50a shown in FIGS. 4a-5c, although not shown, typically the bolt shall 52,52a will be threaded whereby to cooperate with correspondingly threaded bores in the riding platform (not shown) to which it is mounted. Otherwise, the bolt shafts 52,52a have lateral surface features whereby to engage with corresponding features in or on the riding platform by friction and/or mechanical means.

[0094] The frusto-conical headed anchor 50a is an alternative anchor means. The top cropped upper portion 51a of the bolt head of 50a provides a recess for a key hole for cooperation

with, for example, a standard or Phillips head screw driver, an Allen key or like tool. The underside 54a and the shall 52a of the alternative hull head 53a

[0095] The bolts 50,50a are typically mounted on the riding platform such as a snowboard (not shown) with their bolt heads 53,53a facing upwards and the shafts 52,52a aligned axially at right angles relative to the plane of the snowboard. The bolt heads 53,53a are spaced from the upper surface of the snowboard so that there is a gap of between 5 mm and 15 mm between the upper board surface and the bolt underside surfaces 54,54a. This gap is height adjustable to adapt to different binding arrangements, for example where the bolts 50,50a are threaded on their respective shafts 52, 52a. It will be appreciated that, typically, either bolt 50 or bolt 50a (or another anchor means) may be used, although only one type of bolt, either bolt 50 or 50a is preferably used in any one application to enable a single tool to be used. The typical array of bolts 50,50a on the snowboard will involve an array of a pair of spaced sets of four bolts 50, 50a (totaling eight bolts 50,50a), each set arranged in a square pattern. However, the skilled person will appreciate that other numbers and arrangements of bolts 50,50a are possible and preferable depending on the application. For example, it may be preferable to use a single anchor to engage the boot 1 where the anchor may comprise a single shaft and optionally multiple head features, or a pair of anchors or a triplet or more of the anchors to engage the boot 1, depending on the mechanical and loading requirements of the assembly. The bolts 50,50a are well-adapted to assist a user to remove compacted snow, ice and other debris from the cavity 8. To this end, the user may jam the boot down on the bolts 50,50a to knock the ice out of the boot 1. The bolt heads 53,53a have overhanging portions in the form of the bolt heads 53,53a that may be used as an ice pick to scrape away the debris.

[0096] In FIG. 6 there is shown a binding arrangement 60a according to a second embodiment of the invention. The binding arrangement 60a includes a casing made up of a top casing 120 and a lower casing 61. The lower casing 61 is formed from an integrally moulded polymeric/plastics material such as polypropylene, or from a suitable metal alloy which may be cast using metals such as aluminium, titanium, stainless steel, or from a combination of metal and plastic materials. The lower casing 61 defines an opening or aperture 62 that opens into a cavity 63 defined by the walls 66a of the lower casing.

[0097] The lower casing opening 62 is continuous with a pair of parallel entry/exit tracks 65 defined by walls 66 that are continuous with the lower casing's outer walls 64, the tracks 65 extending frontwards towards the toe region of the lower casing 61. In use, the lower casing 61 is placed over a set of bolts 50, 50a so that a pair of bolt heads 53,53a enter a first track 65a and a second pair of the bolt heads 53, 53a enter a second track 65b. The user then moves his foot and the lower casing 61 forward so that the set of four bolts 50,50a slide into the aperture 62 so that the bolt heads 53, 53a are situated in the cavity 63. The bolt head undersurfaces 54,54a overhang lower casing walls 66a as described in greater detail below.

[0098] The binding arrangement 60a includes multiple layers of intermediate horse shoe shaped plates and foam dampeners (described in detail below) having a shape corresponding to the aperture 62 of the lower casing 61 and having side arms that rest directly or indirectly on the floor 67 of the lower casing 61, the free ends of the side arms in each case being spaced by a gap that corresponds to the positioning of the

tracks 65. The intermediate plates also include combinations of ramp and cammed surfaces which combine together to vertically shift a generally horizontal riser plate 110 up or down as a slider plate 95 moves forward or back by the actuation of a rear locking handle 70.

[0099] The binding arrangement 60a may require micro-adjustment to accommodate different bolt gaps (the distance between the underside surface 54, 54a of the bolt 50, 50a and the riding platform on which they are mounted) and variations in manufacturing tolerances. There is therefore provided a micro-adjustment slider 80 and attached adjustment block 85 with underside ramps 81 corresponding to the lower casing floor's 67 ramps 72. This serves to vary the height of the micro-adjustment slider 80 and, consequently, the slider plate 95 and riser plate 110. The adjustment block 85 has a keyhole 85a that cooperates with a corresponding protrusion 86 extending upwardly from a generally rectangular rear extension of the micro-adjustment slider 80. The keyhole 85a and the protrusion 86 enable attachment of the adjustment block 85 to the micro-adjustment slider 80. In an alternative embodiment of the invention, these components could be formed integrally. The adjustment block 85 rests in a channel 68 located centrally at the rear of the lower casing 61 and can be moved forward or backward in the channel 68 by adjustment of a threaded screw or lug 69 (obscured) extending through the rear wall 71 of the lower casing 61. It can therefore be seen that the plurality of shallow wedge-shaped ramps 81 on the underside surface of the micro-adjustment slider 80 cooperate with the corresponding ramps 72 located on the upper surface of the floor 67 to adjust the height of the slider plate 95. A lower foam seal 90 is interposed between the micro-adjustment slider 80 and the slider plate 95. The lower foam 90 performs a dampening function, improves the user's comfort and reduces shock or impact damage to the base components during use.

[0100] The slider plate 95 is integrally formed and includes a pair of side arms 96a, 96b extending forward towards the toe region and a pair of arms-like rack plates 97a, 97b extending rearward in the same plane as the side arms 96a, 96b. Each rack of plates 97a, 97b includes a plurality of ridges 97 adapted to cooperate with corresponding circumferentially arranged ridges on pinions 98a, 98b mounted onto a lateral rotational shaft 131 of a central pivot 130 made of sintered metal or an alternative material of sufficient strength. The shaft 131 rests in half journals 132 formed in the side portions of the extended rear wall 75 of the lower casing 61. The journals are completed by corresponding top half journals 121 formed in the rear side walls 134 of a casing top 121.

[0101] The rear locking handle 70 pivots about the longitudinal axis of central pivot shaft 131 with which it is fixed by its respective arms 73a, 73b through square keyed apertures 74a, 74b to the correspondingly keyed ends 99 of the shaft 131. The shaft 131 is journaled for rotation in the journals 121, 132 of the joined lower and top casings 61, 120. Rotation of the handle 70 causes rotation of the shaft 131 whereby the pinions 98a, 98b coast with the ridges 97 of the nicks 97a, 97b to slide the slider plate 95 forward or backward. The slider plate 95 has on the upper surfaces of its arms 96a, 96b a plurality of cam surfaces 100 that cooperate with corresponding ramps 111 on the underside of the riser plate 110, so that the reciprocal sliding movement of the slider plate 95 causes the riser plate 110 to rise or fall between engagement planes in which the cam surfaces 100 coincide with the underside ramps 111 to raise the riser plate 110 and non-engagement

planes in which the cam surfaces 100 do not coincide with the underside ramps 111 whereby to lower the riser plate 110.

[0102] The internal peripheral edge of 112 of the riser plate 110 corresponding to the aperture 62 of the lower casing 61 includes a radially upwardly inclined ring having gripping surface features whereby to frictionally engage with the underside surface 54, 54a of the bolt 50, 50a. The actuation of the handle 70 can therefore be used to move the riser plate 110 into engagement with the bolts 50, 50a or to disengage from same.

[0103] In FIG. 7 there is shown a simplified binding arrangement 60b having a casing top 130a and casing base 61a, upper and lower foam inserts 115a, 90a, a sliding plate 95a with four cam surfaces 100a on its upper surface and a lifting plate 110a having four corresponding ramps 111a on its underside surface. The fundamental difference between the binding arrangement 60b of FIG. 7 and the binding arrangement 60a shown in FIG. 6 is that the sliding plate 95a is reciprocally shifted by the action of pivot arms 131a rather than the rack and pinion arrangement 130, 97 of the fourth embodiment shown in FIG. 6. The pivot arms 131a rotate about a fixed pivot point, below which a shaft 131b is connected by the pivot arms 131a to cause the shaft 131b to move the sliding plate 95a by the cooperation of its internal slot 131c with lugs 133b on mounting posts 133a.

[0104] FIGS. 8-12 show the binding arrangement 60a of the fourth embodiment shown in FIG. 6 with the lower and top casings 61, 129 together as a combined unit.

[0105] Referring to FIGS. 13a-13e, there is shown a boot 140 according to a sixth embodiment in which the actuation means 141 is placed on the outer side of the boot between the bridge and toe sections. The actuation means is a toggle arrangement operably connected to a pivot mechanism similar to that shown in FIG. 7 and the actuation means or button thereof is sealed against interference by snow and ice by a bubble seal 142. The connection mechanism between the actuation means 141 and the riser mechanism in the boot base 143 can be any one or a variety of suitable mechanisms, such as the riser mechanisms 60, 60b, 60c shown in the above described embodiments. Cabling, for example steel cable, can form part of a useful connection mechanism. For example, the actuation means may comprise a windable dial about which a ratchet and cable mechanism operates to tighten the connection between the riser or lifting plate 110, 110a and the bolt heads 53, 53a. However, the use of cable-based linkages are not preferred. This is because of the potential for such cables to exhibit variable tensions depending on, for example, temperatures, or over time, stretching through application of high tensile forces or metal fatigue from repeated use. Accordingly, direct mechanical connections and linkages, as shown in the fourth and fifth embodiments of FIGS. 6 and 7, are preferred.

[0106] In FIGS. 14a-15 there is shown a boot 150 according to a seventh embodiment of the invention in which the actuation means operable by a user is provided on the left hand ankle side of the boot in the form of a depressible toggle button 151 having a mechanism similar to that described in relation to actuation means 141 in FIGS. 13a-13e.

[0107] With reference to both FIGS. 13c and 15, it can be seen that the aperture 62c, d is narrower than the entry aperture 65c, d, so that the wider entry openings 65c, d permit entry of the bolt heads 53, 53a into the boots 140, 150 base cavity 63c, d. This is necessary because the footprint of the bullheads 53, 53a as a set is wider than the aperture 62c, d. By sliding the

boot **140,150** forwards, the underside **54, 54a** orate belt heads **53, 53a** slides above the lower casing **61c,d** and the sole member **144,154**, so that the periphery of the aperture **62c,d** is interposed in the gap between the snow board and the underside surface **54, 54a**. As shown in FIGS. **13e** and **15**, the boot may comprise an alternative location for the actuation means **141a** on heel/sole portion of the boot **140,150**, whereby the user may operate the binding arrangement by pressing down the heel or manually pushing a recessed toggle button mechanism. Recessing the actuation means when so located is to avoid inadvertent actuation of the binding arrangement during active use.

[0108] Referring to FIGS. **16a-16e**, there is shown a boot **160** in which the actuation means **161** is located on the upper Achilles portion of the boot **160**. The actuation means is in the form of a lever **162** which is adapted to toggle between a closed position **163** and an open position **164**. Referring to FIG. **16e**, an opening aperture **62e** is provided that is continuous with a converging entry/exit track **65e** in which the converging walls **166** of the entry/exit track **65e** assist to guide the bolt shafts **52,52a** so that the bolt heads **53, 53a** enter into the aperture **62e** from a wide entry point or exit at a wide exit point at the outer toe end of the entry/exit track **65e**.

[0109] With reference to FIGS. **17a-17d**, there is shown a boot **170** according to a ninth embodiment of the invention in which the actuation means **171** is again located on the achilles region of the boot **170**. The actuation means **171** is in the form of a combined slide, lever arm and pivotable locking clasp arrangement. The actuation means **171** includes a slide **172** connected to draw lines, strings or cables **173** operatively connected to pivot arms similar to the lever arm **41** shown in FIG. **2**. However, as discussed above, flexible cable connections have limitations due to variations in tension over time or due to failure and mechanical connections using non-flexible components such as levers, cams, racks and pinions are preferred. The actuation means **171** further includes a pivot arm **174** adapted to travel in a substantially vertical heel groove **175** and to be lockable in position by swinging the rotatable clasp **176** in the direction **D** around the pivot arm **174** and into locking engagement with a recess **177** on the slide **172** whereby to lock the actuation means **171** in place. FIG. **17b** shows the actuation means **171** in locked position and FIGS. **17a** and **17c** show the actuation means **171** in the non-engaged position. FIG. **17d** shows aperture **62f** having a shape and configuration similar to the keyhole shape shown with reference to the aperture **65e** in FIG. **16e**.

[0110] In FIGS. **18a-18i** there is shown a boot **180** according to a tenth embodiment of the present invention over a portion of a motive device in the form of a snowboard **195**.

[0111] As best shown in FIG. **18i**, the boot **180** includes a sole member **61g** having an aperture in the form of keyhole opening **62g** with a circular section **63g** and a pair of tracks **65g** adapted to receive the heads **197** of anchor means in the form of bolt heads **197** of four upstanding bolts **196** best shown in FIG. **18a**. The skilled person will appreciate that the number of bolts may vary whilst retaining utility, provided that the entry track or tracks are configured to admit entry of the bolt heads in the particular array provided and the array of bolts **196** is sufficient to lockably engage with the circular section **63g**. For example, if 3, 5 or a greater odd number of bolts **196** are used, the entry track may include the keyhole shaped apertures **62c-f** of the above described embodiments.

[0112] As shown in FIGS. **18a-18b**, the boot **180** is positioned over the bolts **196** so that the bolts **196** are aligned with

the tracks **65g**. As the boot **180** descends, the bolt heads **197** enter the tracks **65g** and the boot's **180** sole **61g** comes to rest on the snowboard **195** as shown in FIG. **18c**. As shown in FIG. **18d**, the boot **180** is then slid forward relative to the snowboard **195** so that the bolt heads **197** travel from the tracks **65g** into the circular section **63g**.

[0113] The track's walls **66g** are spaced to permit the entry or exit of the bolt heads with vertical to relative movement of the boot **180** and the snowboard **195**. By contrast, the radius of the circular section **63g** is dimensioned to trap the bolt heads **197** to permit rotation of the boot **180** about a vertical axis. This vertical axis is generally coaxial to the centre point of the circular section **63g**. However, the circular section **63g** dimensions prevent axial movement relative to the bolts **196** by trapping the bolt heads above the lip of the side wall defining the circular section **63g**. Most particularly, the bolt heads are secured in a binding arrangement similar to that of binding arrangement **60** shown in FIG. **6**. The boot **180** may be rotated from side to side whereby the wearer can determine the desired fixed position of the boot **180** relative to the snowboard **195**. Once the desired position is determined, the boot **180** may be locked in position by actuation means as described below.

[0114] The binding arrangement within the boot **180** is actuated by actuation means handle **181** shown in FIGS. **18c-18h** which performs in a manner similar to that of the rear locking handle **70** shown in FIG. **6**. The handle **181** includes a clip **182** that pivots from an unlocked position as shown in FIGS. **18c-18f** to a locked position as shown FIG. **18g**. When the clip **182** is in this position, the handle urges the clamping means in the form of the riser plate **110** to positively clamp the bolt heads **197** so that the boot **180** is practically immovable relative to the snowboard **195**.

[0115] FIG. **18h** shows the clip **182** being flipped downwardly to unlock the handle **181** so that it can be rotated downwardly to an unengaged position. The boot **180** may then be rotated about the vertical axis for adjustment relative to the snowboard **195** or slid backwards so that the bolts **196** sit in the tracks **65g**, whereby the boots can be removed from the snowboard **195**. Referring finally to FIG. **18j**, the snowboard **195** includes a second set of bolts **198** for securing a left boot (not shown) of the user. The snowboard further includes a set of studs **199**, preferably five to seven in number, to provide a non-slip surface and an alternative set of holes for relocating the right hand set of bolts **196** closer to the leading tell boot.

[0116] Throughout the specification the word "comprise" and its derivatives is intended to have an inclusive rather than exclusive meaning unless the context requires otherwise.

[0117] Orientational terms used in the specification and claims such as vertical, horizontal, top, bottom, upper and lower are to be interpreted as relational and are based on the premise that the component, item, article, apparatus, device or instrument will usually be considered in a particular orientation, typically with the sole member lower most.

[0118] It will be appreciated by those skilled in the art that many modifications and variations may be made to the methods of the invention described herein without departing from the spirit and scope of the invention.

[0119] The invention can be described in terms of provisional claims that can assist the skilled reader in understanding the various aspects and preferences of the invention. However, these provisional claims are not to be construed as defining statements of the invention. It will be appreciated

that other forms, aspects and preferred features of the invention and its embodiments described herein may ultimately be included in the claims defining the invention in the specifications of complete, international or national applications (or their subsequent corresponding patent grants) that may claim priority from the provisional application accompanying this specification. In this context, the following non-limiting claims assist to better describe the invention:

REFERENCE NUMERALS USED IN THE  
DRAWINGS

[0120]

No.	Description
1	Boot
2	Inner boot liner
2a	Inner boot casing
3	Outer boot layer
4	Footbed
5	Leveling spacer
6	Sole
7	Boot base
8	Cavity
9	Opening
10	Body structure
10a	Ramps of body structure
11	Heel
12	Apertures in heelcup molding
13	Side wall of heelcup molding
14	Spindle on lever arm
14a	Apertures in heelcup molding
15	Cammed bearing pinion
16	Rack in rear wall of heelcup molding
17	Curved base of heel cup molding
18	Engagement slider in body structure
21	Integrated internal high back plate
21a	Side wall pivot arm of internal high back plate
21b	Aperture in side wall pivot arm
21c	Aperture in heel cup molding
22	Outer highback slider
23	Highback adjustment ratchet lever
24	Highback mechanism exterior casing
25	Highback rack
25a	Highback pinion
26	Protrusion in outer highback slider
26a	Slot in upper heel of outer boot layer
27	Raised groove proud of outer surface of internal highback plate
28	Side walls defining groove
29	Lower spacers
31	Heel cup molding
41	Mechanical lever arm
42	Lever arm lock
50	Anchor bolt
50a	Alternative anchor bolt
51	Apertures in conical head
51a	Cropped portion in conical head
52	Bolt shaft
52a	Shaft of alternative bolt
53	Conical head of bolt
53a	Alternative bolt head
54	Curved underside surface of bolt head
54a	Underside of alternative bolt head
60	Engagement mechanism of FIGS. 1-3
60a	Binding arrangement of FIG. 6
60b	Binding arrangement of FIG. 7
61	Lower casing
61a	Casing base
61g	Sole member
62	Opening of lower casing
62c	Aperture of lower casing
62d	Aperture of lower casing
62e	Aperture of lower casing

-continued

No.	Description
62f	Aperture of lower casing
62g	Keyhole opening
63	Cavity of lower casing
63c	Base cavity
63d	Base cavity
63g	Circular section of keyhole opening
64	Outer walls of lower casing
65	Parallel entry/exit tracks
65a	First track
65b	Second track
65c	Entry aperture
65d	Entry aperture
65e	Entry/exit track
65g	Pair of entry/exit tracks
66	Walls defining tracks
66a	Wall defining opening of lower casing
67	Floor
68	Channel
69	Threaded lug
70	Rear locking handle
71	Rear wall of lower casing
72	Ramps of floor of lower casing
73a	Left pivot arm of locking handle
73b	Right pivot arm of locking handle
74a	Left keyed aperture of locking handle
74b	Left keyed aperture of locking handle
75	Extended rear wall of lower casing
80	Micro-adjustment slider
81	Underside ramps of slider
85	Adjustment block
85a	Keyhole of adjustment block
86	Protrusion
90	Lower foam seal
90a	Lower foam insert
95	Slider plate
95a	Sliding plate
96a	Left side arm of slider plate
96b	Right side arm of slider plate
97	Ridges of racks of rack plate arms
97a	Left rack plate arm
97b	Right rack plate arm
98a	Left pinion on lateral rotational shaft
98b	Right pinion on lateral rotational shaft
99	Keyed ends of central pivot shaft
100	Cam surfaces on slider plate
100a	Four upper cam surfaces on sliding plate
110	Riser plate
110a	Lifting plate
111	Underside ramps of riser plate
111a	Underside ramps of lifting plate
112	Internal peripheral edge of riser plate
115a	Upper foam insert
130	Central pivot
130a	Casing top
131	Lateral rotational shaft of central pivot
131a	Slotted pivot arms
131b	Shaft
131c	Slot of pivot arms
132	Journals in rear wall of lower casing
133a	Mounting posts
133b	Lugs on mounting posts
134	Rear side walls of casing top
140	Boot
141	Actuation means on upper boot
141a	Recessed actuation means on heel
142	Bubble seal
143	Boot base
144	Sole member
150	Boot
151	Toggle button
151a	Recessed actuation means on heel
154	Sole member
160	Boot
161	Actuation means on upper Achilles portion

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No.	Description
162	Actuating lever
163	Open position of actuating lever
164	Closed position of actuating lever
166	Walls defining track
170	Boot
171	Actuation means
172	Slide
173	Draw lines or cables
174	Pivot arm
D	Direction of closure of rotatable clasp
175	Vertical heel groove
176	Rotatable clasp
177	Recess on slide
180	Boot
195	Snowboard
196	Upstanding bolts
197	Bolt heads

1. A boot for use in an adjustable boot binding arrangement for attaching said boot directly to fixed anchor means on a motive device, said boot including a base including an underside member and an upper support panel on which a wearer's foot directly or indirectly rests, said upper support panel spaced from said underside member and said anchor means including at least one upper detent portion spaced from the upper surface of said motive device, wherein:

- said base includes at least one recess or cavity for receiving said upper detent portion;
- said recess or cavity is able to receive said upper detent portion through said underside member;
- said boot includes engagement means to releasably secure said detent portion in said recess or cavity;
- said engagement means is actuatable to engage or release said detent portion by the wearer of said boot by actuating means located on the outer surface of said boot; and
- said detent portion is releasable in said recess or cavity from said engagement means to permit readjustment of the orientation of said boot relative to said motive device.

2. A boot according to claim 1, wherein said motive device is a snowboard.

3. A boot according to claim 1, wherein said engagement means includes reciprocating means operable to toggle between a non-engaged position whereby there is non-engagement between said anchor means and said engagement means and an engaged position whereby said anchor means and said engagement means are fixedly engaged.

4. A boot according to claim 3, wherein said reciprocating means includes a slidable member.

5. A boot according to claim 4, wherein said slidable member is movable within a region substantially parallel to the plane of said upper support panel between said non-engaged position and said engaged position in which said anchor underside surface abuts said base.

6. A boot according to claim 1, wherein said anchor means consists of at least one threaded bolt.

7. A boot according to claim 1, wherein said anchor means comprises at least three bolts having at least three corresponding bolt heads, each bolt head including said detent portion.

8. A boot according to claim 4, wherein said base is a modular structure including separately formed components contained in a base casing forming a modular unit, said base

casing including a casing top providing said upper support panel and said underside member.

9. A boot according to claim 5, wherein said slidable member is interposed between said casing top and said underside member.

10. A boot according to claim 3, wherein said reciprocating means includes cam and/or ramp means.

11. A boot according to claim 8, wherein said slidable member and said base casing include complementary and opposed cam and/or ramp means adapted to cooperate with each other to raise or lower said engagement means.

12. A boot according to claim 11, wherein said actuation means is operably connected to said slidable member at least partially housed within said base casing to cause, on actuation, said slidable member to slide relative to said base casing to raise said engagement means into said engaged position.

13. A boot according to claim 4, wherein said reciprocating means includes a rack and pinion arrangement to cause said slidable member to move relative to said base.

14. A boot according to claim 13, wherein said actuation means includes a rotatable member operable by a user in said non-engaged or said engaged position.

15. A boot according to claim 14, wherein said actuation means includes a rack and pinion arrangement to cause a slider member to move relative to said boot on actuation of said rotatable member.

16. A boot for use in an adjustable boot binding arrangement for attaching the boot directly to a fixed anchor on a snowboard, the boot comprising a base having an underside member and an upper support panel on which a wearer's foot directly or indirectly rests, the upper support panel spaced from the underside member and the anchor including at least one upper detent portion spaced from the upper surface of the snowboard, wherein:

- the base includes at least one recess or cavity for receiving the upper detent portion;
- the recess or cavity is able to receive the upper detent portion through the underside member;
- the boot includes an engagement member to releasably secure the detent portion in the recess or cavity;
- the engagement member is actuatable to engage or release the detent portion by the wearer of the boot by an actuator located on the boot's outer surface; and
- the detent portion is releasable in the recess or cavity from the engagement member to permit readjustment of the orientation of the boot relative to the snowboard.

17. The boot of claim 16, wherein the engagement member includes reciprocating means operable to toggle between a non-engaged position so that there is non-engagement between the anchor and the engagement member and an engaged position so that the anchor and the engagement member are fixedly engaged.

18. The boot of claim 17, wherein the reciprocating means includes a slidable member movable within a region substantially parallel to the plane of the upper support panel between the non-engaged and engaged positions in which the anchor underside surface abuts the base.

19. The boot of claim 2, wherein the anchor means consists of at least one threaded bolt.

20. The boot of claim 2, wherein the anchor means comprises at least three bolts having at least three corresponding bolt heads, each bolt head including the detent portion.

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