United States Patent [19]

Hansen

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[54] **SKI BOOT ATTACHMENT FRAME**

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[52] **U.S. Cl.** ..... **280/11.35 K,** 36/2.5 AL

[51] **Int. Cl.** **A43b 3/10**

[58] **Field of Search** ... 280/11.35 R, 11.35 K, 11.36, 280/11.26, 11.3; 36/2.5 AL, 2.5 B

[56] **References Cited**

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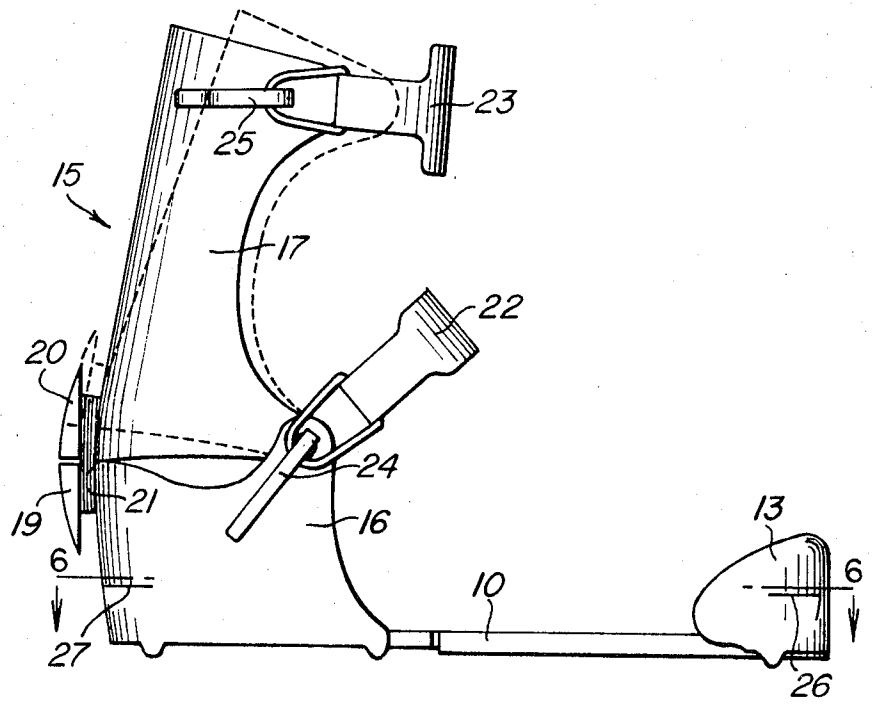
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Attorney, Agent, or Firm—Mallinckrodt & Mallinckrodt

[57] **ABSTRACT**

A device for attaching an ordinary boot to ski bindings on a ski and for strait-jacketing such boot so it simulates a stiff ski boot for skiing purposes is constructed as an elongate, rigid, step-in base having a front member for securely retaining the toe of the boot and an articulated rear member constituting a heel upper of unstretchable material adapted to embrace the soft boot's upper portion as a strait-jacket for skiing purposes. Such rear member has a lower heel part and an upper ankle part pivotally interconnected for limited back and forth articulation under stress. Substantially unyielding strap members attached to the upper and lower parts, respectively, of the heel upper provide for closing the rear member and for strait-jacketing the boot following its insertion in the device. Means are provided on the base frame for latching cooperation with a ski binding.

5 Claims, 9 Drawing Figures



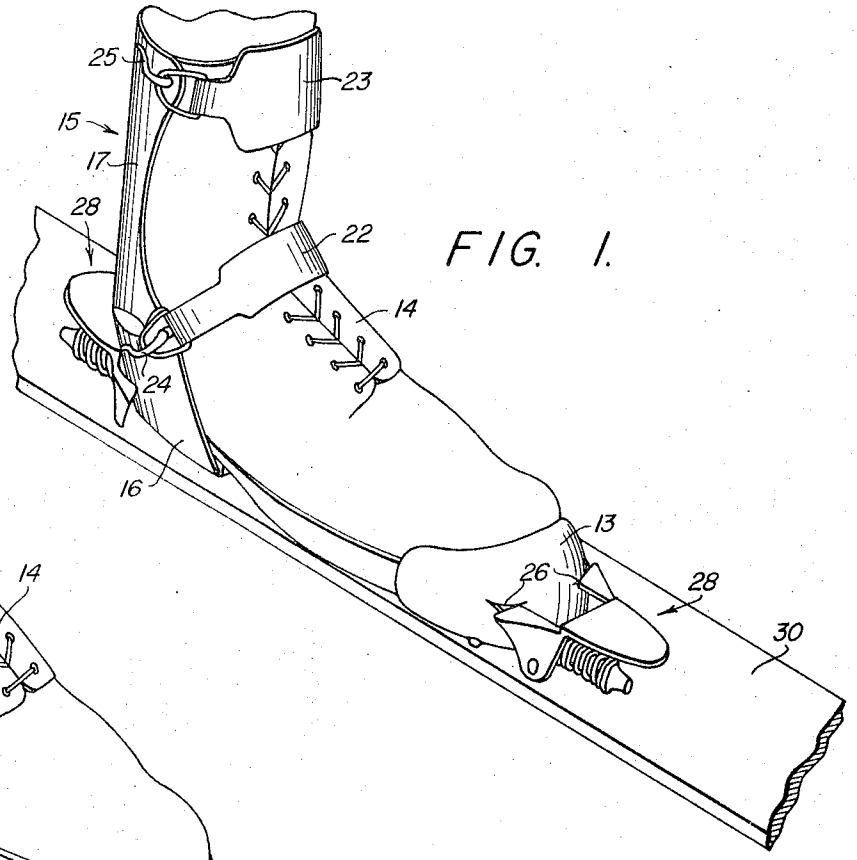


FIG. 1.

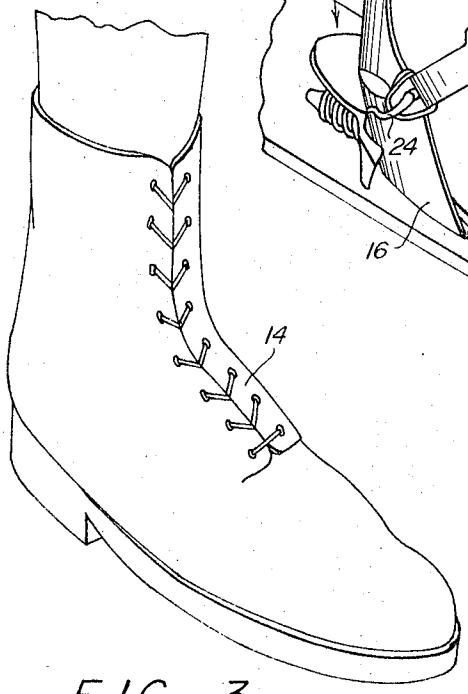


FIG. 3.

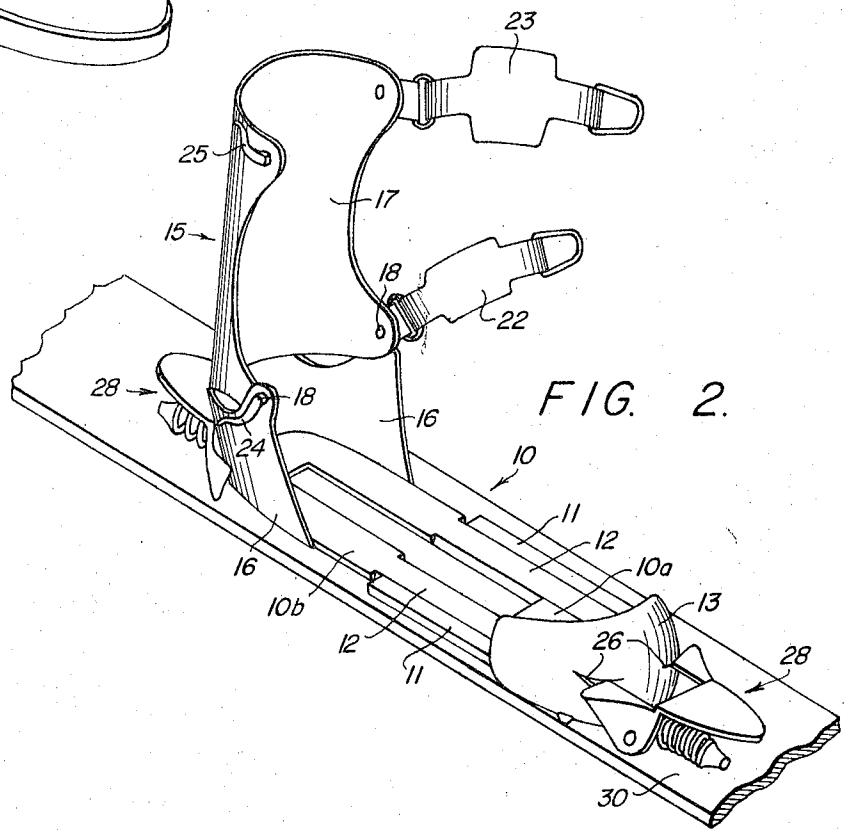


FIG. 2.

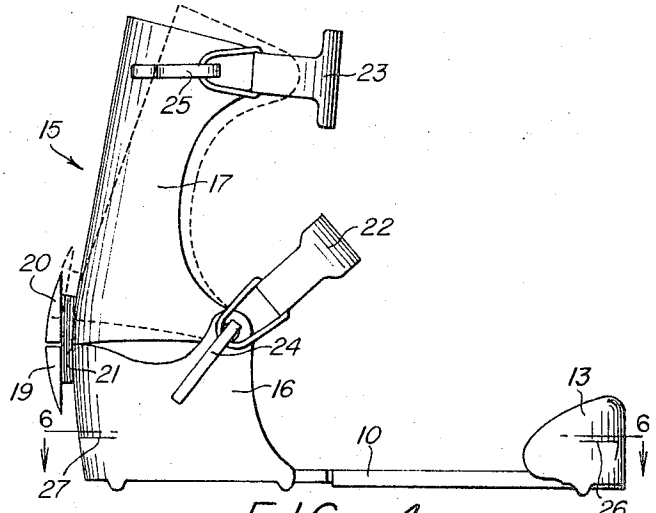


FIG. 4.

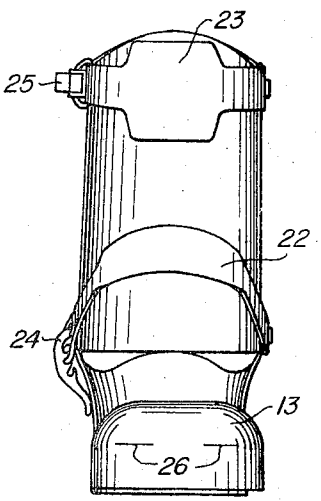


FIG. 5.

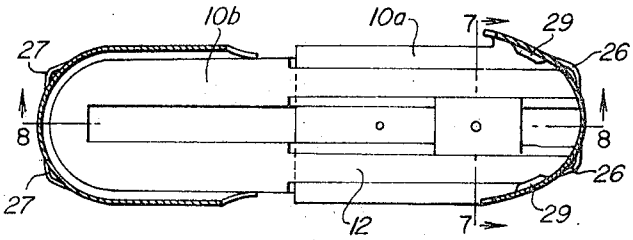


FIG. 6.

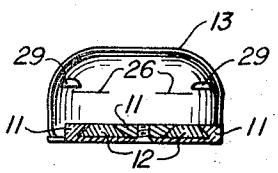


FIG. 7.

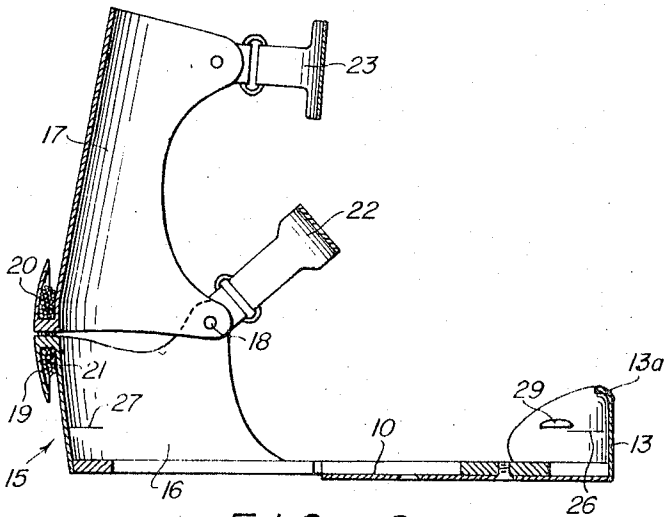


FIG. 8.

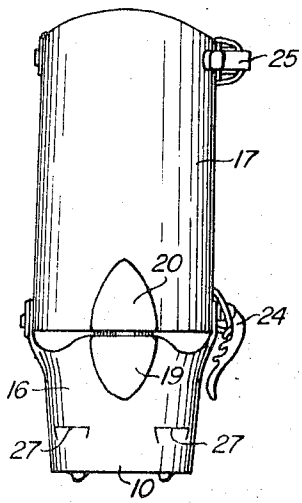


FIG. 9.

SKI BOOT ATTACHMENT FRAME

BACKGROUND OF THE INVENTION

Field: The invention is in the general field of ski binding devices for attaching a skier's boots to his skis.

State of the Art: Many different kinds of ski bindings have been developed heretofore, as well as many different kinds of ski boots. The boots are normally sufficiently stiff to enable a skier to manipulate his skiis by applying directive foot or lower leg pressure to the boots as securely held to the skiis by the ski bindings. The stiff boots are relied upon to transmit such directive pressure to the skis substantially undiminished and substantially without unpredictable modification. Ordinary, relatively soft boots are comfortable, but ineffectual for the purpose. The closest approach to permitting a skier the comfort of soft boots, without destroying skiing effectiveness, appears to be the provision of a molded hard and stiff outer boot split and hinged along its longitudinal axis so as to open and close about a special, relatively soft inner boot that can be worn during, as well as before and after skiing.

SUMMARY OF THE INVENTION

In accordance with the present invention, most any type of soft and comfortable boot, such as a hiking, riding, or work boot, can be effectively used for skiing and can be worn before, during, and after skiing, without requiring any change. Moreover, no accessories for ski bindings need be permanently attached to the boots, as has often been the case in the past. Instead, an intermediate, boot attachment device is provided for temporary attachment to the usual ski bindings in customary manner and for step-in reception of the soft ski boot and for strait-jacketing such soft ski boot thereafter. An elongate, rigid, step-in base has a front member at one of its ends arranged to receive and securely retain the toe of the boot, and an articulated rear member at the other end constituting a heel upper of unyielding material adapted to embrace the soft boot's upper portion as a strait-jacket for skiing purposes. The rear member has a lower heel part and an upper ankle part both of which are open forwardly and pivotally interconnected for limited back and forth articulation under stress, there being preferably a stiffly resilient interconnection at the rear thereof providing for same. Straps of unstretchable material, such as thin sheet stainless steel, are attached to the upper and lower parts respectively, and are arranged to securely buckle or otherwise close over the forward openings of such upper and lower parts to complete the strait-jacketing of the received boot.

THE DRAWINGS

An embodiment representing the best mode presently contemplated of carrying out the invention in practice is illustrated in the accompanying drawings in which:

FIG. 1 is a perspective view looking from the front and one side of the device of the invention temporarily attached to a typical ski (shown fragmentarily) by a typical ski binding, and serving to attach and strait jacket a typical ordinary boot being worn by a skier;

FIG. 2, a similar view of the device of the invention and the ski of FIG. 1 following release of the boot and step-out by the skier leaving the device attached to the ski for quick and convenient step-in;

FIG. 3, a similar view of the skier's foot and boot following step out;

FIG. 4, a view in side elevation of the device of the invention per se, without the ski, ski bindings, and boot shown in the foregoing figures;

FIG. 5, a view in front elevation of the device per se as shown in FIG. 4;

FIG. 6, a horizontal section taken on the line 6—6 of FIG. 4;

FIG. 7, a vertical section taken on the line 7—7 of FIG. 4 (see also FIG. 6);

FIG. 8, a vertical section taken on the line 8—8 of FIG. 5 (see also FIG. 6); and

FIG. 9, a view in rear elevation of the device per se as shown in FIG. 4.

DETAILED DESCRIPTION OF THE ILLUSTRATED EMBODIMENT

In the preferred form illustrated, the device of the invention comprises an elongate, rigid, step-in base **10** made up of a forward, toe section **10***a* and a rearward, heel section **10***b*, the two sections being separate parts of a material such as steel telescopically interengaged by means of respective sets of longitudinal members **11** and **12** which provide for length adjustment of such base and which are held in adjusted position as by frictional engagement.

The base **10** is provided with a front member **13** for engaging the toe of a received boot **14** and with an articulated rear member **15** constituting a heel upper, which opens forwardly and is adapted to close to embrace the upper of the received boot.

Rear member **15** is made of a substantially unyielding material, such as sheet stainless steel of (.074) 14 guage, which serves to constrict and effectively strait jacket a received boot and foot of a skier. As shown, rear member **15** comprises a lower heel part **16** and an upper ankle part **17** articulatively interconnected by pivot pins **18.** Articulation is normally prevented, except under conditions of great stress, by means of a stiffly resilient interconnection at the back of such rear member **15,** which preferably comprises oppositely directed hook member **19** and **20** around which is repeatedly wrapped a length of an elastic cord **21.** The cord **21** is advantageously India rubber.

Both parts **16** and **17** of rear member **15** are open forwardly for receiving a ski boot and are closed by means of respective straps **22** and **23** of unstretchable material, such as (.016)26 guage stainless steel sheet, and respective buckles **24** and **25.** When closed about a received ski boot as shown in FIG. **1,** the straps **22** and **23** and rear member parts **16** and **17** effectively strait jacket the skier's foot and simulate the favored stiff ski boots that contribute so much to ski control.

The front member **13** of base **10** is configurated to receive and secure the toe of the ski boot, being provided in the illustrated instance with an inturned upper lip **13***a*, FIG. **8,** for the purpose. Both front and rear members **13** and **15** are provided with formations, see for example **26** and **27,** FIG. **6,** respectively, for engagement with a ski binding, such as that indicated **28** in FIG. **1.** Front member **13** is also provided with inwardly projecting, sole-engaging formations **29,** FIGS. **6, 7,** and **8,** to provide additional securement for the toe of the received boot.

As can be seen from FIG. **3,** no special fittings are required for the boot. Although the toe and heel portions

13 and 15 of the device can be made to fit practically any kind of boot, it is advantageous that these be standardized from the standpoint of manufacture. Thus, a soft and comfortable boot can be specially made and sold for use with the device, and it will be advantageous that the device be made for closely fitting and special boots.

In any event, the device will become, in effect, a part of the ski boot during skiing and will be safely released by any safety binding for which it is adapted by proper selection of its ski-binding-correlated construction. It should be realized that the particular construction illustrated has been selected for correlation with the so-called "Miller" type of ski binding illustrated and is subject to changes required for correlation with other types of ski bindings.

Whatever type of ski binding is used, the skier need only unbuckle the device on each foot when he wishes to be free of his skis and step out, leaving the devices attached to the skies by means of the ski bindings, as shown in FIG. 2. He is no longer encumbered by stiff and unyielding ski boots, as he is when strait jacketed for skiing, and can walk comfortably wherever he might wish to go.

The skier can put his skis back onto his feet very easily and conveniently by merely stepping back into the devices as still attached to the respective skis and rebuckling the straps 22 and 23.

Whereas the invention is illustrated and described with respect to a particular construction presently contemplated as the best mode of carrying it out in actual practise, it should be realized that various changes may be made without departing from the inventive concepts here taught and claimed.

1. A device for attaching a soft boot to ski bindings on a ski and for strait-jacketing such soft boot so it simulates a stiff ski boot for skiing purposes, comprising an elongate, rigid, step in base having a front member for securely retaining the toe of the soft boot, and a substantially separate, articulated rear member constituting a heel upper of unstretchable material, said heel upper opening forwardly and including a lower heel portion and an upper ankle portion, means pivotally connecting the two portions for articulation about a horizontal axis, and means yieldable under stress normally interconnecting said portions so as to resist articulation, said heel upper being adapted to close to embrace the upper of a received soft ski boot; means for securing said rear member in closed, constrictive position about said upper of the received soft ski boot; and means on the base for latching cooperation with a ski binding.

2. A device as defined by claim 1 wherein oppositely directed hook members project rearwardly from securement to the respective portions of the heel upper; and wherein the yieldable means comprises an elastic cord wrapped about said hook members.

3. A device as defined by claim 1, wherein the means for securing the rear member in closed constrictive position comprise straps of substantially unyielding material secured to the respective portions; and respective buckle means for retaining said straps in closed positions.

4. A device as defined by claim 3, wherein the straps are made of sheet stainless steel thin enough to be flexible.

5. A device as defined by claim 1, wherein the rear member and the securing means therefor are fabricated from sheet stainless steel.

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