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RETRACTABLE BALL SKI BINDING

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5 Claims. (Cl. 280—11.35)

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This invention relates to new and useful improvements in safety bindings between ski boots and skis and more particularly to an improved safety binding over that disclosed in my copending application Serial No. 484, now U. S. Patent No. 2,590,097, issued March 25, 1952.

The primary object of the present invention is to provide an adjustable and retractable ball ski binding including front and rear coacting resilient means for engaging and retaining a ski boot relative to a ski while permitting release of a skier's boot when a hard twist or pull occurs in a fall or other skiing emergency.

Another important object of the present invention is to provide a retractable ball ski binding including a novel and improved boot toe engaging means having a spring urged retaining member capable of being yieldingly engaged with a socket mountable on a boot toe.

A further object of the present invention is to provide means for releasably attaching a ski boot to a ski wherein the aforementioned retaining member is received in one end of a socket whose other end threadingly receives an abutment for the spring acting on the member, whereby adjustment of the resilient force acting on the member will be provided.

A still further aim in the present invention is to provide a ski binding of the aforementioned character that is extremely simple in practical construction, strong and reliable in use, efficient and durable in operation, inexpensive to manufacture and assemble, and otherwise well adapted for the purposes for which the same is intended.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a fragmentary plan view of a ski with the present invention applied thereto;

Figure 2 is a fragmentary longitudinal vertical sectional view of Figure 1 showing a ski boot on the ski and supporting a toe bracket (shown in section) about to be engaged with the spring urged retaining member; and

Figure 3 is a detailed vertical sectional view through an intermediate portion of the flexible heel engaging member shown in Figure 1.

Referring now to the drawings in detail, wherein for the purpose of illustration, there is disclosed a preferred embodiment of the present in-

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vention, the numeral 1 represents a ski having a pair of spaced parallel straps 2 secured to its upper face. The straps 2 extend transversely across the ski 1 and the ends thereof are bent downwardly to form guide channels 21 that slidably receive the forward cable portion 5 of an endless flexible heel embracing member 3.

Member 3 includes the coil spring 7 having one end engaged over a coupling section 8. Section 8 is provided with a flanged head 10 that enters an accommodating opening 11 in a coupling section 12. The sections 8 and 12 are provided with axial bores receiving one end portion 6 of cable 5 and the bore in section 12 is internally threaded to be receivably engaged upon end portion 6, whereby the end portion 5 may be adjusted within or from the coil spring 7.

The end of cable 5 remote from coupling sections 8 and 12 is pivoted to the forward ends of links 18 whose rear ends are pivoted to a curved channel shaped locking lever 14. The forward end of locking lever 14 is pivotally secured to a lug 15 fixed to the coil springs 7, as more specifically disclosed in my above referred to U. S. patent.

A socket 27 is disposed on the ski 1 in front of the straps 2 and includes an apertured attaching flange 27a that is secured against the upper face of the ski 1 by fasteners 27b that extend through the apertures in flanges 27a and into the ski 1. An abutment member 29 is provided with a rear externally threaded cylindrical end portion that is threaded in the forward threaded end of socket 27. A curve 28a in the forward exposed end of member 29 will accommodate a suitable tool, whereby member 29 may be rotated to adjust the same longitudinally of the socket.

The socket 27 is formed with an inwardly directed flange portion 29a at its rear open end. A boot toe retaining member 26a extends rearwardly through the rear end of the socket 27 and is formed with an intermediate peripheral shoulder portion 29b that is urged against the flanged portion 29a by a coil spring 28. Spring 28 is disposed longitudinally within the socket 27 and its ends engage the abutment member 29 and flanged portion 29a to urge the rear convex end 26 with the member 26a into a seat 25 in the vertical flange of a bracket 26b that is removably secured to the toe of a ski boot 23.

Flange 27a is provided with a taped forward end 27c having a channelled edge 27d that receives an intermediate portion of the cable 5.

In practical use the present invention, the boot 23 is placed upon the ski 1 while the lever 14 is in

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a forward position. The forward end of retaining member 26a is received within seat 25 and a flexible member 3 is disposed about the heel of the boot 23. Then, lever 14 is swung rearwardly so that the boot 23 will be yieldingly retained between the retaining member 26a and the flexible member 3.

I claim to be new and patentable:

1. Means for releasably attaching a ski boot to a ski, said means comprising a socket having forward and rear open ends, and an attaching flange, an abutment member including a rear end threaded in the forward end of said socket and a forward end having a slot therein, an endless flexible member having a forward portion engaged about said flange and a rear resilient portion adapted to engage about the heel of a ski boot, a boot toe retaining member received in the rear end of said socket and including a reduced rear portion extending rearwardly from the rear end of said socket, a spring in said socket urging the rear portion of said retaining member from the rear end of said socket, and a boot toe attaching plate having a seat therein for accommodating said rear portion of said retaining member.

2. The combination of claim 1 wherein said rear portion of said retaining member is smoothly rounded, said seat being concave to receive the smoothly rounded rear portion of said retaining member to restrict lateral movement of said attaching plate relative to said retaining member.

3. The combination of claim 1 wherein said retaining member includes an internal shoulder and an open forward end extending to the shoulder, said spring comprising a coil spring having a rear end disposed within the forward end of the retaining member and engaging the shoulder, said spring also having a forward end engaged with the rear end of said abutment member, said abutment member being adjusted longitudinally of said socket to tension said spring.

4. Means for releasably attaching a ski boot

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to a ski, said means comprising a socket having forward and rear open ends, said socket also having an apertured attaching flange, an endless flexible member including a forward portion engaged about said flange and a rear resilient portion for engagement about the heel of a ski boot, an abutment member threaded in the forward end of said socket, an inwardly directed flanged portion at the rear open end of said socket, a boot toe retaining member having forward and rear ends and a shoulder portion joining its forward and rear ends, the forward end of said retaining member being open, and a coil spring in the socket and biased between said shoulder portion and said abutment member to urge the shoulder portion against the flanged portion and the rear end of said retaining member rearwardly from the rear end of said socket.

5. The combination of claim 4 wherein said forward portion of said endless member comprises a length of cable, said rear portion of said endless member comprising a coil spring terminally attached to said cable, and said attaching flange having a forward end with a recess receiving said cable.

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