

March 17, 1970

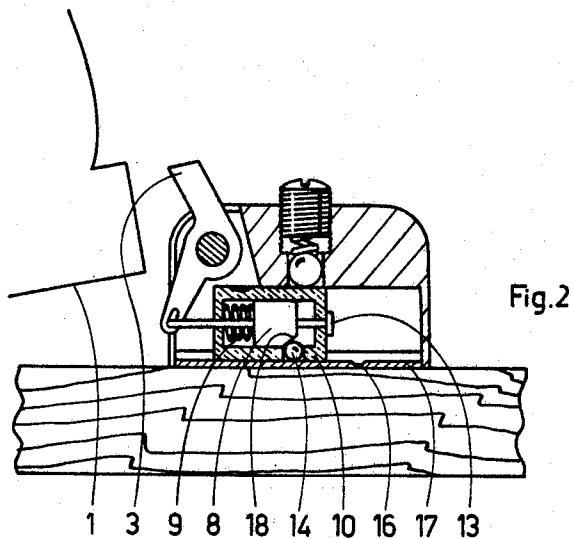
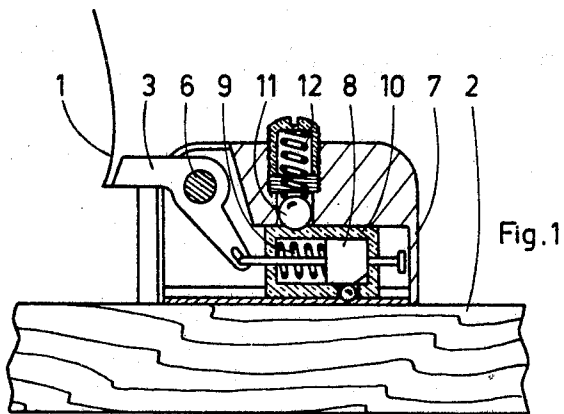
G. P. J. SALOMON

3,501,163

SAFETY BOOT BINDING FOR SKIS

Filed Feb. 14, 1968

3 Sheets-Sheet 1



Inventor
GEORGES P. J. SALOMON
By Pierre Lapointe
Agent

March 17, 1970

G. P. J. SALOMON

3,501,163

SAFETY BOOT BINDING FOR SKIS

Filed Feb. 14, 1968

3 Sheets-Sheet 2

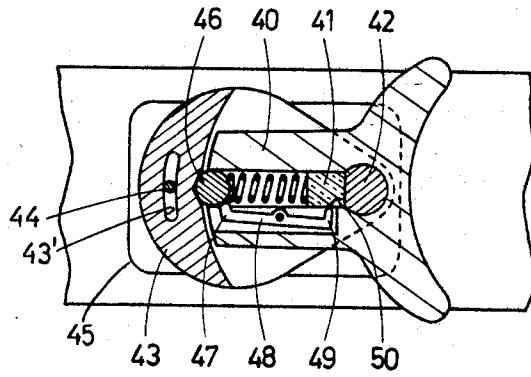


Fig. 6

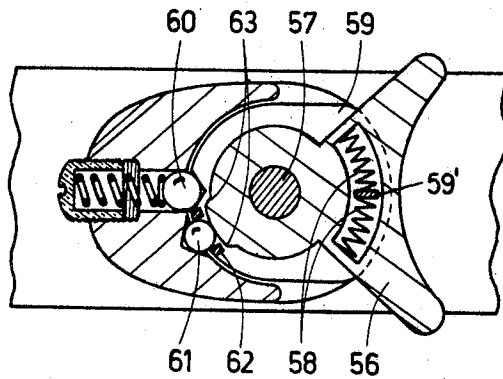


Fig. 7

Inventor
GEORGES P. J. SALOMON
By Pierre Lespérance
Agent

March 17, 1970

G. P. J. SALOMON

3,501,163

SAFETY BOOT BINDING FOR SKIS

Filed Feb. 14, 1968

3 Sheets-Sheet 3

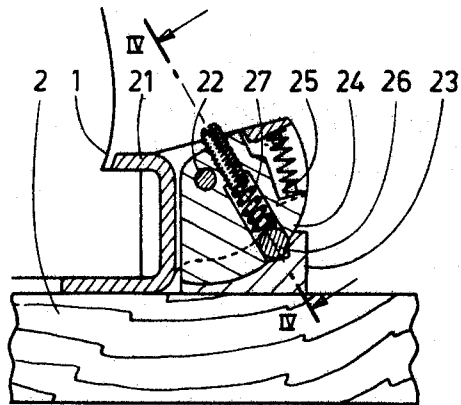


Fig. 3

Fig. 4

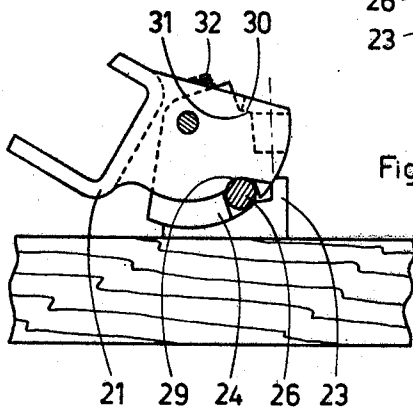
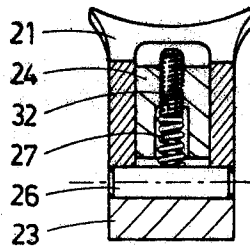


Fig. 5

Inventor
GEORGES P. J. SALOMON
By *Pierre Leprieux*
Agent

1

2

3,501,163

SAFETY BOOT BINDING FOR SKIS

Georges P. J. Salomon, 34 de Loverchy Ave.,

Anney, Haute-Savoie, France

Filed Feb. 14, 1968, Ser. No. 705,558

Int. Cl. A63c 9/082, 9/24

U.S. Cl. 280—11.35

4 Claims

ABSTRACT OF THE DISCLOSURE

The present invention concerns a safety boot binding for skis in which a boot retaining element is capable of a certain elastic play before release and characterized by the fact that an interlocking means is disposed between the safety locking mechanism and the element allowing elastic movement of the boot retaining member, whereby said element will remain blocked in its limit position reached at the time of release of the safety locking mechanism and will not come back to its initial position of its elastic movement until the safety locking mechanism is re-cocked.

The present invention concerns an elastic safety binding for clamping a boot on a ski and in which the boot retaining element is capable of a certain elastic movement or play before release by the safety locking mechanism.

In previous constructions of boot bindings of the character described, the elastic movement of the boot retaining member was independent of the release movement of the safety locking mechanism.

The above arrangement has the disadvantage, more particularly for boot heel bindings, of impeding the boot clamping operation, because the user has to overcome during this operation the simultaneous action of the spring means of the locking mechanism and of those allowing the elastic movement of the boot retaining member.

The present invention has for its object to overcome the above-mentioned disadvantage in a simple and easy manner.

In accordance with the invention, an interlocking device is disposed between the elements allowing the elastic play of the boot retaining member and the safety locking mechanism for the safety release of said boot retaining member, in such a way that said elements will remain in their limit position reached at the time of release of the safety mechanism and will not come back to their initial position of their elastic run until the safety locking mechanism is re-cocked.

The invention will become clearer by referring to the following description and to the annexed drawings which show non-limitative embodiments of the present invention.

In the drawings:

FIGURE 1 is a longitudinal section of a boot heel binding for skis, in boot-clamping position;

FIGURE 2 shows the binding of FIGURE 1 in boot-releasing position;

FIGURE 3 is a longitudinal section of another embodiment in boot-clamping position;

FIGURE 4 is a section taken along line 4—4 of FIGURE 3;

FIGURE 5 is a side elevation, partially in section, of the embodiment of FIGURE 3 in boot-releasing position; and

FIGURES 6 and 7 are top plan sections of two embodiments of a front boot clamp in accordance with the invention.

In FIGURE 1, a ski boot 1 is clamped on a ski 2 by a jaw or boot retaining member 3. Jaw 3 is pivoted on a pivot shaft 6 of a housing 7. Jaw 3 pulls a slide member

10 through the intermediary of a piston 8 and compression spring 9 located in said slide member 10.

The slide member 10 is normally locked in position by a ball 11 pressed by a spring 12 mounted in a cap screw screwed in housing 7. Ball 11 normally engages a notch made in slide member 10.

When abnormal forces tend to open jaw 3, as shown in FIGURE 2, spring 9 is compressed until the head 13 of the rod of piston 8 abuts against slide member 10; the latter is moved forwardly and causes the release of the safety locking mechanism.

Moreover, during forward movement of the slide member 10, a ball 14, freely mounted in an opening of the slide member 10 opposite piston 8 in the release position, is forced to move out of the notch 16 of the base plate 17 for the housing, and due to the greater diameter of the ball 14 than the thickness of the bottom wall of the slide member 10, said ball 14 will protrude within the bore of the slide member behind the bevelled face 18 of piston 8, which is then in advanced limit position.

Piston 8 is therefore locked in said limit position with respect to the slide member 10 and cannot reoccupy its initial release position until the slide member 10 has itself attained its limit release position, enabling the release of ball 14 and therefore the release of piston 8.

In the embodiment of FIGURES 3, 4, and 5, a jaw 21 serving to retain the boot 1 on the ski 2, is pivoted on a transverse horizontal pivot shaft 22 of the support 23, said shaft serving also as a pivot for a crank arm 24. The latter is elastically connected to the jaw 21 by means of a compression spring 25 and is provided with a cavity, in which is inserted a needle roller 26 which is pressed by a spring 27.

Upon raising of the jaw 21, spring 25 is compressed against the crank arm 24 and beyond a certain force, or, as represented in FIGURE 5, when shoulders 30 and 31 of the jaw 21 and crank arm 24 respectively abut each other, the crank arm is caused to rotate causing opening of the safety locking mechanism and, therefore, the release of the needle roller 26 out of the notch made in housing 23. The needle roller then engages a notch 29 of the jaw 21, thereby causing locking of the jaw with respect to the crank arm 24.

Preferably, a screw 32 threaded in the crank arm 24 serves to adjust the compression force of the spring 27.

FIGURE 6 shows a front boot clamp comprising a jaw 40 adapted to overlie the front end of the boot sole and pivoted on a pivot shaft 42.

In normal position, a piston 41 abuts against a flat of pivot 42, being urged by a compression spring, which in turn urges a ball 46 into engagement with a center notch of a crank arm 43, also pivoted on pivot 42.

Crank arm 43 is resiliently urged into the center position shown in FIGURE 6 and can move resiliently one side or the other until a pin 44 secured to the base plate 45, abuts one end or the other of a slot 43' made in the crank arm 43.

When the jaw has reached its elastic course, the spring-pressed locking ball 46 is released and allows the complete opening of the clamp, said ball allowing moreover, by pushing away the finger 47 of a lever 48 articulated intermediate its ends, the insertion of the finger 49 of said lever into a notch 50 of the piston 41, whereby lever 48 retains the latter in spring compressing position.

In the embodiment of FIGURE 7, the jaw 56 is pivotally mounted on a shaft 57 and compresses during its resilient play one or the other of the springs 58 acting on a stud 59' which is part of a counterplate 59, also rotatably mounted on pivot 57.

Counterplate 59 is normally locked by the spring-pressed ball 60 engaging a notch of said counterplate 59. When counterplate 59 starts to rotate about pivot 57, a

3

second ball 61 maintained in a notch 62 of the counterplate 59, is caused to insert itself behind one or the other of two retaining shoulders 63 of the jaw 56.

The positions of the shoulders 63 correspond to the maximum elastic play of jaw 56.

Slide member 10, crank arm 24 and counterplate 59 each constitutes an intermediate member elastically connected to the boot retaining member and directly engaged by the safety locking mechanism.

What I claim is:

1. A safety boot binding for skis, comprising a support adapted to be fixed to a ski, a boot retaining member movably mounted on said support for movement to an open position, an intermediate member movably mounted on said support for movement from a normal position, an interlocking member carried by said intermediate member and interlocking said boot retaining member and said intermediate member against relative movement upon said boot retaining member attaining said open position and upon movement of said intermediate member away from said normal position, said interlocking member releasing said boot retaining member and said intermediate member for relative movement, only upon return of said intermediate member to its normal position, first spring means acting on said boot retaining member and on said intermediate member, stressed by movement of said boot retaining member relative to said intermediate member towards its open position and capable of transmitting a force between said retaining member and said intermediate member so that said retaining member can move said intermediate member away from its normal position and so that said interlocking member can interlock said retaining and intermediate members, and second spring means resiliently retaining said intermediate member against movement from its normal position until said force has attained a maximum, and releasing said intermediate member upon said force exceeding said maximum.

2. A binding as claimed in claim 1, wherein said boot retaining member is pivoted on said support about a horizontal pivot for retaining a boot heel and said intermediate member is a slide mounted for slidable movement in a direction perpendicular to said pivot, said first spring means including a piston slidably mounted in said slide and attached to said boot retaining member, and a spring member located in said slide between a wall thereof and said piston, said interlocking member consisting of a ball movably extending through a wall of said slide, of greater diameter than the thickness of said wall and extending in the path of said piston by engagement with a surface of said support when said slide is out of its normal position, said ball engaging a notch in said support surface when said slide is in normal position to thereby be out of the path of said piston, said second spring means including a spring-urged member mounted

4

in said support and engageable with a notch of said slide in the normal position of said slide.

3. A binding as claimed in claim 1, wherein said boot retaining member and said intermediate member are pivotally mounted on said support about a common pivot, said support and intermediate member defining concentric surfaces coaxial with said pivot, said second spring means and said interlocking member consisting of a single spring-urged roller carried by said intermediate member and of greater diameter than the radial distance between said concentric surfaces and engageable with a notch of said support in the normal position of said intermediate member to retain said intermediate member in normal position while clearing the concentric surface of said boot retaining member to allow pivotal movement of the latter against the action of said first spring means to a limit position relative to said intermediate member, said roller engaging a notch in the concentric surface of said boot retaining member, while the latter is in said limit position, and riding on the concentric surface of said support to allow movement of the assembly of said boot retaining member and of said intermediate member, while locking said two last-named members against relative movement.

4. A binding as claimed in claim 1, wherein said boot retaining member and said intermediate member are pivoted on a common pivot secured to said support, said second spring means including a spring-urged member mounted in said support and engageable with a notch of said intermediate member in the normal position of the latter, said support and said boot retaining member defining concentric surfaces coaxial with said pivot, said boot retaining member further having shoulders at the ends of its concentric surface, said interlocking member including a ball of greater diameter than their radial distance between said concentric surfaces, said ball engaging a notch in said support and the concentric surface of said boot retaining member when said intermediate member is in its normal position, said ball clearing said last-named notch and engaging one of said shoulders when said intermediate member is out of its normal position.

References Cited

UNITED STATES PATENTS

2,867,447	1/1959	Mueller	280—11.35
3,199,885	8/1965	Smolka	280—11.35
3,325,178	6/1967	Reuge et al.	280—11.35

FOREIGN PATENTS

268,301	2/1964	Australia.
---------	--------	------------

LEO FRIAGLIA, Primary Examiner

J. A. PEKAR, Assistant Examiner