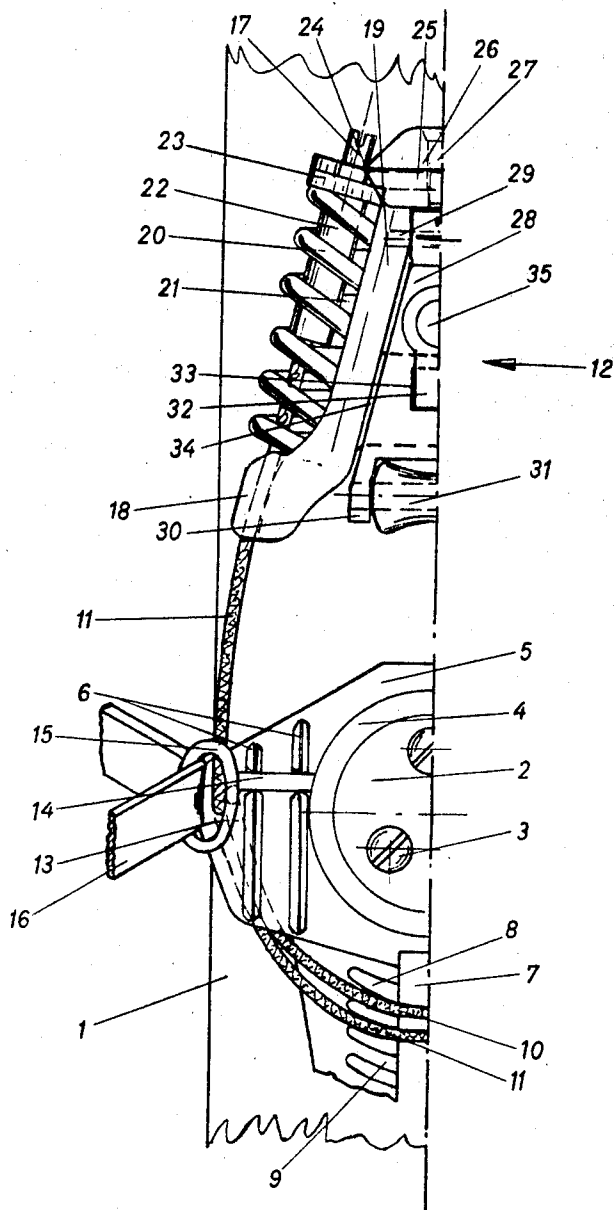


May 6, 1969

H. MENZL

3,442,524

SKI BINDING HAVING A FORWARD RELEASE WHICH IS FLOATING OR
SECURED TO THE SKI AND EFFECTIVE DURING A FORWARD FALL
Filed Oct. 7, 1966



1

3,442,524

SKI BINDING HAVING A FORWARD RELEASE WHICH IS FLOATING OR SECURED TO THE SKI AND EFFECTIVE DURING A FORWARD FALL

Hans Menzl, Ludwigstrasse 5, Regensburg, Germany

Filed Oct. 7, 1966, Ser. No. 585,193

Claims priority, application Germany, Nov. 20, 1965, M 67,340

Int. Cl. A63c 9/08

U.S. Cl. 280—11.35

4 Claims

ABSTRACT OF THE DISCLOSURE

A ski binding comprising automatic heel release means to engage the heel of a ski boot and retain same securely on a ski but to automatically release said boot responsive to a forward fall, said release means including tension elements extending forwardly from said release means, and a longthong binding cross connecting the forward ends of the tension elements and serving as an extension thereof.

Modern skiing involves increasing strains upon the skier and the ski and these strains may sometimes lead to grave dangers. To reduce these dangers, a number of safety ski bindings have already been developed with the object to effect an automatic release of the ski from the boot in the case of a fall. These known bindings still fail to meet certain requirements. Some safety bindings are designed to respond to forward and twisting falls and are reasonably satisfactory in this respect. These bindings have the disadvantage, however, that they cannot be used with longthongs unless the forward release is abandoned.

It is an object of the present invention to provide a relatively simple safety ski binding, which has a high reliability of response and which constitutes a longthong binding, as is urgently desired for a safe control of the ski during skiing.

This object is accomplished according to the invention is that a forward release is employed, which may be floating or secured to the ski and is effective during a forward fall, and the ends of a longthong binding are connected to the tension elements for the forward release. As a result, the firm holding of the boot or foot is not effected merely by a tension element of the safety ski binding, which tension element engages only the sole or heel, but this holding is assisted by means extending across the instep and the ankle portion of the foot.

The invention will be explained more fully with reference to the single figure of the drawing showing an illustrative embodiment in a top plan view.

The drawing shows a ski board, to which a retaining disc 2 is secured with screws 3 at a suitable location under the heel of the boot. The disc has an upturned rim portion 4, which grips and retains a mating rim portion of a turntable 5. This mating rim portion is concealed in the drawing. The outer portion of the turntable is upturned above the height of the disc 2 and is provided with ribs 6. The heel of the boot is not shown and rests on these ribs, which resist a lateral displacement of the heel. A detent-type adjusting device 7 is firmly secured to the turntable 5 and provided with slightly rounded ribs 8, which define between them passages 9, which are also rounded. Tension cables 10 and 11 of an automatic heel release 12, known per se, extend in these passages. The tension cable 10 from the right side, which is not shown, extends through the adjusting device 7 and thereafter in a suitable passage 13 on the underside of the turntable 5 and continues upwardly in a transverse

2

passage 14, which is open at both ends and opens into the free central space. The tension cable 10 terminates in a ring 15, through which the longthong 16 extends. The other tension cable 11 and the parts associated with it are arranged in mirror symmetry to those described hereinbefore.

The automatic heel release 12 may be adjusted with the aid of an adjusting screw 17. When the heel release has been properly adjusted, the tension cable, e.g. the cable 11, extends in a hollow guide 18 of a retaining member 19 and in the interior of a spring 20, which is received by an appropriate recess 21 of the retaining member 19. For an improved adaptation to the spring and to provide an abutment for the upper end of the spring, the end of the cable 11 is provided with a cylindrical member 22, which is enlarged at the end to form a disc 23. The latter serves as an abutment for the spring 20.

The adjusting screw 17 screwed into the disc 23 extends through an opening 24 of a bridge 25, which is connected to the retaining member 19. To avoid damage to the surface of the ski, this bridge is provided with a rubber buffer 26, which is held by a screw 27. The two retaining members 19 are integral with the bridge 25. A pivoted tongue 28 is mounted at 29 in the retaining members and at its free end carries between fork arms 30 a roller 31 of plastics material, which can bear on the heel, not shown. In condition for skiing, the tongue is engaged in known manner by means of a detent lever 32 in an opening 33 of a cross-piece 34, which connects the members 19. An application of pressure on the handle 35 causes the detent lever 32 to be disengaged so that the boot is released. This arrangement is known per se. During a forward fall, the force of inertia of the body of the skier causes his heel to lift from the turntable 5 so that the tension cables 10 and 11 are pulled and the spring 20 is compressed. At the same time, the longthong 16 exerts a pull on the ring 15 and consequently on the other end of the tension cable 10 (or 11). When the force is sufficient, the head of the adjusting screw 17 will slip into the bore 24 and finally through the same so that the spring and the elements 22 and 23 are laterally ejected. As a result, the heel tightener as well as the foot of the skier are released.

The action of the longthong 16 ensures a higher stability of the foot during normal skiing and increases the reliability of the response because the action of the longthong 16 results in a longer spring excursion.

The present example incorporates a floating heel tightener. The invention may be modified for application to any other forward release, particularly to a release which is directly secured to the ski and which may be caused to engage by means of a lever having an upper dead center. It is sufficient to connect the ends of the tension cables to the retaining straps of the longthong by means of the detent passages, as in the example shown. Where a forward release is utilized which is directly secured to the ski, the arrangement may be such that the detour through the detent adjusting device is avoided and the tension elements are directly connected to the longthong rings on the side with which they are associated.

What is claimed is:

1. A ski binding comprising automatic heel release means to engage the heel of a ski boot and retain same securely on a ski but to automatically release said boot responsive to a forward fall, said release means including tension elements extending forwardly from said release means, and a longthong binding being continuously inserted in series with said tension elements so that the tension of each tension element continues in the longthong and at release the heel is liberated from the ski but

3

the longthong binding loosely remains connected with the ski.

2. A ski binding as defined in claim 1, wherein each tension element is connected at one end to said automatic heel release means and wherein the other end is guided through a rotating disc to the opposite side of said boot and is there connected to one end of the longthong.

3. A ski binding as defined in claim 1, further comprising a ring interconnecting each said tension elements with its respective end of said longthong binding and a turntable mounted on the ski upon which said rings bear and from which said rings are capable of separating responsive to a forward fall.

4. A ski binding as defined in claim 3, wherein the turntable is provided with a cross-channel (14) for allow-

4

ing the tension element and longthong-ring to pass there-through.

References Cited

UNITED STATES PATENTS

5	2,836,428	5/1958	Marker	-----	280—11.35
	3,100,119	8/1963	Marker	-----	280—11.35
	3,214,186	10/1965	Spier	-----	280—11.35

FOREIGN PATENTS

10	1,399,081	4/1965	France.
	321,913	7/1957	Switzerland.

KENNETH H. BETTS, *Primary Examiner.*

15 MILTON L. SMITH, *Assistant Examiner.*