May 7, 1940. G. RAUGLAS 2,199,444

SKI BINDING

Filed June 14, 1938

Fig. 1.

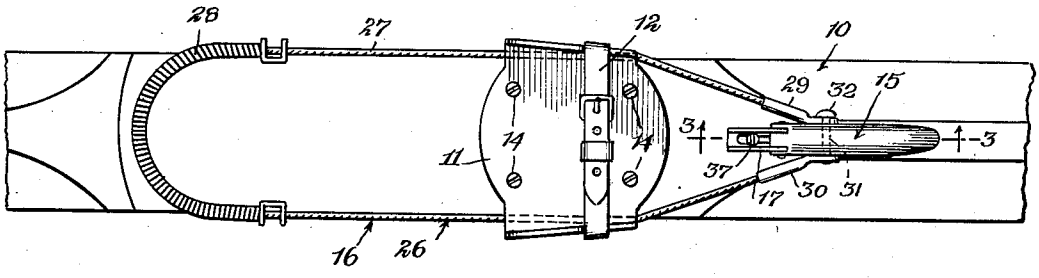


Fig. 2.

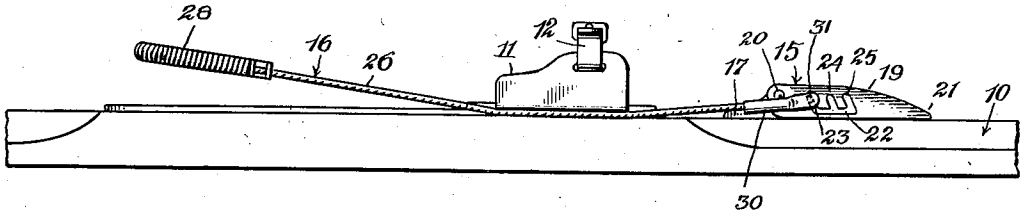


Fig. 3.

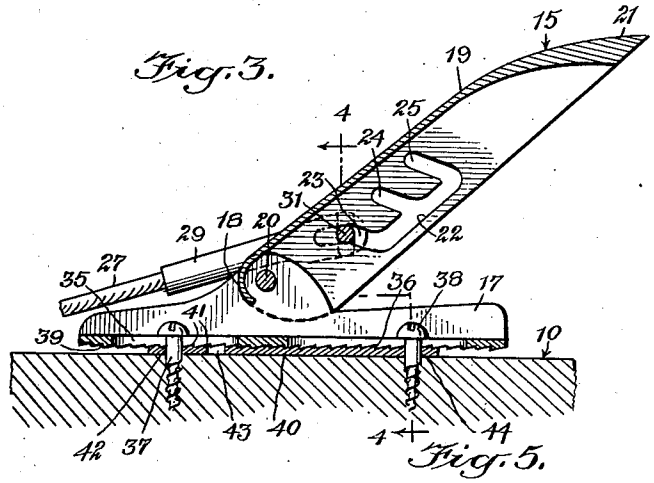


Fig. 4.

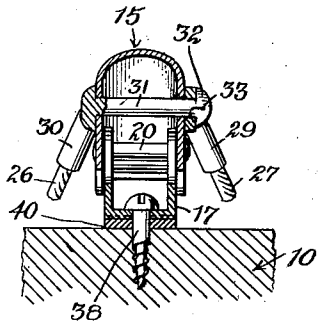
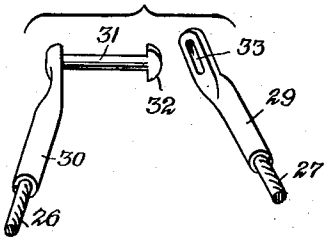


Fig. 5.



WITNESSES

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SKI BINDING

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4 Claims. (Cl. 280—11.35)

This invention relates to improvements in ski bindings and particularly to improved cable supports for ski bindings.

It is an object of the invention to provide an improved cable support for ski bindings which will hold the heel-engaging cable tightly so that the heel of the skier's shoe will be held in position.

A further object of the invention is the provision of an improved cable support of the above character which is easy to apply to a ski and which can be conveniently tightened or adjusted from time to time so that the heel of the skier's shoe will be properly held at all times.

In the accompanying drawing—

Fig. 1 is a plan view of the portion of a ski to which the binding is attached, showing a ski binding and also a cable support embodying my invention applied thereto;

Fig. 2 is a side elevation of the portion of the ski shown in Fig. 1, showing the ski binding and cable supports;

Fig. 3 is a longitudinal sectional view through the ski and cable support in the direction of the arrows on the line 3—3 of Fig. 1;

Fig. 4 is a sectional view in the direction of the arrows on the line 4—4 of Fig. 3, and

Fig. 5 is a detailed view of the connecting sleeves and pin for connecting the cable to the cable support.

In the accompanying drawing the numeral 10 indicates a ski of conventional construction, only that portion of the ski to which the binding is applied being shown. A ski binding 11 consisting of a horizontal foot plate, vertical toe irons and an adjusting strap 12 is applied to the ski in some suitable manner as by means of screws 14. Connected to the ski in front of the binding 11 is my inproved cable support indicated generally by the numeral 15, to which is attached the cable 16 adapted to extend around the heel of the skier's boot in the usual manner and firmly hold it in position.

My cable support is of improved construction so that it may be readily applied to the ski and may thereafter be conveniently adjusted or tightened. Also the tension of the cable may be released so as to facilitate the insertion and removal of the foot of the skier. To this end I preferably form the cable support of a base member 17 preferably of channel shaped construction and provided with upwardly projecting portions on its side walls indicated at 18, to which the releasing lever 19 is pivotally connected as by means of the pin 20. The releasing lever 19 is likewise preferably of channel shaped construction but is preferably of greater width than the base member 17 and extends over the sides thereof as illustrated. So as to improve the appearance and so as to provide a minimum resistance to snow or the like which might engage its upper surface I preferably form the lever 19 of streamlined construction by tapering the forward edge thereof downwardly to the lower level of the side walls as indicated at 21.

Each of the longitudinal side walls of the releasing lever 19 is formed with a substantially longitudinal slot 22 having three substantially vertical slots 23, 24 and 25 extending upwardly therefrom and rearwardly at a slight angle at the two ends and from the center as shown. The slots just described are adapted to receive the end of the cable and to provide for limited adjustment of the tension thereof.

The cable 16 is preferably formed of two separate sections indicated at 26 and 27 which are preferably made of twisted wire cable suitably connected at their ends to the relatively strong coil spring member 28. The coil spring member 28 is of usual construction and the cable ends are connected thereto in the usual manner as by means of screw-threaded sleeves.

The forward ends of the cable sections 26 and 27 are anchored in sleeves 30 and 29, the sleeve 30 having connected thereto at the free end a laterally extending pin 31 with the relatively elongated narrow head 32 formed at the end thereof and adapted to be projected through a similarly shaped slotted opening 33 formed at the end of sleeve 29. The pin 31 is of sufficient length to extend through the slots in the lever 19 with the head 32 projecting outwardly from the opposite side thereof as shown in the drawing.

In attaching the cable to the cable support the pin 31 is extended through the slots in the head 32 and is then projected through the slotted opening 33 in the sleeve 29 as shown. The head 32 is so formed that when the cable extends rearwardly in its normal position as shown in Figs. 1 and 2 the head 32 is positioned substantially transversely of the slot 33 and cannot be released therefrom. To release the head 32 from the slot 33 the two sleeves 29 and 30 can be pivoted relative to each other until the head is parallel with the slot and it can then be released therefrom. It will be noted that the relative length of the cable 16 can be varied by selectively positioning the pin 31 in the various vertical slots 23, 24 or 25.

In addition to the adjustment just described I attach the cable support to the ski in such manner that the relative length of cable 16 may be adjusted by shifting the position of the support. Thus the bottom of the base member 17 is provided with a pair of longitudinally extending slotted openings 35 and 36 adapted to receive suitable fastening members such as the screws 37 and 38 which extend into the central portion of the ski, which is the thickest part of the ski, as shown, and accordingly forms a firm anchorage for the cable support with a minimum amount of strain upon the ski. It will be appreciated that the slotted openings 35 and 36 permit of relative adjustment of the position of the support, which is a decided advantage in that it facilitates the application of the cable support to the ski and also permits of subsequent adjustment thereof.

The cable engages the heel of the skier very tightly and exerts a considerable pulling strain upon the cable support and to prevent accidental shifting of the cable support under the strain I provide the under surface of the base member with serrations preferably of the saw-toothed type, as shown at 39, with the vertical portion thereof facing towards the direction of the pull. Beneath the base plate I preferably provide an attaching plate 40 which is provided with mating saw-toothed serrations 41 which engage the serrations of the base plate and prevent accidental shifting thereof.

The base plate 40 is provided with three openings 42, 43 and 44 which are adapted to receive the attaching screws. The opening 44 is positioned beneath the slot 36, which is of greater length than the slot 35, while each of the openings 42 or 43 is adapted to be positioned beneath the slot 35.

In applying my improved cable support to a ski the ski binding 11 is first attached to the ski in the usual manner and the boot of the skier is positioned in the ski binding. Thereafter the cable 16 is connected to the cable support with the pin 31 extending through the first slot 23 as shown in the drawing and the head 32 is projected through the slotted opening 33 formed in sleeve 30, so as to firmly secure the cable in position. The spring 28 of the cable is positioned around the heel of the ski boot with the cable sections 26 and 27 extending forwardly and beneath the ski binding 11. The attaching plate 40 is placed at the center of the ski in front of the ski binding as shown, at approximately the desired position and the cable support is placed thereon. The cable support 15 is then shifted so that the cable exerts the required tension upon the heel of the ski boot. After this position has been determined the screw 38 is extended through slot 36 and opening 44 and screwed rather loosely into the ski 10 so as to permit a shifting of the cable support relative to the attaching plate 40. The position of the cable support is then carefully adjusted so that the cable exerts the desired amount of tension and screw 38 is then driven firmly home so as to prevent accidental shifting of the cable support. Screw 37 is then extended through slot 35 and through the opening 42 or 43 in attaching plate 40 which is positioned more nearly the center of slot 35. In the accompanying drawing the opening 42 is adjacent the center of slot 35 and accordingly screw 37 has been extended through this opening. It will be appreciated that screw 37 should be screwed tightly into the ski.

When it is desired to temporarily release the tension of coil 16 so as to permit of the insertion or removal of the boot of the skier, releasing lever 19 is raised upwardly into the position shown in Fig. 3. When the boot has been properly positioned in the binding, tension is exerted upon the heel of the boot by clamping lever 19 downwardly to the position shown in Figs. 1 and 2. The cable will then securely grip the heel of the ski boot.

When due to the stretching of the cable or spring it is necessary to increase the tension of the cable it will be appreciated that the pin 31 may be extended into the slot 24 and when additional adjustment is required it may be extended into slot 25. Thereafter if further adjustment is required the screws 37 and 38 may be loosened sufficiently so as to permit of shifting of the cable support relative to attaching plate 40 towards the forward end of the ski. If necessary to obtain additional adjustment the screw 37 may be removed from the position indicated and inserted through opening 43 in the attaching plate.

When the cable support is in proper operating position as indicated in Figs. 1 and 2 the pin 31 cannot escape from the lower ends of slots 23, 24 or 25 into longitudinal slot 22, due to the fact that the channel walls of the base member 17 will engage the pin and prevent it from slipping downwardly. When one of the cable sections 26 or 27 breaks it is not necessary to provide an entirely new cable, due to the releasable connection between the pin 31 and the slotted opening in the sleeve 30. Thus it is merely necessary to screw the section 26 or 27 from the coil spring member 28 and attach the new section at that point.

It will be appreciated that I have provided an improved cable support for ski bindings which can be conveniently attached to a ski, and can be readily adjusted to securely grip the heel of the ski boot, and in which the tension exerted by the cable on the ski boot can be temporarily released in a convenient manner so as to facilitate the insertion and removal of the ski boot.

It should be understood of course, that many modifications may be made in the illustrated and described embodiment of my invention without departing from the invention as set forth in the accompanying claims. It should also be understood that the improved cable as used herein is not limited to a twisted wire strand but applies to any type of flexible member which may be extended from the cable support around the heel of the ski boot.

I claim:

1. A cable support for a ski binding comprising an attaching plate with a serrated upper surface and adapted to be positioned upon the upper surface of a ski in front of the ski binding and provided with a plurality of openings adapted to receive screws or the like, a base member having a serrated lower surface adapted to be positioned on top of the attaching plate and provided with elongated slots in alignment with the openings in the attaching plate and adapted to receive the screws or the like, a lever pivotally attached to the base member and adapted to pivot from cable releasing position above the base member to cable tightening position in engagement with and parallel to the base member, said lever being provided with a substantially longitudinally extending slot having substantially transverse slots extending therefrom at an angle, and a flexible cable adapted to engage the heel of the boot of the skier, and provided with means extending through the said slots, the relative length of the

cable being adjustable by shifting said means along the longitudinal slots to the several transverse slots.

2. A cable for a ski binding comprising a flexible member adapted to encircle the heel of a ski boot, said member being provided with two ends, and a pair of metallic sleeves engaging the ends of said member, one of said sleeves being provided with a pin having an elongated head and the other sleeve being provided with a slot corresponding in shape to the shape of said head, the normal position of said head being substantially transversely of the slot.

3. A cable support for a ski binding comprising a base member adapted to be secured to the upper surface of a ski in front of the ski binding, a lever provided with an opening and pivotally attached to the base member and adapted to pivot from cable releasing position above the base member to cable tightening position in engagement with and parallel to the base member, and a flexible member adapted to engage the heel of the boot of the skier and provided with means extending through the opening in the lever for releasably attaching the front end of the member to the lever, said last named means comprising a pair of sleeves engaging the ends of the flexible member, one of said sleeves being provided with a pin having an elongated head and the other sleeve being provided with a similarly shaped slot adapted to receive the head.

4. A tensioning device for a ski binding comprising a channeled base member, a plate cooperative therewith, a lever pivoted to the base member having a slot adapted to receive means associated with the front ends of a heel binding element for removably connecting said ends to the lever, said plate and said base member having mutually engageable teeth and vertically aligned openings adapted for the passage of fastening means for securing the plate and base member in fixed relation to a ski in predetermined longitudinally adjusted relation as determined by said teeth.

GERARD RAUGLAS.