March 10, 1942. L. NASHE ET AL 2,276,252

SKI BINDING

Original Filed Nov. 16, 1938

Fig. 1.

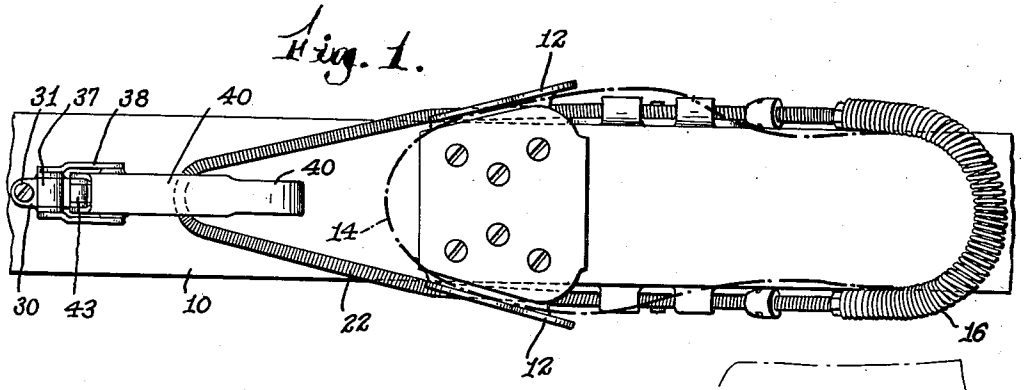


Fig. 2.

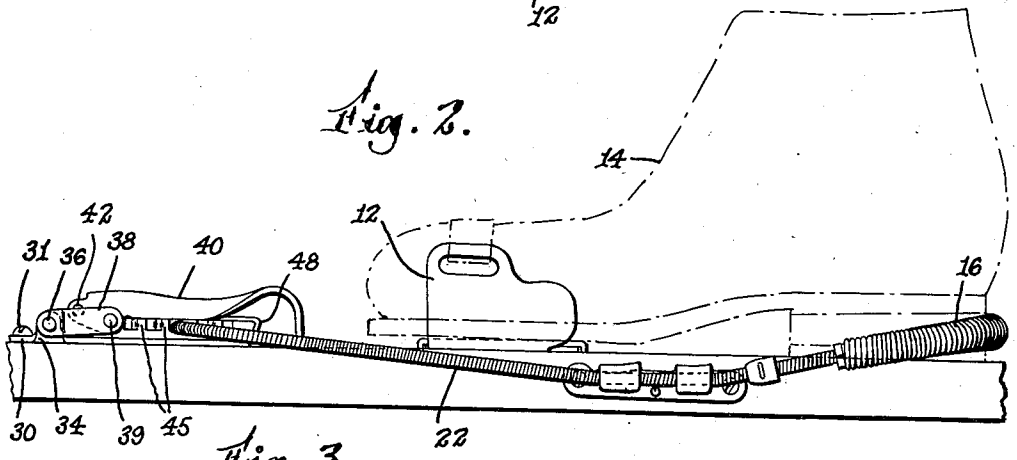


Fig. 3.

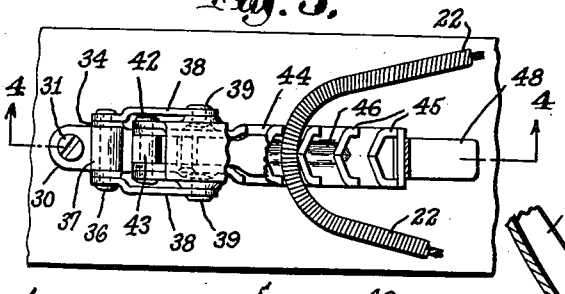


Fig. 5.

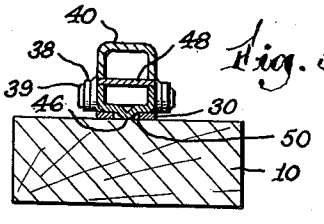


Fig. 4.

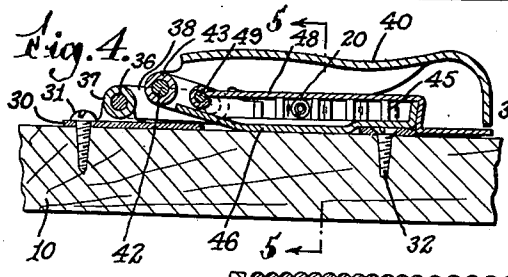
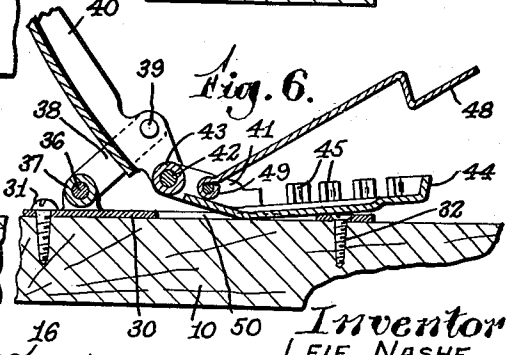


Fig. 6.



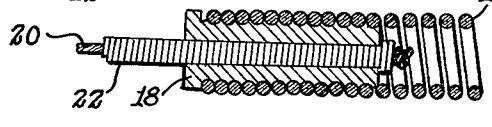


Fig. 7.

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UNITED STATES PATENT OFFICE

2,276,252

SKI BINDING

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Application November 16, 1938, Serial No. 240,694
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4 Claims. (Cl. 280—11.35)

This invention relates to ski bindings and more particularly to a novel cable tightening clamp for such bindings. Modern ski bindings generally include a heel spring, a cable having its ends connected to the ends of the heel spring, and means for tightening the cable to draw the spring into holding engagement with the heel of the skier's boot. This means is usually in the form of a pivoted clamping lever which can be readily moved to spring tightening or spring releasing positions, and the primary object of my invention is to provide a novel and improved clamp for this purpose.

Our improved clamp is in form of a double-action toggle joint employing a lever arranged to swing rearwardly to the cable tightening and clamped position. The clamp structure also embodies a novel cable engaging bar for holding the cable in different positions of adjustment and a clip for holding the cable in place on the bar, and the clamping lever is arranged, when in the clamping position, not only to extend over and hold this clip in place but this rearwardly extending position of the lever renders it free from accidental displacement. The toggle lever assembly is pivoted to a base plate constructed to be anchored to a ski forwardly of the assembly and the base plate is slotted to receive a reinforcing rib formed in and along the cable engaging bar. The production of a novel ski binding clamp embodying these improved features comprises a further object of our invention.

These and other features and advantages of the invention will be more easily understood and appreciated from the following detailed description of a preferred embodiment thereof selected for purposes of illustration and shown in the accompanying drawing, in which:

Fig. 1 is a plan view showing a section of a ski with the binding of my invention assembled thereon.

Fig. 2 is a corresponding view in side elevation,

Fig. 3 is a fragmentary plan view showing the clamp broken away,

Fig. 4 is a view in cross section along the line 4—4 of Fig. 3,

Fig. 5 is a view in cross section along the line 5—5 of Fig. 4,

Fig. 6 is a like view in cross section but showing the clamp open, and

Fig. 7 is a view in cross section showing the connection between the heel spring and the cable.

In the drawing a portion of a ski is shown at 10, converging toe plates are shown generally at 12, and a ski boot 14 is shown in dot and dash lines. A heavy coil heel spring 16 is disposed at the rear end of the binding and is adapted to engage a groove in the heel of a ski boot 14. A wire cable 22 has its ends connected to the ends of the spring by the connecting element 18 and extends forwardly to cooperate with the novel clamping mechanism comprising the invention. The purpose of the clamping mechanism is to engage the cable 22 to draw and hold the spring 16 in tight contact with the heel of the boot.

Our novel clamping mechanism comprises a base plate 30 pressed from a flat metal strap. The base plate is adapted to rest flatly on the ski 10 and is provided with perforations at its two ends for receiving anchoring screws 31 and 32. Rearwardly of the screw 31, the plate has two perforated ears 34 bent upwardly therefrom and the toggle mechanism now to be described is pivotally anchored thereto by a pin 36, a spacing sleeve 37 being mounted on the pin between the ears. A clamping lever is indicated at 40 and two links 38 have the forward ends thereof anchored to the pin 36 and pivot pins 39 connect the rear ends of the links to the side walls of the clamping lever intermediate its ends and adjacent to its forward end.

A cable engaging link 44 stamped to U-shape from sheet metal to provide side flanges 41 has its forward end pivotally connected to the forward end of the clamping lever by a pin 42 extending through the side flanges 41 and having a spacing sleeve 43 thereon. The link extends rearwardly and the rear portion of the flanges 41 are sheared to form ears which are bent inwardly toward each other to provide cable engaging and supporting bridges 45 extending across and relatively spaced along the link. These bridges are adapted to receive the cable therebetween in different positions of adjustment and a spring clip 48 pivoted at 49 to and between the flanges 41 extends rearwardly. When this clip is snapped down to the position of Fig. 4 it holds the cable in position between the bridges 45.

It will be apparent that forward pivotal movement of the clamping lever to the position of Fig. 6 moves the cable holding link 44 rearwardly and that rearward pivotal movement of the clamping lever to the position of Fig. 4 moves the cable holding link 44 forwardly. It will also be apparent that when the lever is in the position of Fig. 4 the pivot 42 has passed the center line connecting the pivots 36 and 39 whereby the cable pull of the link 44 acts to hold the lever in its closed position. The link 44 is reinforced and held more securely in the cable holding posi-

tion by the formation of a longitudinal rib **46** pressed thereinto and arranged to engage within a slot **50** in the base plate when the parts are in the cable tightened and holding position, the rib and slot providing cooperating guideways on the link and the base plate for keeping them in longitudinal alignment.

Among the novel features of advantage resulting from our invention may be mentioned the following. The clamping lever swings rearwardly to clamping position whereby it cannot become accidentally opened by the engagement of some object with the forward end thereof during use. In this clamping position (Fig. 4) the rear end of the lever rests on the clip **48** whereby preventing the clip from accidentally opening, thereby eliminating the possibility of accident and giving the user greater feeling of security. Anchoring of the base plate **59** to the ski forwardly of the pivot **36** prevents buckling of the base plate under compression strain which would otherwise be placed thereon by the rearward pull of the cable **22**.

Forming the ears **45** from the side flanges of the link **44** provides a strong and improved anchoring structure for the cable. The novel clamping mechanism is furthermore very compact, more rigid and stronger than such mechanism heretofore known.

Having thus described our invention what we claim as new and desire to secure by Letters Patent of the United States is,

1. A ski binding clamp comprising a base plate, a clamping lever, a pair of links having their forward ends pivotally connected to the base plate adjacent to its forward end and having their rear ends connected to the clamping lever intermediate its ends and adjacent to its forward end, and a cable engaging link pivotally connected to the forward end of the lever and extending rearwardly therefrom, said link having cable anchoring elements integral therewith and spaced therealong and having a downwardly extending rib pressed thereinto longitudinally thereof, pivotal movement of the lever rearwardly being adapted to draw the link forwardly and the base plate being slotted longitudinally to receive the rib when said link is in its foremost position.

2. A ski binding clamp comprising a base plate, a clamping lever, means providing a link connection pivotally attached on horizontal and parallel axes to the base plate adjacent to its forward end and to the clamping lever intermediate its ends and more adjacent to its forward end, a cable engaging link pivotally connected to the forward end of the lever and extending rearwardly therefrom on the base plate, pivotal movement of the lever rearwardly being adapted to draw the link forwardly, means providing cooperating guideways on the link and the base plate for keeping them in longitudinal alignment, and means for anchoring the base plate to a ski forwardly of the first-named means.

3. A ski binding clamp comprising a base plate, a clamping lever having pivotal connection thereto, a cable engaging link pivotally connected at its forward end to the forward end of the lever and extending rearwardly therefrom, and a plurality of cable engaging ears integral with and relatively spaced along the link, each ear comprising two portions respectively integral with the link at opposite sides thereof and bent inwardly toward each other to form a cable supporting bridge extending across the link.

4. A ski binding clamp comprising a base plate, a cable engaging link having a plurality of cable anchoring elements relatively spaced therealong, a locking clip pivoted at its forward end to the link and pivotally movable thereabout into position overlying the elements, a clamping lever having pivotal connection to the base plate and link in position to draw the link forwardly as the lever is pivoted rearwardly and downwardly, and means on the clamping lever arranged to engage and hold the locking clip in cable anchoring position relative to said elements when the lever is in closed position.

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