

[54] **SKI SPURS**

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[51] Int. Cl. **A63c 7/10**

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280/11.13 Z, 11.13 B, 11.13 Y

[56] **References Cited**

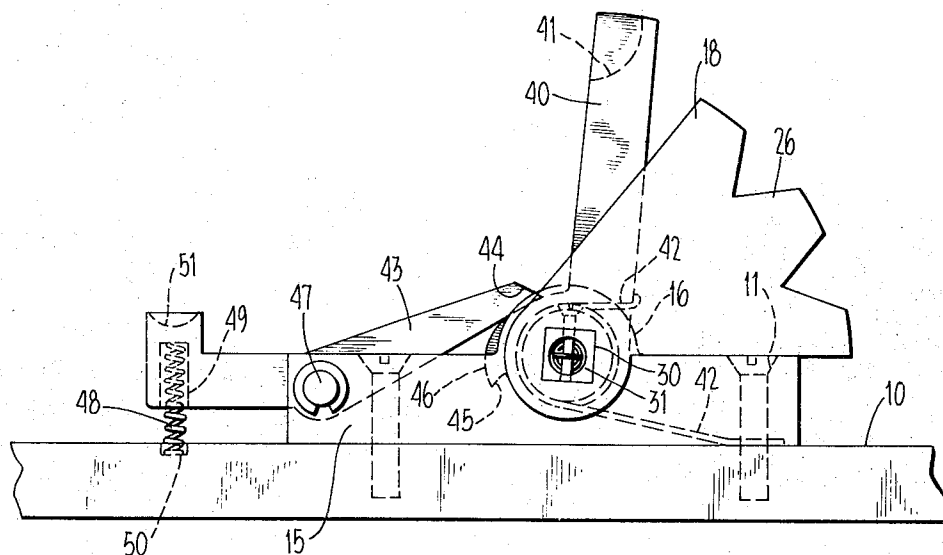
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[57] **ABSTRACT**

This invention relates to a ski spur, or non-skid device for skis which, in a retracted and non-operative position, lies on top of the respective skis; and in a projected and operative condition, provides spurs, or projections, which extend downwardly from the side of the ski to enable the wearer to climb icy or slippery slopes with extreme ease.

4 Claims, 6 Drawing Figures



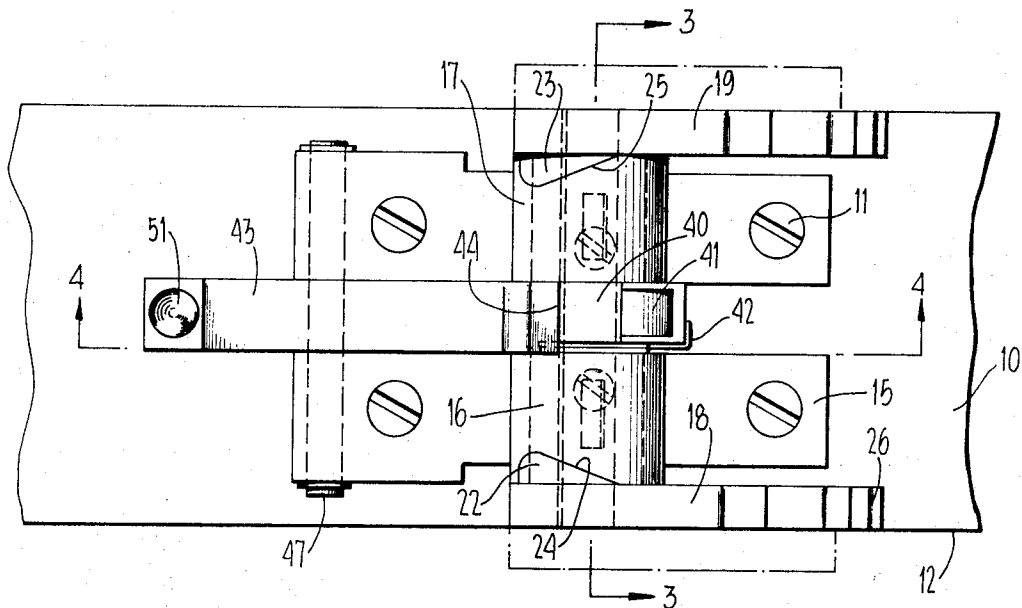


Fig. 1

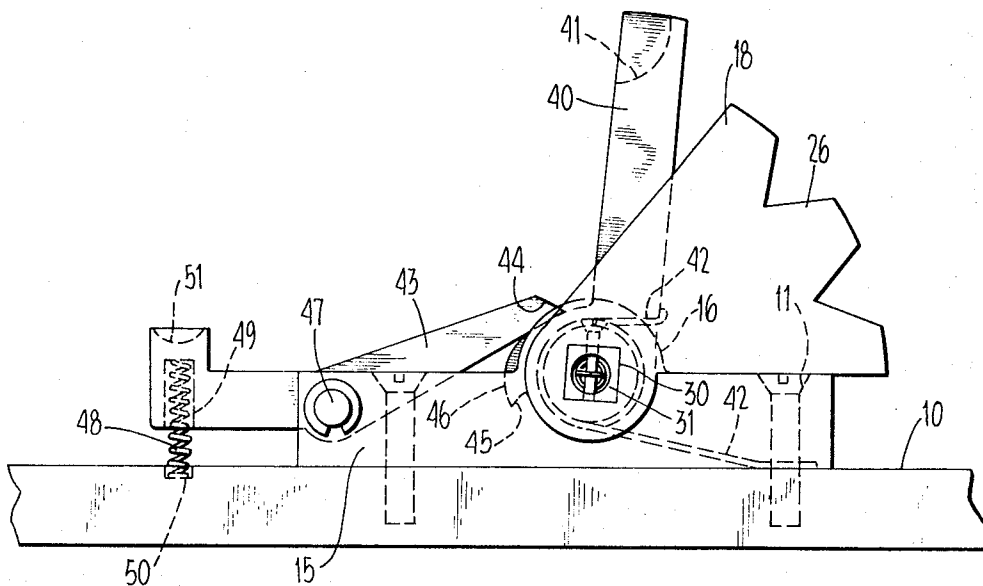


Fig. 2

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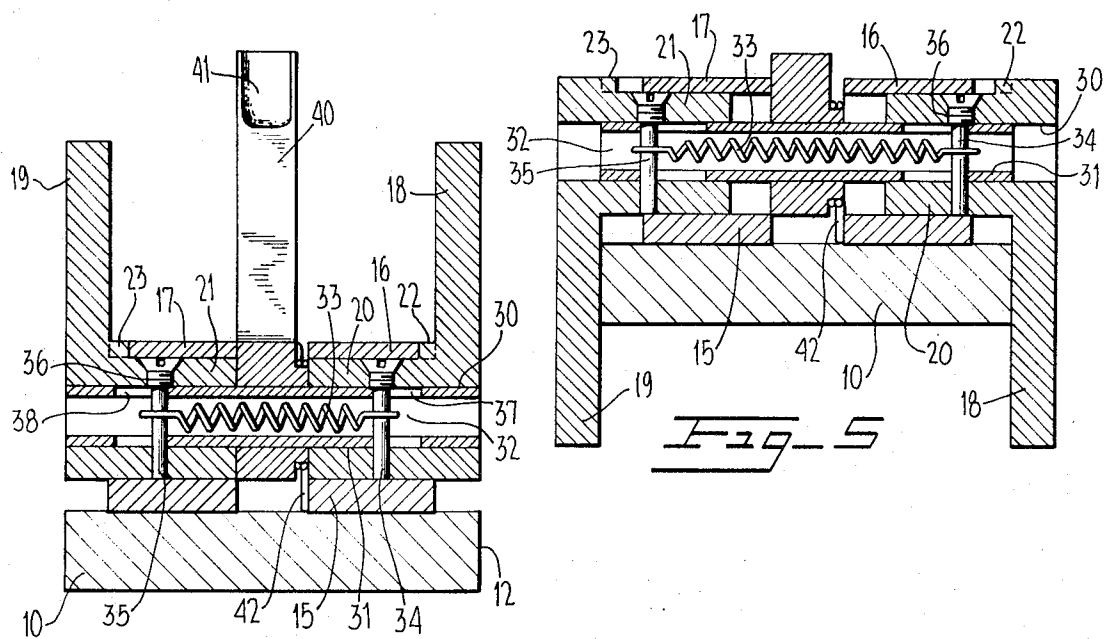


Fig-3

Fig-5

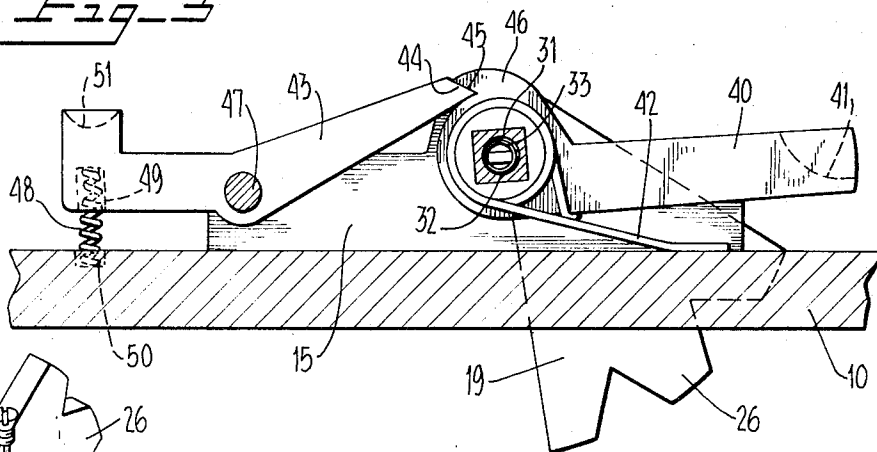


Fig-4

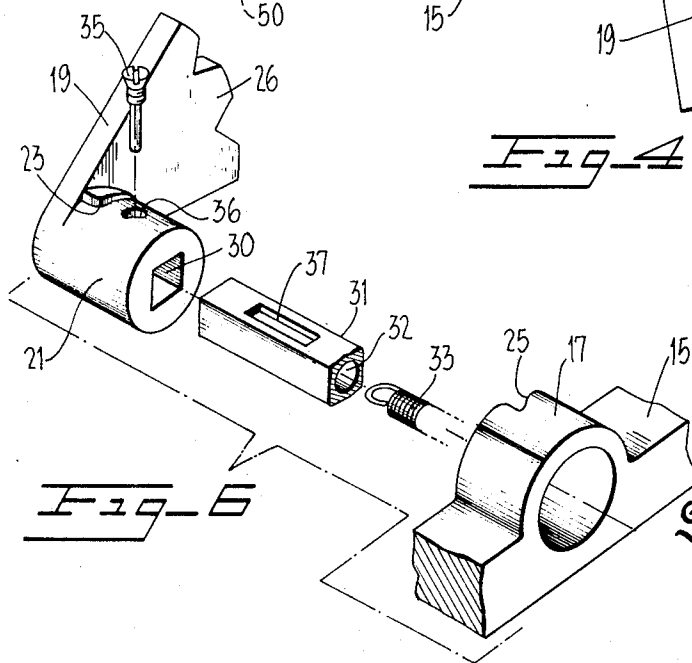


Fig-6

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SKI SPURS OBJECTS

It is a primary object of the present invention to provide a device which enables a skier to climb icy, or otherwise slippery slopes, with extreme ease.

It is another object of the present invention to provide a device that might sometimes be called a "creeper", i.e., one in which, in its operative position, will prevent inadvertent sliding of the skis in climbing slopes but which can readily be retracted to be completely out of the way when skiing.

It is another object of the present invention to provide a braking mechanism for skis.

It is an object of the present invention to provide a pair of spurs for a ski which, when in its inoperative position, lies on top of the ski and out of the way of any activity which the wearer would desire, but which, when moved to its operative position, provides a pair of spurs extending downwardly from the sides of the ski to enable the user to climb slopes or traverse slippery or icy surfaces without danger of sliding backwardly.

These and further objects of the present invention will be apparent from the following detailed description of the device taken in conjunction with the accompanying drawings in which:

FIG. 1 is a plan view of the present invention showing the ski spur in a retracted, or inoperative, position.

FIG. 2 is a side view of the mechanism shown in FIG. 1.

FIG. 3 is a transverse, cross-sectional view, such as taken along the plane indicated by the line 3—3 of FIG. 1, showing the mechanism of the present invention in the same inoperative, or retracted, position.

FIG. 4 is a side, cross-sectional view of the apparatus shown in FIG. 1 with the spur in its projected, or operative, position in which the spurs have projected outwardly and downwardly to lie alongside the edges of the ski so that it projects below the lower surface of the ski, such as taken along the plane indicated by the line 4—4 of FIG. 1.

FIG. 5 is a transverse cross-sectional view of the device shown in FIG. 4 with the spurs in a downward and operative position, and is taken along the same plane as that shown in FIG. 3.

FIG. 6 is an exploded perspective view of the left half of the device shown in FIG. 1, such as a view of the parts shown in a view taken along the plane indicated by the line 4—4 of FIG. 1, with the operating lever omitted.

The device of the present invention comprises a base plate 15 which is affixed to a ski 10 by any suitable means, such as screws, or bolts, 11. The base plate carries a pair of integral bearing bushings 16 and 17 which are adapted to rotatably mount a pair of ski spurs 18 and 19. The spurs 18, 19 are each provided with integral cylindrical stub shafts 20 and 21 which are journaled in the respective bearings 16, 17. The shafts 20, 21 are provided, adjacent the spurs 18, 19, with cam faces 22, 23, respectively (see FIG. 1), which normally lie within complimentary cam faces 24 and 25, respectively, formed in the interior edges of the bearings 16, 17, respectively.

As shown in FIG. 1, the base plate 15 of the ski spur is narrower than the ski 10, so that when the spurs 18 and 19 are in the inoperative position shown in FIGS. 1,

2 and 3, the two spurs are not only above the upper face of the ski 10, but are inside of its outer edges 12, as shown particularly in FIG. 1. However, when the spurs are rotated clockwise from the position shown in FIG. 2 to that shown in FIG. 4, the respective complimentary cams 22, 24 and 23, 25 cam the spurs outwardly so that they lie immediately adjacent the edges 12, as shown by the dotted lines in FIG. 1.

The two spurs 18 and 19 are provided with a plurality of teeth 26 at their outer ends. It will be understood that while three such teeth are shown in FIGS. 2 and 4, any suitable number can be provided. It will also be understood that the teeth 26 can be blunt, as shown in these figures, or can be relatively sharp. The only thing necessary is that the spurs 18 and 19 be long enough to permit some of the teeth 26 to extend well below the lower face of the ski so that when in the operative position shown in FIG. 4, they will penetrate into the snow for a short distance.

The stub shafts 20, 21 are provided with a square central bore 30 adapted to receive a square shaft 31. The square shaft 31, in turn, has an axial bore 32 adapted to encompass a tension spring 33. The spring 33 is tensioned between pins 34 and 35 (see FIGS. 3 and 5) mounted in the stub shafts 20 and 21, respectively. Preferably, the pins 34 and 35 are formed with a screw thread adapted to be threaded into threaded holes 36 in the stub shafts 20 and 21. The spring 33 is relatively strong so as to strongly bias the two spurs 18 and 19 together as shown in FIG. 3, when the spurs are rocked to their upper, or inoperative, position shown in FIG. 2, but to permit them to be cammed apart when rocked to the operative position shown in FIG. 4.

Preferably, the pins 34 and 35 extend through the respective stub shafts 20 and 21 so that both ends are firmly anchored in the walls of the stub shaft, in order to prevent bending of the pins and consequent slipping of the spring 33 therefrom. These diametrical pins 34 and 35 necessarily extend through the square shaft 31, which is provided with extended slots 37 for pin 34 and 38 for pin 35. By this means the two spurs 18 and 19, which carry the pins 34 and 35, are permitted axial movement with respect to the square shaft 31, although the square shaft itself will not move axially although it can rock. Also, the slots 37 and 38, by being closed at both ends, prevent the spurs 18 and 19, respectively, from moving more than necessary to just clear the edges of the ski. It will be understood that there may be considerable side thrust on the spurs, so it is necessary to limit the extent of their lateral movement.

It is apparent that the rocking of the square shaft 31 will rock the spurs 18, 19 when the shaft itself is rocked, as will be explained in the next paragraph. It is also apparent that the spurs 18 and 19 can be slid axially along the shaft 31 and will be drawn to the contracted position of FIG. 3 when the spurs are rocked to the upper position, and forced to the extended position shown in FIG. 5 when the spurs are rocked to the lower position.

It is believed that the operation of the ski spur of the present invention will be obvious. Normally, the latch 43 is released and hence the lever arm 40 will be in the upper and inoperative position shown in FIG. 2. In this position of the arm 40, the two spurs 18 and 19 are raised above the ski and are pulled by the spring 33 to

the inward position shown in full line in FIG. 1. In this position the spurs are above the ski 10 and do not interfere with skiing in any way. However, when it is desired to climb a steep slope or to traverse a slippery surface, the skier can rock the spurs 18, 19 downwardly by forcing the point of the ski pole against the outer end of the control lever 40, thereby rocking the spurs 18, 19 downwardly and at the same time camming them outwardly so they extend over the edges of the ski 10. When the spurs are no longer needed, slight depression of the rear end of the latch arm 43, again by use of the ski pole, releases the latch and allows the force of torsion spring 42 to rock the control lever 40 to its inoperative position shown in FIG. 2, thereby not only rocking the spurs 18 and 19 upwardly, but enabling spring 33 to pull them inwardly over the edge of the ski so that they no longer interfere with skiing.

Normally the ski spur or non-skid device of the present invention will be placed immediately in front of the boot binding (not shown) which constitutes a common and well-known part of the ski. Accordingly, the ski spur will be in front of the skier and hence can be readily operated by him to either set the spurs for climbing or to release them for normal skiing without stooping.

It will be understood that the drawings of the above disclosure show a preferred embodiment of my invention and that many modifications will occur to those skilled in the art which will not depart from the invented concepts herein disclosed. For example, it is obvious that the ski spurs of the present invention can be used as a brake in normal skiing although that is not the primary purpose of the present invention. It is also obvious that the teeth 26 of the spurs can be sharp or relatively blunt, as shown in the figures. Further, various cam means can be used to force the spurs outwardly of the sides of the ski. As a matter of fact, the ski spurs of the present invention would be very valuable if no contraction or expansion laterally were provided for, the spurs always being outwardly of the edges of the ski 10. Accordingly, it is intended that the appended claims cover such modifications as fall within the true spirit and concepts of the invention.

I claim:

1. A non-skid device for skis comprising:

a. a shaft rockably mounted on the top of said ski;

b. a blade member slidably mounted on the end of said shaft, said shaft and blade assembly being adapted to rock from a first position in which the blade is above the top of the ski to a second position in which it extends below the lower face of the ski;

c. means for rocking said shaft and blade assembly;

d. means for biasing said shaft and blade assembly to its first position;

e. means for latching said shaft and blade assembly in its second position;

f. means for permitting limited lateral movement of said blade member on said shaft;

g. means biasing said blade member inwardly when in said first position, whereby said member overlies the ski; and

h. cam means forcing said blade member outwardly when rotated to its second position.

2. The device of claim 1 wherein the blade member is provided with projections adapted to penetrate icy snow.

3. The device of claim 1 wherein the blade member comprises a pair of plates, one lying to either side of the ski, and each plate is provided with projections adapted to penetrate icy snow.

4. A non-skid device for skis comprising:

1. a base plate adapted to be mounted on the top of said ski;

2. a shaft journaled in said base plate transversely of said ski;

3. a spur slidably and non-rotatably mounted on each end of said shaft, said spurs in an extended position lying immediately adjacent the sides of said ski and in a retracted position lying above the said ski;

4. a lever for rocking said shaft,

5. means for biasing said lever to a position in which the spurs are elevated above the ski;

6. latch means for holding said lever in another position in which the spurs extend below the face of the ski;

7. spring means for pulling said spurs toward each other when said spurs are in an elevated position, and

8. complimentary cam means on said spurs and said base plate for forcing said spurs apart when rocked to a lower position.

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