Jan. 7, 1941. A. JAUSLIN 2,228,215

SKI BINDING

Filed Aug. 15, 1939

Fig. 1.

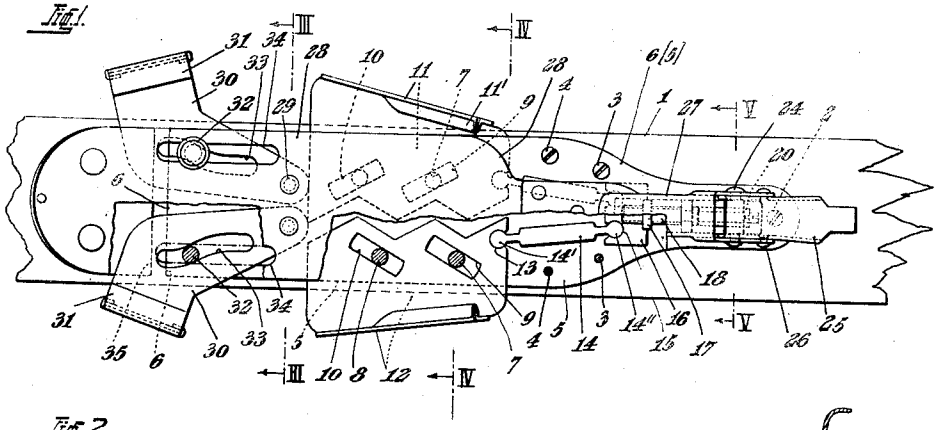


Fig. 2.

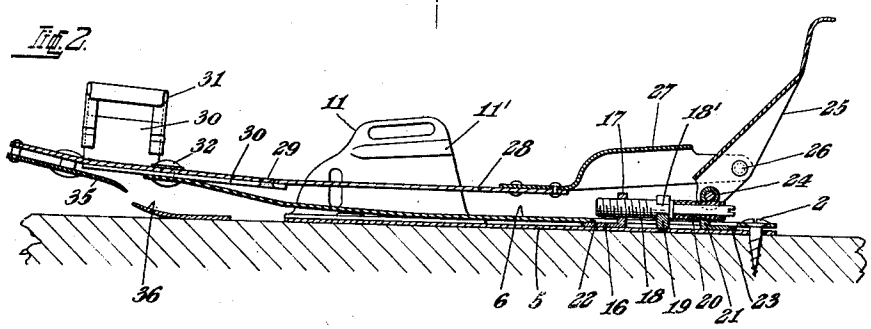


Fig. 3.

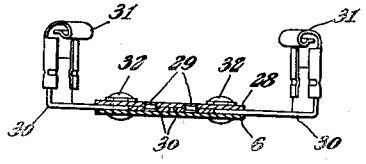


Fig. 4.

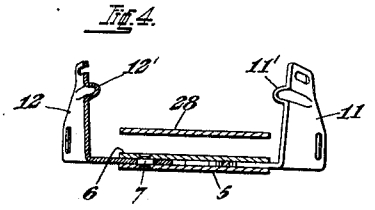


Fig. 5.

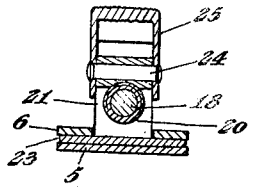
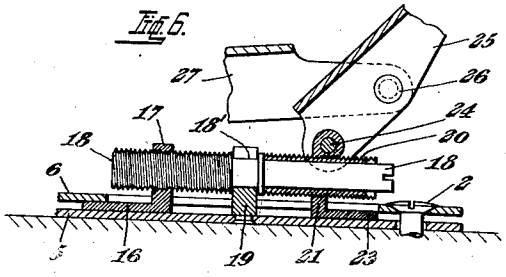


Fig. 6.



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SKI BINDING

Alfred Jauslin, Zurich, Switzerland

Application August 15, 1939, Serial No. 290,289

5 Claims. (Cl. 280—11.35)

My invention relates to improvements in ski bindings in which only the front portion of the boot is clamped down to the ski; and the objects of my improvements are, first, to provide means for positively gripping the sole welt under all practical conditions; second, to afford facilities for readily and easily adapting the binding to any normal ski boot; and, third, to provide a binding which may be readily secured to the ski.

I attain these and related objects by the ski binding illustrated, by way of a single form of invention, in the accompanying drawing, in which—

Fig. 1 is a top view of the entire binding secured to the ski;

Fig. 2, a longitudinal section thereof;

Fig. 3, a cross-section on line III—III of Fig. 1;

Fig. 4, a cross-section on line IV—IV of Fig. 1;

Fig. 5, a cross-section on line V—V of Fig. 1 in enlarged scale; and

Fig. 6, a longitudinal section through the front portion of the binding in enlarged scale.

In Figs. 1 and 2 the boot is supposed to enter into the binding from the left, i. e. the tip of the ski is situated to the right of the drawing.

Two spring leaves 5 and 6 are secured at their front ends to the ski 1 by means of the screws 2, 3 and 4 so that their rear portions are movable in a vertical direction. Two pairs of pivots 7 and 8 are secured to the rear portion of the lower leaf 5 and engage respectively in skew slots 9 or 10 which are provided respectively in the horizontal legs of toe holders 11 and 12. When moving the toe holders forward or backward, therefore, they simultaneously are brought together or spread apart, and this permits of adapting the distance between the upright legs of the toe holders to the width of the boot sole.

In order to permit of simultaneously adjusting both toe holders, the following device is provided. The horizontal leg of each toe holder is provided with a circular recess 13 at its front end (Fig. 1) which is engaged by the circular head 14' of a connecting rod 14. The latter at its front end engages a circular recess 15 of the plate 16 by means of its circular head 14''. The plate 16 is secured to the bottom edge of a square nut 17, and the latter is engaged by a screw spindle 18 which, by means of the turned down portion 18', is rotatively mounted in a fork 19. The latter is secured to the front end of the leaf 5 and extends upwardly therefrom. The front portion of the spindle 18 is stepped down in diameter, and a sleeve 20 (Fig. 6) provided with outer threads is loosely mounted thereon and engages a nut 21. The said nuts 17 and 21 are guided in a longitudinal slot 22 (Fig. 2) of the upper leaf 6. A tongue 23, which extends between the leaves 5 and 6, is secured to the lower edge of the nut 21 and tends to hold the latter vertically without stressing the sleeve 20 upon clamping down the toggle 25 forwardly. The toggle clamp 25 is pivoted on a pin 26 mounted in the head portion of the nut 21 and is of U-shaped cross-section over its central portion so that it covers the front portion of the spindle 18 in the clamped down position. A link 27 is pivoted to the two vertical legs of the toggle 25 by means of the pin 26 and is, for the greatest part, of U-shaped cross-section so as to cover the spindle 18. The said link 27 at the rear end is rigidly secured to a third leaf (tension strap) 28 which extends rearwardly between the toe holders 11 and 12. Two claw levers 30 are pivoted to the pins 29 secured to the rear portion of the leaf 28. The outer ends of the levers 30 are bent upward and have mounted thereon, for frictional vertical adjustment, claws 31 the tops of which are beaded and bent over inwardly so as to engage the welt of the boot. Two pivots 32 are secured to the rear end of the leaf 6 and extend through the lever 30 and the leaf 28. The lever 30 is provided with a cranked slot 33 in the form of a reverse curve, and the leaf 28 with a straight longitudinal slot 34.

By clamping down or unclamping the toggle 25, the leaf 28 is correspondingly pulled forward or pushed backward, and the claw levers 30 are swung inwardly or outwardly and at the same time shifted longitudinally together with the leaf 28. The claws 31, then, engage the welt of the boot sole from the sides, and the boot is drawn forward on the leaf 28 between the toe holders 11 and 12 and pulled up tightly thereagainst by means of the inwardly projecting snugs 11' and 12'. In the reversed case, the boot is set free backwardly so that it may be readily withdrawn from the binding.

A tongue 35 is riveted to the rear end of the leaf 28 and is bent down at the front end so as to engage the similarly adapted rear end of the plate 36 which is secured to the ski. The rear ends of the leaves 6 and 28 are thus restrained from rising and the bending of the skier's foot is rendered more difficult. This is of particular advantage in downhill skiing and in jumping, as it materially facilitates the leaning forward of the body. When going uphill or on level

ground, on the other hand, the tips 35 and 36 are not in engagement.

The ski binding described and illustrated possesses the advantage that it may be shop-assembled ready made and that, after having been mounted on the ski, it may be easily adapted to any normal ski boot by turning the spindle 18 and the threaded sleeve 20 by means of a screw driver with the toggle 25 in the off-position. Although this binding has proven of advantage in actual practice, various changes may be made therein without, however, departing from the scope of my present invention.

I am aware that, prior to my invention, ski bindings have been made comprising a toggle-operated metal leaf longitudinally displaceable between two toe holders, in combination with laterally movable claws pivoted on said leaf for the purpose of engaging the welt of the boot sole and of pulling the latter forward between the toe holders. Furthermore, ski bindings are known in which metal leaves at their front ends are secured or articulated to the ski and of which the upper leaf is secured to the toe holders. I therefore do not claim such a combination or combinations broadly.

What I claim and desire to secure by Letters Patent is:

1. Ski binding of the class described, comprising a leaf spring secured at its front end to the ski and on its rear portion having stud pins projecting upwardly, a longitudinally divided toe holder disposed displaceably above said leaf and guided by the said pins in slots extending askew to its axis, a second leaf spring with its front end secured to the ski disposed above and projecting rearwardly beyond said first leaf and said toe holder and at its rear end having a pair of stud pins projecting upwardly, a third leaf disposed longitudinally displaceable in parallel slots on the latter pins above said other leaves, a pair of claw levers pivoted to the rear portion of the third leaf and engaging said latter pins in cranked slots, means for simultaneously adjusting the grip of said toe holders by displacing same longitudinally, a toggle clamp for displacing the third leaf longitudinally, and means for simultaneously adjusting the grip of said claw levers by displacing the said toggle and third leaf relative to said toe holders.

2. Ski binding according to claim 1 in which the said first means comprise a stationary horizontal screw spindle, a nut adapted to be displaced between said first and second leaves and engaged by said spindle, and a pair of rods connecting said nut and said toe holder by means of head and socket joints.

3. Ski binding according to claim 1, in which the said latter means comprise a stationary screw spindle having a turned-down non-threaded central portion and a stepped-down non-threaded front portion, a fork secured to said first leaf and supporting said central portion, a threaded sleeve disposed on said front portion, a nut disposed displaceably between said first and second leaves and engaging said sleeve, and a pin secured to said nut to which the said toggle is journaled for the purpose described.

4. Ski binding according to claim 1 comprising a tongue secured to the rear end and to the bottom side of said third leaf and having its front end bent downward, and means cooperating with the said tongue for the purpose of preventing a rise of said third leaf when the latter is pressed downward and pulled forward.

5. Ski binding according to claim 1 comprising vertically adjustable claws frictionally secured to the bent-up outer ends of said claw levers and having their beaded tops bent inward for the purpose described.

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