

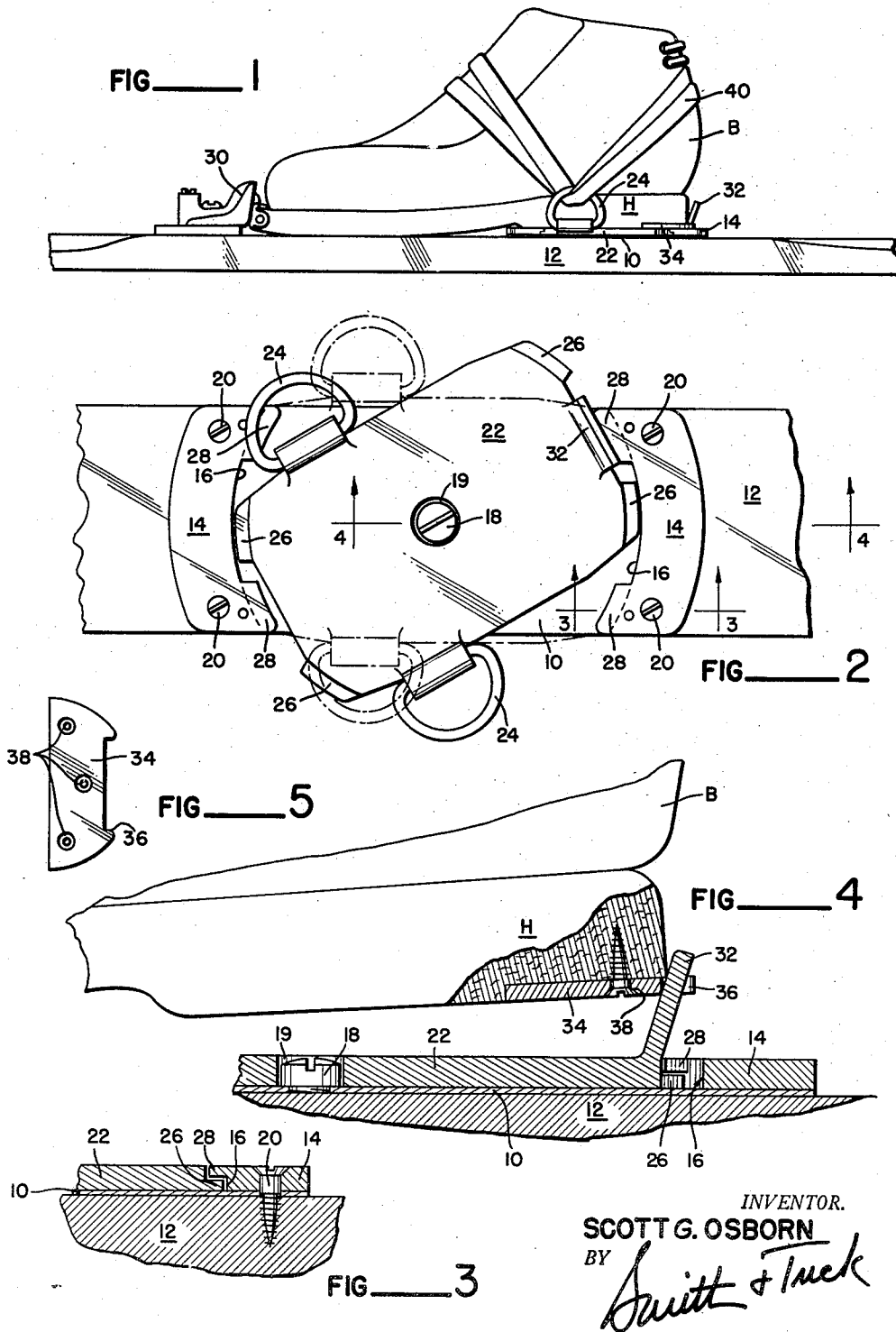
Sept. 27, 1960

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SKI BINDING HAVING RELEASABLE HEEL SECURING MEANS

Filed Nov. 5, 1957



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SKI BINDING HAVING RELEASABLE HEEL SECURING MEANS

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Filed Nov. 5, 1957, Ser. No. 694,544

4 Claims. (Cl. 280—11.35)

This invention relates to a ski binding and, more particularly, to a heel binding independent of but cooperable with toe bindings and useful for securing a skier's boot at the heel to his ski.

Developments by the manufacturers of skier's equipment have included the production of a multitude of toe bindings adapted to secure the toe of a skier's boot and operable upon swinging of the same upon a rearwardly located axis to release the boot toe. Under such circumstances twisting forces that would otherwise be applied to the skier's leg through the forward portion of his foot are avoided and the likelihood of injury is, of course, lessened. However, it has become increasingly popular to secure the heel of the skier's boot to the ski through the use of various types of bindings, of which the most popular and widely used type is known as "the long-thong." Thus, even though the toe of the boot may be free of a ski in a bad spill or tumble the skier's leg may still be twisted due to the fact that the heel is quite untwistably secured to the ski. The latter may be wind-milling as the skier tumbles and falls through the snow and bad sprains or fractures may still result.

It is among the more important objects of this invention to provide: a heel binding which will secure the skier's heel to the ski but which will release quickly and easily upon the occurrence of any twisting motion beyond a predetermined degree between the ski and the axis of the skier's leg; a heel binding which will establish a vertical axis at a rear position between the ski boot and the ski; and a heel binding that is simple and easy to construct and to attach to a ski, and which will operate with ease and efficiency under adverse conditions of frost, ice, snow and the like.

In the accompanying drawings forming a part of this specification I have shown a preferred form of heel binding in accordance with my invention. It will, of course, be apparent to those skilled in the art that the principles of the invention as set forth and defined in the subjoined claims may assume different forms than those specifically shown herein. All such variations and modifications as with fair equivalency fall within the spirit and scope of the claimed invention I consider part of this inventive development. Throughout the drawings like reference numbers will refer to like parts.

In the drawings:

Figure 1 is a side view of a portion of a ski having my heel improved binding secured thereto;

Figure 2 is an enlarged plan view of the heel-receiving member secured to a ski;

Figure 3 is an enlarged cross-section view showing an anchor member attached to a ski and cooperable plate member securable to the ski boot;

Figure 4 is an enlarged vertical cross-section view taken on line 4—4 of Figure 2; and

Figure 5 is a plan view of a boot heel clip.

A toe-binding 30 carried forwardly on the ski acts to clamp the front of the boot B in a releasable manner to

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the ski 12. There are many such toe-bindings or clamps hence I have only shown a typical form that operates when there is sufficient lateral pressure at the boot toe to release and free the boot. It is under such circumstances that my apparatus, hereafter described, operates for the purposes stated.

The heel binding shown in Figure 2 comprises the base plate 10 which covers the ski 12 at the heel position. Base plate 10 is preferably thickened at the ends to form elevated flanges 14 which are concavely curved in their opposed faces to form guide ways 16, 16. These curved surfaces are arcuate portions of the same circle and are concentric with a common axis defined by the screw 18 anchored medially in plate 10.

As shown in Figures 2 and 3, plate 10 and its end flanges 14, 14 are secured to the ski by screws 20.

The heel H of boot B rests upon heel or swing plate 22 which has a medial opening 19 to fit around the head of screw 18 which forms a pivot center or axis for the plate. At the opposite sides of plate 22 are D-rings 24, 24 by which the skier's boot may be lashed to the plate.

The ends of heel plate 22 are convexly curved to match the curvature on the surfaces 16, 16 of the base plate 10. Outstanding lugs 26 at the ends of the curves of heel member or plate 22 are disposed under the overhanging lugs 28 at the ends of arcuate surfaces 16 of base plate 10 when plates 22 and 10 are aligned as in Figure 1. In Figure 2, plate 22 is shown swinging about its pivot to the point of disengagement of mating lugs 26 and 28. In this position the binding plates 10 and 22 separate and the boot heel is free of the ski.

At the rear of plate 22 is an upstanding inclined flange 32 which acts to force the boot heel forward as it descends toward plate 22. The heel plate 34 of Figure 5 has notch 36 on its rear edge to cooperate with flange 32. Plate 34 is secured to the rear underside of the boot heel by screws inserted through holes 38.

A skier lashes his boot to the heel binding by use of a long-thong 40 as shown in Figure 1. This thong is a strip of leather anchored to the D-rings 24 and wrapped over the instep and around the heel as suggested by the drawings. Normally the last operation in binding the boot to the ski is the application of the long-thong. At this time the toe binding 30, properly adjusted for tension, is clamping the boot toe and the boot heel is resting flush upon plate 22.

Should the skier take a spill and the toe-binding release, the heel binding plate 22 under torsional effects also rotates, lugs 26 and 28 disengage and the ski is free of the boot. It may be seen that the skier thus avoids injury, such as spirally broken leg bones, without having actually to do anything to free himself.

Normally the heel binding may be re-assembled, without unwinding the long-thong, merely by centering plate 22 over screw head 18 and revolving the plate to engage lugs 26 and 28. Of course, it may be desirable to unwrap the thong 40 and normally reassemble the parts of the heel binding.

From the foregoing structure it will be apparent that my device is used in combination with a ski having a toe binding securing device which is operable to disengage from the toe of a skier's boot upon swinging of the toe about a rearwardly located axis, and that when the plate 22 rotates with the ski boot heel and the mating members 26 and 28 are disengaged, the heel binding will disengage from the ski. This will preclude injury to the skier caused by twisting or rotation of the ski relative the skier's leg. The disengagement of the parts is accomplished by plate 22 being rotated to such a degree that the members 26 are removed from beneath the overhanging lips 28, whereupon the heel will come free from the ski as boss or pin 18 is withdrawn from opening 44.

Having thus described my invention, I claim:

1. A ski binding for pivotally and removably attaching the heel of a skier's boot to a ski and adapted for use with a toe binding device operable to disengage the toe of a boot upon swinging movement of the toe about a rearwardly located axis comprising: an elongated base plate having inwardly projecting lug means overhanging said plate, a heel plate mounted for rotation about the center of said base plate at a point beneath the heel of the boot and removable from said base plate, said heel plate having outwardly projecting lug means located to engage under said inwardly projecting lug means when the side edges of the base plate and heel plate are aligned to secure said heel plate to said base plate until said heel plate pivots to disengage said lug means and means secured to opposite side edges of said heel plate and located forwardly of the axis of rotation of said heel plate on said base plate and adapted to receive binding means for securing the instep and heel of the boot to said heel plate.

2. A ski binding for pivotally and removably attaching the heel of a skier's boot to a ski and adapted for use with a toe binding device operable to disengage the toe of a boot upon swinging movement of the toe about a rearwardly located axis comprising: an elongated base plate having a medially located upstanding boss positioned to underlie the heel of the boot, a transverse upstanding flange at each end of said plate, each of said flanges being uniformly curved on its inner surface concentric with the axis of said boss and having inwardly projecting lug means overhanging said plate and spaced upwardly therefrom, a heel plate having a medial opening to closely encircle said boss and having outwardly projecting lug means located to engage under said inwardly projecting lug means when the side edges of the base plate and heel plate are aligned to secure said heel plate to said base plate until said heel plate pivots about

said boss to disengage said lug means and means secured to opposite side edges of said heel plate and located forwardly of said medial opening and adapted to receive binding means for securing the instep and heel of the boot to said heel plate.

3. A ski binding as recited in claim 2 in which each of said flanges is formed with an inwardly projecting lug positioned at each end of its curved inner surface and overhanging said plate while not extending above the level of said flanges and said heel plate having a pair of laterally spaced apart outwardly projecting peripheral lugs on each end and located to engage under said inwardly projecting lugs, said inwardly projecting lugs being laterally spaced apart and said peripheral lugs being dimensioned to fit within the space between said inwardly projecting lugs so that said heel plate will be released from said base plate when said heel plate rotates to swing in either direction to remove said peripheral lugs from beneath said inwardly projecting lugs.

4. A ski binding as recited in claim 2 in which pivoted rings are secured to opposite side edges of said heel plate to receive a thong binding and said heel plate is dimensioned to fit beneath the heel of the boot.

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