Sept. 20, 1938. L. NASHE ET AL 2,130,693

SKI BINDING

Filed Feb. 27, 1936

Fig. 1.

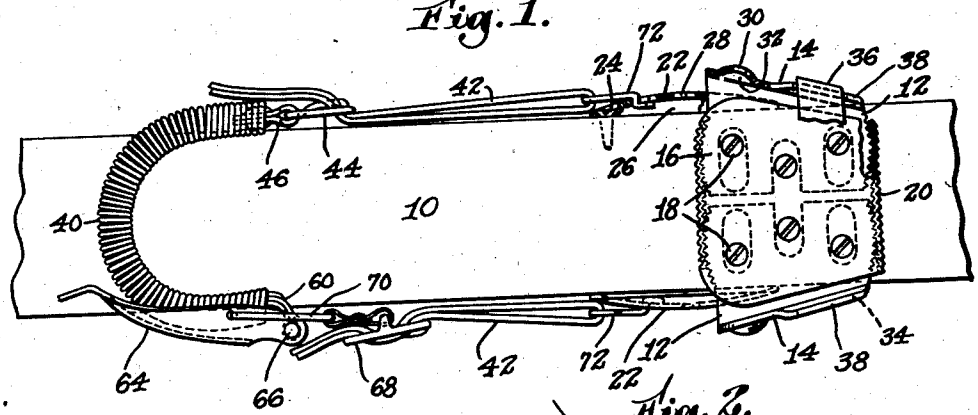
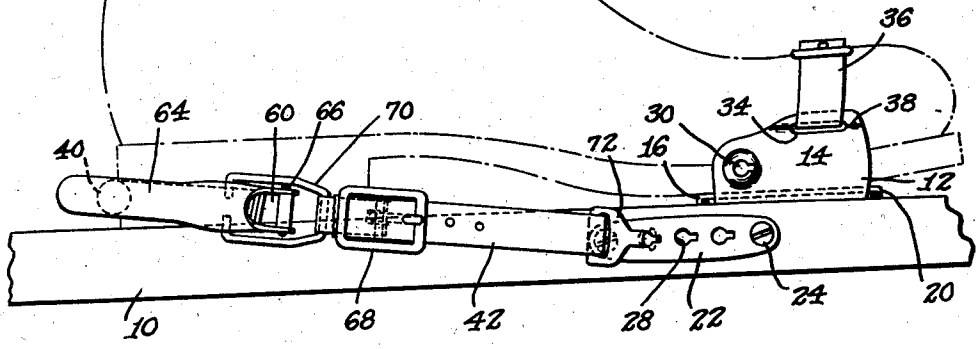


Fig. 2.



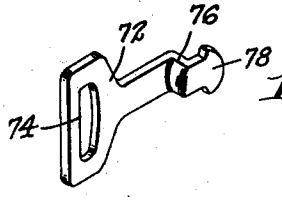


Fig. 3.

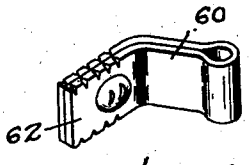


Fig. 7.

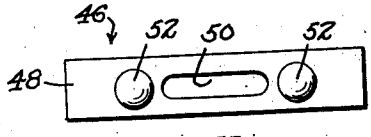


Fig. 4.

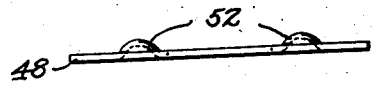


Fig. 5.

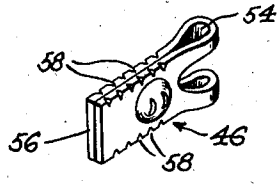


Fig. 6.

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UNITED STATES PATENT OFFICE

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SKI BINDING

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Application February 27, 1936, Serial No. 66,040

3 Claims. (Cl. 280—11.35)

This invention relates to ski bindings which are attached to skis for the purpose of receiving and holding the rider's shoes thereto. Such bindings usually comprise a portion, herein called toe irons, for receiving and holding the toe of the shoe and a cooperating strap portion for engaging the heel and holding the shoe in firm contact with said toe portion. The two ends of this strap are adapted to be detachably engaged in different adjustable positions with the toe portions, or a portion of the binding adjacent thereto. One object of our invention is the provision of an improved binding which employs a pair of novel plates adapted to be attached to the edges of the ski whereby conveniently and adjustably to receive the ends of the heel strap, and furthermore, a cooperating connection for permitting the ends of the strap to be engaged with the toe irons, the said plates and toe irons respectively giving hitches of different heights for purposes hereinafter described.

It is highly desirable that the ski binding should be as compact as possible and that the hitching portions should present no objectionable projecting parts and should adapt the binding freely to receive and hold the shoe. Our improved ski binding is particularly efficient in these respects.

The heel strap portion of the binding preferably includes a coiled spring for engaging the shoe heel and giving resiliency to its shoe holding function. Another valuable feature of our invention resides in novel elements engaged within the ends of the spring and providing connections to the buckles of the strap, these elements being formed from flat strip metal as hereinafter described.

These and other features of the invention will be best understood and appreciated from the following 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 of an embodiment of our improved ski binding attached to a ski,

Fig. 2 is a side elevation thereof,

Fig. 3 is a perspective view of the novel hitch element,

Figs. 4 and 5 are face and edge views of a metal strap used in constructing a connecting element of our improved binding,

Fig. 6 is a perspective view of the completed connecting element,

Fig. 7 is a perspective view of a similar connecting element constructed in like manner.

Referring more specifically to the drawing, 10 indicates a ski to which our novel binding is applied. The toe iron comprises two side elements 12 each having an upwardly extending flange 14, these elements resting on the top face of the ski and a top plate 16 rests on the two elements and is held in place by screws 18 extending through slots in the elements and into the ski. The plate has its forward and rearward edges bent downwardly to overlap the adjacent edges of the elements and such edges have cooperating teeth 20 whereby the plate holds the elements against lateral movement. The elements can be adjusted relatively for width by releasing the screws sufficiently to disengage the plate teeth from the teeth of the elements.

Cooperating with the toe irons are a pair of hitch plates 22 respectively secured in face to face contact to the side edges of the ski by screws 24. Each such plate has a convex outer front wall relatively spaced from the inner and ski contact face of the plate in a manner providing a chamber 26 therebetween within the plate, it being clear that the plate rests flatly against the ski preferably around its entire margin, and also flatly against the ski at its ends beneath the screws 24 (Fig. 1). The front wall of each plate has a plurality of hook-engaging holes 28 therethrough into the chamber in relatively spaced relation therealong. Similar hook-engaging holes or eyes 30 are provided in the rear portion of each flange 14, and these eye portions are dished outwardly at 32 to provide hook-receiving chambers therein as hereinafter described. The forward portion of each flange 14 is provided with a slot 34 therethrough for receiving a toe strap 36, these portions of the flange being bent outwardly at 38 whereby to provide clearance for the strap.

Cooperating with the portion of the binding above described is a heel-engaging means including a coiled spring 40 and side straps 42, the spring being adapted to contact with the heel of the shoe. One strap is connected to the spring through a buckle 44 and an element 46. We construct this element very simply from a metal strip 48 (Figs. 4 and 5) by first punching the strip at 50 and upsetting the end portions thereof outwardly at 52. The strip is then bent upon itself to provide an eye 54 and a shank 56 and the shank is indented at 58 to provide teeth for engaging the convolutions of the spring. The shank is threaded into the end of the spring as shown in Fig. 1, the indentations 58 engaging the spring convolutions and the lugs 52 providing a

snug fit within the spring end. The slot 58 provides clearance for the tongue of the buckle 44.

A like element 60 with an angularly bent shank 62 is provided for the free end of the spring. A locking lever 64 pivoted to the eye 66 of this element is connected to the other strap 42 and the buckle 68 through a wire yoke 70, this yoke being of spring wires and the free ends normally pressing inwardly into engagement with the lever. Hook elements 72 are provided with eyes 74 for receiving the straps 42. The other end of each such element is offset at 76 and provided with a T-shaped free end 78. This free end is adapted to be engaged within the holes 28 and 30 and each such hole is formed with a key slot portion 30 permitting the passage of the T-shaped end of the element.

It will be apparent that our improved ski binding provides relatively simple means for obtaining a low hitch on the ski at 28 as well as a higher hitch at 30, the plate 22 also being economical to manufacture and easy to apply to the ski. The key holes 28—30 thereinto are adapted to receive therethrough the T-shaped ends 78 of the elements 72 which elements may thereafter be rotated to the position shown in Figs. 1 and 2 in which position said ends are completely housed within the chambers 26 and cannot be accidentally detached therefrom. The dished portion 32 of the eye 30 also provides for the housing of the hook end 78 flush within the flange 14. It will be understood that the low hitch in the plates 22 tends to hold the heel down on the ski and that the several holes 28 provide for an adjustment in the amount of downpull on the heel.

The elements 46 and 60 are relatively simple and economical and provide a very strong and substantial connection to the ends of the spring 40. The resilient yoke 70 also engages the lever 64 in a firm grip which cannot become accidentally disengaged.

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

1. In a ski binding, a heel-engaging coiled spring and a connecting element having a shank portion engaging within an end of the spring and an eye portion projecting outwardly of the spring, the element comprising a flat metal strap bent in face to face contact upon itself to provide a shank and said eye at the closed end thereof, the shank having teeth formed in the edges thereof for engaging with the coils of the spring, and the two legs of the shank having portions thereof upset outwardly to thicken the shank whereby more firmly to engage the same with the coils of the spring.

2. A ski hitching plate having flat surfaces at its inner face in a common plane at the ends of the plate, the inner portion of the plate being bulged outwardly to form an outer convex wall and a chamber therein between said ends of the plate, the plate being adapted to be secured to a ski with said flat surfaces resting flatly against the flat edge of the ski and having a screw engaging hole through each of said ends and a plurality of hook engaging holes through said convex wall into the chamber in relatively spaced relation along the plate and between said screw engaging holes.

3. The combination defined in claim 2 including two of said hitching plates adapted to be secured respectively to opposite edges of a ski, plus two toe irons adapted to be adjustably secured to the top face of the ski above the hitching plates and having upwardly extending flanges with toe strap slots through the forward portions thereof and hook-engaging holes like the first mentioned hook-engaging holes through the rear portions thereof, the flanges being dished outwardly around said holes to form hook-receiving chambers inwardly of the holes.

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