

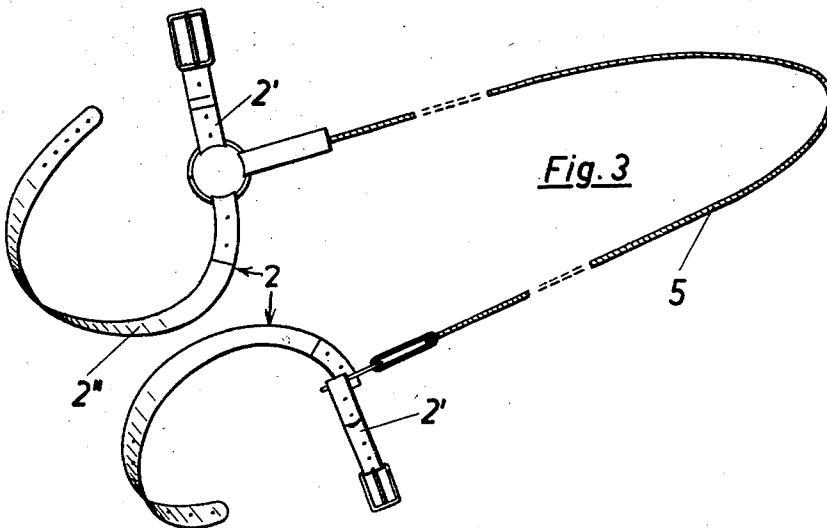
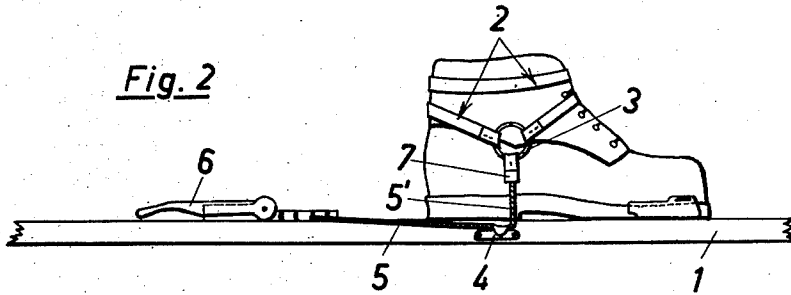
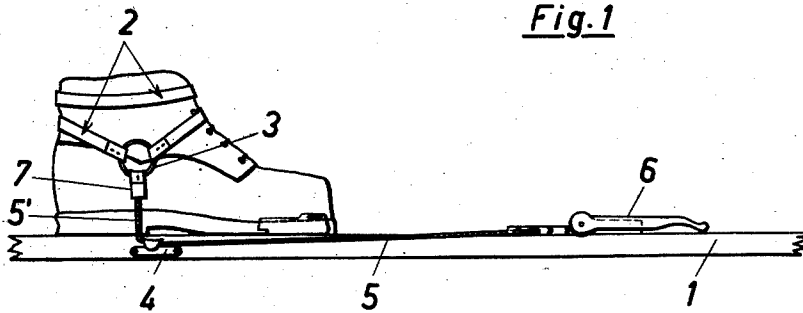
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HEEL FASTENING MEANS FOR SKI BINDINGS

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HEEL FASTENING MEANS FOR SKI BINDINGS

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The invention relates mainly to that type of bindings, in which the boot is connected to the ski by mutually separate fastening means attached to the toe part and the heel, respectively. These bindings have proved particularly suitable for downhill runs and slalom because they provide a firm yet in a certain sense yielding connection between the boot and the ski.

In known bindings of this type the heel fastening means consists of a strap firmly enclosing the foot part and ankle, and rings which are laterally fixed thereto and can be hung selectively into catches fixed on both sides of the ski. It has been found that after prolonged use of these bindings the heel fastening means becomes somewhat loose so that the heel is no longer urged against the ski with the desired force. This is also due to the fact that the heel fastening means cannot be pulled too tightly because the rings to be caught must be passed over the hook ends and part of the tension is lost as they slide back to the bottom of the hook. Moreover, it was not possible to release or at least loosen the heel fastening means in cases where a fixed connection of the heel to the ski is undesired, e. g. for climbing or for walking on level ground.

These disadvantages cannot be avoided with another ski binding, in which the usual heel tension member consists of a steel cable and a coil embracing the heel and connected to the steel cable with a wire loop interposed, which may be hung selectively into one of the conventional lateral catches.

It is a feature of the invention to provide means to increase the stability of the heel on the ski and to improve the participation of the ankle in the control of the ski.

It is another feature of the invention to establish the connection of the rings, fixed to the strap embracing the rear part of the foot and ankle, to the catches fixed to the ski, by interposing a tension cable, which extends from the rings through the catches to a stretching device, e. g. a tightener, arranged in front of the toes or behind the heel, and is stretched by the stretching device.

It is another feature of the invention to give an open form to the rings fixed to the strap embracing the rear part of the foot and ankle.

It is a still further feature of the invention to arrange the tension cable from the rings to the catches in an approximately vertical direction to the ski.

For a better understanding of the invention, reference is had to the accompanying drawings, in which the improvement according to the invention is illustrated.

Fig. 1 is an arrangement with a tightener in front of the toes,

Fig. 2 is an arrangement with a tightener behind the heel.

Fig. 3 shows the arrangement of the straps and of the tension cable.

1 designates the ski, 2 the strap embracing the ankle,

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3 the preferably open rings fixed thereto, and 4 the catches, e. g. hooks, which are fixed laterally to the ski and to which the rings 3 are connected. According to the invention this connection is effected with a tension cable 5 fixed to the rings 3 and extending through the hooks 4 to a stretching device, e. g. a tightener 6. The latter may be fixed to the ski either in front of the toe irons, as shown in Fig. 1, or behind the heel, as shown in Fig. 2. The function of the heel fastening means is the same in both cases. The stretching device may be of any desired form but a construction is preferable which permits of an easily detachable hooking and, if desired, of an adjustment of the tension cable.

If desired the stretching device for the tension cable may also stretch any additional toe and heel fastening means present at the same time.

The arrangement of the catches (hooks) 4 and the resulting tension on the boot may be selected in different forms. For instance, the hooks may be fixed slightly in front of the ankle so that the cable portions 5' between the rings 3 and the hooks 4 extend forwardly and downwardly and provide a slight forward tension in addition to the tension directed toward the ski. Vice versa, the hooks may be fixed slightly behind the ankle to produce the opposite effect. In each case the fixation of the hooks depends primarily on the type of toe fastening means used at the same time. It is of advantage, however, to attach the hooks 4 vertically below the ankle and to preclude any horizontal components of force.

The ends of cable 5 are hung into the rings 3 preferably by means of intermediate members 7, which may be soldered or welded, e. g., to the cable, and each of which has an eye through which the ring 3 can be passed.

The construction of the binding according to the invention and the resulting elevation of the rings 3 further enables a shortening of the ankle strap 2, which may now be formed substantially of two longer and two shorter strap parts 2', 2'' fixed in pairs to the rings 3, one part of each pair carrying the buckle whereas the other one has the holes in it. This also takes account of the desire for a possibility of quickly releasing the binding.

To apply the heel fastening means, the cable 5 is hung at its middle into the tightener 6 (whether in front or at the rear) and the two ends are passed at the left and right hands, respectively, below the heel through the hook 4. Each of the two ends is now loosely fixed around the ankle by means of the straps 2', 2'', whereby the rings 3 on both sides of the foot are pulled downwardly. The straps are stretched and tightened from both sides to embrace the ankle very closely and urge it inseparably toward the ski.

The new binding element may be combined with any toe fastening means. On the other hand it may replace the previously used diagonal tension means in most of the known tension cable and strap bindings.

I claim:

1. A ski binding for securing a skier's shoe to a ski, comprising a cable, a pair of adjustable straps each being individually secured to one end of said cable and detachably secureable independently of the other around a skier's shoe, each of said straps being independently secured around the skier's shoe from opposite sides thereof with the respective strap at its connection with said cable below the ankle portion of the shoe and the run of the respective strap opposite said connection above the ankle portion of the shoe, hooks secured to each side face of the ski vertically below said connections, and a tightener for the cable and disposed on the upper surface of the ski longitudinally thereof from the shoe, said cable extending from said connections perpendicularly of the ski and under the respective hooks to said

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tightener with the bight of said cable secured in said tightener, whereby tension on the respective runs of said cable will pull below the ankle on the respective side and stress above the ankle on the respective opposite side of the shoe to afford greater stability and control over the ski.

2. A ski binding for securing a skier's shoe to a ski, comprising a cable, an open ring connected to each end of said cable, a pair of adjustable straps each being individually secured to one of said open rings and detachably secureable independently of the other around a skier's shoe, each of said straps being independently secured around the skier's shoe from opposite sides thereof with the respective open ring and its connection with said strap below the ankle portion of the shoe and the run of the respective strap opposite said connection above the ankle portion of the shoe, hooks secured to each side face of the ski vertically below said connections, and a tightener for the cable and disposed on the upper surface of the ski longitudinally thereof from the shoe, said cable extending from said connections perpendicularly of the ski and under the respective hooks to said tightener with the bight of said cable secured in said tightener, whereby tension on the respective runs of said cable will pull below the ankle on the respective

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side and stress above the ankle on the respective opposite side of the shoe to afford greater stability and control over the ski and excessive stress will open at least one of said rings to relieve such excessive stress and avoid fracture of the skier.

3. A ski binding as set forth in claim 2 wherein each of said straps comprises two parts connected together by the open ring connecting the respective strap to the cable, whereby the rings will open upon excessive stress between the cable and the respective straps or due to excessive stress between the parts of the respective straps.

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