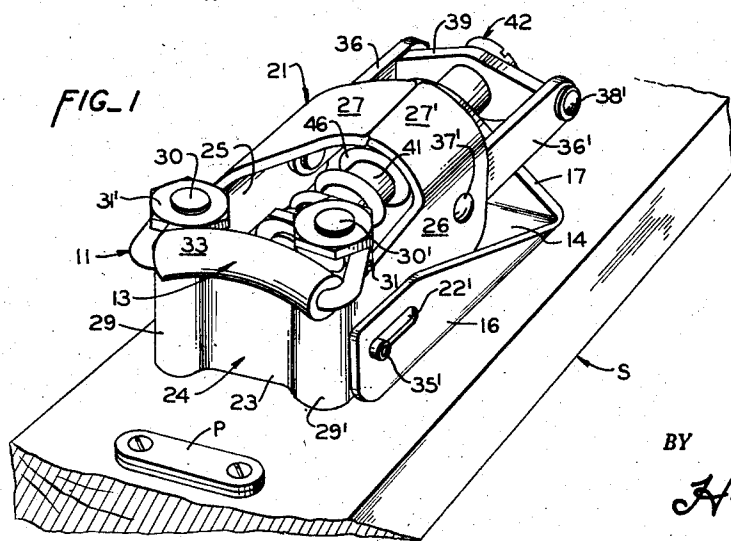


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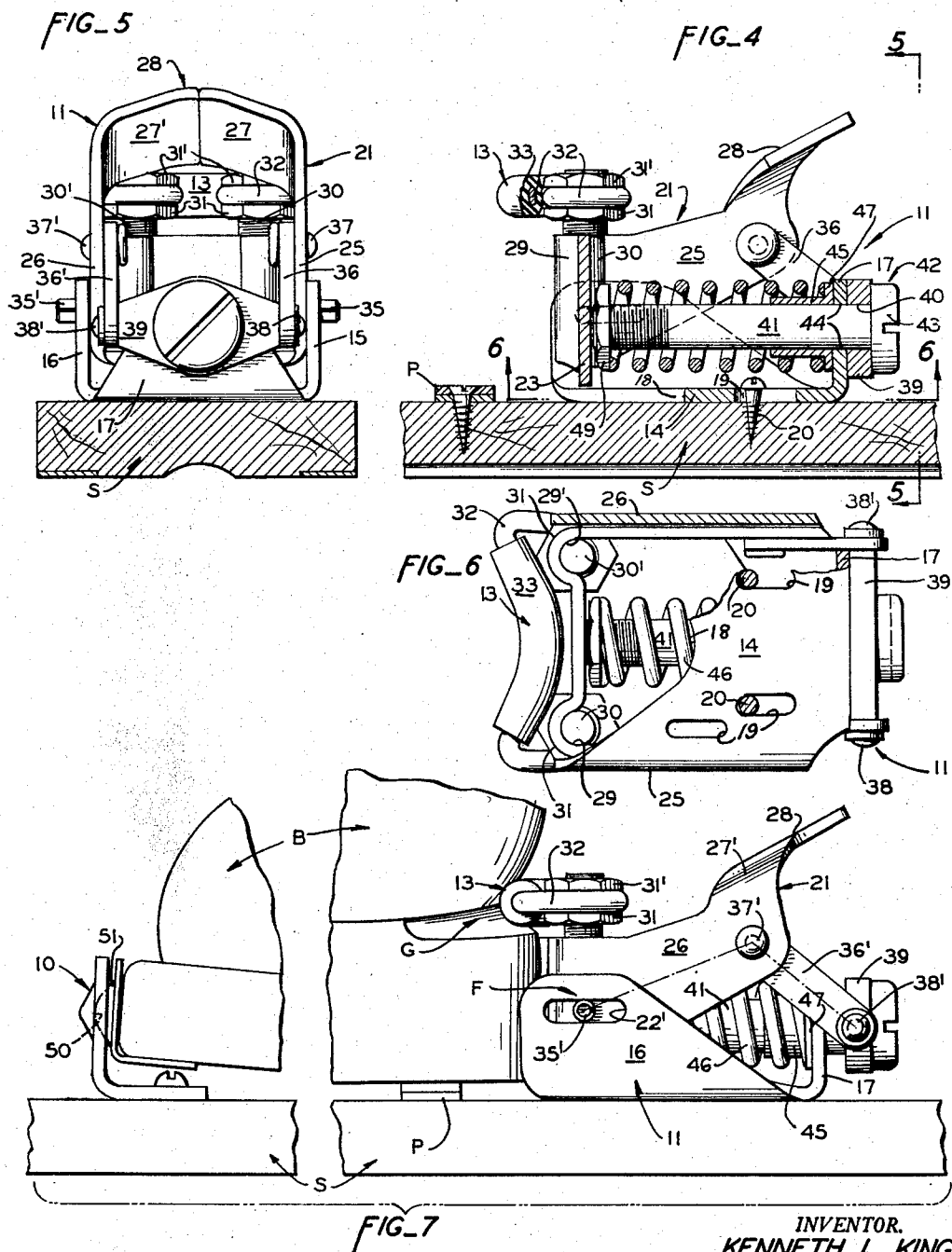
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SKI BINDING HAVING AUTOMATICALLY RELEASABLE HEEL ANCHOR

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2 Sheets-Sheet 2



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**SKI BINDING HAVING AUTOMATICALLY
RELEASABLE HEEL ANCHOR**

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13 Claims. (Cl. 280—11.35)

This invention relates to ski binding and more particularly to a heel anchor for binding a ski boot to a ski blade.

When it is considered that ski boots are hand made and seldom match in length or that due to excessive wetting and or freezing become misshapened such as to lose proper locational positioning relative to binding clamps or boot engaging keepers, it will be appreciated that most binders must be readjusted periodically to compensate for these changes in boot dimension and shape. Moreover, since ski blades are interchangeable relative to right and left boots the dimensional differences between these boots can cause difficulty on pre-set binders. One object of this invention is to provide a ski binder requiring little or no readjustment once it is installed irrespective of changes in boot dimension.

Another object of the present invention is to provide a device for anchoring the heel portion of a ski boot to a ski while simultaneously releasably urging the boot forwardly relative to the ski blade and into locking contact with a toe clip or clamp as the case may be.

Yet another object is to provide a heel anchor in which the heel engaging portion thereof floats in a fore to aft direction so as to exert a forward holding force which is somewhat less than an upward force or undue pressure required to quickly free the boot from the ski blade. This object contemplates a toggle clamp floatingly arranged in a mounting plate and coordinated therewith for keeping the heel engaging portion of the clamp in foremost position when binding a ski boot to the ski.

It is another object to provide an over center type of clamp operating mechanism in ski binders having a common spring disposed as to exert a force directed over the point of contact of the clamp with the heel of a ski boot and facilitating rearward sliding of the entire toggle mechanism when a rearward force by the ski boot exceeds the capacity of the spring.

By reason of this rearward yieldability the heel anchor of the present invention is capable of interchangeably clamping boots of opposite feet or of different dimension. In other words if set for one particular boot and then engaged for a different or longer boot the heel engaging clamp will yield rearwardly to compensate for this added length. Vice versa, if the boot is somewhat shorter than the one originally intended the heel anchor of the present invention will bear forwardly against the smaller boot.

With the present invention, no adapter plate is required on the boots. Neither is there any need for extensive alteration to the boot or ski blade. No special toe release need be employed since any well known toe clip providing an abutment and keeper action will suffice.

These and other objects and advantages of the present invention will become apparent from a reading of the following description in the light of the drawings in which:

Fig. 1 is a perspective view of my new ski binder attached to a ski blade which is shown fragmentarily.

Fig. 2 is a plan view of Fig. 1.

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Fig. 3 is a longitudinal section taken along line 3—3 of Fig. 2.

Fig. 4 is a view similar to Fig. 3 with parts thereof shown in a different position.

Fig. 5 is an end view of the ski binder as seen from line 5—5 in Fig. 4.

Fig. 6 is a bottom view of the ski binder as seen from line 6—6 in Fig. 4; and

Fig. 7 is a contracted side view of a ski boot bound onto a ski blade with the binder of the present invention.

Referring to the drawings, S is a ski blade upon which a toe clip 10 and the binder 11 of the present invention is secured. As seen in Fig. 7 a ski boot B is clampingly secured to the ski blade S by being releasably lodged between the toe clip 10 and a cleat or stirrup 13 formed as a part of the binder 11.

In general the binder 11 comprises a heavy gauge metal base plate 14 having upturned sides 15 and 16 as well as an upturned back flange 17. The bottom of base plate 14 is recessed as at 18 along its fore end and has several screw slots 19 formed therein through which securing screws 20 extend into the ski blade S. The sides 15 and 16 which are identical in shape comprise a trunnion support for a main latching lever 21 and its associated parts.

The lever 21 is stamped out of heavy gauge metal to provide a bight portion 24 from which arms 25 and 26 extend diagonally upward and in parallelism with each other so as to fit between the upturned sides 15 and 16 of the base 14. These arms terminate in half handle portions 27—27' along their upper extremities which are bent toward each other with their free ends in abutting relation so as to form a thumb or finger engaging tab 28.

The bight portion 24 of lever 21 is recessed slightly between rolled corners at the point of juncture with the arms 25 and 26 so as to provide sleeve-like seats 29 and 29' on their insides to receive the shank of a bolt 30 and 30', respectively. These bolts 30—30' are welded into the seats 29—29' and have their threaded upper ends extended above the upper edge of the bight and arms to each receive a pair of nuts 31—31' between which the coiled ends of a heavy wire bail 32 is secured. The mid portion of this wire bail is of concave configuration and has a rubber covering 33 thereon to provide the aforementioned cleat or stirrup 13. This stirrup 13 is so disposed, sized and shaped as to be adapted to fit into the groove G formed at the heel welt in conventional ski boots (Fig. 7) and commonly used to receive the spring loaded heel cable of other type binders.

About midway the upper and lower ends of each sleeve-like seat 29—29' each of the latter are bored transversely as is each bolt shank 30—30' seated therein to receive a pinion 35 and 35'. These pinions 35—35' extend laterally from the lever 21 and into a respective horizontally extending slot 22 and 22' formed in the sides 15 and 16 of the base plate 14. In this manner the lever 21 is provided with a fulcrum F which is shiftable in a fore to aft direction relative to the base plate 14 and ski blade S to which it is attached. The lever 21 is, however, yieldably maintained in a foremost position relative to the shiftable fulcrum in a manner now to be explained.

Both arms 25 and 26 of the lever 21 are part of a toggle arrangement including corresponding links 36 and 36' having their fore ends pivotally connected as at 37—37' to the aft ends of the respective side arms 25 and 26 of the lever 21. The rearmost ends of these links 36—36' are pivotally mounted on pintle ends 38 and 38' respectively, of a yoke or collar 39 which spans the space between the links 36—36' so as to maintain them in spaced parallel relation. The outer end of each pintle 38 and

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38' carries a washer outside the respective link and is peened over to maintain the link in place on each pintle.

The collar 39 has a central bore 40 through which the shank 41 of a bolt 42 extends, the head 43 of which bears against the back side of the collar 39. The back flange 17 of the base plate 14 is also bored through at 44 so that the shank of bolt 42 has sliding fit therewith as it extends therethrough. This bolt shank 41 is of a length to span from the collar 39 to the bight portion 24 of lever 21 when the parts are positioned as shown in Figs. 4 and 7 to clampingly engage a ski boot. To prevent any tendency of rocking on the part of the bolt shank relative to the flange 17, I have placed a guide sleeve 45 upon the bolt 42 in a position to be pressed toward the flange 17 by a heavy compression spring 46 by which the toggle arrangement is also operated. In this manner the flange 47 on the sleeve 45 is held firmly against the stationary flange 17 on the base 14 so that the sleeve 45 is maintained perpendicular thereto for guiding the bolt shank for axial movement in a fore to aft direction only. In other words the bolt shank will not wobble or come out of alignment with the axis of the bore 44 through the fixed back flange 17 on the base member 14.

The opposite or free end of the bolt 42 is threaded to receive a nut 49 which bears against the adjacent end of the compression spring 46 for properly loading the same. As seen in Fig. 4 the spring 46 has base bearing with the flanges 47 and 17 both of which are stationary so that only the opposite or free end of the bolt is adapted to move or be moved during operation of the ski binder of the present invention. Thus it will be seen that the spring 46 exerts a forward thrust against the nut 49 and bolt 42 so that the head 43 on the latter bears firmly against the yoke or collar 39. In this manner a similar forward thrust is exerted against the yoke collar 39 and transmitted thereby against the links 36 and 36' connected thereto.

The links 36 and 36' being part of the toggle arrangement of which the lever 21 is also a part, the forward thrust exerted against the links also causes forward movement of the lever 21. This drives the floating fulcrum F, i.e., pinions 35—35' to the foremost extremities of the respective slots 22 and 22' formed in the upstanding side walls 15 and 16 of the base plate 14.

The toggle arrangement aforesaid is so constructed and arranged that the pivotal connections 37 and 37' between the lever 21 and links 36—36' may be disposed over or under center, i.e., an imaginary line *l* (Fig. 3) extended from the axis pinions 35—35 to the axis of the pintle ends 38 and 38' on the yoke collar 39. Thus it will be seen that the toggle arrangement may assume either of two positions, one (Figs. 1, 2 and 3) in which the lever 21 is in a lowered position with its stirrup portion open to receive the heel of a ski boot; and the other (Figs. 4 through 7) in which the lever 21 is in a raised position with its stirrup portion disposed to clampingly engage the groove G over the heel of a ski boot.

Referring now to Fig. 7 note that the toe clip 10 is secured to the top surface of the ski blade so as to have abutting relation with the tip of the ski boot B. In the present disclosure I have shown the toe clip as having a recess 50 formed on its rearmost face to receive a bayonet head 51 secured to the fore end of the boot and along the longitudinal axis thereof. The toe clip 10 is positioned such that when the bayonet head 51 engages in the recess 50 the heel end of the boot will just clear the bight portion 24 of lever 21 when the latter is in lowered or boot clamping position. However, when the boot is to be inserted into the binder of this invention the handle portion or tab 28 of lever 21 is manually depressed so that the toggle arrangement snaps under center (line *l* Fig. 3) so that the heel of the boot can rock into place. In this manner the extreme rearmost tip of the heel edge engages the lowermost area 23 of the bight portion 24, i.e., below the

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fulcrum F, so that further downward movement of the heel of the boot into place causes the lever 21 to rock counterclockwise. This raises the connections 37—37' of the toggle arrangement over center (line *l*) whereupon the compression spring 46 snaps the lever 21 toward boot clamping position simultaneously with the lowering of the boot heel into place. Note in Fig. 3 that this automatic closing of the clamp 21 causes the rubber covered cleat or stirrup 13 to enter the groove G in the boot B. To assure proper disposition of the groove G relative to the rubber covered stirrup 13 as shown in the drawings a shim plate P may be secured to the top surface of the ski blade adjacent the binding 11. Note also that due to the position of the groove G relative to the binder 11 the stirrup 13 is forced rearwardly against the action of the compression spring 46 thus shifting the fulcrum F rearwardly relative to its supporting slots 22—22' in the trunnion provided by sides 15—16 of the base plate (see Fig. 7).

Now then it should be noted in Fig. 7 that while the cleat or stirrup 13 is pressed against the groove G the rear face of the bight portion 24 bears against the free end of the bolt 42. Moreover, while the thrust from links 36—36' is relatively diagonally upward the points 37—37' at which this thrust is received by lever 21 are substantially between the horizontal plane of the stirrup 13 and the point of engagement of the bolt 42 with the bight 24 of lever 21. Note also that this rearward shifting of the toggle arrangement does not alter the disposition of the lever 21 relative to the boot heel because the entire toggle arrangement including the yoke collar 39 shifts rearwardly in unison as a rigid body. This is so because the rearmost face of the bight portion 24 engages the free end of the bolt 42. So long as the thrust from the boot heel is directed rearwardly the toggle arrangement remains as a rigid unit while shifting rearwardly enough to accommodate the ski boot. It should here be noted that the toggle arrangement has a capacity pre-calculated to resist upsetting under normal yawing or tugging of the boot relative to the ski blade. However, the moment any undue upward movement of the cable groove G occurs the lever 21 is rocked clockwise (Figs. 7 to 3) about the fulcrum pins 35—35' thereby upsetting the clamping action of the toggle arrangement. In this manner the clamp is automatically opened to free the boot from the ski blade.

From the foregoing it will be appreciated that I have devised a new type of heel anchoring ski binder which is highly efficient in use, simple to install and to operate, and economical from the standpoint of manufacture.

While I have described my new binder in specific detail it will be understood that it is susceptible to variations, alterations, and/or modifications without departing from the spirit of my invention. I therefore desire to avail myself of all variations, alterations, and/or modifications as fairly come within the purview of the appended claims.

What I claim as new and desire to protect by Letters Patent is:

1. In a ski binder including a toe engaging clip, a heel anchor adapted to be disposed a boot length behind said clip comprising a base plate secured to a ski blade and having upstanding trunnion side walls as well as a stationary rear wall, a U-shaped lever having a bight portion and rearwardly extending side legs disposed between said side walls, a concave stirrup having its ends secured to the upper corners of said U-shaped lever above the bight portion thereof for engaging in a binder groove formed in the heel of said ski boot, a spring loaded bolt arranged for fore to aft sliding movement through said stationary rear wall, a yoke on the rear end of said bolt means on the rear end of said bolt for urging said yoke toward said rear wall said trunnion side walls each having horizontally extending slots formed therethrough, pinions extending laterally from each side leg of said U-shaped lever substantially midway the upper and lower

edges of the bight portion thereof and into the slots formed in said trunnion side walls to provide a shiftable fulcrum for said lever, and a link for pivotally connecting the rearmost extremity of each of said side arms to the respective sidemost extremity of said yoke for urging said lever toward its foremost position relative to said shiftable fulcrum.

2. A heel anchor for a ski comprising a base plate having trunnion side walls and an upstanding rear wall, a lever pivotally mounted on and between said side walls, said lever having a forwardly projecting cleat on its upper edge adapted to engage in a binder groove in a ski boot, and a toggle arrangement between said lever and said upstanding rear wall for rocking said lever in snap-like action toward boot receiving and boot engaging positions, comprising a headed bolt, a yoke carried on the rear end of said bolt and engageable from the rear by the head of said bolt for forward movement therewith, said bolt having its shank portion extending through and reciprocable relative to said upstanding rear wall, spring means on the shank portion of said bolt ahead of said rear wall for urging said bolt forwardly relative to said rear wall whereby the head of said bolt yieldingly urges said yoke toward the back side of said rear wall, and a linkage between said yoke and said lever facilitating over center toggle action therebetween to rock said lever into either of its extreme positions.

3. In a ski binder including a toe clip and a heel anchor, said heel anchor comprising a base plate secured to a ski blade having upstanding side and rear arms, a lever pivotally mounted on and between said side arms and having a cleat portion adapted to engage the heel groove of a ski boot, and a toggle arrangement operatively associated with said lever comprising a headed bolt, a yoke on said bolt engageable by the head portion of the latter, said bolt having its shank portion arranged for sliding movement in a fore to aft direction through the rear arm of said base plate with the head of said bolt to the rear of said rear arm, a linkage pivotally connected to said yoke and to the rearmost extremity of said lever at a point to assume over and under disposition relative to an imaginary line extended from the pivotal points of said lever and said yoke, a compression spring on that end of said bolt ahead of said rear arm, and means secured to the fore end of said bolt for compressing said spring toward said rear arm tending to draw said bolt forwardly and yieldably urging the head end of said bolt against said yoke for constantly urging the same toward said rear arm.

4. A heel anchor adapted to be mounted on a ski blade a ski boot distance behind a toe engaging clip comprising a base plate secured to a ski blade having upstanding side and rear arms, a lever pivotally mounted between said side arms having a cleat portion threadably secured to the fore end of said lever for up and down fixation relative thereto so as to be adapted to engage the heel groove of a ski boot, and a toggle arrangement operatively associated with said lever comprising a bolt, a yoke on said bolt, a linkage pivotally connected to said yoke and to the rearmost extremity of said lever at a point to assume over and under disposition relative to an imaginary line extending through the pivotal points of said lever and said yoke, said bolt having its shank portion arranged for sliding movement in a fore to aft direction through the rear arm to support said yoke rearwardly of said rear arm, a compression spring on that end of said bolt ahead of said rear arm, means secured to the free fore end of said bolt for compressing said spring toward said rear arm whereby said spring tends to draw said bolt forwardly, and means on said bolt rearwardly of said yoke and impassable therethrough for constantly engaging the same under the influence of said compression spring.

5. A heel anchor adapted to be mounted on a ski blade a ski boot length behind a toe abutment on said blade,

comprising a base having upturned side walls provided with horizontally extending slots and having an upstanding rear wall provided with a central bore, a U-shaped lever having lateral pinions journaled in the horizontal slots of said side walls for sliding movement relative thereto for presenting the bight portion of said U-shaped lever to the heel of a ski boot, a spring loaded bolt arranged for fore to aft movement through said rear wall, a yoke arranged on the rear end of said bolt, means on the rear end of said bolt for urging said yoke toward the rear face of said rear wall, and toggle linkages connecting said yoke to the rearmost extremities of said U-shaped lever for rocking the latter between boot receiving and boot clamping positions.

6. A heel anchor adapted for mounting on a ski blade a boot length behind a toe abutment comprising a base plate secured to a ski blade having trunnion side arms and an upstanding rear arm, a U-shaped lever pivotally mounted on said trunnion side arms having a bight portion adapted to be engaged by the heel of a ski boot, a stirrup on said bight portion adapted to seat in the binder groove in said ski boot, a toggle arrangement operatively associated with said lever comprising a headed bolt, a yoke on said bolt so as to be engaged on its rear face by the head portion of said bolt, said bolt having its shank portion arranged for sliding movement in a fore to aft direction through the rear arm of said base plate, means for spring loading said yoke comprising a compression spring on that end of said bolt ahead of said rear arm, means on the fore end of said bolt for compressing said spring toward said rear arm whereby said spring tends to draw the head portion of said bolt forwardly against the back face of said yoke to normally urge said yoke toward the rear wall of said rear arm, and a link connected to each end of said yoke and to the rearmost extremity of the legs of said U-shaped lever for urging the latter into either of its extreme positions.

7. In a ski binder including a toe engaging clip and heel anchor, said heel anchor comprising a base plate secured to a ski blade and having upstanding trunnion side walls as well as a stationary rear wall, a toggle arrangement mounted on said trunnion side walls comprising a U-shaped lever having a boot heel engaging bight portion and rearwardly extending side arms disposed between said side walls, a stirrup having its ends secured to the upper corners of said U-shaped lever and having a concave intermediate portion adapted to engage the binder groove in the heel of a ski boot having its toe end in engagement with said toe clip, a bolt having a shank portion and a head portion, a yoke on the shank portion and having its back face engageable by the head portion of said bolt, said bolt having its shank portion extended from the rear through said stationary rear wall for fore to aft sliding movement relative thereto, spring means on that portion of the shank of said bolt ahead of said rear wall and bearing against the front face thereof, a nut on the fore end of said bolt shank and engaged by the fore end of said spring for urging said bolt forwardly whereby the head portion presses against the back face of said yoke to normally urge said yoke toward the back face of said rear wall, said trunnion side walls each having horizontally extending slots formed therethrough, pinions extending laterally from each rearwardly extending side arm of said U-shaped lever into the slots formed in said trunnion side walls to provide a shiftable fulcrum for said lever, and a link for pivotally connecting the rearmost extremity of each of said side arms to the respective sidemost extremity of said yoke for urging the said lever toward its foremost position relative to said shiftable fulcrum.

8. In a ski binder for releasably securing a ski boot to a ski blade with the toe end of said boot engaging an abutment, a heel anchor comprising a stationary base plate having upstanding trunnion side walls as well as an upstanding stationary rear wall, a U-shaped lever

having a bight portion and rearwardly extending side arms disposed between said side walls terminating in a finger engaging tab above said rear wall, a stirrup secured to the upper edge of said bight portion for engaging the binder groove in the heel of said ski boot, a bolt arranged for fore to aft sliding movement through said stationary rear wall, a yoke on the rear end of said bolt, said bolt having its head end rearwardly of said yoke, spring means on the fore end of said bolt and bearing against the front face of said rear wall, means on said bolt engaged by said spring for urging the head on said bolt forwardly against said yoke to urge the latter toward the back face of said rear wall, said trunnion side walls each having horizontally extending slots formed therethrough, pinions extending laterally from said lever midway the upper and lower edges of the bight portion thereof and into the slots formed in said trunnion side walls to provide a shiftable fulcrum for said lever, and a link pivotally connected to the respective sidemost extremity of said yoke and operatively connected to the rearmost extremity of each said side arm at a point relative to said fulcrum facilitating over center rocking of said lever relative thereto into either of its extreme positions.

9. In a ski binder, a heel anchor cooperable with a toe engaging clip for releasably securing a ski boot to a ski blade comprising a stationary base plate having upstanding trunnion side walls as well as an upstanding stationary rear wall, a U-shaped lever having a bight portion and rearwardly extending side arms disposed between said side walls and terminating in a finger engaging tab above said rear wall, a stirrup secured to the upper edge of said bight portion having a concave intermediate portion adapted to engage the binder groove in the heel of a ski boot having its toe end engaging said toe clip, a headed bolt having its shank portion extending from the rear through said stationary rear wall, a yoke on the rear end of said bolt between its head end and the back face of said rear wall spring means on the fore end of the shank portion of said bolt and bearing against the front face of said rear wall, means on said bolt engaged by said spring for urging the head end of said bolt forwardly against said yoke to thereby yieldingly press said yoke toward the back face of said rear wall, pinions extending laterally from said lever midway the upper and lower edges of the bight portion thereof and into said trunnion side walls to provide a fulcrum for said lever, and a link pivotally connected to each sidemost extremity of said yoke and operatively connected to the respective rearmost extremity of each said side arm at a point relative to said fulcrum facilitating over center rocking of said lever relative thereto into one of its extreme positions when the heel of a ski boot descending relative to said heel anchor engages the lower extremity of said bight portion to effect over center operation of said toggle arrangement to thereby rock said lever into its other extreme position to engage said stirrup in the binder groove in said ski boot.

10. In a ski binder, a heel anchor cooperable with a toe engaging clip for releasably securing a ski boot to a ski blade comprising a stationary base plate having upstanding trunnion side walls as well as an upstanding stationary rear wall, a U-shaped lever having a bight portion and rearwardly extending side arms disposed between said side walls and terminating in a finger engaging tab above said rear wall, said trunnion side walls each having horizontally extending slots formed therethrough, pinions extending laterally from said lever midway the upper and lower edges of the bight portion thereof into the slots formed in said trunnion side walls to provide a shiftable fulcrum for said lever, a bolt arranged for fore to aft sliding movement through said stationary rear wall, a yoke carried by the rear end of said bolt and behind said rear wall, means on the extreme rear end of said bolt for urging said yoke toward

the back face of said rear wall, yieldable means on the fore end of said bolt bearing against said rear wall, means on said bolt engaged by said yieldable means for urging the means on the rear end of said bolt forwardly to thereby urge said yoke toward the back face of said rear wall, a link pivotally connected to each sidemost extremity of said yoke, each link being operatively connected to the rearmost extremity of each said side arm at a point relative to said fulcrum facilitating over center rocking of said lever relative thereto into one of its extreme positions when the heel of a ski boot descending relative to said heel anchor engages the lower extremity of said bight portion to effect over center operation of said arms and links to thereby rock said lever toward the heel of said ski boot, and a stirrup secured to the upper edge of the bight portion of said U-shaped lever having a concave intermediate portion adapted to engage the binder groove in the heel of said ski boot.

11. In a ski binder cooperable with a toe engaging clip for releasably securing a ski boot to a ski blade, a heel anchor comprising a base plate secured to said ski blade and having an upstanding rear wall and trunnion side walls, a U-shaped lever having a heel engaging bight portion from which side arms extend rearwardly and terminate in a finger engaging tab, said trunnion side walls each having horizontally extending slots formed therethrough, pinions extending laterally from said lever midway the upper and lower edges of the bight portion thereof and into the slots in said side walls, a headed bolt arranged for sliding movement through said stationary rear wall, a yoke carried by the rear end of said bolt ahead of the head end thereof, spring means on the fore end of said bolt bearing against the front face of said rear wall, means on said bolt engaged by said spring for urging said bolt forwardly whereby the head end of said bolt yieldably presses said yoke toward the back face of said rear wall, a link pivotally connected to each sidemost extremity of said yoke and each operatively connected to the rearmost extremity of each said side arm at a point thereon perpendicular to said bight portion and relatively between the upper and lower edges thereof to facilitate over center rocking of said lever into an inclined position when the descending heel of a ski boot engages the lower extremity of the inclined bight portion to effect over center operation of said arms and links to thereby rock said lever toward the heel of said ski boot, a stirrup secured to the upper edge of the bight portion of said U-shaped lever having a concave intermediate portion adapted to engage the binder groove in the heel of said ski boot, said stirrup being urged directly forwardly relative to said boot heel and being free for upward movement upon application from said boot heel of pressure in excess of the capacity of said spring means to thereby automatically effect over center operation of said arms and links to free said ski boot from engagement with said heel anchor.

12. In a heel anchor for releasably securing a ski boot to a ski blade by engagement of the heel of said boot with a heel engaging plate rockable between extremities of heel receiving and heel engaging positions about the axes of a pair of pinions extending laterally from said heel engaging plate; means for guiding and urging said heel engaging plate forwardly relative to said ski blade comprising a base plate having a pair of trunnion side arms each provided with a horizontally extending slot for receiving and supporting the respective pinions of said heel plate, said base plate having an upstanding rear arm provided with a central bore, a headed bolt having its shank extending from the rear through the bore of said rear arm to engage said heel engaging plate for limiting movement thereof at heel engaging position, a yoke on the rear end of said bolt behind said rear wall and engageable from the rear by the head of said bolt,

spring means on the shank of said bolt, means on said bolt for compressing said spring means toward the front face of said rear arm to thereby draw the head end of said bolt forwardly for urging said yoke toward the back face of said rear arm, and link means between said yoke and rearward extension of said heel engaging plate for urging the latter forwardly relative to said ski blade irrespective of whether said heel engaging plate is disposed in either of its extreme positions of rockability.

13. A heel anchor adapted for mounting on a ski blade a boot length behind a toe abutment comprising a base plate secured to a ski blade having trunnion side arms provided with horizontally extending parallel slots and an upstanding rear arm provided with a central bore slightly below the axes of the slots in said side arms, a U-shaped lever having a bight portion engageable by the heel of a ski boot engaging said toe abutment at its fore end, a stirrup secured to the upper edge of the bight portion of said U-shaped lever adapted to be seated in the binder groove in the heel of said ski boot, a headed bolt extending through said rear arm from the rear thereof with the fore end disposed to limit the forward swing of the bight portion of said U-shaped lever, a yoke on the rear end of said bolt behind said rear wall and

ahead of the head of said bolt, spring means connected to the fore end of said bolt for drawing the latter forwardly relative to said rear arm whereby the head of said bolt yieldingly presses said yoke toward the back face of said rear wall, a link connected to each side of said yoke and pivotally connected to the rearmost extremities of the legs of said U-shaped lever, and pinions extending from the legs of said U-shaped lever into the slots in said trunnion side arms affording rocking of said U-shaped lever as well as fore and aft movement thereof relative to said base plate.

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