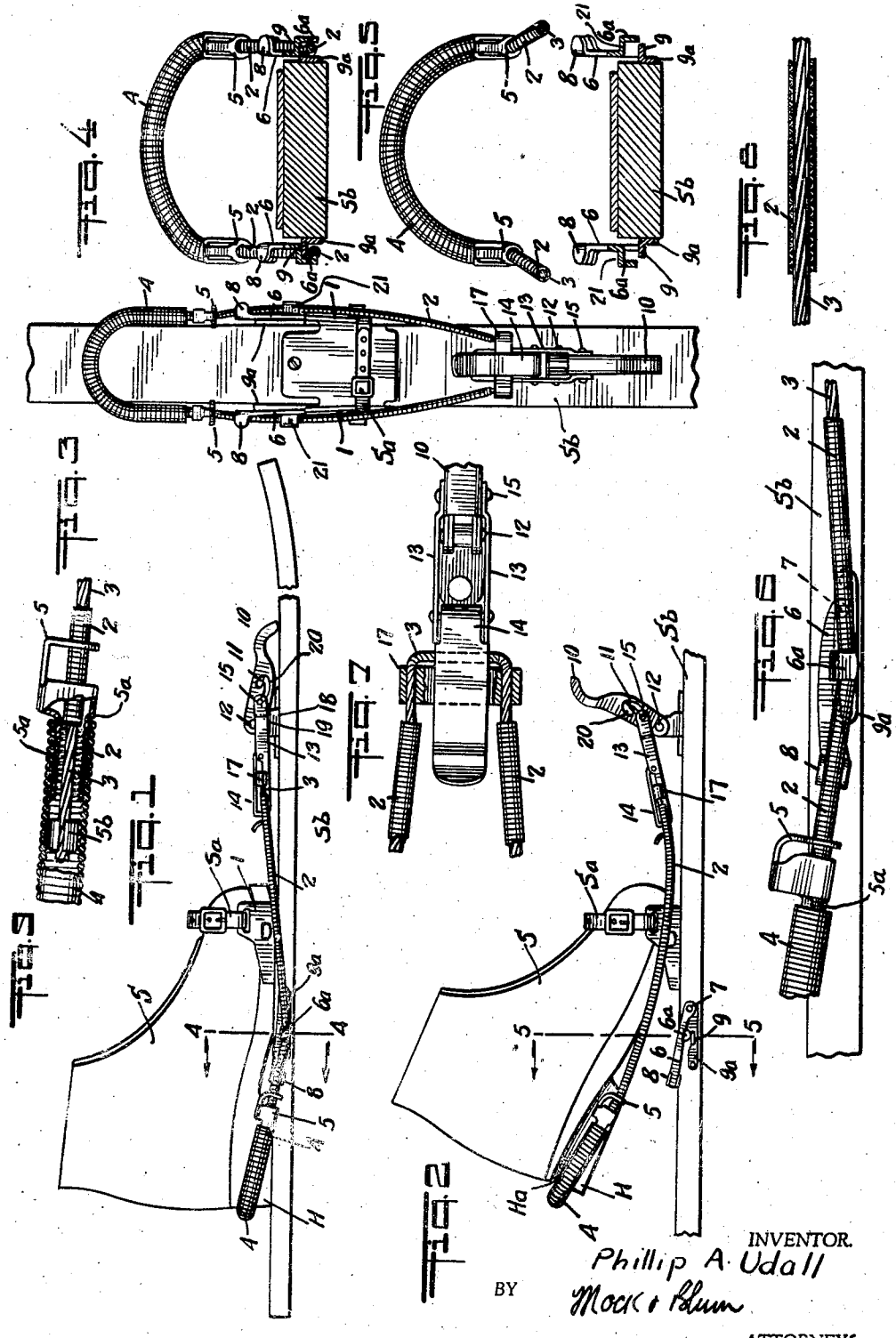
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SKI BINDING

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SKI BINDING

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My invention relates to ski-bindings and more particularly to emergency release means for said bindings.

In skiing it is important that the ski respond to any slight movement of the foot and so it is necessary that the ski boot be firmly attached to the ski. For accurate and easy manipulation of the ski, it is desirable that the heel of the boot be held firmly to the ski, which is usually accomplished by means of the down hill type of ski binding which exerts a forward and downward pull on the heel. In using the aforementioned type of binding, there is always a great danger of bodily injury, such as a sprained or broken ankle, in case of a severe forward fall. Many bindings are provided with springs to alleviate this danger but it is quite obvious that when the spring is too taut there is little advantage gained and when the spring is too loose the boot is not held firmly enough to the ski. Therefore, the main object of my invention is to provide means which will automatically release the binding when the ski hits an obstruction or projection.

Another object of my invention is to provide means which will automatically release the heel cable of a ski-binding when the heel of the ski boot is thrown a predetermined distance above the ski.

Another object of my invention is to provide means which will automatically loosen the heel strap of a ski-binding when the ski hits against any obstruction.

Another object of my invention is to provide means which will automatically loosen the heel strap of a ski-binding when the ski hits against any obstruction, said means in no way causing the boot heel to be loosely held to the ski.

Another object of my invention is to provide automatic releasing means for ski-bindings, said means being of simple and durable construction.

Other objects of my invention will be apparent from the following description and drawing, the above general statements of the objects of my invention being intended to generally explain the same, without limiting it in any manner.

Fig. 1 is a front view of my device in operative position, attached to a ski and holding a ski boot in place, the ski being shown partially broken away.

Fig. 2 is a view similar to Fig. 1 showing my device in a released position.

Fig. 3 is a top plan view, with the ski boot removed and the device in operative position.

Fig. 4 is a sectional view along line 4—4 of Fig. 1.

Fig. 5 is a sectional view along line 5—5 of Fig. 2.

Fig. 6 is a front enlarged fragmentary view of my device.

Fig. 7 is a fragmentary detail top plan view, partly in section, showing the front end of the cable joined to the locking mechanism.

Fig. 8 is a sectional view of the cable.

Fig. 9 is a fragmentary view of part of the heel cable.

Referring to the drawing, the reference letter S denotes the usual type of ski shoe or boot, which is removably attached to ski S*b*. The toe portion of boot S is rigidly held to the ski S*b* by the usual type of toe iron 1 and toe strap S*a*. The heel H of boot S is provided with a peripheral groove H*a*.

My improved device operates in combination with the heel cable. Said heel cable comprises a flexible cable 3 slidably enclosed by the spiral casing 2. Engaging the peripheral groove of the ski boot heel is the heel spring 4. Referring to Fig. 9, heel spring 4 is joined to the cable by means of a coupling 5, said coupling having external thread 5*a* adapted to internally engage heel spring 4. Casing 2 terminates slightly beyond coupling member 5 and cable 3 passes through said coupling and has stop member 5*b* clamped at its end thereof.

Substantially anterior to toe iron 1 is located a locking mechanism. Said mechanism comprises a base 18 having two upright sides 19. A locking lever 10 is pivotally connected by means of pivot 12 to the side walls 19. Lever 10 is provided with a substantially U-shaped slot 11, having backwardly sloping arms 20. Slidably mounted in groove 11, by means of pin 15, is clamp member 13, having a hinge clasp 14. Clamp member 13 is adapted to retain holding member 17. It should be noted that the upper end of the vertical arms 20 of slot 11 are in a lower plane than the center of pivot 12 when trip lever 10 is in closed position.

The release mechanism consists of a pair of release units secured to each side of the ski between the boot heel and the toe iron. Each unit comprises a base plate 9*a* having a horizontal shoulder 9 extending therefrom and integral therewith. Pivotally connected to the front part of the base plate 9*a* by means of pivot 7 is the release arm 6. Said release arm has a second horizontal shoulder 21 having a lip 6*a* from the outer edge thereof. Shoulder 21 and lip 6*a* are so situated that they will abut shoulder 9 when release arm 6 is in closed position. Channel shaped member 8 is integrally formed with the

free end of arm 6 and is adapted to engage casing 3 of the heel cable.

My device operates in the following manner:

Referring to Fig. 1, which shows boot S in locked position, the boot cable passes around heel H through channel-shaped portions 8 and under shoulders 9 and is held thereunder by means of projections 6a. The front end of said cable is held in clamp 13, which in turn is held in the forward taut position by lever 10, when said lever is in the locked position, as shown in Fig. 1. It should be noted that the heel cable passing through channel-shaped portion 8, holds member 6a upon shoulder 9 so that the cable will not slip from under said shoulder.

When the ski strikes an impediment thereby throwing the skier forward, heel H is lifted from the ski carrying the heel cable upwardly and consequently swinging open release arm 6 whose free end is engaged with said heel cable. Since the release arm is thus swung open lip 6a no longer obstructs horizontal shoulder 9 and the heel cable is released from thereunder. The heel cable then bulges outwardly thus freeing itself from the engaging portion 8 of arm 6. In this way the boot heel is no longer firmly held to the ski and the skier has obtained much greater freedom.

It is obvious that with my device affixed to a ski, the feet of the skier will be readily and safely released from the ski when the ski strikes an obstruction or impediment in its path.

I have shown a preferred embodiment of my invention but it is obvious that numerous changes and omissions may be made without departing from its spirit. For example I have shown lever means cooperating with the heel cable but it is obvious that the release lever may be made to cooperate directly with the ski boot. It is not necessary that lever means be employed to release the heel cable, since many other mechanical contrivances may be substituted therefor.

I claim:

1. An article of the character described comprising a base plate, an arm pivotally connected to the forward end of said base plate, said arm being adapted to swing in a vertical plane, a first shoulder extending horizontally from the base plate, a second shoulder extending from the pivoted arm, the second shoulder having a lip depending from the outer edge thereof, the second shoulder being adapted to overlay the first shoulder and have its lip fall below and adjacent to said first shoulder when the pivoted arm is in closed position, the pivoted arm having a channel-shaped portion formed at the free end thereof.

2. A device of the character described comprising a base member, a substantially horizontal shoulder projecting from said base member, a vertical lip having the upper portion of its inner face normally abutting the outer edge of said horizontal shoulder and forming a heel cable retaining member therewith, said vertical lip being limited to upward movement from the horizontal shoulder to a point whereby the formed heel retaining member assumes an open position, and means adapted to move said vertical lip with the movement of the heel of a ski boot held to the ski in which the device is positioned.

3. A cable release device of the character described comprising a base plate secured to the side of a ski, said base plate having a horizontal shoulder, an arm pivotally connected to said base plate, said arm having a vertical lip adapted to have its inner face fall adjacent to the outer edge of the horizontal shoulder when said arm is in closed position, said lip being limited to upward movement from said horizontal shoulder.

4. A cable release device of the character described comprising a base plate secured to the side of a ski, said base plate having a horizontal shoulder, an arm pivotally connected to said base plate, said arm having a vertical lip adapted to have its inner face fall adjacent to the outer edge of the horizontal shoulder when said arm is in closed position, said lip being limited to upward movement from said horizontal shoulder, said arm having independent means adapted to releasably engage a heel cable whereby said arm will move with said heel cable.

PHILLIP A. UDALL.