United States Patent [19]

Smedley

[11] **3,739,607**

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[54] **LOCK FOR SKIS**

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[52] **U.S. Cl.** **70/18,** 70/39

[51] **Int. Cl.** **E05b 67/22,** E05b 73/00

[58] **Field of Search** 70/14, 15, 18, 26, 70/39, 51, 52, 53, 57, 58; 224/22, 49, 455

[56] **References Cited**

UNITED STATES PATENTS

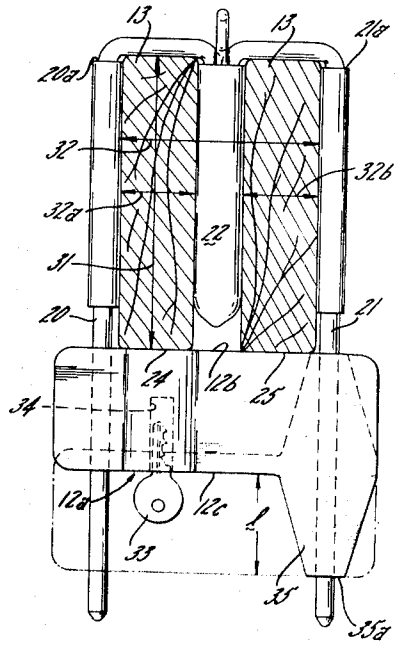
2,471,291	5/1949	Soref	70/52 X
3,636,739	1/1972	Smedley	70/58

Primary Examiner—Robert L. Wolfe
Attorney—John L. Parker

[57] **ABSTRACT**

An improved lock for skis is provided, the lock including a shackle shaped to fit snugly around the midportions of the skis and a detachable body for locking engagement with the shackle to prevent removal of the skis from the lock. The lock body includes a projection extending away from the retained skis and outwardly from the side of the body into which the lock key is inserted (or the side which carries a combination dial or the like). The projection facilitates proper orientation of the lock body with respect to the shackle when the lock is being placed on the skis so that the keyway (or combination dial) carried by the lock body faces outwardly to permit ready access for opening the lock. In the event that the lock body should be improperly oriented and backwardly installed on the shackle, with the keyway (or combination dial) facing inwardly toward the skis rather than outwardly, the projection of the lock body provides a clearance space between the main portion of the body and the skis to permit removal of the skis and to provide access to the keyway (or combination dial) so that the lock may be opened, and the lock body correctly installed on the shackle. In one form of the invention notches carried on each of the legs of the lock shackle are offset with respect to notches on the other leg so that the shackle and body when coupled may be secured more tightly against a given pair of locked skis. The shackle legs may also be differentially marked to permit the lock user to associate the spacing of notches on a given leg with the requirements for firmly securing a given pair of skis.

12 Claims, 5 Drawing Figures



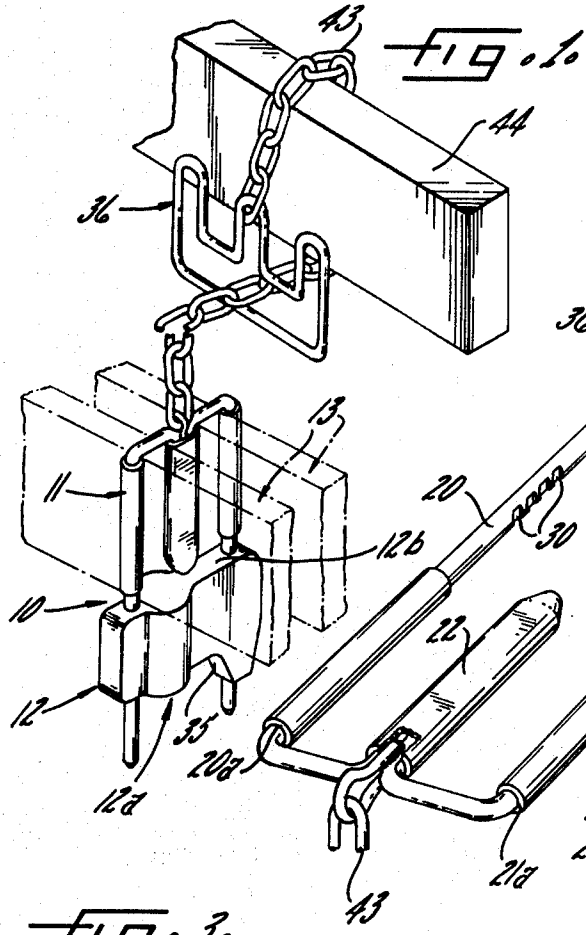


Fig. 1.

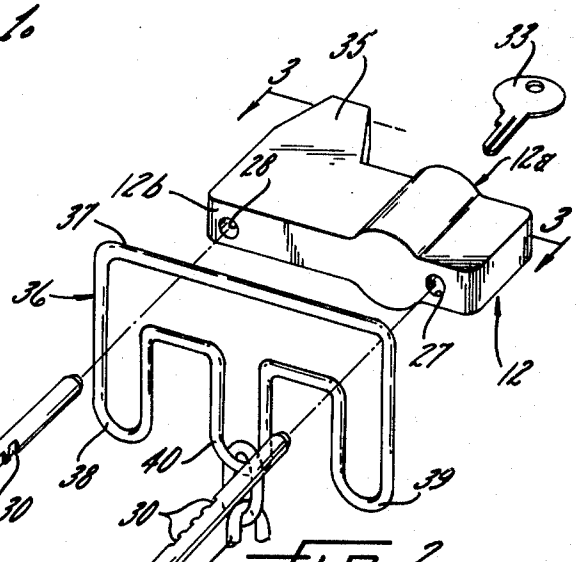


Fig. 2.

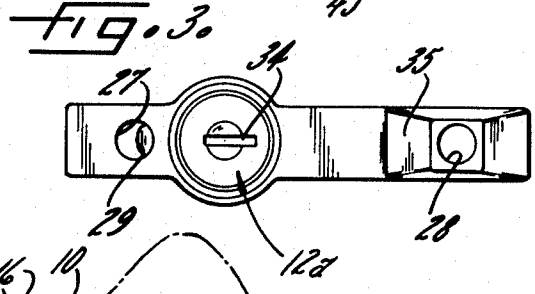


Fig. 3.

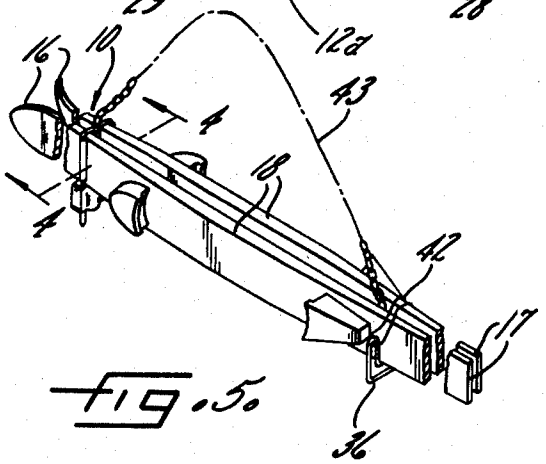


Fig. 5.

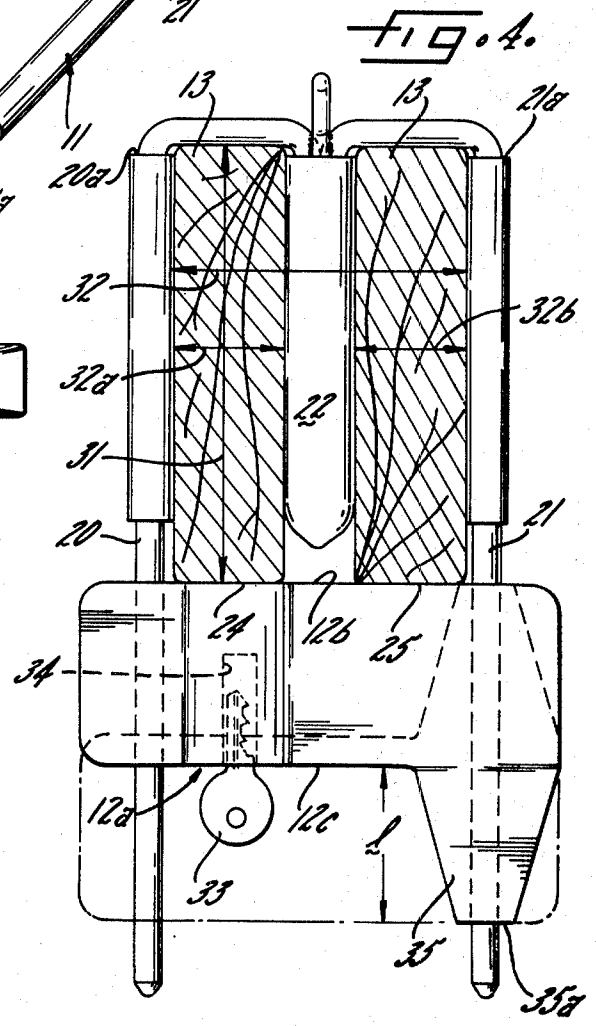


Fig. 4.

LOCK FOR SKIS

DESCRIPTION OF INVENTION

This invention relates to an improved ski lock of the general type disclosed and claimed in Smedley U.S. Pat. No. 3,636,739. Such ski locks include a shackle and a detachable body. The shackle is shaped to fit snugly around the midportions of the skis; when the lock body is attached, the skis become locked between the shackle and body.

In such ski locks the locking mechanism is typically located within the lock body and engages notches or the like provided along the legs of the shackle. When these locks are of the key operated type, a keyway is provided in the body for receiving a suitable lock key to operate the locking mechanism. Normally the keyway is aligned longitudinally within the body in the same direction as the shackle and faces outwardly, i.e., away from the shackle. In this way the lock is opened by a lock key inserted into the keyway from the side of the lock body opposite the shackle. Alternatively, such ski locks may be of the combination type, in which the locking mechanism is operable by the manual setting, for example on a suitable rotatable dial or on multiple discs, of a number combination.

One problem that arises during use of such ski locks is that occasionally, through inadvertence or carelessness, the user will install the lock body on the shackle backwards, i.e., with the keyway or combination dial facing inwardly toward the locked-in skis. When the lock body is thus improperly oriented with respect to the shackle, the inward facing keyway (or combination dial) is positioned adjacent to the edges of the locked-in skis where it is inaccessible to a lock key (or to access to the dial). The locked-in skis cannot be removed from the lock. And it becomes impossible to open the lock, since there is no room to slip the key into the keyway (or to manually set the combination).

It is the primary aim of the present invention to solve the above described problem of backward installation of the lock body onto the shackle by providing an arrangement which permits a backwardly locked ski lock nevertheless to be readily opened, so that the lock body may be reversed and correctly installed on the shackle. It is a related object to provide a foolproof safeguard against permanent mislocking of the ski lock in a backwards position.

A further object of the invention is to provide a key or combination operated ski lock which permits the lock user to readily orient the lock body with respect to the shackle before they are attached together, so as not to obstruct the lock keyway or combination dial from ready access by the lock user after the lock is secured on the skis.

Yet another object of the invention is to provide a body and shackle type ski lock which is capable of being installed on the skis so as to tightly and firmly grip them, thereby avoiding the disabilities of a loose or slack fit of the lock to the skis. Still another object is to permit the lock user to instantly and easily identify which orientation of the lock body with respect to the shackle best accommodates a given pair of skis, thereby affording optimum security of the skis within the lock the first time the lock is fastened together.

Other objects and advantages of the invention will become apparent upon reading the following detailed description and upon reference to the drawings, in which:

FIG. **1** is a perspective view showing an illustrative improved ski lock (with retained skis shown in dotted outline) secured to a permanent base or fixture,

FIG. **2** is an exploded perspective view showing parts of the illustrative ski lock,

FIG. **3** is an end view, taken along the line **3—3** in FIG. **2**, of an illustrative ski lock body and body projection,

FIG. **4** is a view, partly in section, taken substantially in the plane of line **4—4** in FIG. **5**, showing the illustrative ski lock in place on the skis, with the lock body shown installed on the shackle in the correct (solid lines) and in an alternative incorrect (dotted lines) position, and

FIG. **5** is a fragmentary perspective view showing an illustrative lock and an associated carrier device attached to the skis for carrying the skis.

Turning to the drawings, there is shown a lock of the type described in Smedley U.S. Pat. application Ser. No. 824,127 filed May 13, 1969. As shown, the lock **10** includes a U-shaped shackle **11** and a lock body **12** containing, in this instance, a suitable key operated locking mechanism **12***a*. Combination-type lock mechanisms may also be utilized.

The illustrative lock is particularly suited for use with conventional skis **13**, which as is generally known, are not uniform in cross-sectional shape. Rather, most skis **13** are relatively broad and thin near their tips **16** and tails **17**, gradually narrowing and thickening toward their mid-portions. The skis become narrowest and thickest at a ski midsectional point, designated as **18** in the drawings (FIG. **5**). Each ski is also typically arched or bowed with a bottom camber.

The illustrative lock **10** as constructed takes advantage of this gradual change in cross-sectional shape to lockably retain the skis **13** within the shackle and lock body. To this end, the illustrative shackle **11** is rigidly formed in the shape of a squared U having two parallel legs **20** and **21** and a central tongue **22** disposed parallel to the legs. In this instance the shackle is formed of bent wire rod, and the tongue **22** and upper portions of the legs **20, 21** are covered with plastic coatings **20***a* and **21***a*. As will be described in more detail below, it is often desirable to provide the legs with differently colored plastic coatings **20***a*, **21***a* so that they may be quickly visually distinguished from one another by the lock user when attaching the lock to the skis.

To retain the bottom ski camber and to avoid straining the skis **13** when they are inserted in the shackle, the tongue member **22** has a minimum thickness or width substantially equal to the distance between the bottoms of the skis when the tips and tails of the skis are in engagement and the skis are placed bottom to bottom (see FIG. **5**).

To secure the skis **13** in the lock, the shackle **11** is placed around the skis near their ends and moved along the skis toward the ski mid-point **18** as far as it will go, so that the cross-sectional thicknesses of the skis substantially fill the space within the shackle. The lock body **12** is then thrust onto the ends of the shackle legs **20, 21** and advanced to the illustrated position snugly abutting the ski sides **24** and **25** (see FIGS. **1, 4, 5**). To accommodate the shackle legs **20** and **21**, spaced holes **27** and **28** are formed in the lock body.

The lock mechanism **12***a* includes one (as illustrated) or more key-operated latches **29** positioned within one (as illustrated) or both holes **27, 28** for engaging selected ones of the notches **30** formed on the shackle legs **20** and **21.** Several such notches **30** are provided so that the lock may accommodate skis of varying widths. The lock mechanism **12***a* is thus operable regardless of which shackle leg **20** or **21** is inserted into which hole **27** or **28.**

When the lock body **12** is thus attached to the shackle **11,** the shackle and lock body together define an enclosed free space into which the tongue **22** extends to lockably retain the skis. The length **31** of this enclosed free space (see FIG. **4**) is less than the maximum but greater than the minimum width of the skis. The space width **32,** defined as the sum of the distances **32***a* and **32***b* when the shackle includes a central tongue **22,** is less than the sum of the maximum thicknesses of the skis, but is at least as great as the sum of the thicknesses of the skis at the point along the length of the skis where the width of the skis is equal to the length of the enclosed free space.

When attached to the skis **13** in this manner, the lock **10** cannot be removed from the skis. The shackle **11** cannot be moved toward the tips **16** (or tails **17**) of the skis, for the increasing widths of the skis cannot be accommodated between the shackle and the attached lock body (i.e., the ski width would exceed the length **31** of the enclosed free space). And the shackle cannot be moved further toward the midpoint **18** of the skis, for the increasing thicknesses of the skis cannot be accommodated in the space **32** (or **32***a* and **32***b*) between the shackle legs **20, 21** (and tongue **22**).

In this instance the lock **10** is opened by a key **33** insertable into a keyway **34** provided in the lock body **12,** the keyway being aligned longitudinally in the same direction as the shackle **11.** The keyway **34** thus faces outwardly so that the key **33** is inserted from the side of the lock body **12** opposite the shackle **11.** Or, if a combination lock is used, the manually operable combination dial or discs (not shown) are accessible from the side of the lock body **12** opposite the shackle.

As is typical of this type of lock, the holes **27, 28** extend all the way through the lock body **12** so that the ends of the shackle legs **20, 21** may project beyond the body when the lock is secured to the skis. By the same token it is thus possible for the lock body **12** to be thrust onto the shackle **11** in either of two ways, i.e., frontwards or backwards. That is, the body may be installed onto the shackle in the correct or frontwards position with the keyway (or combination dial) facing outwardly. Or the body may be flipped over 180° in the opposite direction and installed onto the shackle backwards, in which event the keyway (or combination dial) faces inwardly and toward the sides of the retained skis. In the event of backward coupling of the lock body and shackle, means must be provided for gaining access to the keyway (or combination dial) in order to open the lock.

In accordance with one aspect of the invention, the lock body **12** is specially constructed to permit a backwardly locked ski lock nevertheless to be readily opened so that the lock body may be properly reinstalled frontwardly on the shackle. This is accomplished by providing a projection or lug **35** extending outwardly from the side of the lock body **12** to which access must be gained for opening the lock. If the lock body **12** is installed onto the shackle **11** backwards, the projection **35** becomes interposed between the main portion of the lock body **12** and the skis **13** retained in the lock. The projection **35** thus provides a space between the lock body **12** and the skis adequate to slip the mis-locked skis out of the lock and/or to permit access to the lock opening mechanism (e.g., by key or by combination dial), so that the lock may be opened and the lock body reinstalled correctly upon the shackle.

The illustrative lock body **12** is shaped to present a generally planar surface or side **12***b* for abutment against the retained skis when the body is properly installed on the shackle. The surface **12***b* thus contacts the sides **24, 25** of the retained skis and holds them firmly within the shackle (see solid lines in FIG. **4**). Access to the locking mechanism is gained from the opposite side **12***c* of the lock body proper, from which the projection **35** extends. That is, it is the side **12***c* of the lock body from which the keyway **34** is accessible (or in a combination lock, upon which the combination dial or discs are mounted).

When the lock body **12** is correctly installed on the shackle **11,** the side **12***c* and keyway **34** of the illustrative lock face outwardly for ready key access. Should the lock body **12** be inadvertently or otherwise reversed with respect to the shackle **11,** and incorrectly installed with the illustrative side **12***c* and keyway **34** facing inwardly towards the sides **24, 25** of the skis, the projection **35** becomes interposed between the main portion of the lock body and the skis (see dotted lines in FIG. **4**). The projection **35** thus provides a clearance space between the lock body and the skis, so that the skis may be slipped endwise out of the lock and/or the key **33** may be readily inserted into the keyway to open the lock and thereby permit correct installation of the body onto the shackle.

In one application of the improved ski lock of the invention, the projection **35** has a length l as shown in FIG. **4** (i.e., the distance that the projection extends beyond the lock body side **12**c) greater than the difference between the maximum width of the retained skis and the width of the skis at the point where the lock is attached to the skis when properly installed (at that point the ski width equals the length **31** of the enclosed free space of the lock — see FIG. **4**). This length l of the projection **35** thus prevents the lock body and shackle from defining an enclosed free space having a length **31** less than the maximum ski width, so that the skis may be removed from the improperly secured lock. Stated otherwise, this length l of the projection **35** affords adequate space between the body (side **12***c*) and the sides **24, 25** of the retained skis to permit the skis to be removed endwise from the lock, i.e, the spacing is sufficient to permit the full width of the skis to pass therethrough as the skis are slipped out of the backwardly secured lock. Thereupon the lock may readily be opened and re-secured to the skis in proper manner. While the side **12***c* of the illustrative lock body is shown as generally planar, it need not be, so long as its shape does not unduly restrict the space available for passage of the skis therethrough.

In another application of the improved ski lock, the projection **35** has a length l approximating the length of the lock key **33,** so that the key may be inserted into the keyway **34.** Alternatively, the length l of the projection **35** is adequate to permit manual access to and ad-

justment of the combination dial or the like in a combination type lock.

To assist the lock user in carrying his skis, a ski carrying arrangement may be provided. The details of this arrangement are described and shown in Smedley U.S. Pat. application Ser. No. 231,907, filed Mar. 6, 1972. As illustrated, a carrier **36** formed of heavy wire **37** and generally shaped as a hollow "E" is provided. The "E" includes two outer ski support legs **38, 39,** and an inner separator leg **40.** The "E" shape of the carrier **36** thus defines two generally U-shaped pockets for cradling the skis. To further secure the carrier **36** to the skis, a flexible strap **42,** shown in FIG. **5,** may be passed across the skis from one support leg **38** to the other **39.** A flexible link member **43,** which may take the form of a chain as illustrated, is provided for joining the carrier **36** and the lock **10.** When the lock **10** and the carrier **36** are installed on the skis the flexible link **43** provides a carrying handle for the skis. As an alternate construction (not illustrated), the flexible link **43** may be attached to the lock body rather than the shackle.

The carrier **36** is also constructed to provide means for fastening the lock **10** with or without its retained skis to a permanent base or fixture **44.** To this end, the carrier **36** is formed to define an opening of sufficient size to allow passage of the shackle **11** therethrough. In this instance the opening corresponds to the hollow part of the "E." This opening is sized, however, too small to allow passage of the lock or the lock and skis. To secure the lock **10** to the fixture **44** such as a ski rack, the lock user passes the shackle around the fixture (see FIG. **1**) and through the carrier opening. He then locks the shackle **11** to the lock body **12.** Since the opening formed in the carrier **36** is too small to allow passage of the lock body, the lock will be securely fastened to the fixture **44** even when no skis are placed in the lock. If the link **43** is alternatively attached to the lock body **12,** the shackle **11** may be formed to prevent passage of more than the lower portions of the legs **20, 21** through the carrier **36.**

One of the features of the invention is that when the lock body is incorrectly installed upon the shackle it becomes immediately apparent to the lock user that the skis cannot be locked within the lock. Thus, when the lock body **12** is incorrectly installed on the shackle (dotted lines in FIG. **4**) only the end **35***a* of the projection **35** is in a position to touch the skis. The lock body **12** as thus installed fails to present a planar surface (cf. surface **12***b*) for locking abutment with the skis, and the above-described free space is not defined. Since the shackle and body together do not abut the skis on all sides, the skis cannot become locked within the lock. The lock user can thus immediately perceive that the skis are not locked because the lock body is backwards, and can then remove the skis, open the lock and reverse the body to the correct position.

Another of the advantageous features of the invention is that the presence of the projection **35** on the lock body **12** helps prevent incorrect engagement of the lock in the first instance by providing a visual guide to the lock user. That is, the projection **35** serves to readily identify the correct or proper orientation of the lock body (with the projection extending away from rather than towards the shackle) for attachment to the shackle legs.

Another feature of the improved ski lock is that, if desired, an especially tight and firm grip of the lock to the skis may be assured through use of a specially constructed lock shackle **11.** In this construction, the notches **30** in one of the shackle legs **20, 21** are offset from the notches in the other leg. In other words, instead of arranging the notches on the shackle legs directly across from one another, they are offset.

For example, where ¼ inch diameter metal rod is used to make the shackle, each shackle leg **20, 21** may be provided with a series of five notches **30** each spaced ¼ inch apart along the leg (such spacing leaves enough metal between notches to provide adequate notch strength). But the series of notches on leg **20** may be offset from the series of notches on leg **21,** for example, by ⅛ inch. That is, the last notch on one leg, say leg **20,** is ⅛ inch nearer to the closed shackle end than the last notch of the other leg, **21.**

In use, when the lock body **12** is secured onto the shackle **11** with the skis in place within the lock, the planar side **12***b* of the lock body may come to rest more than ⅛ inch away (in this example) from the sides **24, 25** of the skis. If so, the lock user need only unlock and remove the lock body from the shackle, rotate the body so that each shackle leg **20** or **21** extends through the opposite hole **27** or **28** in the body, and then reinstall the body onto the shackle. Now, the undesirable ⅛ inch slack will be taken up due to the fact that the lock operating latch **29** will engage a notch **30** offset by ⅛ inch from the notch originally engaged. The result is that the lock body is secured ⅛ inch closer to the retained skis than originally, thereby avoiding the disabilities of a loose or slack fit of the lock to the skis.

There is still another advantage to this aspect of the invention, i.e., when the series of notches **30** in the respective shackle legs **20, 21** are not equidistant (are offset) from the closed end of the shackle. The shackle legs may be distinguished from one another, e.g., by differently colored plastic coatings **20***a*, **21***a* or other differential markings, in which case the lock user may readily associate coupling of a given colored shackle leg with a given hole **27, 28** in the lock body (e.g., with the hole **28** extending through the body projection **35**) to provide a snug lock fit for a given pair of skis. In other words, for a given pair of skis the user may, for example, find that the red colored shackle leg **20** (having its last notch **30** closer to the closed end of the shackle as described in the above example) should desirably always be inserted into the hole **28** extending through the projection **35** of the lock body in order to provide optimum security of the skis within the lock the first time the lock is fastened together.

I claim as my invention:

1. In an improved ski lock for use with a pair of skis, the lock including a shackle formed to fit around the skis and a body attachable to the shackle and including a planar side to face and abut the skis, the lock shackle and body when attached together defining between the shackle and the planar side of the body an enclosed free space for lockably retaining the skis, and the lock body having means for operating the lock located on the side of the body opposite the planar side, the improvement comprising a projection carried on the lock body and extending outwardly therefrom on the side of the body carrying the lock operating means, the outer end of the projection being adapted to contact a retained ski should the lock body be incorrectly attached to the shackle with the planar side of the body facing away from the skis, and the projection providing a

clearance between the lock body proper and the retained skis when the body and shackle are so incorrectly attached together and having a length sufficient to allow removal of the skis from the lock and to provide access to the lock operating means.

2. An improved ski lock as defined in claim 1 in which the length of the body projection is greater than the difference between the maximum width of the retained skis and the width of the skis at the point where the lock is attached to the skis when properly installed.

3. An improved ski lock as defined in claim 1 in which the length of the body projection is sufficient to prevent the lock body and shackle from defining an enclosed free space having a length less than the maximum ski width when the lock body and shackle are incorrectly attached together.

4. An improved ski lock as defined in claim 1 in which the means for operating the lock includes a key and in which the length of the body projection approximates the length of the key.

5. An improved ski lock as defined in claim 1 in which the means for operating the lock includes number combination means and in which the length of the body projection is sufficient when the body and shackle are incorrectly attached together to permit access to the number combination means.

6. In a lock for use with a pair of skis placed bottom to bottom, each ski having a tip portion and a tail portion each of relatively broad and thin cross-section and having a midsectional portion of relatively narrow and thick cross-section, and each ski being bowed with a bottom camber, the lock comprising a lock body and a shackle for lockable connection with the lock body, the lock body including a planar side to face and abut the skis and having means for oprating the lock located on the side of the body opposite the planar side, the shackle rigidly formed in the shape of a squared U and having two parallel legs, the shackle including a central tongue disposed parallel to the shackle legs and having a minimum thickness substantially equal to the distance between the bottoms of the skis along their midportions when the tip and tail portion of the skis are in engagement, the shackle and lock body when locked together defining between the shackle and the planar side of the body an enclosed free space into which the tongue extends for lockably retaining the skis, the length of the enclosed free space being less than the maximum but greater than the minimum width of the skis, and the width of the enclosed free space being less than the sum of the maximum thicknesses of the skis but at least as great as the sum of the thicknesses of the skis at the point along the length of the skis where the width of the skis is equal to the length of the enclosed free space, the improvement comprising a projection carried on the lock body and extending outwardly therefrom on the side of the body carrying the lock operating means, the outer end of the projection beng adapted to contact a retained ski should the lock body be incorrectly attached to the shackle with the planar side of the body facing away from the skis, and the projection providing a clearance between the lock body proper and the retained skis when the body and shackle are so incorrectly attached together and having a length sufficient to allow removal of the skis from the lock and to provide access to the lock operating means.

7. An improved ski lock as defined in claim 6 in which the length of the body projection is greater than the difference between the maximum width of the retained skis and the width of the skis at the point where the lock is attached to the skis when properly installed.

8. An improved ski lock as defined in claim 6 in which the length of the body projection is sufficient to prevent the lock body and shackle from defining an enclosed free space having a length less than the maximum ski width when the lock body and shackle are incorrectly attached together.

9. An improved ski lock as defined in claim 6 in which the means for operating the lock includes a key and in which the length of the body projection approximates the length of the key.

10. An improved ski lock as defined in claim 6 in which the means for operating the lock includes number combination means and in which the length of the body projection is sufficient when the body and shackle are incorrectly attached together to permit access to the number combination means.

11. In an improved ski lock for use with a pair of skis, the lock including a shackle having a pair of legs formed to fit around the skis and a body attachable to and having openings for receiving the shackle legs, each of the shackle legs carrying a series of notches and the lock body including a locking mechanism selectively engageable with the notches, the lock body including a planar side to face and abut the skis when retained in the lock, and the lock shackle and body when attached together defining between the shackle and the planar body side an enclosed free space for lockably retaining the skis, the improvement in which the notches on one shackle leg are linearly offset with respect to the notches on the other shackle leg so that engagement of the body locking mechanism with the notches carried on a selected shackle leg positions the planar side of the lock body in tight abutment against the retained skis.

12. An improved ski lock as defined in claim 11 in which the shackle legs are marked differentially so that they may readily be visually distinguished from one another, and in which the body openings for receiving the shackle legs are also marked differentially so that they may be visually distinguished from one another, whereby the lock user may readily associate the notch location on a given shackle leg with a given body opening.

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