Nov. 26, 1968 R. P. BERRYMAN 3,412,585

SKI-LOCKING DEVICE

Filed June 12, 1967 2 Sheets-Sheet 1

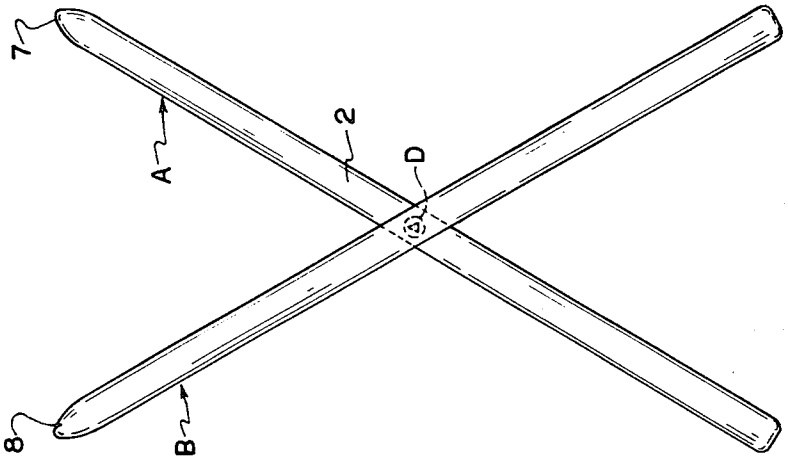


FIG-3

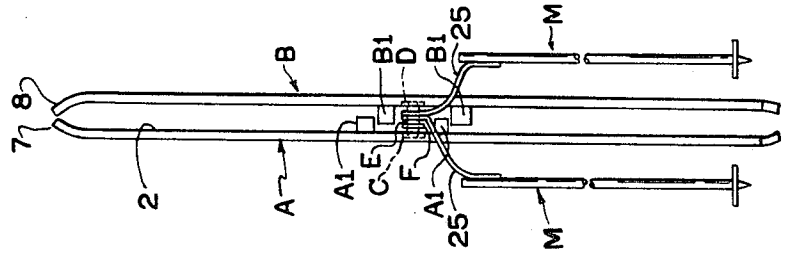


FIG-2

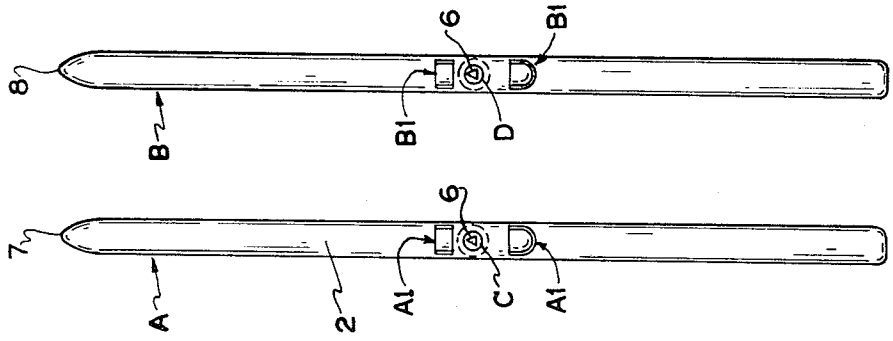


FIG-1

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SKI-LOCKING DEVICE

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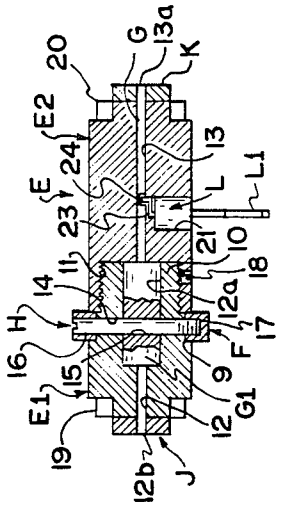


FIG-9

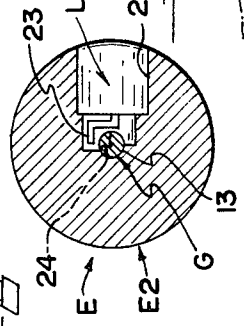


FIG-10

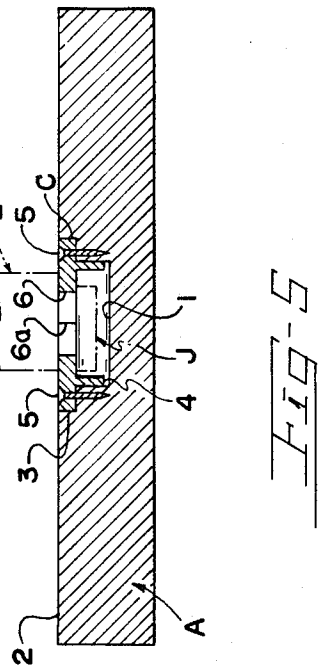


FIG-5

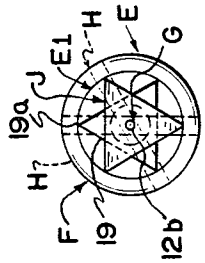


FIG-8

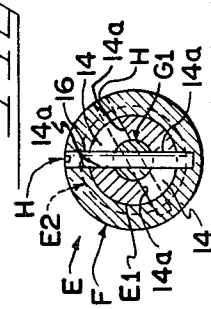


FIG-6A

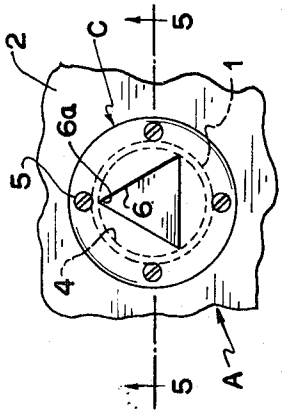


FIG-4

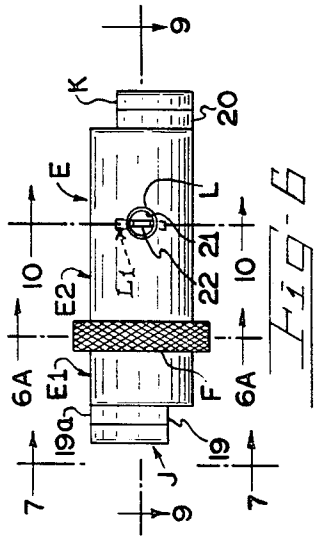


FIG-6

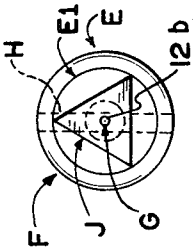


FIG-7

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SKI-LOCKING DEVICE

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7 Claims. (Cl. 70—58)

ABSTRACT OF THE DISCLOSURE

A ski-locking device in which the skis are locked together in crossed relation so that the two skis will form an X. The locking device when connected to the skis will not only hold them in an X formation, but the two skis will be spaced a short distance apart at their points of connection. The locking device when disconnected from the skis may be carried in the pocket or in a packet suspended from a belt or attached to a skier's clothing. Also during the securing of the two skis together, the hand loops of the ski poles may be placed over the locking device and thus be secured to the skis. Further, one end of a flexible steel strand cable having lops formed at each end may be placed over the locking device while the opposite end is threaded through articles of clothing or equipment or around a tree or other permanent member and then also placed over the locking device thus locking the equipment and skis together. If desired the skis with or without such clothing or equipment may be secured to the tree or other permanent member. The locking portions on the skis do not project beyond the outer surfaces of the skis.

Background of the invention

Field of the invention.—Skis are frequently stolen when the skier temporarily leaves them unattended. I have provided a novel locking device that will secure the two skis together when they are arranged in the form of an X. It is more readily apparent that a pair of skis are being stolen when they are locked in non-parallel relationship while being carried away. Also when skis are locked in the form of an X, it is almost impossible for a thief to remove them from the ski area by automobile or otherwise. The locking device should be small and the attaching means on the skis should not protrude beyond the outer surfaces of the skis nor should the skis be weakened by the attaching means. The usual ski poles are provided with hand loops and the locking device can be inserted through these loops at the time it secures the two skis together. In this way the ski poles are locked with the skis.

Description of the prior art.—The patent to P. W. Poehlmann, et al., No. 3,277,676, issued Oct. 11, 1966, is for a ski lock that will secure the two skis together in criss-cross relationship. However, each ski carries a locking element that is attached to the upper surface of each ski and therefore becomes a hazard to the skier when using the skis and is also unsightly. The two locking elements interlock with each other when the skis are placed in criss-cross relation and a standard padlock is used for securing the two locking elements together.

In my device the locking element is of novel construction and is entirely removed from the skis when the latter are used for skiing. Also the complemental locking elements in the skis are embedded so that nothing projects above the outer surfaces of the skis when the locking element is removed.

Summary of the invention

An object of my invention is to provide a ski-locking device that is small and compact so as to be readily carried on the person when not in use. The locking device has a ski-locking member at each end thereof that is receivable in complemental locking members which are embedded in the skis. The complemental locking members on the skis and the ski-locking member at each end of the ski-locking device are shaped so that they will hold the skis in criss-cross relation when the locking device secures the skis together. It is also possible to secure the skis together in parallel relation if so desired, by placing the skis face to face and the tips in opposite directions. When placed in this position the shoe clamps of each ski avoid contacting each other. This locking position would be convenient when the owner desires to lock the skis to a fixed object by the steel strand cable earlier referred to or when the skis are to be locked at the location requiring a lesser degree of safety such as in an automobile or at the owner's home. While the ski-locking device can be secured in locked position by a key-controlled lock, the preferred means is that of a combination lock constructed within the locking device.

Brief description of the drawings

FIGURE 1 is a plan view of a pair of skis arranged parallel to each other and showing a part of my ski-locking device applied thereto.

FIGURE 2 shows the two skis facing each other with my locking device operatively applied to interconnect them in criss-cross relation.

FIGURE 3 is a plan view of FIGURE 2 and illustrates the criss-cross position the skis assume when they are locked together by my device.

FIGURE 4 is an enlarged plan view of a portion of one of the skis shown provided with a part of my ski-locking device.

FIGURE 5 is a transverse section through the ski and is taken along the line **5**—**5** of FIGURE 4 and is on the same scale of drawing.

FIGURE 6 is a side elevation of the ski-locking device that can be removably connected to the two skis when they are arranged to face each other as shown in FIGURE 2 and are in a criss-cross formation as shown in FIGURE 3.

FIGURE 6A is a transverse section taken along the line **6A**—**6A** of FIGURE 6.

FIGURE 7 is an end view of the ski-locking device when looking in the direction of the arrows **7**—**7** of FIGURE 6 and shows the end locking member on the device in unlocked position.

FIGURE 8 is a similar view to FIGURE 7, but shows the end locking member on the device in locked position,

FIGURE 9 is a longitudinal section through the ski-locking device and is taken along the line **9**—**9** of FIGURE 6.

FIGURE 10 is a transverse section through the ski-locking device on an enlarged scale and is taken along the line **10**—**10** of FIGURE 6.

Description of the preferred embodiment

In carrying out my invention, I provide a pair of skis and they are indicated generally at A and B in FIGURES 1, 2 and 3. The skis are of standard construction and are provided with the usual shoe clamp attachments illustrated at **A1** for the ski A and at **B1** for the ski B.

Each ski A and B is provided with a socket-shaped insert indicated generally at C for the ski A and at D for the ski B. Both socket inserts are identical in construction and a description of the socket insert C for the ski A will suffice for both. The socket insert C is illustrated on an enlarged scale in FIGURES 4 and 5. A recess **1** is provided in the upper surface **2** of the ski A and is preferably placed near the shoe-clamping attachment **A1** as clearly shown in FIGURE 5, although I do not wish to be confined to any particular location. The socket insert C is

in the form of a disc that is received in an annular groove 3 formed in the ski A and the axis of the groove coincides with the axis of the recess 1. The socket insert C has a cylindrical portion 4 that is integral with the disc-shaped portion and both have a common axis. FIGURE 5 shows the cylindrical portion 4 snugly received within the cylindrical wall of the recess 1. Screws 5 or other suitable fastening means secures the socket insert C to the ski A. It should be noted that the upper surface of the socket insert lies flush with the top surface 2 of the ski A. The cylindrical portion 4 reinforces the wall of the recess 1 and the socket insert strengthens the ski A rather than weakens it.

FIGURE 4 shows the insert C provided with a non-circular opening 6 that leads to the interior of the cylindrical portion 4, see FIGURE 5. Both FIGURES 1 and 4 show the opening 6 to be triangular in shape with one apex 6*a* of the triangle pointing toward the front end 7 of the ski A. One apex of the triangular opening 6 in the socket insert D in the ski B also points toward the front end 8 of the ski. The opening 6 is in the shape of an equilateral triangle.

I provide a novel ski-locking device for the two skis A and B that is compact and can be readily carried in the pocket when not in use. This ski-locking device is shown in detail in FIGURES 6 to 10 inclusive and comprises a cylindrical body composed of two cylindrical parts E1 and E2, see the sectional view of FIGURE 9. The part E1 has annular groove 9 for receiving a knurled ring F, and it has a threaded end 10 of a smaller diameter than that of the part E1. The part E2 has a threaded bore 11 for receiving the threaded end 10 and the outer cylindrical diameter of the part E2 is the same as the outer cylindrical diameter of the part E1.

Both of the parts E1 and E2 of the ski-locking device E have axially aligned bores 12 and 13, see FIGURE 9, that receive an axial rod G. The bore 12 has an enlarged cylindrical portion 12*a* for receiving an enlarged cylindrical portion G1 of the rod G. The part E1 has a transversely extending slot 14 for receiving a screw pin H. The pin H also extends through a transverse bore 15 provided in the enlarged cylindrical portion G1 of the rod G. The knurled ring F has a radially extending opening 16 for receiving the head of the pin H and it has a diametrically opposed and radially extending recess 17 for receiving the threaded end of the pin. It will be noted from FIGURE 6A that the transverse slot 14 in the part E1 is in the form of two substantially triangular sectors, each sector having angularly disposed and radially extending walls 14*a* that make an angle of about 60° between them. Sufficient space is provided between the two sectors to receive the pin H and permit is movement. The purpose of this is to permit the knurled ring F to be rotated on the part E1 through an angle of 60° for swinging the pin H, the enlarged cylindrical portion G1 and the rod G through a similar angle for a reason presently to be described. The ring F can be rotated between the two extreme positions so as to swing the pin H between the full and dot-dash line positions shown in FIGURES 6A and 8. The part E1 can be prevented from accidentally rotating with respect to the part E2 by a set screw 18, see FIGURE 9.

The outer end of the part E1 has a projection 19 whose walls are in the shape of an equilateral triangle of the same size as the equilateral triangular opening 6 in the socket inserts C and D for the skis A and B respectively. The apex 19*a* could be received in the apex 6*a* of the triangular opening 6. One end 12*b* of the rod G extends through the center of the triangularly-shaped projection 19 and it has a triangularly-shaped locking member J rigidly secured thereto. The member J is of the same size and equilateral shape as the projection 19 and when the three sides of the member J are in alignment with the adjacent three sides of the projection 19, the member will be in unlocked position as shown in FIGURES 6 and 7.

It is now possible for the operator to insert the aligned member J and the adjacent projection 19 into the triangular opening 6 of the socket insert C as shown by the dot-dash lines in FIGURE 5. The thickness of the disc-shaped portion of the insert C is the same as the thickness of the projection 19 and this will cause the member J to be received in the socket portion of the insert. The knurled ring F may now be rotated through a 60° arc and this will cause the pin H to be swung through a similar arc as clearly shown in FIGURE 6A. The rod G will be rotated 60° and likewise the member J. The member J will now assume the position shown in FIGURE 8 with respect to the projection 19. The three pointed portions of the member J will now be swung under the undersurface of the disc-shaped part of the socket insert C, see the dot-dash line position of the member J in FIGURE 5. The ski-locking device E is now secured to the ski A and cannot be removed so long as the member J is in a different angular position from the projection 19. If desired a spring-pressed ball, not shown, may be carried by the part E1, and the underside of the ring H may have two recesses disposed 60° apart. One recess will receive the spring-pressed ball when the ring is in one of its extreme positions and the other recess will receive the ball when the ring is in its other extreme position. In this way the ring F is prevented from accidental rotation.

I will now describe how the other end of the ski-locking device can be secured to the other ski B and can hold this ski at an angle of 60° with respect to the ski A. Then I will describe how the ski-locking device E can be secured in locked position by a key-actuated lock. The outer end of the part E2 has a projection 20 of the same equilateral triangular shape as the projection 19, see FIGURE 9. The projection 20 is constructed so that its three apexes are disposed 60° angularly from the apexes of the projection 19. The other end 13*a* of the rod G extends through the center of the triangularly-shaped projection 20 and it has a triangularly-shaped locking member K rigidly secured thereto. The member K is of the same size and equilateral shape as the projection 20 and is aligned therewith when the member K is in unlocked position.

The operator may insert the aligned member K and its adjacent projection 20 into the triangular opening 6 in the other socket insert D that is embedded in the other ski B. The ski B is rotated through an angle of 60° with respect to the ski A before the aligned projection 20 and the member K are inserted into the opening 6 of the socket insert D. This will cause the two skis A and B to form a criss-cross relation with respect to each other as shown in FIGURE 3. When the ring F is rotated through 60° to rotate the member J into locked position in the socket insert C, the same rotation of the ring will rotate the member K into locked position in the other socket insert D. The locking device E is now secured to both skis A and B and will maintain them in criss-cross relation. The shoe-clamping mechanism A1 for the ski A and A2 for the ski B will face each other as shown in FIGURE 2 and the front ends 7 of the two skis will extend in the same direction with each other.

Any key actuated or combination actuated locking means may be used for preventing rotation of the rod G after it has been rotated by the ring F into locked position. I illustrate a key-actuated locking means in FIGURES 6, 9 and 10. A tumbler lock casing L is inserted into a radially extending bore 21 provided in the part E2 of the ski-locking device E. When a key L1 is inserted into the key slot 22, see FIGURES 6 and 9, and is rotated into locked position, it will rotate a crank-shaped latch 23 from an unlocked position, shown in FIGURE 10, where it is clear of the rod G, into a locked position where the crank will be received in a notch 24 provided in the rod G, see FIGURE 9. The notch 24 has a shoulder against which the latch 23 will bear should anyone try to rotate the ring F and rod G in an endeavor to free the locking members J and K from their respective socket inserts C and D.

The ski-locking device E is small enough to be carried in the pocket when it is disconnected from the skis A and B. FIGURE 2 shows the device E interconnecting the skis in a criss-cross manner. The loops **25** of a pair of ski-poles M may be passed around the ski-locking device when the latter connects the two skis together. The ski-poles will therefore be locked with the skis.

It is possible for the operator to secure the two skis A and B together by the device E when the skis are arranged parallel to each other and the front ends **7** of the skis face in the opposite direction. When the two skis are thus arranged, both of the triangular openings **6** of the socket inserts C and D can receive the locking members J and K that are aligned with their associate projections **19** and **20**.

While I have previously referred to the complemental locking members as being embedded in the skis, such members may be mounted on the surface of each ski or be a part of the ski binding or part of the ski.

What is claimed is:

1. In combination:

(a) a pair of skis, each having a socket insert; each socket having a recess with an opening communicating therewith in which a portion of the perimeter of the opening overhangs a portion of the recess;

(b) a ski-locking device comprising a body having a projection at each end, each projection having a periphery adapted to fit into the opening in each socket insert; and

(c) ski-locking means disposed at each end of said body and adapted to enter the opening in each socket insert at the same time as the projection at the end of said body enters the opening; said ski-locking means being manually actuated for engaging with a portion of said overhang; whereby said skis are secured to each other by said ski-locking device.

2. The combination as set forth in claim **1**: and in which

(a) the socket openings are non-circular; and

(b) the projections at the ends of said body are non-circular, and are angularly arranged with respect to each other so as to hold said skis in a criss-cross arrangement when said projections are received in the non-circular openings in said socket inserts;

(c) whereby the pair of skis will be held in criss-cross shape when said ski-locking device interconnects the pair of skis.

3. The combination as set forth in claim **2**: and in which

(a) the non-circular opening in each socket insert is an equilateral triangle with one apex lying in the longitudinal axis of the ski; and

(b) the projections at the ends of said body have their peripheries in the shape of equilateral triangles of the same size as said insert openings and are designed to be snugly received in said openings when said ski-locking means secures the pair of skis together;

(c) whereby said skis can be arranged in parallel relation when secured to said ski-locking means or one of the skis can be angularly rotated through an arc of 60° with respect to the other ski and then the two skis secured together in a criss-cross relation by said ski-locking means.

4. The combination as set forth in claim **1**: and in which

(a) each socket insert has an inner edge disposed adjacent to the rim of the non-circular opening; and

(b) said ski-locking means includes two locking members having peripheries of the same size and shape as the non-circular peripheries of said projections; each locking member being disposed adjacent to said projections and aligned therewith to constitute an extension of said projection; and

(c) said ski-locking means includes a manually rotatable ring operatively connected to said locking members for rotating said members into contact with said inner edges of said inserts for securing said ski-locking device to said skis.

5. In a ski-locking device:

(a) an elongated body member having a projection at each end, each projection having a non-circular periphery;

(b) a rotatable rod extending along the axis of said body and having its ends projecting beyond each of said projections;

(c) a locking member secured to each end of said rod and having a size and shape similar to that of its associate projection; said members normally being in alignment with said associate projection; and

(d) means for rotating said rod and said locking members for moving the latter out of alignment with their associate projections.

6. The combination as set forth in claim **5**: and in which

(a) said rod rotating means includes a ring rotatably mounted on said body; and

(b) connections between said rod and said ring for rotating said rod when said ring is rotated.

7. The combination as set forth in claim **6** and in which

(a) locking means is provided for preventing the rotation of said rod when said rod has rotated said locking members out of alignment with said projections.

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