United States Patent

Baso

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[54] BUCKLE ATTACHED TO SKI BOOT

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[30] **Foreign Application Priority Data**

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[52] **U.S. Cl.** ..... **24/70 SK**, 36/2.5 AL

[51] **Int. Cl.** **A43c 11/00**

[58] **Field of Search** ..... 24/68 SK, 69 SK, 70 SK; 36/2.5 AL, 50

[56] **References Cited**

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[57] **ABSTRACT**

A buckle on ski shoes consisting of a toothed tensioning lever pivotally arranged on the one instep portion and a longitudinally adjustable clamping loop which is secured to the other instep portion by means of a mounting plate and an adjustable plate which can be connected to the tensioning lever.

8 Claims, 6 Drawing Figures

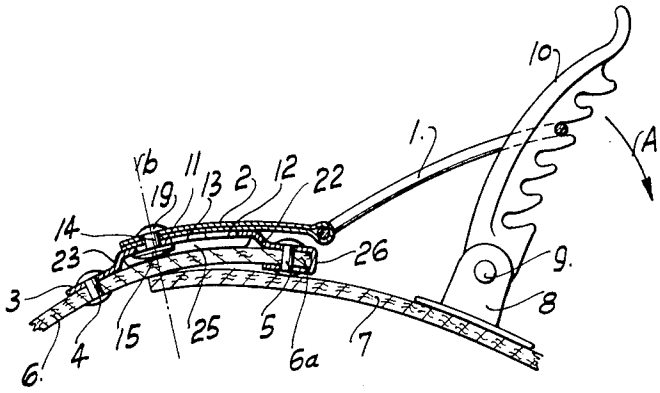


Fig. 1.

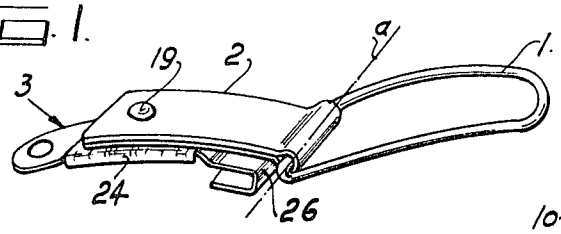


Fig. 2.

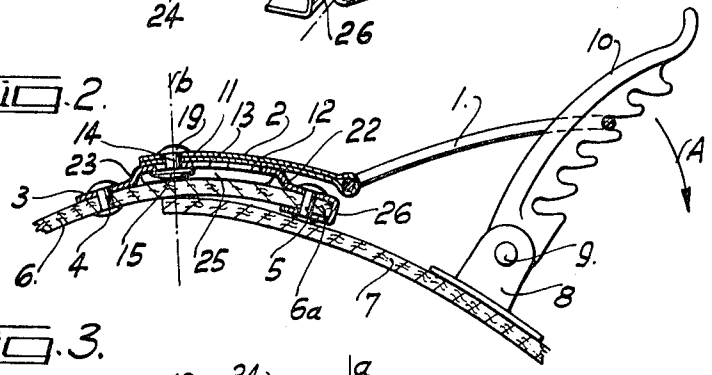


Fig. 3.

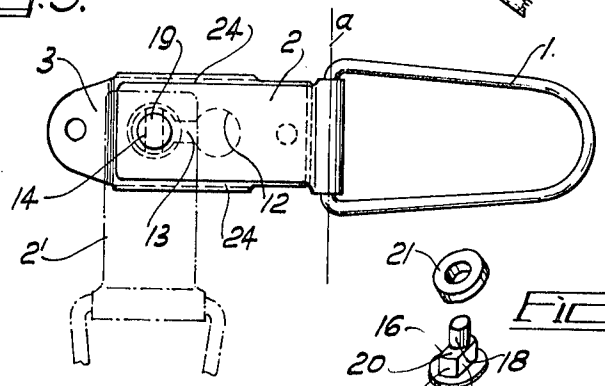


Fig. 5

Fig. 4.

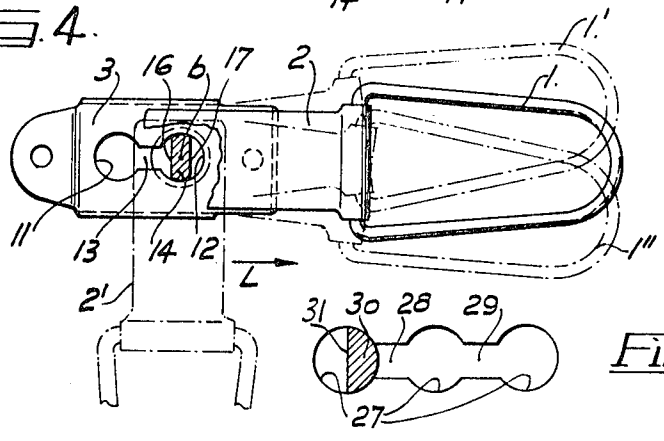


Fig. 6.

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BUCKLE ATTACHED TO SKI BOOT

The invention relates to a buckle attached to ski boots consisting of a toothed tensioning lever pivotally arranged on one instep portion and a longitudinally adjustable clamping loop engageable with the lever and secured to the other instep portion, said clamping loop being so secured by means of a mounting plate and an adjustable plate.

In presently known devices of this type the adjustable plate which carries the clamping loop is secured to the mounting plate by means of a screw or other means. This construction has the disadvantage that a tool must be used for the longitudinal adjustment of the loop and that furthermore a reliable function is not assured.

The basic purpose of the present invention is to produce a simple, safe and strong mounting of the clamping loop which in a simple manner permits a longitudinal adjustment of the clamping loop without the help of a tool. A further purpose is to render the clamping loop pivotable about both a horizontal and a vertical axis.

This purpose is attained according to the invention by providing two or more holes in the one plate, which holes are each connected by a longitudinal slot and are arranged in longitudinal direction of said plate and by further providing a bolt secured to the other plate and fitting into said holes to form a vertical swivel axis. Said bolt is flattened transversely to the longitudinal direction of the plate in such a manner that - after the adjustable plate has been rotated 90° —said plate can be adjusted longitudinally with respect to the mounting plate, whereby the flattened bolt slides through the longitudinal slot.

The invention will be disclosed more in detail hereinafter in connection with the drawings which illustrate exemplary embodiments.

In the drawings:

FIG. **1** is a diagrammatic view of a clamping loop, adjustable plate and mounting plate;

FIG. **2** is a longitudinal cross-sectional view of the complete buckle secured to the instep portion of the ski boot;

FIG. **3** is a top view of mounting plate, adjustable plate and clamping loop in their normal position;

FIG. **4** is a partially cross-sectional view of this top view after the longitudinal adjustment of the clamping loop;

FIG. **5** is a diagrammatic view of individual parts;

FIG. **6** is a further embodiment.

In the drawing **1** identifies a clamping loop, **2** an adjustable plate and **3** a mounting plate. This mounting plate has holes at the front and rear end thereof which holes according to FIG. **2** serve to secure said mounting plate on the one instep portion **6** by means of rivets **4** and **5**. A bearing block **8** is secured to the other instep portion **7**. A toothed tensioning lever **10** is supported pivotally about the axis **9** on said bearing block **8**. As illustrated in FIG. **2**, the clamping loop **1** can engage the tooth spacings of this lever so that by rotating said lever in direction A, the buckle can be tensioned.

Two round holes **11** and **12** are provided in the mounting plate **3** in the illustrated advantageous embodiment. The round holes are connected through a narrow longitudinal slot **13**. A bolt **14** is secured to the adjustable plate **2** which overlaps the mounting plate **3**, said bolt gripping under the mounting plate with a flat head **15**. The bolt has, as can be seen from FIGS. **3** to **5**, such a diameter that it fits into the holes **11**, **12** and locks, in the illustrated position, the adjustable plate **2** on the mounting plate. This bolt is advantageously flattened on both sides **16**, **17** in such a manner that it forms a substantially rectangular cross section and can slide through the longitudinal slot **13** in the position **2'** of the adjustable plate **2**, which position is illustrated in dash-dotted lines in FIGS. **3** and **4**. Thus, for a longitudinal adjustment of the clamping loop **1**, it is only necessary to rotate said clamping loop together with the adjustable plate **2** from the normal position (FIG. **3**) through 90° into the dash-dotted position **2'** and to then move said adjustable plate according to FIG. **4** in direction L whereby the bolt **14** slides through the longitudinal slot **13**. The adjustable plate with the clamping loop **1** is then returned through 90° into the normal position as illustrated in full lines in FIG. **4**.

The above-described embodiment has not only the advantage of the simple longitudinal adjustment of the clamping loop without a tool, but has also the advantage that the clamping loop is not only pivotable in a conventional manner about a horizontal axis "a," but furthermore also about a vertical axis "b" formed by the bolt **14**, as is illustrated by the dash-dotted swinging positions **1'** and **1''** in FIG. **4**. This free swinging of the clamping loop with the adjustable plate **2** is desired because, during securing of the locking parts, the mounting plate **3** and the tensioning lever **10** often do not correspond in their longitudinal direction.

FIG. **5** illustrates that the flattened bolt **14** has a rivet pin **18** which as shown in FIGS. **1**, **2** can be formed into a rivet head. The bolt **14** is thereby supported with the shoulders **20** on the adjustable plate **2**. On the one hand, this provides a strong fastening of the bolt **14** on the plate **2**, and yet a free movement of said bolt opposite the mounting plate during the longitudinal adjustment is made possible.

If necessary, the bolt **14** can also be connected releasably to the adjustable plate by, for example, constructing the pin **18** as a screw pin and by providing for mounting a nut **21** which can be screwed onto said pin.

In the advantageous embodiment illustrated in FIGS. **1** to **4**, the mounting plate **3** is offset downwardly at both ends at **22** and **23** and also at both sides at **24** so that a hollow space **25** is created between instep portion **6** and mounting plate, in which hollow space the head **15** of the bolt **14** can move freely. Furthermore the end **26** of the mounting plate is advantageously bent to form a U to receive the edge **6***a* of the instep portion.

The mounting plate and the adjustable plate consist of sheet-metal parts whereby the clamping loop **1** is supported in a conventional manner pivotally about the horizontal axis a on the adjustable plate **2**.

FIG. **6** illustrates that, if necessary, three or more round holes **27** can be provided in the mounting plate and can be connected each through longitudinal slots **28** and **29**. As a further possibility, the bolt **30** secured to the adjustable plate can be flattened only on one side **31**.

The invention is not limited to the illustrated embodiment. Thus, if necessary the round holes and the longitudinal slot can also be arranged in the adjustable plate **2** while the flattened bolt **14** or **30** is secured to the mounting plate.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. Buckle on ski shoes consisting of a toothed tensioning lever pivotally arranged on the one instep portion and a longitudinally adjustable clamping loop which is secured to the other instep portion by means of a mounting plate and an adjustable plate and which can be hung into the tensioning lever, characterized in that two or more holes are provided in the one plate which holes are each connected through a longitudinal slot and are arranged in longitudinal direction of said plate and that a bolt fitting into said holes and forming a vertical swivel axis is secured to the other plate, which bolt is flattened transversely to the longitudinal direction of the plate in such a manner that — after the adjustable plate has been rotated for 90° — said plate can be adjusted longitudinally with respect to the mounting plate, whereby the flattened bolt slides through the longitudinal slot.

2. A buckle according a claim **1**, characterized in that the holes which are each connected through a longitudinal slot are arranged in the mounting plate secured to the instep portion and the bolt is secured to the adjustable plate overlapping said mounting plate, whereby said bolt grips under the mounting plate with a flat head.

3. A buckle according to claim **2**, characterized in that the mounting plate has rivet holes at the ends and is offset downwardly both at the ends and also at the sides.

4. A buckle according to claim **3**, characterized in that the one end of the mounting plate is bent to form a U to receive the edge of the instep portion.

5. A buckle according to claim 1, characterized in that round holes are provided in the one plate and the bolt is flattened on both sides in such a manner that it has approximately a rectangular cross section.

6. A buckle according to claim 5, characterized in that the flattened bolt has a rivet.

7. A buckle according to claim 5, characterized in that the flattened bolt has a screw pin.

8. A buckle according to claim 1, characterized in that the bolt is releasably connected to the adjustable plate.

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