Dec. 24, 1968 A. WELKER 3,418,004

MOUNTING BASE FOR A PORTION OF A SKI BINDING

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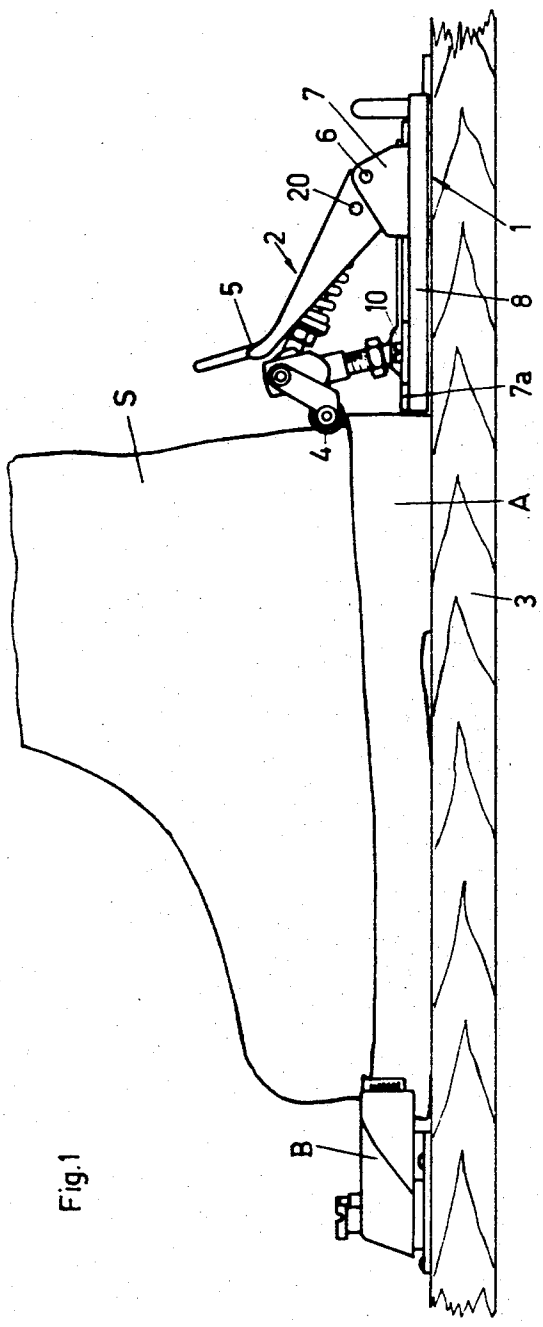

Fig.1

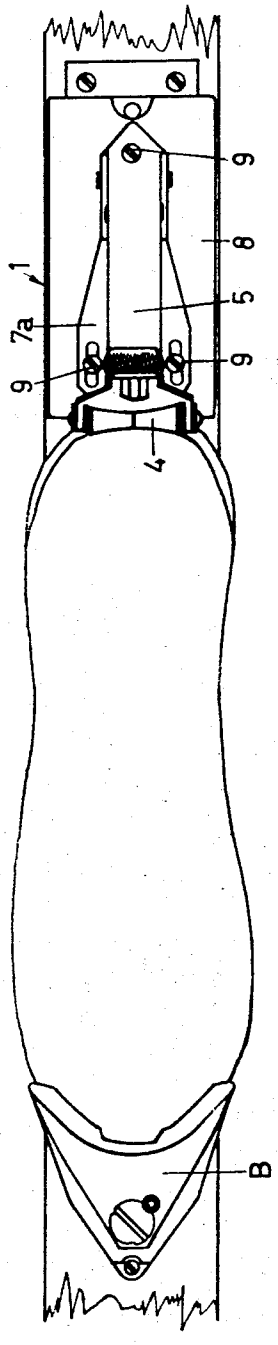

Fig.2

MOUNTING BASE FOR A PORTION OF A SKI BINDING

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Fig.3

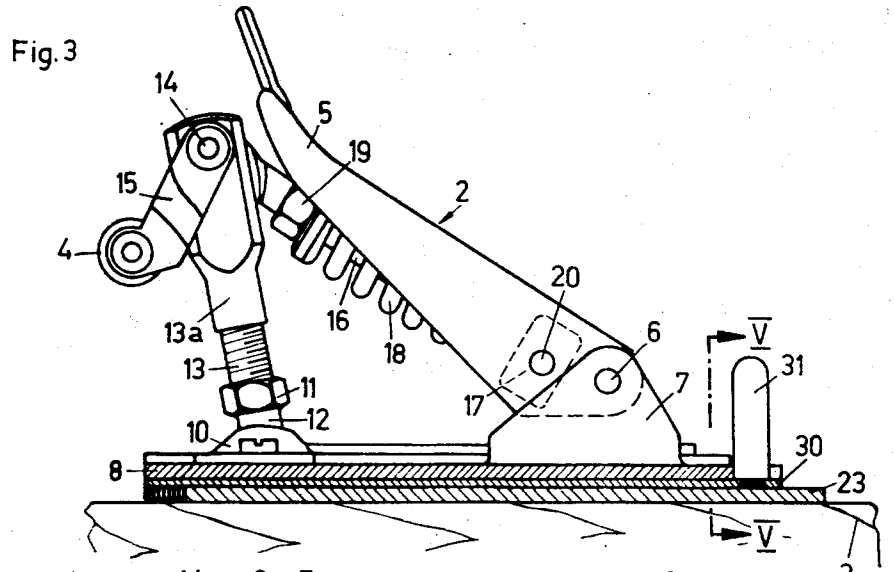


Fig.4

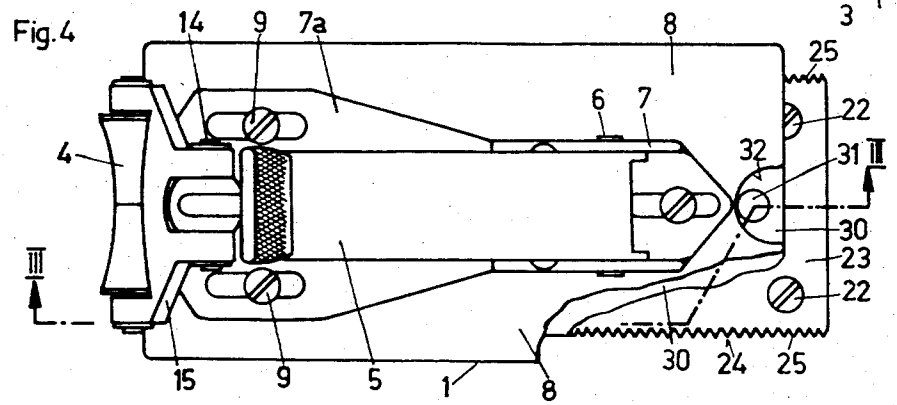


Fig.5

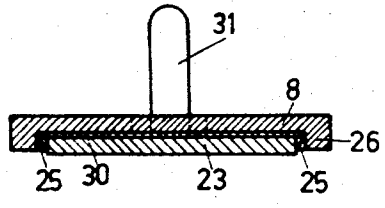
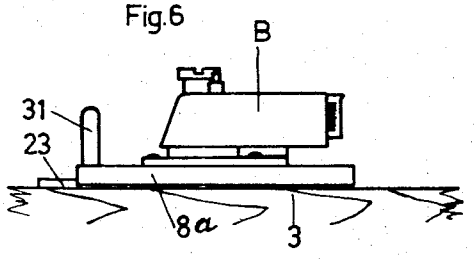


Fig.6



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MOUNTING BASE FOR A PORTION OF A SKI BINDING

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Fig.9

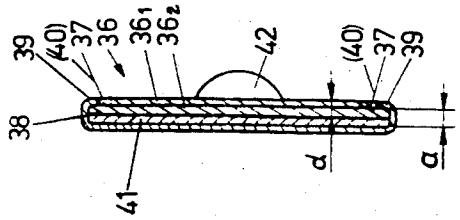


Fig.7

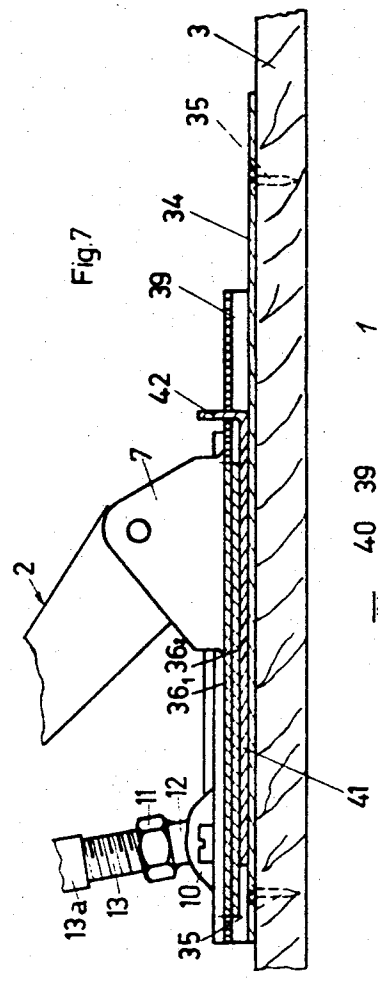
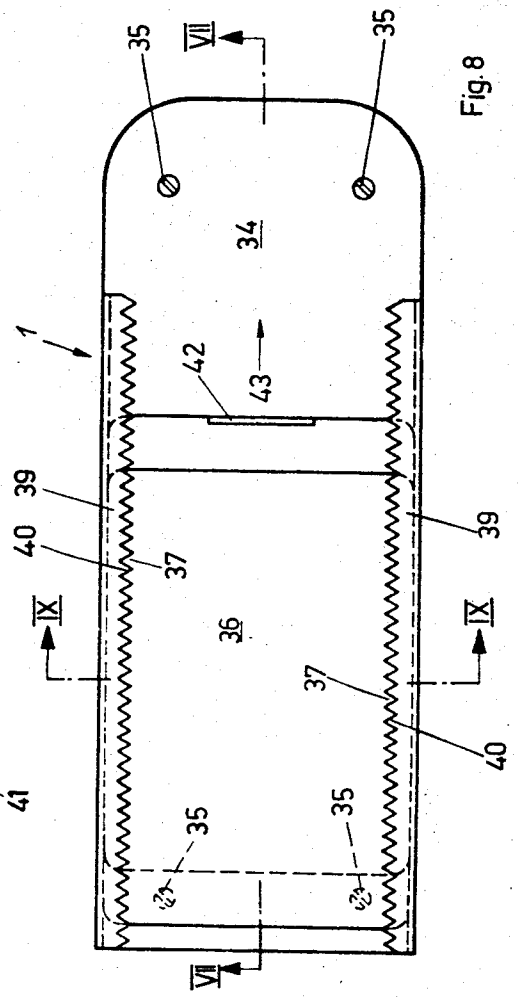


Fig.8



United States Patent Office 3,418,004 Patented Dec. 24, 1968

3,418,004

MOUNTING BASE FOR A PORTION OF A SKI BINDING

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4 Claims. (Cl. 280—11.35)

ABSTRACT OF THE DISCLOSURE

A longitudinally slidably adjustable plate carrying a part of a boot engaging ski binding is provided along its downwardly directed longitudinal edges with oblique serrations adapted to slide freely along oppositely disposed serrations on a base plate fixed to the ski. By inserting an intermediate plate between said slidably adjustable plate and said base plate the slidably adjustable plate is raised from the base plate thereby causing a locking engagement between the serrations on said two plates and a locking of the slidable plate in a selected position to the base plate.

The invention relates to a mounting base for a portion of a ski binding.

Cable free two-piece ski bindings are known whose two pieces, namely a forward support jaw for the toe of the boot and a rearward holding piece for the heel, are mounted separately on the ski. This mounting has to be done under careful consideration of the size of the ski boot and this is connected with several disadvantages which will be enumerated below.

It is the object of the invention to overcome these disadvantages. The mounting base according to the invention is distinguished by a base plate to be attached to the ski and a slidable adjusting plate to which a portion of the two-piece ski binding is attached. Each one of these plates is provided with at least one serration extending along opposed longitudinal edges, whereby these two opposed serrations are capable of being caused to mesh with each other in different positions of the adjusting plate with reference to the base plate, and means are provided to secure them in this position.

The invention will be described in more detail with reference to the accompanying drawings in which:

FIG. 1 is an elevation view of a ski binding equipped with a mounting base constructed in accordance with the invention;

FIG. 2 is a plan view of FIG. 1;

FIG. 3 is a vertical sectional view of the rearward portion of the ski binding firmly fastened to a mounting plate in an enlarged scale and along the broken line III—III of FIG. 4;

FIG. 4 is a plan view of FIG. 3 with small sections broken away;

FIG. 5 is a cross-sectional view along the line V—V of FIG. 3;

FIG. 6 is a side elevation view of a mounting base attached to the forward part of the ski;

FIG. 7 is a longitudinal sectional view of a second embodiment of the invention along the line VII—VII of FIG. 8 of a mounting base for a portion of a ski binding;

FIG. 8 is a top view of FIG. 7, and

FIG. 9 is a cross-sectional view along the line IX—IX of FIG. 8.

Referring to the FIGS. 1 to 5 of the drawing, a base plate **1** serves for mounting a rear portion **2** of a ski binding which firmly holds the heel A of the ski boot S on the ski **3**. For this purpose the ski binding portion **2** is provided for example with a pressure roller **4** which engages a rearwardly projecting portion of the heel A when a tensioning handle **5** is moved into its closed position (FIG. 1). This handle **5** is pivotal about an axis **6** in a bearing bracket **7** which is firmly fastened to an adjusting plate **8**, for instance by screws **9** which extend through slots in the flat extension **7***a* of the bracket. The latter also has on its base a semi-spherical elevation **10** which receives the cap-shaped end face of a short stud **12** firmly connected by a nut **11**. In engagement with the nut **11** is a threaded spindle **13** the upper end of which is threaded into an arm **13***a* whose upper end is traversed by a bearing pin **14**. Pivotally mounted on the pin **14** is one end of a lever **15** carrying at its other end the roller **4**. The bearing pin **14** further supports pivotally the upper end of a rod **16** the lower end of which is axially freely movable in a cross bar **17**. The cross bar **17** is movably mounted on a pin **20** traversing the handle **5**. A tension spring **18** abuts with one end the cross bar **17** and with its other end engages a stop **19** on the rod **16**. The FIGS. 1 and 3 clearly show that by a clockwise movement of the tensioning handle **5** the pin **20** swings arcuately around the axis **6** and thereby causes the presser roller **4** to move away from the ski boot which is set free and the ski **3** can be removed.

In such ski bindings the toe of the boot is held by a forward support jaw which usually is provided with a safety device, whereby the boot without using a cable is held in this support jaw merely in that the rear portion **2** mounted on the rear portion of the ski urges the heel not only downward against the ski, but at the same time urges the heel also forwardly. In mounting such ski bindings it is necessary to adjust the distance between the rear holding portion **2** and the support jaw B exactly to the length of the ski boot S. Therefore it is not possible to mount the binding already in the manufacturing plant but the mounting can be done only after the ski has been sold and it is sometimes difficult to find store personnel capable of properly mounting the binding. If the user buys another pair of boots or someone else wants to use the ski, another cumbersome mounting job is called for in order to readjust the binding on the ski.

To avoid these disadvantages the mounting base **1** is constructed as illustrated in the FIGS. 1 to 5. The adjusting plate **8** is slidably adjustably mounted on a base plate **23** which in turn is fixedly connected by screws **22** to the ski **3** in the manufacturing plant. The two longitudinal edges **24** of the base plate **23** are each provided with a serration **25** the individual teeth of which diverge in an obligue upward direction, as shown in FIG. 5. Over these longitudinal edges **24** extend downwardly directed marginal portions **26** of the adjusting plate **8**. The inner edges of the marginal portions **26** facing the edges **24** of the plate **23** are also provided with serrations similar to the serrations **25** and they are also chamfered. When the adjusting plate **8** is placed on the base plate **23**, the two mentioned serrations do not mesh since the edges of the marginal portion **26** facing the longitudinal edges **24** are spaced a distance from the same which is little more than the height of the serrations. Therefore, the adjusting plate **8** can easily be slidably displaced on the base plate **23**. This means that the adjusting plate **8** in combination with the holding portion **2** thereon is capable of being adjusted to any shoe size without requiring an expert for making such an adjustment.

As soon as the holding portion **2** including its pressure roller **4** are in a proper position, an intermediate plate **30** of a carefully selected thickness is slidably inserted between the base plate **23** and the adjusting plate **8**. This causes a raising of the adjusting plate **8** from the base plate **23** and its serrations come into meshing engagement with those of the base plate **23** which has the

result that the adjusting plate **8** is now solidly locked in position. The intermediary plate **30** is retained in position by friction but may be removed by means of a handle **31** attached to it when the adjusting plate **8** is to be readjusted. In actual use the handle **31** is arranged as closely as possible to the bearing bracket **7** and for this purpose a semi-circular recess **32** is provided in the rear edge of the plate **8**.

It is, of course, also possible to connect the bearing bracket **7** rigidly to the ski and to mount the forward toe support B to an adjusting plate **8***a*, as shown in FIG. 6. Also in this embodiment the adjusting plate is secured to a base plate by means of an intermediary plate, as described in the foregoing in connection with the rearward piece of the ski binding.

Another embodiment of the invention is illustrated in the FIGS. 7 to 9. On a base plate **34** attached by screws **35** to the ski **3** is placed an adjusting plate **36** on which is mounted the rearward holding portion **2**. The adjusting plate **36** is composed of two rectangular sheet metal pieces 36_1 and 36_2 placed one on top of the other and being secured together for instance by means of spot welds. The upper sheet metal piece 36_1 has a serration **37** along its two longitudinal edges, while the lower sheet metal piece 36_2 has smooth longitudinal edges **38** extending somewhat beyond the serration **37**.

The base plate **34** has longitudinal margins **39** which are parallel to each other and are twice bent about an angle of 90° to form inwardly open channels. These margins extend almost over the entire length of the plate **34** and their edges are provided with serrations **40**. The teeth and the gaps therebetween of the serrations **37** and **40** are of the same size so that the teeth of one serrate edge may engage the gaps of the other serrate edge. The space *a* (see FIG. 9) between the serrations **40** and the base plate **34** is equal to twice the thickness *d* of the adjusting plate **36**, and the width of the bottom sheet metal piece 36_2 is equal to the distance between the two upwardly directed portions of the longitudinal margins **39**; consequently, the adjusting plate **36** is displaceable on the base plate **34**, when it is placed directly on it, and it is guided by the longitudinal margins **39**.

In the illustrated position of the mounting base **1**, a slidable intermediary plate **41** is inserted between the base plate **34** and the adjusting plate **36**. The plate **41** is provided at its rear end with an upwardly bent lug **42** serving as a handle. The intermediary plate **41** keeps the adjusting plate **36** at such a distance from the base plate **34** that its serrations **37** mesh with the serrations **40** while the smooth longitudinal edges of the lower metal piece 36_2 engage the serrations **40**.

When the intermediary plate **41** by means of the handle **42** is pulled out of its position between the adjusting plate **36** and the base plate **34** into the direction of the arrow **43**, the adjusting plate **36** comes to lie on top of the base plate **34** and is now ready to be slidably displaced in any desired way, as described in the foregoing. If the adjusting plate **36** is raised so that the serrations **37** and **40** engage each other at a different place, it is again possible to insert the intermediary plate **41** whereby the adjusting plate **36** again is locked in its new position. It is apparent that in this simple manner the position of the adjusting plate **36** and therewith that of the boot holding portion **2** mounted on the adjusting plate **36** can be effortlessly adjusted to the length of any ski boot used at a time. Consequently, the entire ski binding or at least the mounting

base **1** can be mounted to the ski already in the manufacturing plant.

It is obvious that the adjusting plate **36** need not be composed necessarily of two pieces of sheet metal 36_1 and 36_2 but may also consist of a single piece made, for instance, by die-casting.

What I claim is:

1. A mounting base for a part of a ski binding, including a base plate for attachment to the ski and an adjustment plate to which said part is attached, said adjustment plate mounted for limited vertical movement relative to said base plate, said base plate and said adjustment plate having each two longitudinal parallel edges each provided with serrations thereon, the serrations on said two plates being adapted to mesh with each other in different positions of said adjusting plate with reference to said base plate, and an intermediary plate insertable between said two plates for causing said serrations on said two plates to mesh with each other and thereby lock said adjusting plate to said base plate in the position to which said adjusting plate has been adjusted.

2. A mounting base according to claim **1**, in which the serrations on said longitudinal parallel edges of said base plate are chamfered while said adjusting plate is provided with parallel marginal portions extending downward over said longitudinal edges of said base plate, the serrations of said adjusting plate being arranged on the inwardly facing edges of said marginal portions so as to face the serrations on the longitudinal edges of said base plate, the insertion of said intermediary plate effecting a raising of said adjusting plate and therewith causing an engagement of the serrations of the latter with those of said base plate.

3. A mounting base according to claim **1**, in which said base plate has two parallel longitudinal margins which are bent twice to form an inwardly open channel and the serrations are provided on said margins, said channel serving as a guide for said adjusting plate when the latter is placed upon said base plate, said adjusting plate being disposed with its edges in said channel and being provided along its longitudinal edges with two steps, of which one is formed with said serrations while the other one has a smooth edge extending beyond said serrations, said intermediary plate when inserted between said adjusting plate and said base plate causing said adjusting plate to be raised such a distance from said base plate that its serrations are caused to engage with those on the twice bent longitudinal margins of said base plate.

4. A mounting base according to claim **3**, in which said adjusting plate is composed of two pieces of sheet metal fixedly secured one on top of the other and of which the top piece is provided with serrations and the bottom piece has smooth edges.

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