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Gertsch et al.

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[54] **RELEASABLE SKI BINDING PARTIALLY MOUNTED IN A SKI BOOT SOLE**

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[57]

**ABSTRACT**

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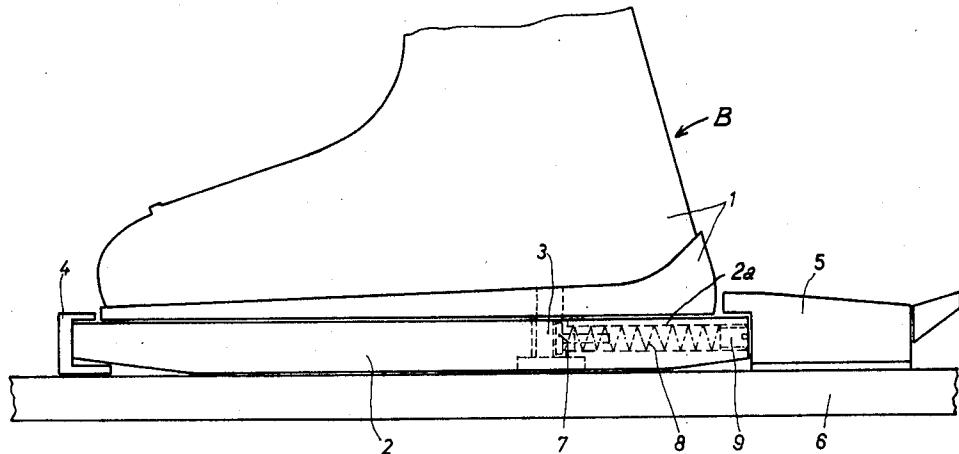
[58] **Field of Search... 280/11.35 K, 11.35 C, 11.35 R, 280/11.35 D, 11.35 A, 11.35 T, 11.35 H, 11.35 Y, 11.35 G**

[56] **References Cited**

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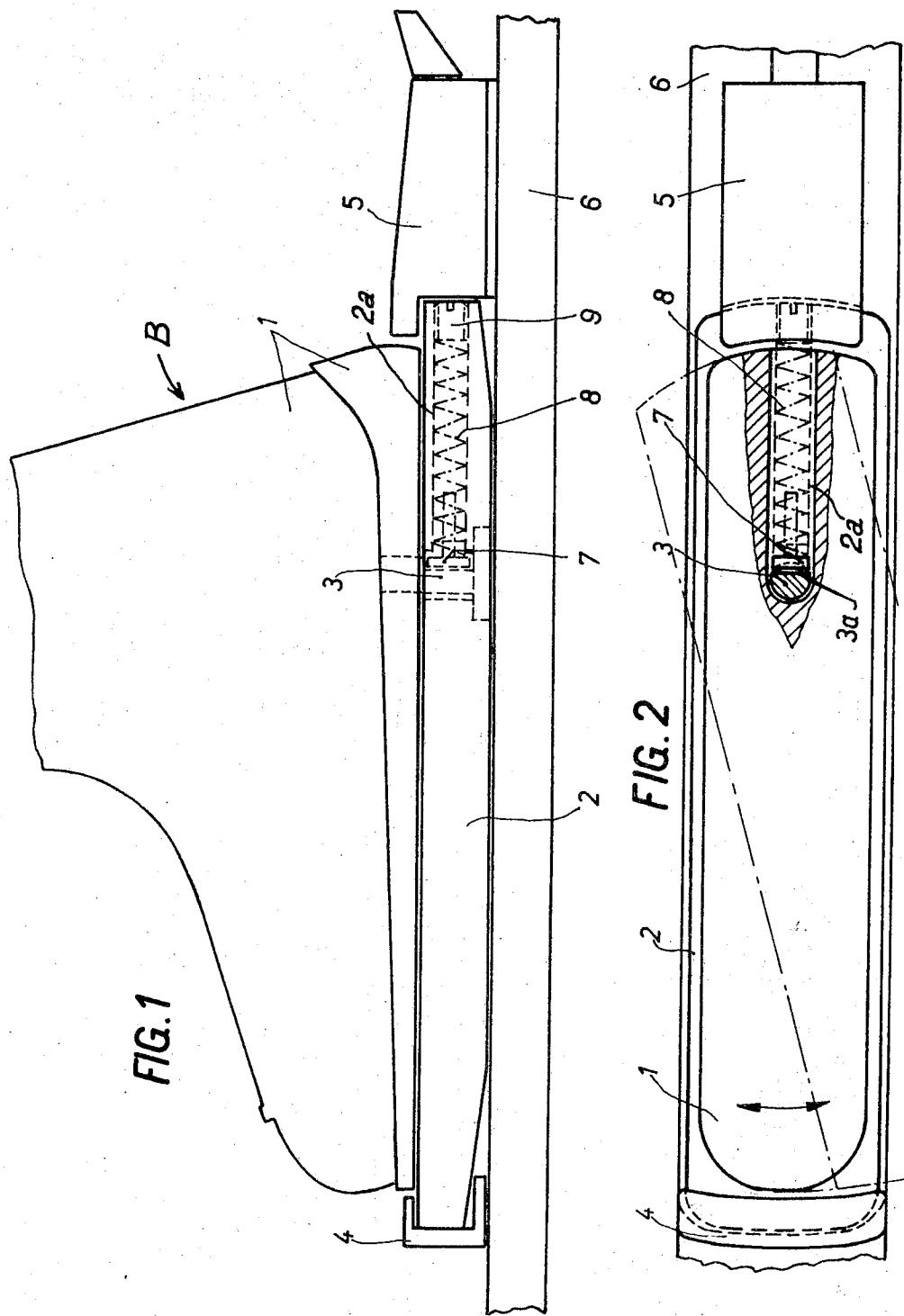
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**6 Claims, 2 Drawing Figures**



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3,854,740



## RELEASABLE SKI BINDING PARTIALLY MOUNTED IN A SKI BOOT SOLE

### BACKGROUND OF THE INVENTION

The present invention relates to the art of safety ski bindings and, more specifically, concerns a new and improved construction of releasable ski binding which is partially mounted at the sole of the ski boot.

Ski bindings installed at the ski boot sole are already known to the art, and these can be conveniently divided essentially into two groups:

For the first group of such type bindings the release mechanism mounted in the ski boot sole cooperates with holding elements arranged at the front, rear or beneath the boot at the ski. A major drawback with such arrangement resides in the fact that the ski boot sole slides upon the ski during the lateral release action, so that, just as is the case for conventional safety ski bindings, there arise considerable friction problems. Furthermore, both the ski boot sole as well as the release elements which protrude at the rear and front past the sole can be subject to wear, and consequently, can unfavorably influence the release forces, especially during lateral release.

With the second group of bindings of the aforementioned type the release mechanism is accommodated at a portion of the ski boot sole. During the release action the lower portion of the sole completely releases from the ski boot. The drawback of this arrangement can be appreciated in terms of the high costs, considerable weight and large volume of the construction. Furthermore, after release of the binding has occurred there is present the danger of contamination or fouling by dirt or other foreign particles as well as the formation of ice between the sole and the ski boot.

### SUMMARY OF THE INVENTION

Hence, it is a primary object of the present invention to provide an improved construction of safety ski binding which effectively and reliably overcomes the aforementioned drawbacks and disadvantages of the prior art constructions discussed above.

Still a further significant object of the present invention relates to a new and improved construction of releasable ski binding which is partially mounted in the sole of the ski boot, provides for a positive release action of the skier's boot from the ski during such time as dangerous skiing conditions are encountered demanding release of the binding, and wherein the releasable ski binding itself is relatively simple in construction, economical to manufacture, not readily subject to breakdown or malfunction, and fulfills the intended release action quite satisfactorily, thereby providing increased safety for the skier.

Now in order to implement these and still further objects of the invention, which will become more readily apparent as the description proceeds, the invention contemplates that the ski boot sole and the upper portion of the ski boot are connected for rotation with one another, however retained against rotation by the mechanism responsible for lateral release action, and that the mechanism responsible for the vertical release action is arranged upon the ski. This arrangement is of exceedingly simple construction. Therefore it can be fabricated inexpensively, and the mechanism which is to be installed or mounted in the sole of the ski boot can possess small weight and small volume.

### BRIEF DESCRIPTION OF THE DRAWING

The invention will be better understood and objects other than those set forth above, will become apparent when consideration is given to the following detailed description thereof. Such description makes reference to the annexed drawing wherein:

FIG. 1 is a side view illustrating a ski boot equipped with the releasable ski or safety binding of this development; and

FIG. 2 is a top plan view of the arrangement of FIG. 1, however on a smaller scale.

### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Describing now the drawing there will be recognized a ski boot B having a ski boot upper portion or upper 1 which is connected with the ski boot sole 2 by means of a pivot pin 3 or equivalent structure and may be considered to define a cam-like member. The ski boot sole 2 is retained at the ski 6 at its front region by means of a holder or holddown mechanism 4 and at the rear by means of an automatic heel holddown mechanism 5 of conventional construction. The automatic heel hold-down mechanism 5 allows for forward or vertical release of the ski boot upper 1 with the ski boot sole 2. By means of a resilient element, such as a spring 8, which is located in a recess 2a of the ski boot sole 2 and acts through the agency of a piston 7, which may be considered to define a cam follower, upon a segment-shaped section 3a of the pivot pin 3, it is possible to limit the torsional force which must be exerted during lateral release upon the ski boot upper 1. The tension of the spring 8 and therefore the hardness of the release action can be conveniently adjusted by an adjustment screw 9, in other words set to a desired value. The mechanism for the lateral release action can act through the gap or space between the upper portion and the sole, to which end the spring can be accommodated together with a locking or engaging body in the sole or in the upper portion of the ski boot.

Furthermore, it should be understood that the remaining components of the binding arranged upon the ski, which for convenience in illustration have not been particularly shown since they are not necessary for understanding the concepts of this development, also can be designed with respect to providing a rearward release action.

While there is shown and described present preferred embodiments of the invention, it is to be distinctly understood that the invention is not limited thereto, but may be otherwise variously embodied and practiced within the scope of the following claims. ACCORDINGLY,

What is claimed is:

1. A releasable binding for skis and partially mounted in the ski boot sole of a ski boot having a ski boot upper and ski boot sole, the improvement comprising said ski boot sole and ski boot upper being connected for rotation with one another, a mechanism for lateral release of the ski boot for retaining the ski boot sole and the ski boot upper against rotation, said lateral release mechanism including a spring-loaded locking mechanism mounted in the ski boot, and a mechanism for the vertical release of the ski boot which is arranged upon the ski, said ski boot upper and said ski boot sole form two parts of the ski boot, said spring-loaded locking

mechanism includes pivot means defined by a cam-like member, a cam follower member cooperating with the cam-like member, and said spring biasing said cam follower towards the cam-like member, said cam-like member being carried by one part of said ski boot and said cam follower being carried by another part of said ski boot.

2. The releasable binding as defined in claim 1, wherein said pivot means is a pivot pin, the ski boot upper carries said pivot pin which engages with the ski boot sole, said spring-loaded locking mechanism having a spring located in a recess of the ski boot sole, and an adjustment screw against which bears said spring.

3. The releasable binding as defined in claim 2, wherein the spring-loaded locking mechanism defines

said lateral release mechanism.

4. The releasable binding as defined in claim 2, wherein said cam-like member is defined by said pivot pin.

5. The releasable binding as defined in claim 1, wherein said lateral release mechanism is totally mounted in the ski boot.

6. The releasable binding as defined in claim 1, wherein the ski boot upper carries said pivot means which engages with the ski boot sole, said lateral release mechanism incorporating a spring-loaded locking mechanism having a spring, and an adjustment screw against which bears said spring.

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