

- [54] **SKI BINDING**
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- [58] Field of Search.....280/11.35 C, 11.35 K,
280/11.35 Y, 11.35 R, 11.35 D

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[57] **ABSTRACT**

Means for mounting ski binding components onto a ski in such a manner as to permit flexing of the ski without varying the distance between the ski binding components. A rigid plate is mounted in spaced relation to an upper surface of the ski by means which permit at least one end of such plate to be longitudinally translatable with respect to said ski. Preferably one end of the plate is pivoted to the ski and the other end of the plate connected thereto through a slot and pin arrangement. Thus the shape of the plate remains unaffected by flexing of the ski. The boot engaging components of the ski binding are then mounted on said plate and remain at a constant distance from each other regardless of any flexing which may occur in the ski.

10 Claims, 6 Drawing Figures

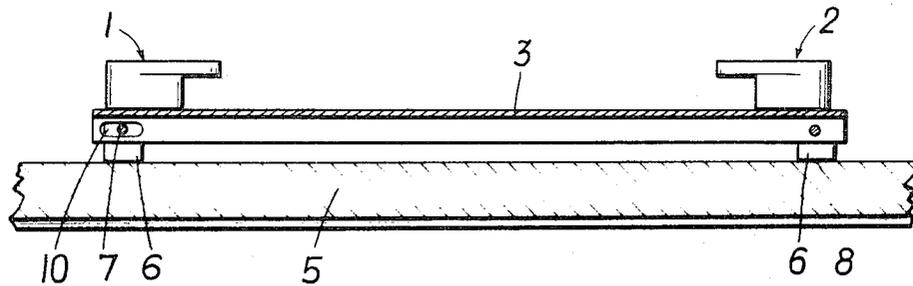


FIG. 1

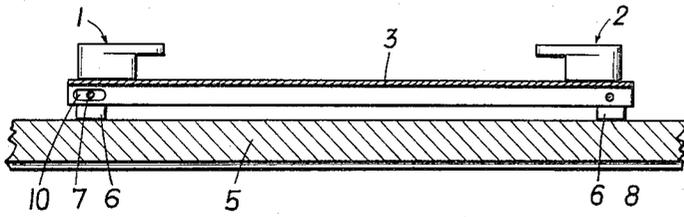


FIG. 2

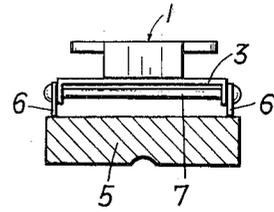


FIG. 3

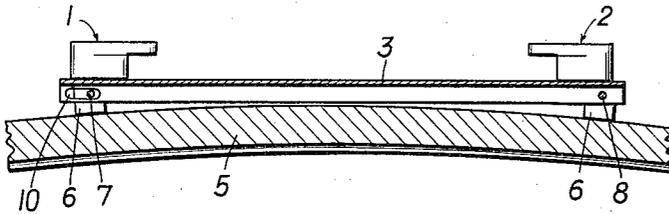


FIG. 4

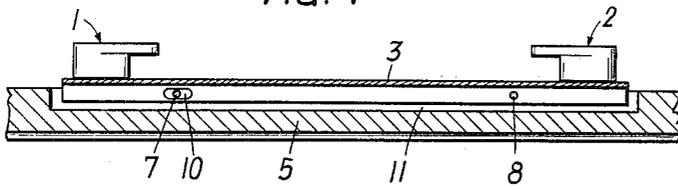


FIG. 5

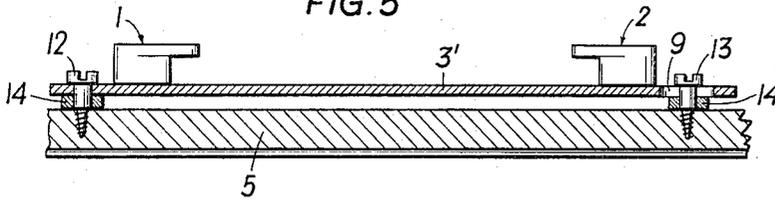
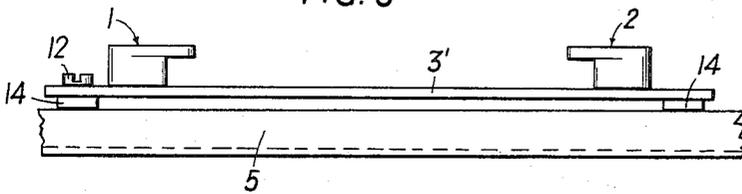


FIG. 6



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SKI BINDING

The invention relates to a ski binding which is mounted to a plate arranged on a ski.

In most cases ski bindings are mounted directly onto the ski. However, if during use one skis over a rough terrain, the ski bends downwardly and upwardly. Thus, the distance between the ski binding components changes so that, if the ski binding parts are not moveable in longitudinal direction, the ski boot tends part of the time to be compressed and damaged and part of the time to be held only loosely and possibly actually to be released from the binding.

Therefore ski bindings have already been produced in which one ski binding part, particularly the heel holder, is arranged to move in the longitudinal direction in response to the force of a compression spring. While this spring effectively balances the distance variations of the ski binding parts, nevertheless, the holding forces still vary sufficiently that there is continuing danger of an opening of the binding occurring too soon or too late and thus a continuing risk of injury.

It is also known to mount the ski binding parts on a plate secured to the ski. This plate, however, either follows the curvatures of the ski through which the distance between the ski binding parts is still changed in the same manner as above mentioned or the ski is stiffened and its elasticity is affected.

The purpose of the invention is to avoid these disadvantages and yet to produce a device in which the distance between the ski binding parts is not affected by the flexing of the ski.

This purpose is attained by providing a plate spaced from the ski and at least at one point supported for movement relative to the ski in longitudinal direction of the ski. Thus, the ski can be bent without changing the distance between the ski binding parts.

The subject matter of the invention is illustrated by several exemplary embodiments in the drawings, in which

FIGS. 1 and 2 illustrate views associated with one another of one embodiment of the invention.

FIG. 3 illustrates this embodiment on a flexed ski.

FIGS. 4 to 6 illustrate three further embodiments of the invention.

As shown in FIGS. 1 to 3, the ski binding parts 1,2 are mounted onto a relatively rigid plate 3. In the embodiment of said FIGS. 1-3, said plate is shaped and positioned as an inverted U. Supports 6 which carry pivot pins 7,8 are provided on the ski 5, the axes of which are parallel and perpendicular to the longitudinal axis of the ski 5. The plate 3 by its downwardly directed flanges is supported pivotally on the axis 8 and through the slotted holes 10 is both pivotally and translatably supported on the pin 7. Thus, the plate 3 is not mounted directly on the ski 5 but is spaced therefrom. If the ski is flexed, as is illustrated in FIG. 3, the supports 6 pivot about the pins 8 and the pins 7 move as needed in the slotted holes 10. Through this manner of support, the ski 5 can bend in both directions without stressing the plate 3 and thus without varying the distance between the ski binding components.

A somewhat similar construction is illustrated in FIG. 4. It differs from FIGS. 1 to 3, however, in that the plate 3 is arranged with the pins 7,8 in a recess 11 of the ski 5. Thus, the plate 3 is spaced from the base surface of the recess 11, said space again making possible the flex-

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ing of the ski without influencing the plate 3 and/or ski binding parts 1,2.

In the construction shown in FIG. 5, there is provided a base plate 3' which is here shown without flanges but still has sufficient stiffness to remain substantially flat during normal use and flexing of the ski. The plate 3' is secured on the ski 5 by means of screws 12,13 which extend through interposed spacers 14. Slotted holes 9 are provided at one end of the plate 3', such as in cooperation with the screws 13. Thus, if the plate 3' bends upwardly or downwardly, the screws 13 can slide in the slotted holes 9.

FIG. 6 corresponds primarily to FIG. 5. Here, however, the plate 3' is secured on one end by the screws 12 and merely rests without any fastening on the other end on the spacer 14.

The invention is, of course, not limited to the illustrated embodiments. Those skilled in the art will recognize other embodiments which will lie within the scope of the invention.

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

1. In a ski binding arrangement having ski binding components mounted onto a rigid plate, said plate in turn being mounted onto a flexible ski, the improvement comprising means for supporting said rigid plate in a vertically spaced relation to said ski solely at a pair of longitudinally spaced locations on said ski, said supporting means consisting solely of a pair of supports secured to said ski and fastener means for pivotally securing at least one of said supports to said rigid plate at one of said locations for movement about a horizontal axis perpendicular to the longitudinal axis of said ski and relative movement permitting means for supporting said rigid plate at the only other one of said supports for pivotal movement about an axis parallel to said first mentioned axis and for translational movement relative to said rigid plate in response to a flexing of said ski whereby the flexibility of said ski is unaltered by preventing resistance being developed by the connection between said rigid plate and said support means.

2. The improvement according to claim 1, wherein said relative movement permitting means includes means defining a slotted hole extending longitudinally of said plate in which pivot means is longitudinally movably supported, said pivot means being secured to said other one of said supports.

3. The improvement according to claim 1 wherein the upper surface of said ski is interrupted by a recess and wherein said support means supports said rigid plate in spaced relation to the base surface of said recess.

4. A device for mounting boot engaging ski binding components onto a ski, comprising:
an inverted U-shaped plate of sufficient stiffness to remain substantially planar during normal use and flexing of the ski;
means for pivotally mounting said plate to the ski at one location thereon in spaced relation to the ski;

means for pivotally and longitudinally translatably mounting to said ski another location on said plate longitudinally spaced from the first location and maintaining the spaced relationship of said plate from the adjacent opposed surface of said ski;

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whereby when boot engaging components are mounted on said plate said ski may flex in normal use thereof without varying the longitudinal spacing between said components.

5 5. The device as defined in claim 4 wherein said longitudinal translation is obtained by a pin and slot arrangement.

6. The device as defined in claim 5, wherein said slot is located in said plate and the pin extending through said slot is mounted on said ski. 10

7. The device as defined in claim 5, wherein said slot is located in the downwardly extending flanges on said plate and the pin is horizontally aligned and extends through said slot.

8. The device as defined in claim 4 wherein said opposed surface is the upper surface of the ski. 15

9. The device as defined in claim 4 wherein said opposed surface is the bottom of a recess provided in the upper surface of the ski.

10. A device for mounting boot engaging ski binding components onto a ski, comprising: 20
a rigid plate separate from said ski and having sufficient stiffness to remain planar during normal use

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and flexing of the ski;

a pair of longitudinally spaced support means fixedly mounted on said ski for vertically spacing said plate from an adjacent opposed surface on said ski;

means for pivotally securing said plate to one of said support means about a fixed horizontal axis relative to said ski and in vertically spaced relation to the ski;

means for permitting a relative longitudinal movement between said plate and the other of said support means while maintaining the spaced relationship of said plate from the adjacent opposed surface of said ski; and

longitudinally spaced boot engaging components mounted solely on said plate, the connection of a boot to said boot engaging components and said plate being solely accomplished by said boot engaging components mounted on said plate, whereby said ski may flex in normal use thereof but said plate will not flex to vary the longitudinal spacing between said components.

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