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T. G. SMOLKA

3,605,288

DEVICE FOR DEMONSTRATING SKI BINDINGS

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3 Sheets-Sheet 2

FIG. 4

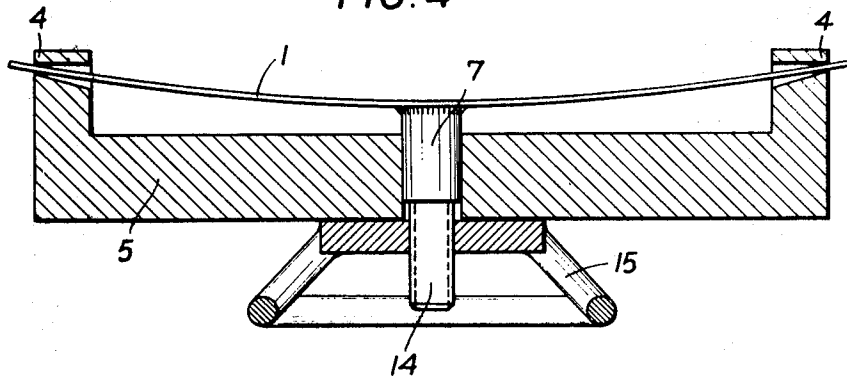


FIG. 5

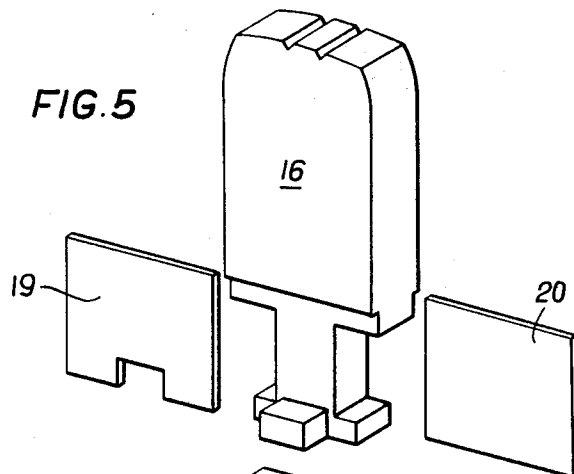
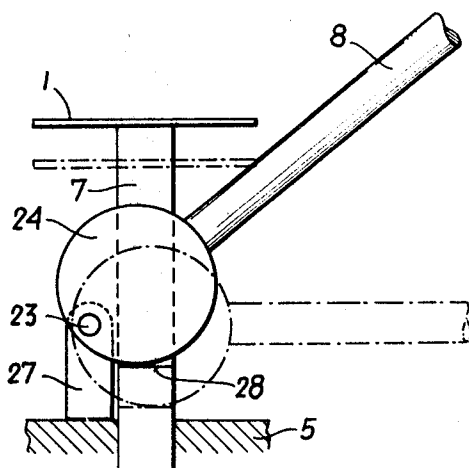
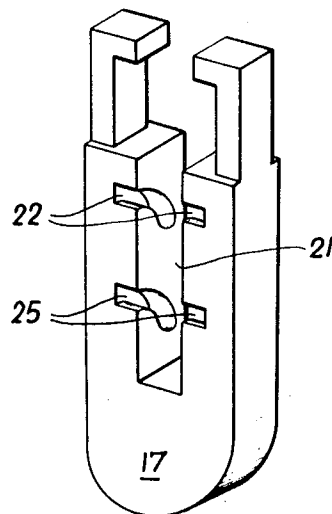


FIG. 8



INVENTOR
THOMAS G. SMOLKA

BY
Woodhams, Blanchard & Flynn
ATTORNEYS

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T. G. SMOLKA

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FIG. 6

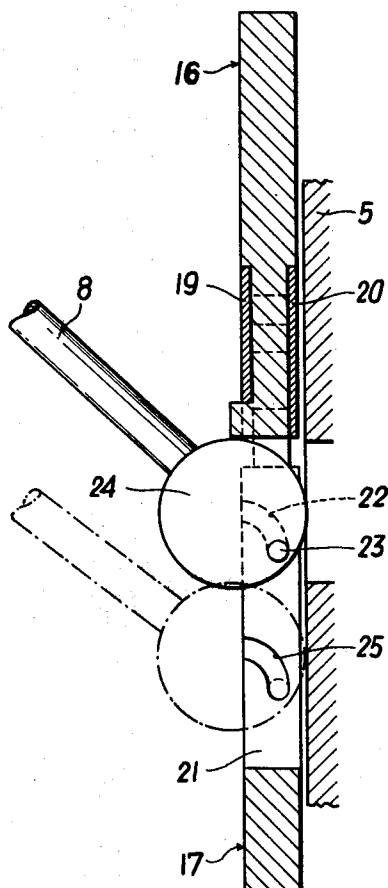
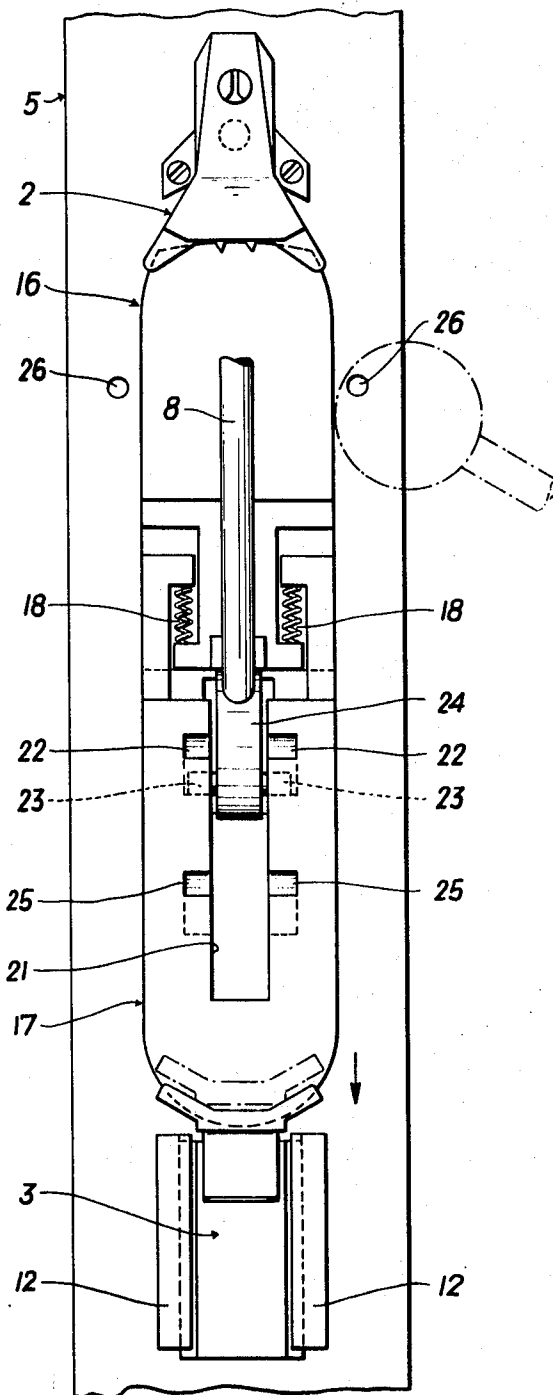


FIG. 7



INVENTOR
THOMAS G. SMOLKA

BY
Woodhams, Blewett & Flynn
ATTORNEYS

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3,605,288

DEVICE FOR DEMONSTRATING SKI BINDINGS
Thomas G. Smolka, Vienna-Mauer, Austria, assignor to
Wiener Metallwarenfabrik Smolka & Company,
Vienna-Mauer, Austria

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6 Claims

ABSTRACT OF THE DISCLOSURE

A device for demonstrating ski bindings in which the ski bindings are mounted on a base plate and a shoe or a model formed like a shoe sole in arranged between the binding parts. The plate is supported for flexing or the model is supported for longitudinal movement in order to demonstrate the longitudinal, or slide, elasticity of a binding part.

The invention relates to a device for demonstrating ski bindings in which a ski binding is mounted on a base plate and a shoe, or a model formed like a shoe sole, is received between the parts of such binding.

Devices for demonstrating ski bindings are already known with which demonstration may be made of the sideward yielding and release of the ski bindings as well as the upward yielding and release of same, as they, for example, will occur during a fall forwardly. While these devices fulfill their purpose as thus far stated, it has so far not been possible to demonstrate in a simple manner that a binding also exerts a thrust against the shoe. If, for example, the longitudinal elasticity of a cableless heel tensioning means were to be shown, the primarily known binding had to be moved back by hand which required great strength.

A longitudinal elasticity is generally required in ski bindings. It happens quite often during skiing that the ski bends. This somewhat reduces the space between the binding parts. If the binding parts should be arranged fixedly on the ski, they would longitudinally compress the shoe sole which would damage both the shoe sole and the binding components. Therefore, at least one binding part is preferably constructed with some longitudinal elasticity so that this binding part can yield during such flexing of the ski.

The purpose of the invention is to demonstrate by means of a demonstrator device this longitudinal elasticity which is required in practice. To attain this purpose the invention provides that for demonstrating the longitudinal yielding of a binding part, the base plate is supported in a manner to permit same to bend or the model is supported so that it can itself move.

According to a further characteristic of the invention, the base plate rests on two supports and is connected in its central zone to a lever system. The plate is advantageously connected to a guide and actuating portion which is engaged by a lever which is pivotally supported at one end. A spring is supported on said actuating portions. In one particular construction, the base plate is connected to an actuating portion which has a threaded member on which there is arranged an approximately handwheel-shaped nut which is itself supported on the device.

In a further construction of the invention, the model consists of two parts which are movable to one another which parts are held with respect to one another by one or more springs. One of the model parts has one or more recesses into which one or more bolts which are eccentrically arranged on a disk are receivable. The thus eccentrically supported disk is provided with a lever-like handle

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and contacts the other model half upon suitable rotation thereof to effect a relative movement of both model halves with respect to one another.

Further recesses can be provided so that the upward and sideward yielding can also be demonstrated with the eccentric disk.

The subject matter of the invention is shown for illustrative purposes by the several embodiments appearing in the drawings, in which:

FIGS. 1 and 2 illustrate a demonstrator device of the invention in two different positions.

FIG. 3 illustrates a detail seen in the direction of the arrow III of FIG. 1.

FIG. 4 illustrates a different exemplary embodiment of the invention.

FIGS. 5 to 7 illustrate a further possible modification whereby FIGS. 6 and 7 are sectional planes associated with one another and FIG. 5 is an inclined sectional plane of a model of a shoe sole.

FIG. 8 illustrates a further embodiment of the invention.

According to FIGS. 1 to 3, a front jaw 2 and a heel tensioning means 3 are mounted on a base plate 1 adjacent the ends thereof. This plate 1 is supported outboard of the members 2 and 3 on supports 4 of the demonstrator platform 5. A model 6 which has the shape of a shoe sole is clamped between the binding parts 2 and 3. The plate 1 is rigidly connected to the actuating portion 7 approximately in the center. A lever 8 is pivotally supported at its one end by the pivot 9 and a pin 10 which is arranged on the actuating portion 7 engages a slot 11 of the lever 8.

When the lever 8 is operated, the base plate 1 with the binding parts thereon is pulled downwardly and assumes the curved position as shown in FIG. 2. This curving effectively reduces the distance between the binding parts so that the heel tensioning means 3 is moved backwardly on its rail 12. This movement can be clearly recognized in comparing FIGS. 1 and 2. In returning the lever, which can also be done automatically by the spring 13 which is supported on the actuating portion, the plate 1 returns to its straight position of FIG. 1. The heel binding 3 then slides back to its original position due to its own longitudinal, or slide, elasticity on the rail 12.

In FIG. 4, the actuating portion 7 has a threaded member 14 on which an approximately handwheel-shaped nut 15 is arranged. By rotating said nut 15, which is supported on the platform 5, the plate 1 is bent as before. By rotating the nut 15 in opposite direction, the plate 1 returns to the straight position. This base plate 1 is here constructed resiliently so that it tends at all times to assume its horizontal position.

According to the construction of FIGS. 5 to 7, the model is formed like a shoe and consists of two halves end parts 16 and 17. These model halves 16, 17 are guided longitudinally to one another and, as can be particularly seen in FIG. 7, springs 18 are arranged therebetween and tend to maintain both model halves 16, 17 with respect to one another in such a manner that they assume their shortest dimension. In the zone of the guide means there are provided cover or guide plates 19, 20 which prevent a raising of one portion of the model with respect to the other.

The model half 17 has a slot-shaped recess 21. Further recesses 22 are provided adjacent said slot 21. A camming disk 24 which is provided with a lever 8 has eccentrically arranged bolts or pins 23 on both sides. These bolts are guided into the recesses 22. If the disk 24 is rotated, its peripheral face contacts the adjacent edge of the second model half 16 and both model halves are moved relatively to one another against the pressure of

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the relatively weak springs 18 and the pressure of the longitudinal elasticity of the binding. This causes the heel binding 3 to move backwardly in the rails 12 from the position indicated in dash-dotted lines to the position indicated in full lines. In moving the lever 8 with the eccentric disk 24 in the opposite direction, both model halves 16, 17 return together again and the heel binding slides into the position which is indicated in dash-dotted lines. In the plan view of FIG. 7, the guide plate 19 is not illustrated in order to better illustrate the relationship of the two model halves 16, 17.

With this device it is also possible advantageously to demonstrate the vertical and lateral elasticity of a binding and also the upward and side release thereof. To demonstrate the elasticity and release in an upward direction, the lever 8 is positioned with the bolts 23 in the recesses 25. The disk 24 is then caused to bear against the platform 5 and upon a rotation of the lever 8, the model halves 16, 17 are lifted in an upward direction. In demonstrating the side elasticity or the side release, the lever 8 is placed with one bolt 23 in one of the bores 26 and is rotated. The eccentric disk 24 thereby presses the model halves 16, 17 toward the side thereof.

In FIG. 8, the bolts 23 are placed into a fixed abutment 27 and the disk 24 is supported on a step-shaped shoulder 28 of the guide portion 7. During rotation of the lever 8, the plate 1 is again bent downwardly.

The invention is not limited to the illustrated exemplary embodiments. A number of further modifications are possible all of which will lie within the scope of the invention. For example, the plate 1 could be supported in its supports by means of pivotal joints. It is also possible to arrange the plate 1 to be bendable in an upward direction.

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

1. A device for demonstrating ski bindings, comprising in combination:

a flexible base plate;

toe and heel engaging means atop and adjacent the ends of said base plate for gripping a model of a ski shoe sole therebetween and supporting same with respect to said base plate;

means supporting at least one of said toe and heel engaging means for longitudinal movement with respect to said base plate;

means for supporting said base plate adjacent and outboard of said toe and heel engaging means;

manually operable mechanical advantage, tensioning means including a post rigidly fixed to the underside of said flexible base plate and depending therefrom, said post being located intermediate the locations of said toe and heel engaging means, and manually actuable, force multiplying means engaging said post for flexing the intermediate portion of said base plate downwardly away from said model to cause outward longitudinal movement along said base plate of said one of said toe and heel engaging means; whereby to demonstrate the ability of said one of said toe and heel engaging means to move longitudinally of said base plate.

2. A device according to claim 1 in which said means

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for supporting said base plate comprises a platform which engages said base plate at spaced locations for supporting same.

3. A device according to claim 2 wherein said post is threaded and projects through an opening in said platform and said force multiplying means comprises a nut threadedly engaged with the threaded portion of said post on the side of said platform opposite said base plate whereby movement of said nut relative to said threaded post causes flexing of said base plate.

4. A device according to claim 2 wherein said force multiplying means includes lever means cooperating with said post and platform to exert a force on said base plate to cause flexing thereof.

5. A device for demonstrating ski bindings, comprising in combination:

a base plate and means supporting same;

toe and heel engaging means and means supporting same on said base plate, at least one of said toe and heel engaging means being movable longitudinally with respect to said platform and said supporting means thereof;

a shoe model engaged at the ends thereof and supported with respect to said base plate by said toe and heel engaging means, said shoe model comprising first and second longitudinally arranged end parts capable of longitudinal movement with respect to each other;

manually operable, mechanical advantage means for moving the adjacent one of said first and second parts longitudinally of said base plate and toward said one of said heel and toe engaging means engaged therewith;

whereby to demonstrate the ability of said one of said heel and toe engaging means to move longitudinally of said base plate.

6. A device according to claim 5 including springs disposed between said first and second end parts and operatively arranged for urging said parts toward each other and in which said mechanical advantage means includes a camming element pivotally supported with respect to one of said end parts and including means bearing in camming relation on the other of said end parts and having lever means actuable for moving said end parts apart against the urging of said springs.

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HARLAND S. SKOGQUIST, Primary Examiner

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