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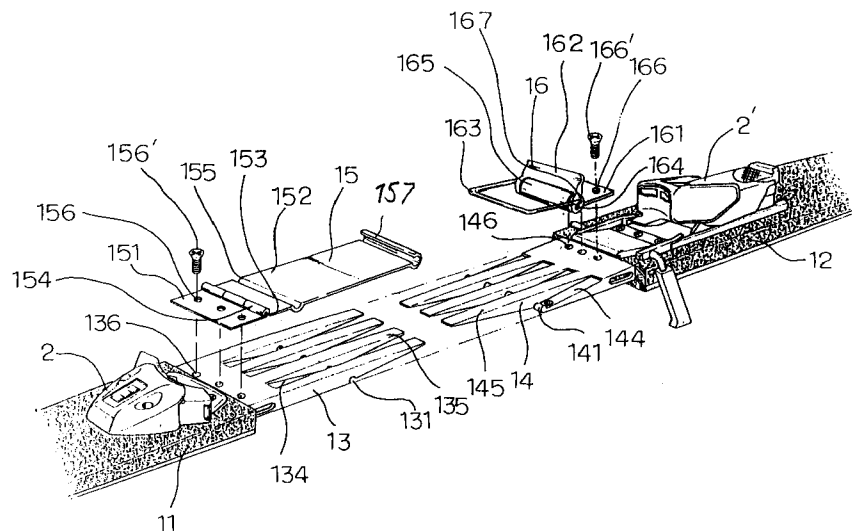
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(54) Ski with divisible board

(57) The divisible ski board has front and rear parts (11, 12) that are selectively integrated into a single board by a board connecting assembly. In the board connecting assembly, front and rear clasps (13, 14) are fixed to the junction ends of the parts, respectively. Each clasper (13, 14) has a plurality of teeth (135, 145) spaced out with regular bays (134, 144). The rear clasper (14) has a stop protrusion (141), while the front clasper (13) has a stop groove (131) engaging with the stop protrusion (141). The above assembly also

includes a hook (15) and a buckle (16). The hook (15) is mounted to the front part (11) and has a hook ring (157) while the buckle (16) is mounted to the other part (12) and is selectively buckled on the hook (15). The buckle (16) includes a buckle ring (163) which selectively engages with the hook ring (157). A lever (162) is coupled to the buckle ring (163) and is selectively rotated in opposite directions in order to tighten or loosen the buckle ring (163) engaging with the hook ring (157).

FIG. 3



EP 0 819 453 A2

Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates, in general, to skis used for skiing and, more particularly, to a structural improvement in such skis for selectively dividing a ski board into two parts, that is, front and rear parts, thus allowing the skis to be easily and simply carried by vehicle without using any additional ski carrier and to be stored without wasting space out of ski season.

2. Description of the Prior Art

A typical ski generally comprises an integrated long board and a binder assembly as disclosed in U.S. Patent Nos. 4,914,928 and 5,191,774. The integrated long board of the ski has three layers, that is, the top shell, middle layer and bottom shell, while the binder assembly is mounted to the board and is used for binding a ski boot to the board.

The construction of a typical ski is shown in Fig. 1. As shown in the drawing, a binder assembly 2 and 2' is mounted to the middle portion of an integrated long board 1. The above board 1 is formed of a synthetic resin, while the binder assembly comprises front and rear binders 2 and 2' which are spaced apart from each other. The binders 2 and 2', which are used for binding the nose and heel of the boot to the board 1 respectively, are tightly mounted to the board 1 using, for example, set screws.

As well known to those skilled in the art, a skier typically selects ski boards having a length which is nearly equal to one's height. In this regard, the length of the adult ski boards having the integrated construction is substantially long enough to be an inconvenience to users while they are carried by vehicle. That is, the integrated adult ski boards can not be placed in the trunk of a car, but must be carried by an additional carrier which is typically mounted to the roof of a vehicle. However, the ski carrier is an expensive piece of equipment thus forcing excessive costs on the user. The ski carrier also wastes labor and takes too long to attach or remove from a vehicle. Furthermore, as skiing is a winter-season sport, the skis with the long boards must be stored out of season thus wasting space. In this regard, the skis with the integrated long boards are inconvenient to the users.

SUMMARY OF THE INVENTION

It is, therefore, an object of the present invention to provide a ski with a divisible board in which the above problems caused by the typical skis with the integrated board can be overcome and which board can be divided into front and rear parts while the ski is carried by a vehi-

cle or is stored out of season, thus being convenient to users.

In order to accomplish the above object, a ski according to the invention comprises a divisible board and a boot binder. The divisible board comprises front and rear parts which are selectively integrated into the board by a board connecting assembly. The board connecting assembly includes means for claspings the front and rear parts in order to primarily couple the parts together into a single board. The claspings means is provided on the junction ends of the parts. The board connecting assembly also includes means for buckling the primarily-coupled parts in order to fix the coupled state of the parts thereby finally integrating the parts into a single board.

The above claspings means comprises front and rear clasps which are fixed to the junction ends of the parts, respectively. Each of the clasps has a plurality of teeth spaced out with regular bays. One of the clasps has a stop protrusion, while the other clasper has a stop groove engaging with the stop protrusion to prevent separation of the clasps even when the parts are horizontally pulled in opposite directions.

The above buckling means includes a hook, which is mounted to one of the parts and has a hook ring. A buckle is mounted to the other part and is selectively buckled on the hook. The buckle includes a buckle ring which selectively engages with the hook ring. A lever is coupled to the buckle ring and is selectively rotated in opposite directions in order to tighten or loosen the buckle ring engaging with the hook ring.

In order to integrate the front and rear parts into a single board, the parts of the board are primarily coupled together by engaging the clasps with each other prior to fitting the stop protrusion into the stop groove. Thereafter, the buckle ring engages with the hook ring and in turn is tightened by rotating the lever rearward, so that the primarily-coupled state of the parts is fixed.

BRIEF DESCRIPTION OF THE DRAWINGS

The above and other objects, features and other advantages of the present invention will be more clearly understood from the following detailed description taken in conjunction with the accompanying drawings, in which:

Fig. 1 is a perspective view showing the construction of a typical ski with an integrated long board;

Fig. 2 is a perspective view showing the construction of a ski with a divisible board in accordance with the preferred embodiment of the present invention;

Fig. 3 is an exploded perspective view of the ski with the divisible board of Fig. 2;

Fig. 4 is a perspective view showing the construction and configuration of clasps of a board connecting assembly provided in the junction of the

divisible board of Fig. 2;

Fig. 5 is a sectional view taken along the line A-A of Fig. 2;

Figs. 6A to 6C are perspective views showing the operation of the board connecting assembly of the invention while integrating the front and rear parts of the board into a single body;

Fig. 7 is a side view showing the operation of the above board connecting assembly while dividing the board into the front and rear parts; and

Fig. 8 is a side view showing the ski of this invention with a ski boot.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Fig. 2 shows the construction of a ski with a divisible board in accordance with the preferred embodiment of the present invention. As shown in the drawing, the divisible board of the ski according to this invention comprises two parts, that is, front and rear parts 11 and 12, which are normally separated from each other but are selectively integrated into a single board using a board connecting assembly. In the board connecting assembly, a clasp means clasps the front and rear parts 11 and 12 thereby primarily coupling the parts 11 and 12 together into a single board, while a buckling means buckles the primarily-coupled parts 11 and 12 thus fixing the coupled state of the parts 11 and 12. The clasp means includes two clasps 13 and 14 which are fixed to the junction ends of the respective parts 11 and 12. Meanwhile, the buckling means includes a hook 15 and a buckle 16, which are screwed to the top of the respective clasps 13 and 14. In order to integrate the front and rear parts 11 and 12 into the long board, the clasps 13 and 14 substantially engage with each other prior to buckling the buckle 16 on the hook 15.

Fig. 3 is an exploded perspective view of the above ski with the divisible board.

As shown in Fig. 3, the clasper 13, 14 of each part 11, 12 has a plurality of longitudinal teeth 135, 145 which are spaced out with regular bays 134, 144 therebetween, so that the clasps 13 and 14 can substantially engage with each other in order to connect the parts 11 and 12 together. A stop protrusion 141 of a rounded cross-section is transversely formed on the inside end of each bay 144 of the rear clasper 14, while a stop groove 131 of a rounded cross-section is transversely formed on each tooth 135 of the front clasper 13 at a position corresponding to the above protrusion 141. When clasping the parts 11 and 12 with the clasps 13 and 14, the teeth 135 of the front clasper 13 are positioned in the bays 144 of the rear clasper 14, while the teeth 145 of the rear clasper 14 are positioned in the bays 134 of the front clasper 13.

The clasping of the parts 11 and 12 is finished by fitting the stop protrusions 141 of the rear clasper 14 into the respective stop grooves 131 of the front clasper

13.

In the above clasps 13 and 14, the inside end of each bay 134, 144 is inclined downwardly toward the edge, so that the inside end of the bay 134, 144 has an inclined top surface. Meanwhile, each tooth 135, 145 is inclined upwardly toward its tip thus forming an inclined bottom surface. The inclined bottom surface of each tooth 135, 145 substantially meets with the inclined top surface of an associated bay 144, 134, when the clasps 13 and 14 engage with each other. Due to both the inclined surfaces of the teeth and bays and the rounded configuration of the protrusions and grooves of the clasps 13 and 14, the protrusions 141 are not separated from the respective grooves 131 even when the parts 11 and 12 are horizontally pulled by a strong force in opposite directions after clasping the parts 11 and 12.

The above clasps 13 and 14 are preferably integrated with the junction ends of the parts 11 and 12 while forming the parts 11 and 12 using synthetic resin.

Fig. 4 shows the construction and configuration of the above clasps 13 and 14 in more detail. As shown in Fig. 4, each clasper 13, 14 is provided with a plurality of hook holes 132, 142 for reinforcing the integration of the clasps 13 and 14 with the parts 11 and 12. That is, the synthetic resin fills the holes 132 and 142 while molding the parts 11 and 12 thereby increasing the coupling strength between the clasps 13 and 14 and respective parts 11 and 12. In order to further increase the coupling strength between the clasps 13 and 14 and respective parts 11 and 12, a plurality of set screws 133' and 143' may be screwed into the sides of the parts 11 and 12, so that the screws penetrate into the holes 132 and 142.

As described above, the hook 15 and lever buckle 16 are tightly mounted to the top of the respective clasps 13 and 14. As shown in Fig. 3, the hook 15 comprises a mount plate 151 and a hook plate 152 which are hinged together. The mount plate 151 has a plurality of screw holes 156, while the front clasper 13 has a plurality of screw holes 136 at positions corresponding to the above holes 156 of the plate 151. The hook 15 is mounted to the front clasper 13 by tightening the screws 156' passing through the screw holes 156 and 136, so that the hook 15 is integrated with the front part 11.

The hook plate 152 is hinged to the above mount plate 151 by movably fitting the hinge connection bar 153 of the mount plate 151 into the hole 154 of the hook plate 152. The distal end of the hook plate 152 is bent into a hook ring 157, while the rear portion of the plate 152 is provided with a transverse groove 155 of a semi-circular cross-section. Due to the above groove 155, the hook 15 and buckle 16 are elastically held on the clasps 13 and 14 when they are buckled up.

The buckle 16, which is mounted to the top of the rear clasper 14, comprises a mount plate 161, a lever 162 and a buckle ring 163 which are coupled together. In the same manner as described for the hook 15, the

buckle 16 is mounted to the rear clasper 14 by tightening the screws 166' passing through the screw holes 166 and 146 of the mount plate 161 and rear clasper 14, so that the buckle 16 is integrated with the rear part 12. The lever 162 has fitting holes 164 on its opposite bosses, while the mount plate 161 has a holding bar 165. The lever 162 is thus rotatably coupled to the plate 161 by fitting the holes 164 over both ends of the holding bar 165. Meanwhile, the buckle ring 163 is coupled to the bosses of the lever 162. In this case, the coupling joints of the ring 163 on the bosses of the lever 162 are not positioned on the center of the bosses, but are positioned on the rear portion of the bosses. The buckle ring 163, engaging with the hook ring 157 and tightened by rotating the lever 162 rearward, is thus exclusively released from the hook ring 157 when the lever 163 is rotated forward.

As described above, the claspers 13 and 14 are integrated with the respective parts 11 and 12 by the engaging means 133', 143', 156' and 166'. The integration strength between the claspers 13 and 14 and the parts 11 and 12 is further improved by the fact that they are integrated into a single structure through a molding process. The hook 15 and buckle 16 are mounted to the respective parts 11 and 12 by the engaging means 156' and 166'.

In the present invention, it is preferable to form the claspers 13 and 14, hook 15 and buckle 16 using a metal, such as stainless steel, or a fiber reinforced plastic (FRP).

The construction for coupling the parts 11 and 12, claspers 13 and 14, hook 15 and buckle 16 together are shown in Fig. 5.

Fig. 5 is a sectional view taken along the line A-A of Fig. 2. As shown in Fig. 5, the rear clasper 14 is integrated with the rear part 12 by means of both the molding process and the engaging means 166', while the buckle 16 is mounted to the part 12 by the engaging means 166'.

In the same manner, the front clasper 13 is integrated with the front part 11 by means of both the molding process and the engaging means 156', while the hook 15 is mounted to the part 11 by the engaging means 156'.

The operational effect of the above ski with the divisible board will be described hereinbelow.

The front and rear parts 11 and 12 of the divisible board are assembled into a single board in the following manner. As shown in Fig. 6A, the parts 11 and 12 with the claspers 13 and 14 are primarily clasped. In this case, the teeth 135 of the front clasper 13 are positioned in the bays 144 of the rear clasper 14, while the teeth 145 of the rear clasper 14 are positioned in the bays 134 of the front clasper 13. The clasping of the parts 11 and 12 is finished by fitting the stop protrusions 141 of the rear clasper 14 into the respective stop grooves 131 of the front clasper 13. Thereafter, the hinged hook plate 152 of the hook 15 is turned to be laid

on the coupled claspers 13 and 14. The lever 162 of the buckle 16 is rotated forward prior to bringing the buckle ring 163 into engagement with the hook ring 157 of the hook 15 as shown in Fig. 6B. The lever 162 in turn is forcibly rotated rearward thus tightly buckling the buckle 16 on the hook 15 as shown in Fig. 6C. The front and rear parts 11 and 12 are thus integrated into a single ski board.

In order to divide the integrated board into the front and rear parts 11 and 12, the lever 162 of the buckle 16 is rotated forward prior to removing the buckle ring 163 from the hook ring 157 of the hook 15. Thereafter, the parts 11 and 12 are bent at the junction of the protrusions 141 and grooves 131 of the claspers as shown in Fig. 7 prior to separating the claspers 13 and 14 from each other.

Fig. 8 shows the ski of this invention with a ski boot. As shown in Fig. 8, the boot 3 is attached to the ski, whose board has been integrated as described above, by binding the nose and heel of the boot 3 to the board by the front and rear binders 2 and 2'.

As shown in Fig. 8, the gap, which remains between the sole of the boot 3 and the board 11 and 12 while attaching the boot 3 to the board, is substantially large enough to place the hook 15 and buckle 16 therein.

In the divisible board of the ski, the front and rear parts of the board have respective claspers. Each clasper has teeth and bays which have inclined surfaces, so that the claspers substantially meet with each other when the parts are clasped by the claspers. In addition, the rounded stop protrusions of the rear clasper are fitted into the stop grooves of the front clasper while clasping the two parts. Thereafter, the buckle mounted to the rear part is buckled on the hook of the front part, thus integrating the two parts into a single board. The above divisible board of the ski is not suddenly separated into the parts even when an impact is applied to the board while skiing, so that the ski of this invention is safe to a user while skiing.

As described above, the present invention provides a ski with a divisible board. The board of the above ski can be divided into front and rear parts while the ski is carried by a vehicle or is stored out of season, so that the ski is convenient to users.

Although the preferred embodiments of the present invention have been disclosed for illustrative purposes, those skilled in the art will appreciate that various modifications, additions and substitutions are possible, without departing from the scope and spirit of the invention as disclosed in the accompanying claims.

Claims

1. A ski comprising a board and a boot binder, wherein said board is a divisible body comprising front and rear parts, said front and rear parts being selectively integrated into a single board by a board connecting assembly, said assembly including:

means for clasping said front and rear parts in order to primarily couple the parts together into a single board, said clasping means being provided on the junction ends of said parts; and means for buckling the primarily-coupled parts in order to fix the coupled state of the parts thereby finally integrating the parts into a single board, said buckling means being mounted to said parts.

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2. The ski according to claim 1, wherein said clasping means comprises front and rear clasps fixed to the junction ends of the parts, respectively, each of said clasps having a plurality of teeth spaced out with regular bays, one of said clasps having a stop protrusion, while the other clasper having a stop groove engaging with said stop protrusion for preventing separation of said clasps even when the parts are horizontally pulled in opposite directions.

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3. The ski according to claim 2, wherein each of said teeth and bays is inclined at an angle of inclination, while the inclining direction of each tooth is opposite to that of each bay.

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4. The ski according to claim 2, wherein said stop protrusion and groove have a rounded cross-section suitable for preventing said clasps from being separated from each other when said parts are horizontally pulled in opposite directions under the condition that the protrusion engages with the groove.

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5. The ski according to claim 1, wherein said buckling means comprises:

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a hook mounted to one of said parts, said hook having a hook ring; and

a buckle mounted to the other part and selectively buckled on said hook, said buckle including:

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a buckle ring selectively engaging with said hook ring; and

a lever coupled to said buckle ring and selectively rotated in opposite directions in order to tighten or loosen the buckle ring engaging with the hook ring.

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6. The ski according to claim 5, wherein the joint of said buckle ring on said lever is eccentric from a rotating shaft of the lever.

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FIG. 1

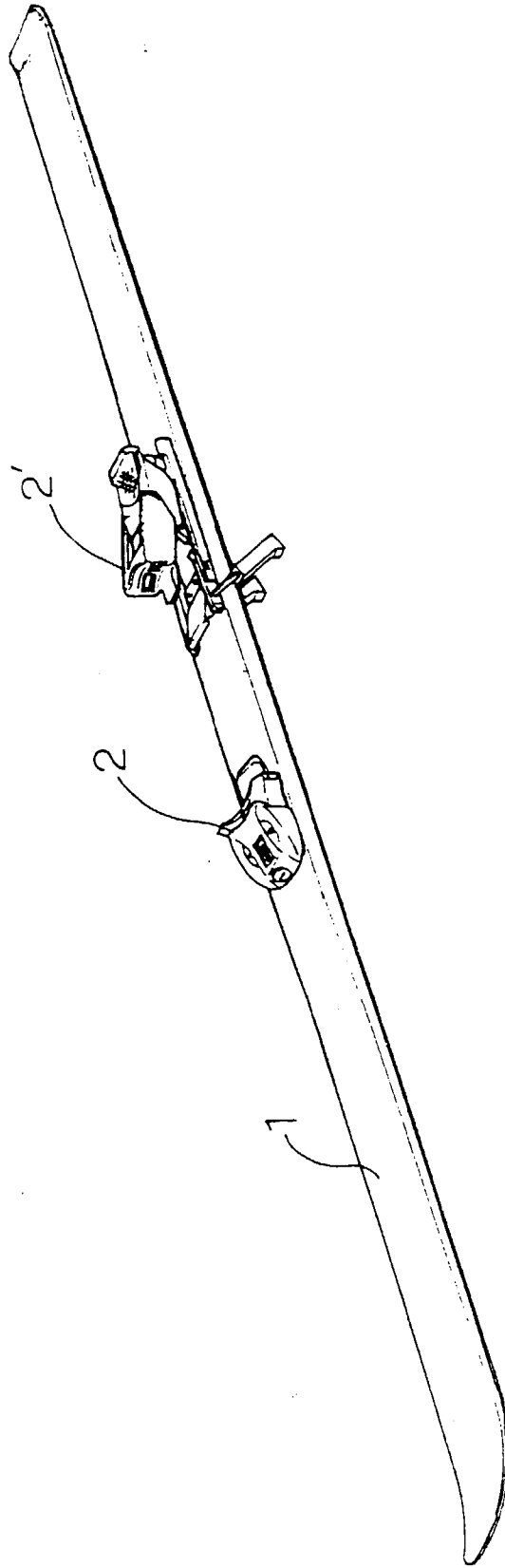


FIG. 2

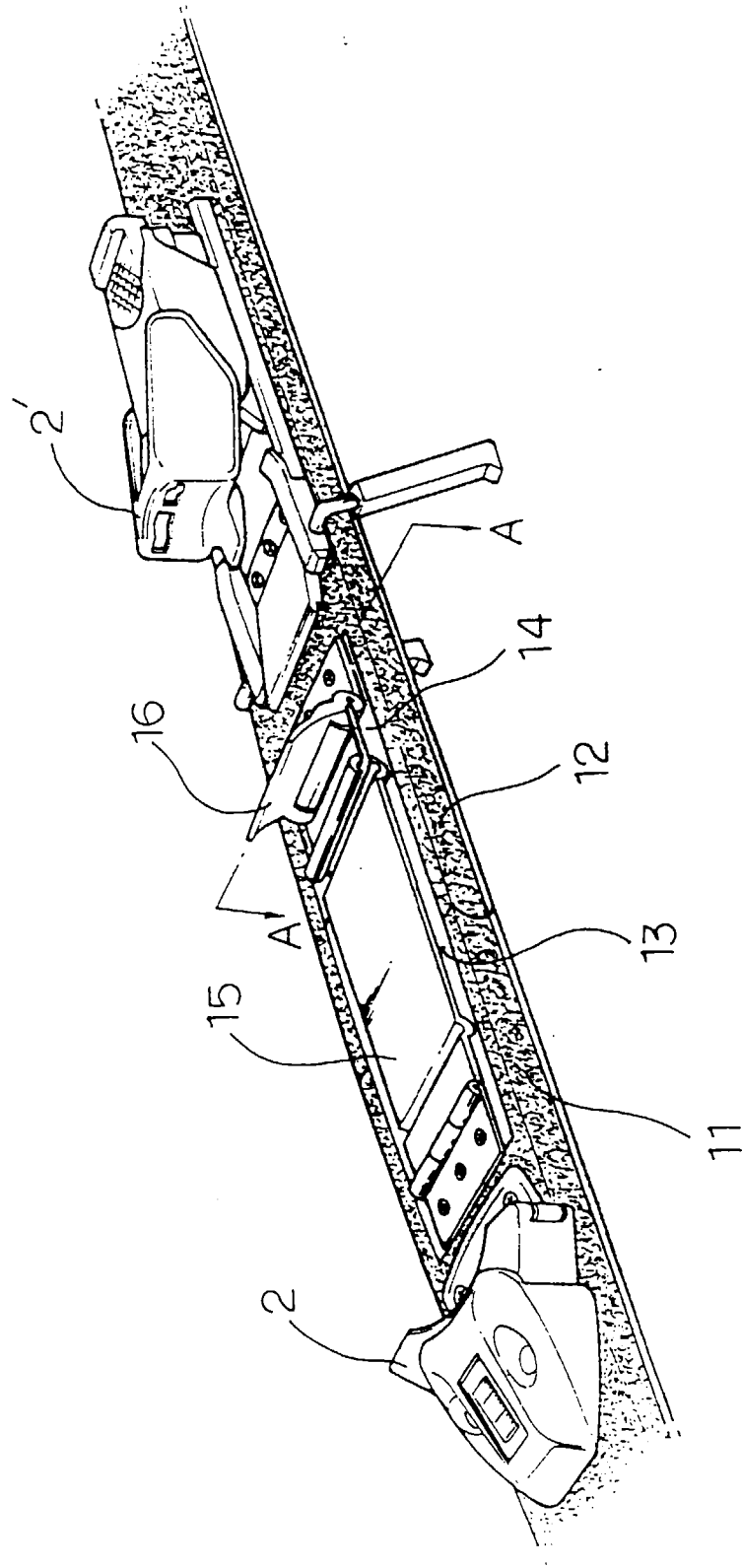


FIG. 3

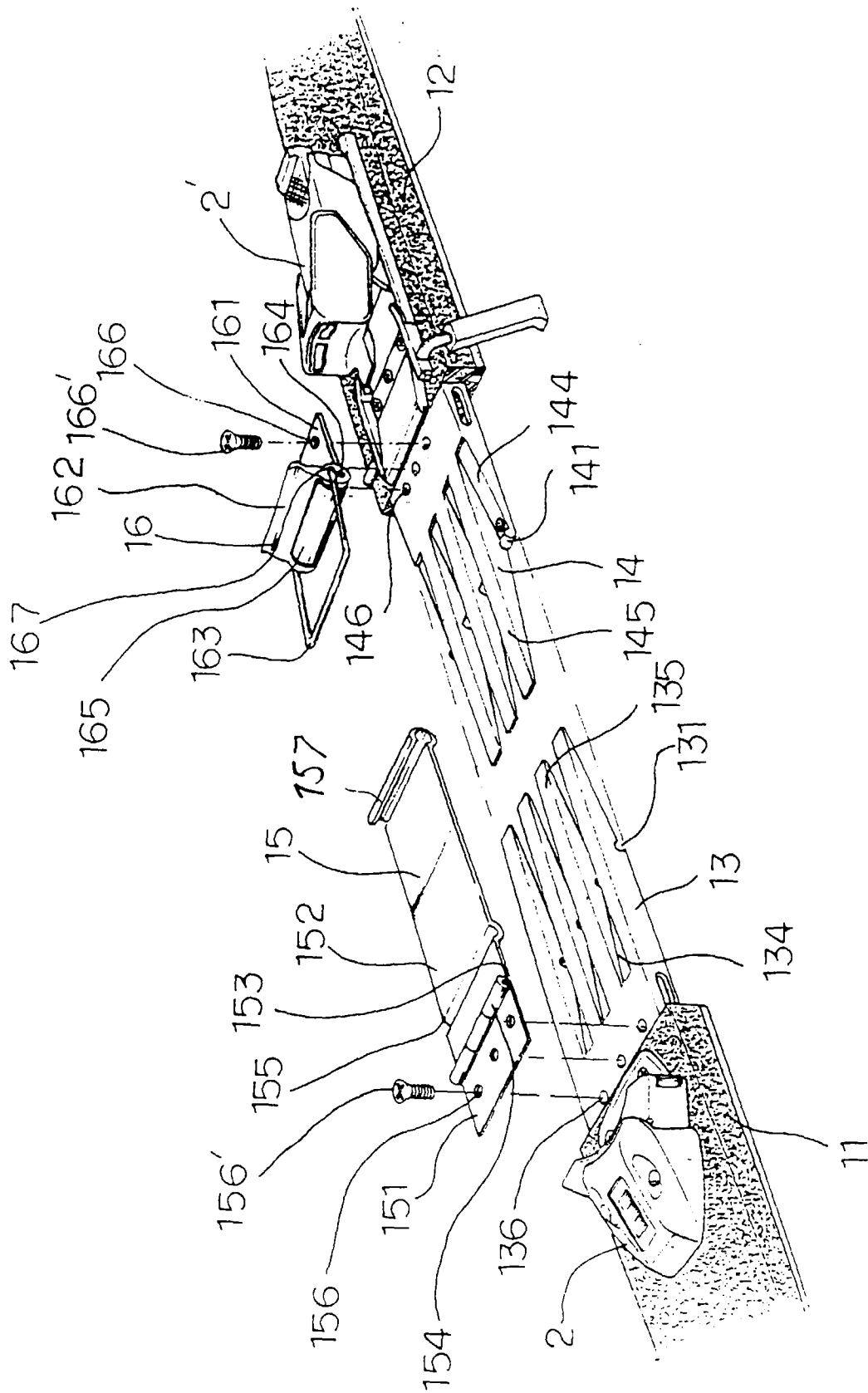


FIG. 4

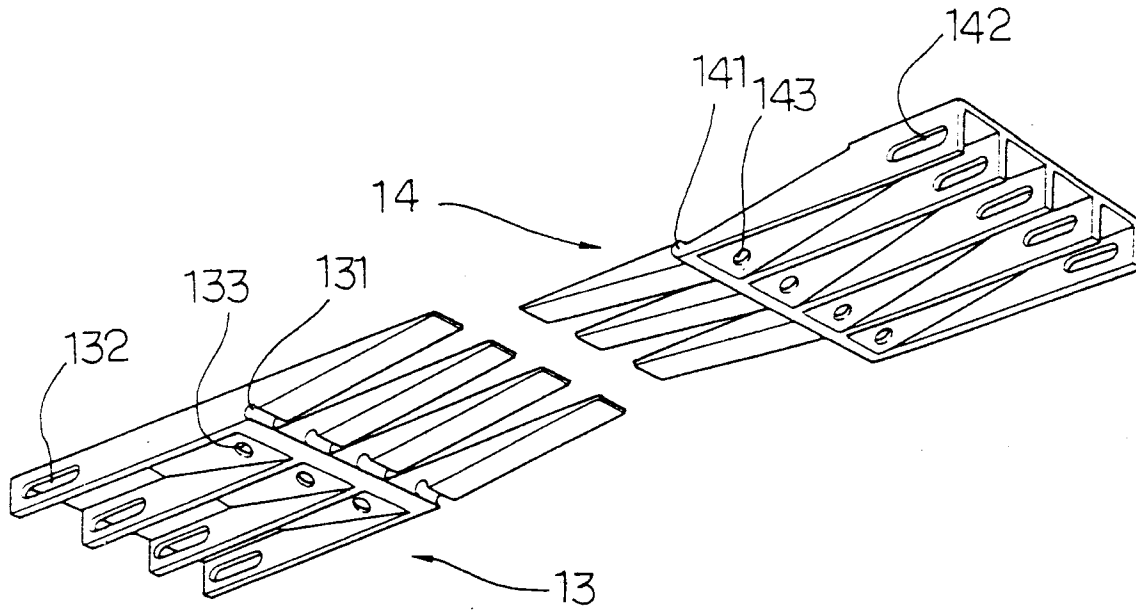


FIG. 5

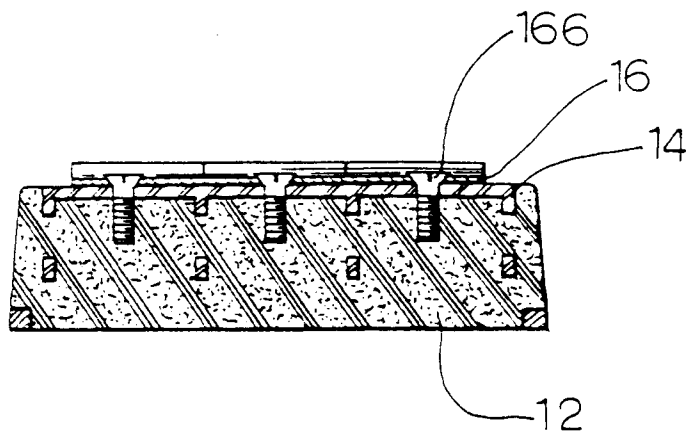


FIG. 6A

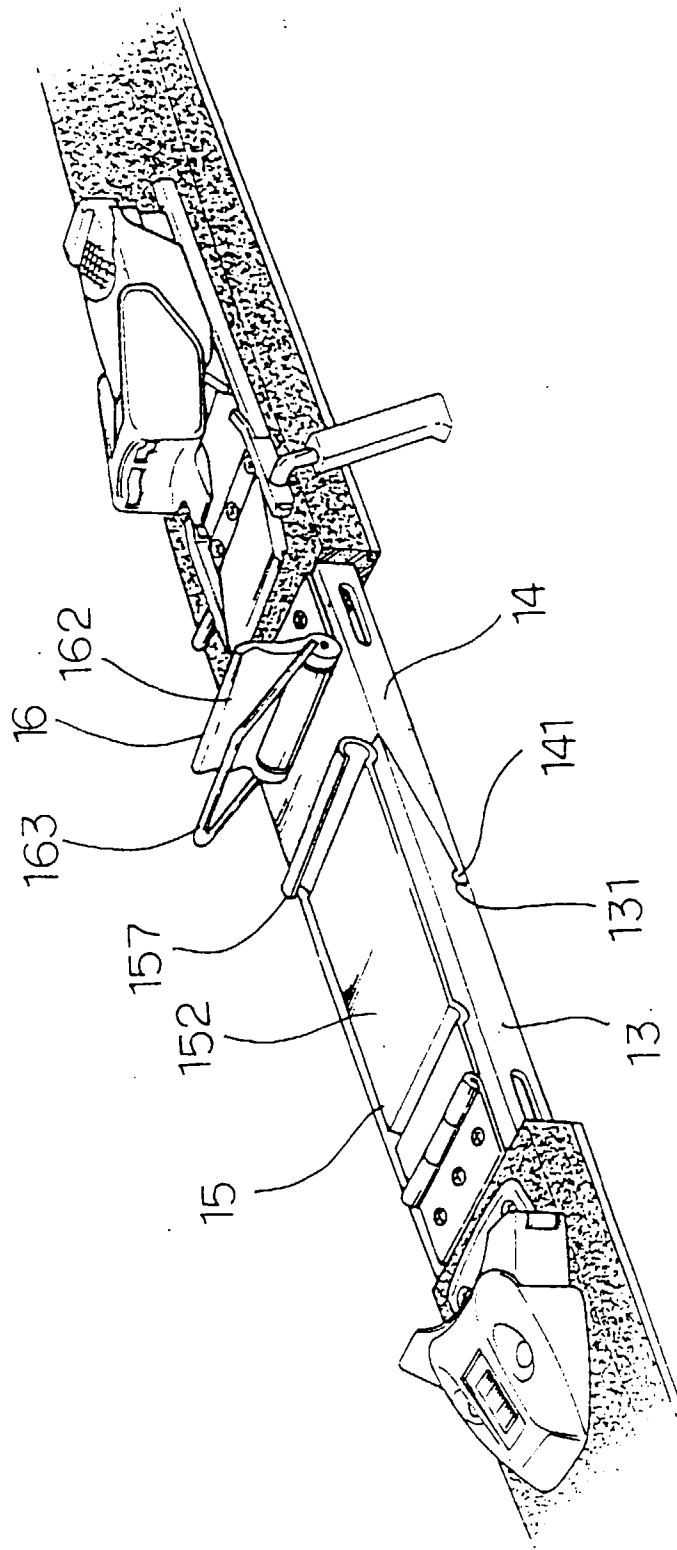


FIG. 6B

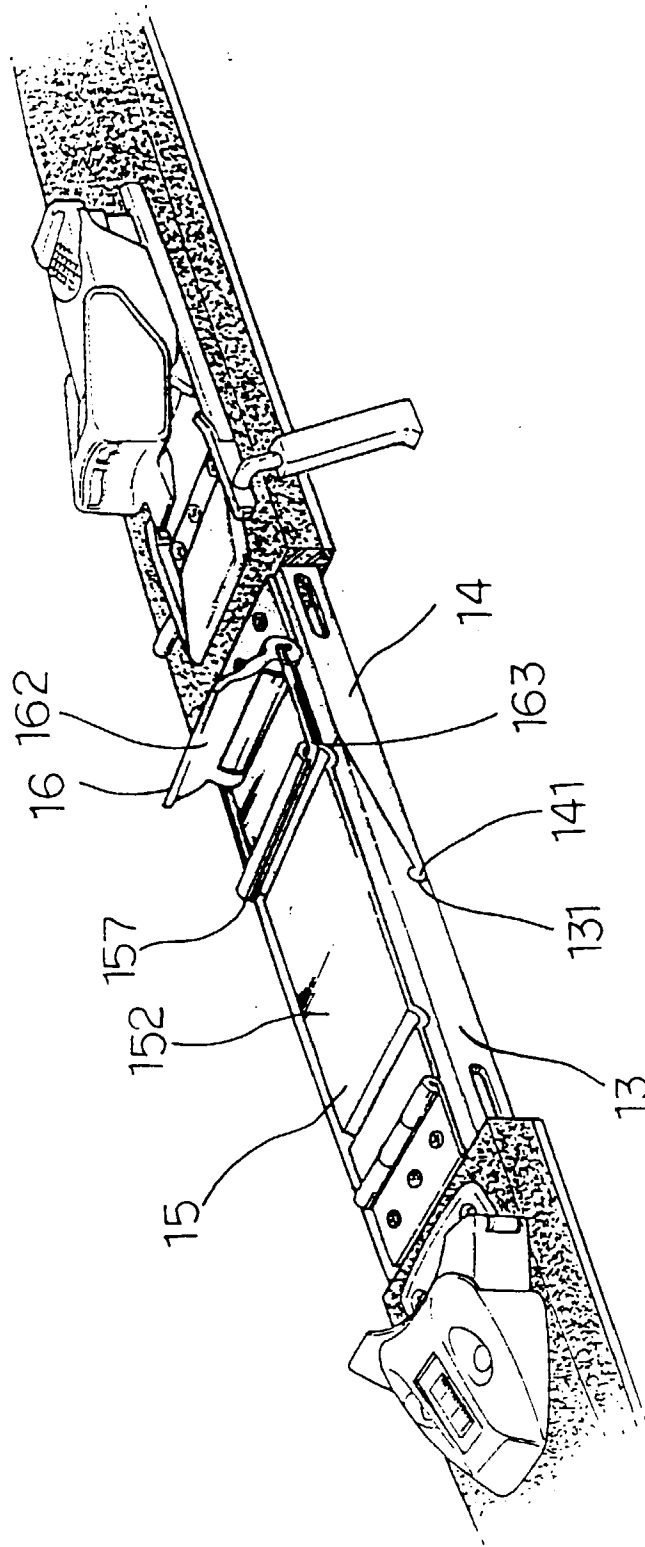


FIG. 6C

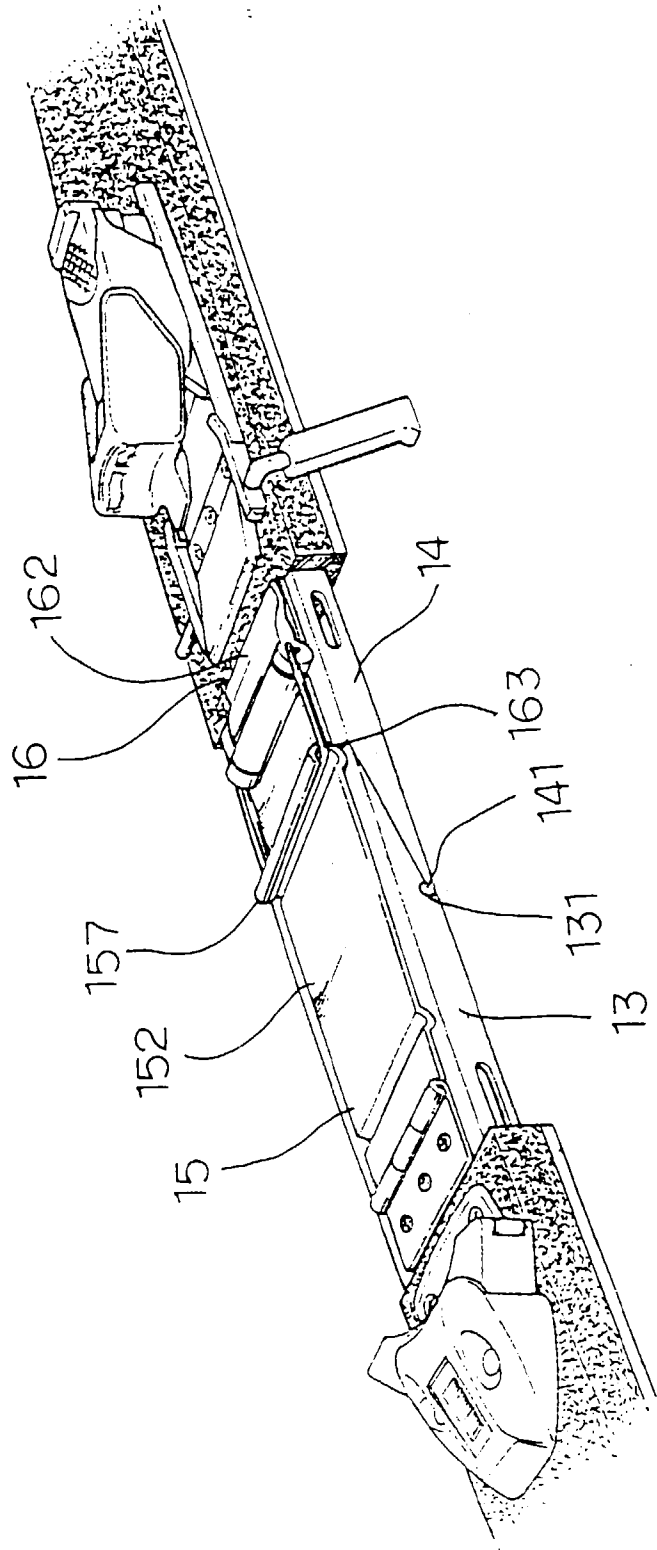


FIG. 7

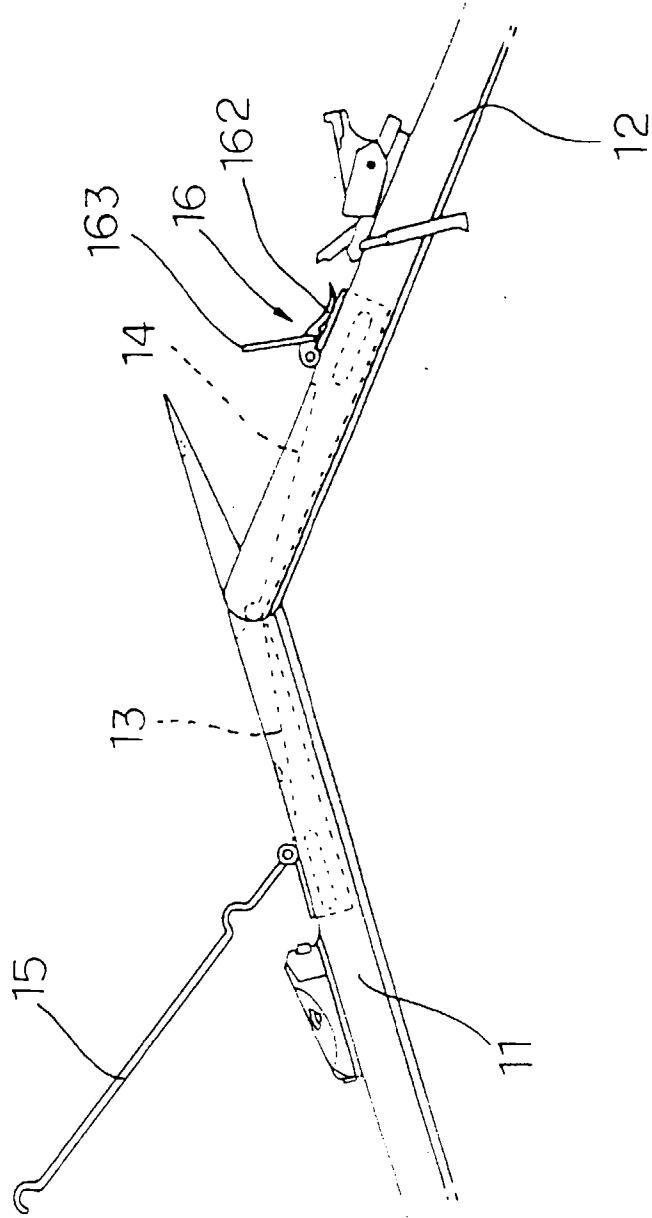


FIG. 8

