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(54) **Snowboard made of at least two body parts releasably coupled**

(57) A snowboard (10) comprises at least two board parts (12, 16, 14) releasably coupled together along a lateral joint (18, 40) to provide continuous upper, lower and edge surfaces (20, 22, 24). The joint (18, 40) com-

prises a protrusion (26) formed within the thickness of one board part and a corresponding aperture (28) formed within the thickness of the other board part. The snowboard is capable of being kept in a small bag and has a secure joint construction.

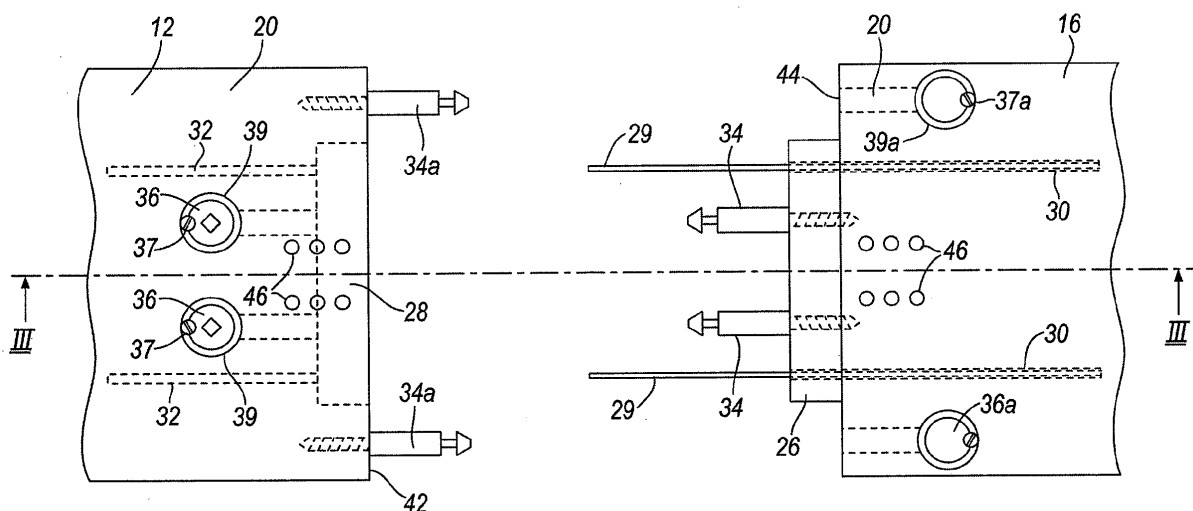


Fig.2

Description

Field of the Invention

[0001] This invention relates to a snowboard and in particular to a snowboard which can be accommodated in a carrying case.

Background to the Invention

[0002] Snowboards are boards, which resemble a wide ski, with the ability to glide on snow. Size and shape variance in the boards accommodates different people, skill levels, snow types, and riding styles. Shorter boards are typically considered youth size, designed for use by children, though some varieties of short boards are specifically designed for a special purpose, such as the performance of snowboarding tricks.

[0003] Nevertheless, snowboards are usually of a size, particularly of a length, that exceeds the maximum dimensions allowable for transport, especially hand baggage limits on aircraft, and therefore attract additional carriage charges.

[0004] It has been proposed to form a snowboard of two parts for ease of transportation. Thus, Korean patent publication KR 20090038096 (Yang Byeong II) describes a snowboard formed of two board parts releasably coupled together along a lateral joint line. The snowboard can be kept in a small bag and can be assembled and disassembled quickly and simply. In one embodiment, the board parts are coupled by an open dovetail joint in which a protrusion part of one board part is accommodated in an open sided groove in the other part. A laterally extending screw passes through both board parts to complete the joint. The middle part of the upper side of the of each board part adjacent the joint is curved upwardly.

[0005] While the snowboard described in the above Korean patent publication does enable the snowboard to be kept in a small bag, the construction of the joint is such as to weaken the assembled board in the vicinity of the joint, with the result that the snowboard could flex unpredictably in use making the snowboard difficult to control and in the extreme the board may break at the joint. Furthermore, the raised upper surface of the assembled snowboard in the vicinity of the joint limits the positioning of the user's feet on the board.

[0006] There is therefore a need to provide a snowboard which while being capable of being kept in a small bag has a joint construction which does not suffer from the disadvantages noted above.

Summary of the Invention

[0007] According to the invention there is provided a snowboard comprising at least two board parts releasably coupled together along a lateral joint line to provide continuous upper, lower and edge surfaces, wherein the joint comprises a protrusion formed within the thickness

of one board part engaged within a corresponding aperture formed within the thickness of the other board part.

[0008] The snowboard may further comprise at least one (preferably straight) strengthening bar inserted into a longitudinal aperture in one board part and extending into a longitudinal aperture formed in the other board part.

[0009] The joint comprises a protrusion formed within the thickness of one board part and a corresponding aperture formed within the thickness of the other board part.

Forming the protrusion and the aperture within the thickness of the respective board parts, enables the board parts to provide continuous upper, lower and edge surfaces with each other in the assembled condition. The aperture should correspond in shape to the protrusion so that, when the board is assembled, the protrusion is fully engaged within the aperture, and is supported on all sides by the walls of the aperture, in contrast to the open-groove assembly arrangement described in the above-mentioned KR 20090038096. There should be substantially no space between the walls of the aperture and the protrusion. The protrusion should ideally be integral with its associated board part.

[0010] As an example, the joint may be a comb joint or more preferably a mortise and tenon joint. In the latter case, the tenon preferably has a triangular cross-section with the mortise being correspondingly shaped. The lateral joint is preferably secured by releasable securing means, such as at least one cam lock nut. A suitable securing device is a Minifix® bolt, available from Häfele UK Ltd. The releasable securing means are ideally located fully within the thickness of the board. Where more than one securing device are used, these may extend only from one board part into the other, or more preferably at least one securing device extends from a first board part into a second board part while at least one further securing device extends from the second board part into the first board part.

[0011] In a known manner, the snowboard may be constructed of a hardwood core which is sandwiched between multiple layers or fibreglass. The front (or "nose,") of the board is upturned to help the board glide over uneven snow. The back (or "tail") of the board is also upturned to enable backwards (or "switch") riding.

[0012] The core may be made of laminated fibreglass around wood. Desired properties of the core include damping, rebound, strength, flex and reduced weight. In use, the base or bottom surface of the board is in contact with the snow surface. It may be formed of a porous, plastic (e.g. polyethylene) material, that is saturated with a wax to create a very quick and smooth, hydrophobic surface. Wax is an important finishing product for all base materials. Not only does it allow the snowboard to have a smoother glide, but it also allows the rider to change the characteristics of the base and adjust the board to the snow conditions.

[0013] In known manner, a strip of metal running the length of either side of the board may be provided. This sharp edge enables enough friction to be produced to

ride on ice, and the radius of the edge directly affects the radius of carving turns, and in turn the responsiveness of the board.

[0014] Generally, the snowboard has a camber. Camber refers to the bend of the board from tip to tail. Traditionally boards have a raised camber, meaning that if one were to lay it flat the board comes off the ground between the spots where the user's feet would be.

[0015] The upper surface of each board part will usually be substantially flat, the upper adjoining edges of the board parts at the lateral joint lying in the plane of said upper surfaces.

[0016] Means may be provided for attaching bindings to the snowboard above the joint line. Bindings are separate components from the snowboard deck and are very important parts of the total snowboard interface. The bindings' main function is to hold the user's boot in place tightly in order to transfer their energy to the board. Several types of bindings are possible, such as strap-in, step-in, and hybrid bindings. The question of how much the bindings are angled depends on the rider's purpose and preference.

[0017] Placed between the bindings, but closer to the rear binding, a stomp pad may be provided to allow the rider to better control the board with only one boot strapped in, such as when maneuvering onto a chair lift or riding a ski tow. Whereas the upper surface of the board is usually smooth, the stomp pad has a textured pattern which provides grip to the underside of the boot.

[0018] The snow board preferably comprises a front board part, a rear board part and at least one intermediate board part. In a preferred embodiment, three board parts are provided, namely a front board part coupled to an intermediate board part along a first said lateral joint and a rear board part coupled to the intermediate board part along a second said lateral joint.

[0019] The invention also provides a combination of a snowboard as described above and a carrying case, the internal dimensions of the carrying case being more than the dimensions of the board parts but having at least one dimension less than the length of the snowboard in its assembled state.

[0020] The carrying case may comprise pockets to accommodate the board parts, the board parts serving to provide rigidity to sides of the carrying case when said board parts are so accommodated.

[0021] The invention will now be further described, by way of example, with reference to the accompanying illustrative drawings in which:

Figure 1 is a view of a snowboard according to the invention, in its assembled state;

Figure 2 is a view of one of the joints of the snowboard taken from the direction 11 in Figure 1, again in the dis-assembled state; and

Figure 3 is a cross-section of one of the joints of the

snowboard taken on the line III - III in Figure 2, in a dis-assembled state;

Figure 4 is an illustrative view of a carrying case for the snowboard of Figures 1 to 3.

[0022] As shown in Figures 1 to 3, a snowboard 10 is formed of three board parts of laminated hardwood and fibreglass, namely a front board part 12, a rear board part 14 and one intermediate board part 16, of approximately the same length l_p , to provide a snowboard having a length L_b in its assembled state. The board parts 12, 14, 16 have a maximum width w_p .

[0023] The front board part 12 is releasably coupled to the intermediate board part 16 along a first lateral joint 18 to provide continuous upper, lower and edge surfaces 20, 22, 24. The joint 18 comprises an integral machine cut tenon protrusion 26 having a triangular cross-section formed within the thickness of the intermediate board part 16 and a correspondingly shaped machine cut mortise aperture 28 formed within the thickness of the front board part 12. When the board is assembled, the protrusion 26 is fully engaged within the aperture 28, without any space between the wall of the aperture 28 and the protrusion 26. Two straight stainless 4mm diameter steel strengthening bars 29 are inserted into longitudinal apertures 30 in the intermediate board part 16 and extend into longitudinal apertures 32 formed in the front board part 12. The joint 18 is secured by the engagement of Minifix® bolts 34, 34a with releasable cam lock nut housings 36, 36a located in metal lined blind holes 39, 39a fully within the thickness of the board. The cam lock nuts are locked in known manner with grub screws 37, 37a.

[0024] The upper surface 20 of each board part is substantially flat, and the upper adjoining edges 42, 44 of the board parts 12 and 16 at the lateral joints 18 lie in the plane of the upper surfaces 20.

[0025] The intermediate board part 16 is similarly releasably coupled to the rear board part 14 along a second said lateral joint 40.

[0026] Screw holes 46 are provided to enable bindings of known type to be positioned above the joints 18, 40.

[0027] It will be appreciated that the shape of the snowboard 10 shown in the Figures is merely illustrative, for the sake of clarity. In practice, as with some commercially available snowboards, the board as viewed from above will be slightly narrowed in its central portion to provide a "waist" while maintaining continuous side edges. When viewed from the side, the board will have slightly raised portions towards the front and the rear, and in the central portion, while maintaining the continuous upper and lower surfaces and a substantially constant board thickness.

[0028] Figure 4 shows a carrying case 48 for the snowboard, formed of a flexible, e.g. fabric material. The carrying case 48 comprises pockets 50, 52, 54. The width w_c , height h_c , and depth d_c of the carrying case meet the limits set with regard to airline hand baggage and are each less than the length L_b of the snowboard in its as-

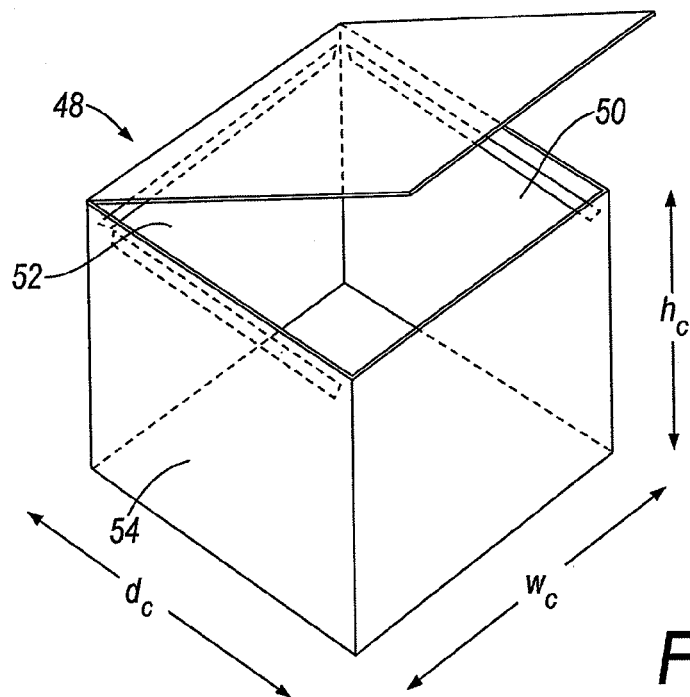
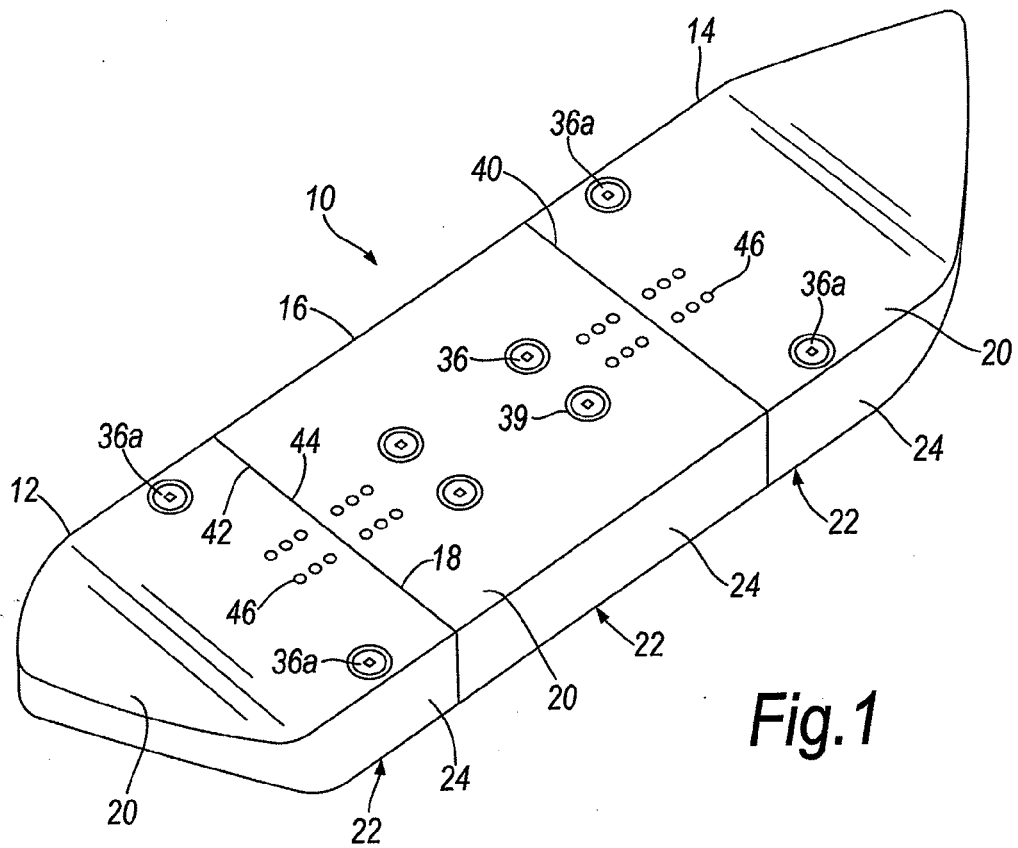
sembled state. However, the width w_c and the depth d_c of the carrying case are each more than the length l_p of the board parts 12, 16, 14, while the height h_c of the carrying case is more than the width w_p of the board parts 12, 16, 14. Thereby, the pockets 50, 52, 54 of the carrying case 48 are able to accommodate the board parts 12, 16, 14. When so accommodated, the board parts 12, 16, 14 serve to provide rigidity to sides of the carrying case. The interior of the carrying case can be used for accommodating the user's boots and bindings.

Claims

1. A snowboard comprising at least two board parts (12, 16, 14) releasably coupled together along a lateral joint (18, 40) to provide continuous upper, lower and edge surfaces (20, 22, 24), wherein the joint (18, 40) comprises a protrusion (26) formed within the thickness of one board part engaged within a corresponding aperture (28) formed within the thickness of the other board part.
2. A snowboard according to claim 1, further comprising at least one strengthening bar (29) inserted into a longitudinal aperture (30) in one board part and extending into a longitudinal aperture (32) formed in the other board part.
3. A snowboard according to claim 1 or 2, wherein the joint (18, 40) is secured by releasable securing means (36).
4. A snowboard according to claim 3, wherein the releasable securing means comprises at least one cam lock nut (36).
5. A snowboard according to claim 3 or 4, wherein the releasable securing means (36) are located fully within the thickness of the board.
6. A snowboard according to any preceding claim, wherein the upper surface (20) of each board part is substantially flat, and the upper adjoining edges (42, 44) of the board parts (12, 16, 14) at the lateral joint (18, 40) lie in the plane of said upper surfaces (20).
7. A snowboard according to any preceding claim, wherein means (46) are provided for attaching bindings to the snowboard above the joint (18, 40).
8. A snow board according to any preceding claim, comprising a front board part (12), a rear board part (14) and at least one intermediate board part (16).
9. A snowboard according to claim 8, wherein the front board part (12) is coupled to an intermediate board part (16) along a first said lateral joint (18) and the

intermediate board part (16) is coupled to the rear board part (14) along a second said lateral joint (40).

10. The combination of a snowboard according to any preceding claim and a carrying case (48), the internal dimensions (w_c , h_c , d_c) of the carrying case being respectively more than the dimensions (l_p , w_p , t_p) of the board parts (12, 16, 14) but less than the length (L_b) of the snowboard in its assembled state.
11. The combination according to claim 10, wherein the carrying case (48) comprises pockets (50, 52, 54) to accommodate the board parts (12, 16, 14), the board parts (12, 16, 14) serving to provide rigidity to sides of the carrying case when said board parts (12, 16, 14) are so accommodated.



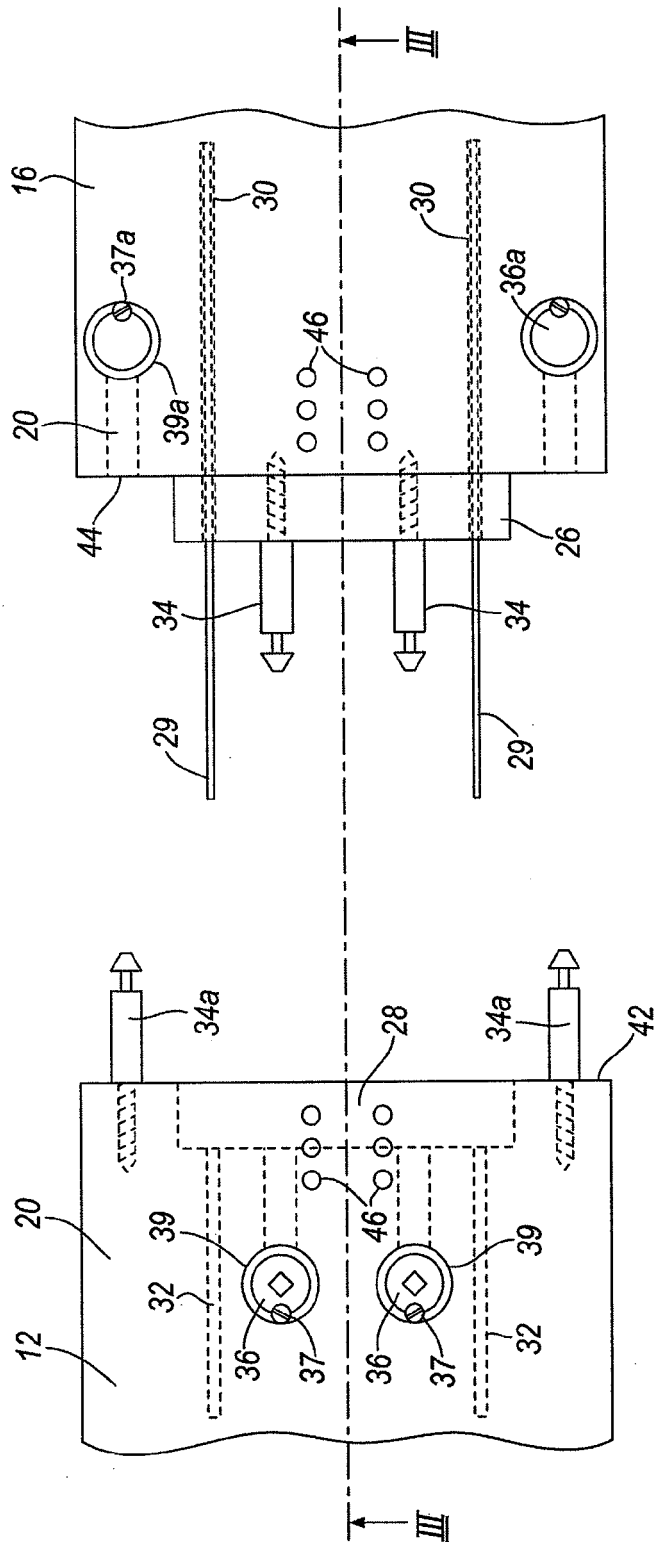


Fig. 2

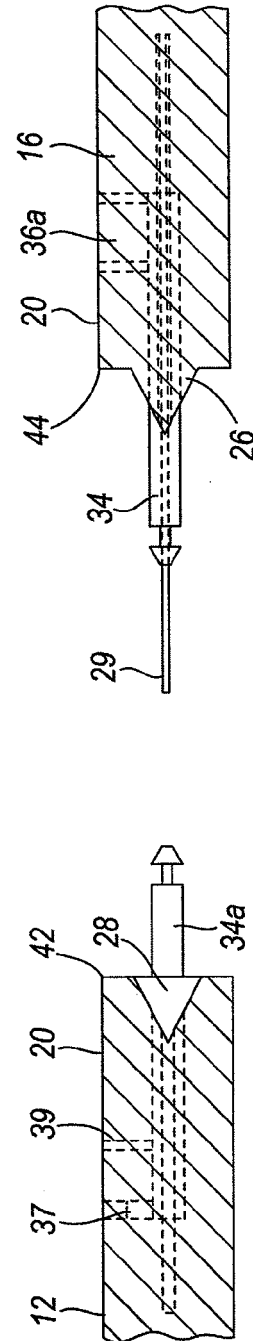


Fig. 3



EUROPEAN SEARCH REPORT

Application Number
EP 11 15 1578

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Place of search Munich		Date of completion of the search 6 May 2011	Examiner Murer, Michael
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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