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(54) **Temetési jármű belső kialakítása**

Interior of a burial vehicle

Description

[0001] The invention concerns an interior construction in the coffin compartment of a hearse.

[0002] In addition to the surfaces of the vehicle bodywork which form an interior compartment behind the driver's compartment by enclosing the so-called coffin compartment, this coffin compartment is also delimited by surface elements which are permanently installed inside the bodywork and which are referred to as the interior construction. The interior construction may have walls in the coffin compartment which have a smoother surface than that achievable by the inside surfaces of the vehicle bodywork where these are fitted with struts, ribs or similar reinforcing elements. Forming the interior construction of a hearse using panels of wood material is known from practice. These are substantially flat panels which are joined to one another with the aid of profile elements in places where the surfaces of the interior construction meet one another at different angles.

[0003] Within the context of the present proposal, the appropriate wall sections are also referred to as "substantially flat" when they are slightly curved in comparatively wide radii e.g. by following the course of the vehicle bodywork in the upright direction.

[0004] The profile elements may, for example, have an approximately H-shaped cross-section, i.e. they may have two opposing insertion grooves each of which is intended to hold one of the panels of wood material. Other profile elements may allow the panels to be joined perpendicularly to one another e.g. where the insertion grooves are not positioned opposite one another but are arranged at right angles to one another. Where two panels adjoin one another at right angles to form an outside corner, these may also be covered by a profile element with an L-shaped cross-section thereby providing the corner with protection against mechanical damage and preventing the sawn edge of one of the panels from being visible, even without having to cut a mitred joint. In addition, the profiled elements always cover the sawn edges of the panels thus concealing slight irregularities at the edges where two panels adjoin one another.

[0005] The purpose of the invention is to improve an interior construction of this type in such a way that it has a finely finished appearance, is capable of being easily and thoroughly cleaned, economical to manufacture and widely variable with regard to visual design.

[0006] This purpose is fulfilled by an interior construction in accordance with claim 1. Advantageous embodiments are described in the sub-claims.

[0007] In other words, the invention proposes dispensing with panels of wood material and instead using a composite board with a surface layer of metal and a core of plastic material. The composite board consists of at least these two layers. The surface layer has a greater resistance to mechanical stress than the core and faces towards the interior of the coffin compartment thus forming

the surface of the interior which is open to view, which in turn means that this surface layer is arranged on the so-called visible side of the composite board.

[0008] In accordance with the invention, it is proposed to manufacture two adjoining wall sections not of two separate composite boards, but to form them from one and the same composite board. For this purpose, a milled line is provided along the edge to be formed at the back of the composite board i.e. on the side facing away from the visible side. This milled line reduces not only the forces required to fold the composite board, but it also defines the course of the edge without any further aids, which means that the composite board can be bent manually without using tools. For the manufacture of the interior construction it may of course be advantageous to use templates or other folding aids to carry out the folding operation in a defined manner and, for example, to form the folds with greater reproducibility at a constant angle.

[0009] By virtue of the fact that the milled line passes along the back of the composite board a uninterrupted surface is created on the visible side over both wall sections, especially in the area of the edge. Compared to the use of special profile strips, this achieves a considerable improvement in the appearance of the interior construction. In addition, it creates a smooth uninterrupted surface in the area of the edge which considerably facilitates cleaning.

[0010] Composite boards, which in accordance with the proposal, can be used for the interior construction in the coffin compartment of a hearse, are standard products which can be easily and economically procured. For example, they are obtainable under the trade name of "DIBOND", not only in a number of standard surface designs, but can also be printed or coated with foil or veneer (i.e. laminated or veneered) with the result that a great variety of surface qualities can be achieved using composite boards of this kind.

[0011] A further advantage of the interior construction in accordance with the invention and the use of composite boards, is that a variety of different surface designs can be created i.e. a virtually unlimited choice of surface qualities is available. Because of changing tastes, standard surface finishes e.g. decorative plastic foils or panels of wood material with applied surface designs are normally available only for a certain period of time. By contrast, the proposed composite boards can be printed directly e.g. when they are supplied with a neutral white visible side. The vehicle manufacturer therefore has the possibility of digitising certain designs e.g. by photography, or creating them digitally from the outset. The possibility also exists of modifying or personalising existing digital designs. In cases where a vehicle requires repair but whose interior design is no longer available as a standard product, the intact surface design in the vehicle can, for example, be digitised and a new composite board printed on the basis of the data obtained, e.g. as a mirror image of the digitised design.

[0012] Since the previously standard edging bands are no longer to be used in making the individual wall sections for the interior construction, the production time can be considerably reduced. The body edges which are produced where two adjacent wall sections meet one another at an angle are

not only visually and haptically rounded, but also impermeable to moisture. This permits quick, easy and thorough cleaning.

[0013] A light and easily-cleaned design for the interior construction in the coffin compartment of a hearse could also be achieved by a single-piece tray- or basin-like structure, e.g. in the form of a shell made of a fibre composite material such as GRP. A shell of this kind could combine monolithically all the individual surface sections of the interior constructions thus achieving joint-free transitions between all the surfaces of the construction. By contrast however, the proposed interior construction can be manufactured much more economically and with greater flexibility because (quite apart from the considerable saving in production time) no special mould is required as is normally the case in manufacturing a tray or shell of fibre composite material. Besides this, different shells of this kind would be needed for different vehicle designs, thus making a number of different moulds necessary. With the proposed interior construction however the location of the milled lines only has to be defined once. Having defined such a pattern, e.g. in the form of a program for controlling an automatic milling machine, it is possible to manufacture reproducibly any number of such interior structures, and a number of different programs adapted, for example, to different vehicle types, requires only sufficient memory in the control system of the milling machine, whereas the number of different moulds necessary for manufacturing different GRP shells would require a considerable amount of storage space in a factory building.

[0014] On the back of the composite board it may be advantageous to provide a second surface layer of metal as is the case with the above-mentioned standard product "DIBOND". This lends the composite board a high degree of stability and intrinsic rigidity for a low material thickness in the single-figure millimetre range, e.g. between 3 and 6 mm. In such a case, the milled line along the edge between the two wall sections extends through the second surface layer.

[0015] In a first design, the interior construction may comprise two wall sections rigidly joined to one another, such as is possible with the aid of above-mentioned "DIBOND" boards. Here, the milled line extends advantageously not only through one of the surface layers but right into the core. By varying the contour of the milled line it is possible to influence the bending radius of the composite board in such a way that different radii can be created without difficulty at different locations in the interior structure by using either one single composite board or, at the most, a number of identical composite boards, without having to stock different boards in semi-finished form for different bending radii. Instead, a surface mill can be used to cut a pattern of lines on one single composite board, if necessary with different line contours created with different milling heads in such a way that this board can be folded into a comparatively complex (if necessary, three-dimensional) shape, and not only two but several wall sections can be made from the same board, of which two always adjoin one another at an angle. In this way not only a positive economical effect is achieved by reducing the time required to produce the interior construction, but further significant advantages are obtained from a closed design with as few joints as possible and in particular by avoiding the use of visible profile strips.

[0016] In order to enhance the stability of the finished interior construction, it may be advantageous, in the area of the milled line, not to remove the core completely up to the surface layer on the visible side, but instead to ensure that the core retains a certain residual thickness in the area of the milled line, i.e. that it has a reduced thickness in comparison to the usual layer thickness. Depending on this residual material thickness, the core affects the amount of force necessary to bend the composite board as well as the evenness of the edge line e.g. with regard to the even rounding of the edge area to a previously defined bending radius.

[0017] Instead of being designed to achieve a particularly rigid and stable interior construction, a composite board in accordance with the proposal may, in a second embodiment, be provided with a core of an intentionally pliable plastic material which is capable of being bent back and forward several times. In this case, the composite board in the interior construction of the hearse may be used to form a hinge by providing the two wall sections along the edge with a milled line, so that, in the area of this edge, the two surface layers are at a distance from the core. The pliable plastic which can be bent back and forward therefore acts to form a hinge between the two wall sections, thereby avoiding gaps in which dirt may accumulate, as is the case with other hinge designs, as well as obstructive projections on the inside or outside of the hinge and unsightly bulges caused by bulky hinge design. Simplification of the manufacturing process and reduction in the amount of time required to produce the interior construction may be further optimised by the fact that a flap or a door which adjoins a surface of the interior construction, does not have to be installed separately but instead can be formed by a section of the same composite board which also forms the above-mentioned surface of the interior construction.

[0018] However, even when separate elements are used as doors or flaps, they can be formed advantageously by one of the proposed composite boards: in this case, the above-mentioned hinge line can divide the composite board into two sections on either side of the hinge line. One section is measured as a comparatively narrow strip running adjacent to the hinge line and which serves as an installation strip. For example, screws may be screwed through this installation strip in order to attach the desired door or flap to other elements of the interior construction. A practically invisible attachment can be achieved if an adhesive is used in place of screws, thereby allowing the installation strip for the composite board to be bonded to another element of the interior construction by its rear side which is out of sight to the viewer. The second, by comparison larger section of the composite board forms the actual flap or door, e.g. the so-called door leaf, which can be opened or closed i.e. pivoted around the hinge line, while the installation strip of the composite board remains stationary.

[0019] Such a door or flap through the composite board can be formed advantageously with the hinge line created therein if the door leaf itself is relatively narrow and, with reference to the length of the hinge line, extends considerably less far at right angles to the hinge line than in the longitudinal direction of the hinge line. In this way, the load acting on the elastically ductile middle layer of the hinge plate is kept low, thus favourably affecting the life span of the flap or door. For example, the door of a storage compartment can be formed in this way: The arrangement of a storage area between the driver's compartment and the coffin compartment and the coffin compartment is well-known in

practice, and may be located behind the passenger seat only or over the entire width of the hearse. This storage compartment is normally accessed from the side of the vehicle and the door provided may extend over a height of one metre or more depending on vehicle type, whereas the width of the door leaf may be, for example, between 10 and 20 cm. This storage-compartment door is provided as part of the interior construction in the interior of the hearse and is accessible only after the bodywork door has been opened e.g. a sliding door at the side of the vehicle.

[0020] As the metal used for one and/or both surface layers, an aluminium alloy may be very advantageous, which, on the one hand, achieves an excellent resistance to atmospheric influences, as is always advantageous in vehicle construction and, on the other, allows the surface to receive standard treatments anodising to achieve different decorative effects.

[0021] The core of the composite board may consist advantageously of polyethylene which can be joined excellently to the surface layers and has a high degree of resistance to chemical and mechanical stresses.

[0022] When several milled lines are made, the ductility of the proposed composite boards even allows domed areas to be created, i.e. areas with concave or convex arching, thus enabling, for example, the formation of an arch projecting into the coffin compartment, or a basin similar to a wall niche within a larger surface area of the interior construction.

[0023] This ductility can be utilised advantageously to create an arch in the composite board which forms a recessed area in the above-mentioned larger surface area of the interior construction. Objects may be arranged in this recess. A cover may be provided to conceal the recess which can however be removed to gain access to the recess and the objects contained therein or to allow an unimpeded view of an object situated in the recess.

[0024] Such a recess may be arranged advantageously in a partition wall dividing the coffin compartment of the hearse from the driver's compartment at the front. The coffin compartment may directly adjoin the driver's compartment as in a prior-known way, or a storage compartment provided between the driver's and the coffin compartment. The recess in the partition wall may for example be large enough and have a base which is horizontal enough to be used for holding an urn. When a coffin is situated in the coffin compartment during funerals, the recess may be concealed by a cover, preferably with an decorative design so that the cover is perceived as a decorative element. If no cover is provided, a decorative element, e.g. a candle or similar illumination, may be arranged within the recess itself during funerals. If the funeral is not being held with a coffin but with an urn, the cover can be removed and the urn placed in the recess. In this way the hearse can be converted as required within a short space of time and this advantageous convertibility can also be used for other materials used in the interior construction of the hearse if the recess is formed within a large surface area of the interior construction e.g. in the above-mentioned partition wall.

[0025] A practical example of the invention is illustrated in more detail by the schematic diagrams given below. This shows:

Fig. 1 a perspective view from the rear into the coffin compartment of a hearse,

Fig. 2 a section of the view shown in Fig. 1 in a larger scale,

Fig. 3 a diagonal view into the coffin compartment of the same hearse seen from a side door where three different wall sections made of the same composite board abut one another,

Fig. 4 a view through the same side door of the so-called B column of the hearse.

[0026] In the drawings, the hearse in general is signified with the number 1. Fig. 1 shows a view of the coffin compartment through the open rear door of the vehicle 1. Sections 2 of the side wall can be seen which are separated from one another by a light strip 3 and which line the coffin compartment as side walls. A loading surface in the coffin compartment is formed by several panels 4 and 5, where outer stationary panels 4 are provided and two moving centre panels 5 which in Fig. 1 are shown in the lowered position from which they can be raised to form a continuous loading surface together with the two outer stationary panels 4.

[0027] Sections of the outer panels 4 are arranged to form the flap 6 of a storage compartment, where this flap can be opened and closed by means of a grip opening 7.

[0028] Under the stationary panel 4 another vertical wall section 2 is provided which is formed by a composite board. This wall section 2 adjoins a back section 2 at an angle of 90° which contains several control elements 8, e.g. operating buttons, control lamps etc. for operating the moving panels 5. The two wall sections 2 under the stationary panel 4 are formed by a single composite board 9, where this composite board 9 forms an edge 10 where the two wall sections 2 adjoin one another, along which the composite board 9 is folded.

[0029] In a larger scale than Fig. 1, Fig. 2 shows that the flap 6 is also formed of a composite board, with a hinge 11 being visible in the area where the flap 6 adjoins the wall section 2 located above it. In the area of this hinge 11, the surface layer which forms the visible side of the flap 6 and which is marked as 12 in Fig. 2, has been removed by milling, thereby revealing a core 14 of the composite board along the line of the hinge 11. The composite board 9 used to form the flap 6 does not run from the flap 6 to the wall section 2 adjoining it from above, but downwards along the hinge 11, and the free end of the flap 6 opposite the hinge 11 rests on the wall section 2 located below it, which, as is shown in Fig. 1, is formed by the composite board 9, or on a frame-like supporting structure to which the composite board 9 is also attached.

[0030] Fig. 3 shows three wall sections 2 on the opposite side of the vehicle above the stationary panel 4 provided there, which are all manufactured from the same composite board 9, although this is a second composite board 9 of the same type and not the board 9 shown in Fig. 1.

[0031] The large wall section 2 in Fig. 3 runs along two folded edges 10 bent to a certain radius, each of which passes over into a narrower wall section 2, where the two edges 10 themselves

adjoin one another at an angle in such a way that the two narrower wall sections 2 also adjoin one another, i.e. at an angle along a fine parting joint which is practically invisible.

[0032] Fig. 3 also shows that the second panel 4, i.e. on the side of the hearse opposite Fig. 1, is also fitted with a flap 6 which is designed to move on a hinge in the same way as explained for Figs. 1 and 2.

[0033] Whereas Fig. 3 shows a view through a side door backwards into the coffin compartment, Fig. 4 shows the view through the same side door forwards to the driver's compartment 15. An end wall 16 delimits the coffin compartment towards the front and the transition from this end wall 16 to a B column 17 of the hearse 1 is formed by another composite board 9 which may be roughly Z-shaped: It forms a narrow bordering strip 18 around the edge of the end wall 16. From there, the composite board 9 extends at almost right angles forward towards the driver's compartment 15, and at the level of the B column 17, the composite board 9 again bends by approximately 90° so that it now runs almost parallel to the edging strip 18, up to the B column 17, in such a way that a kind of pocket is formed at the side adjacent to the end wall 16 into which the side door plunges when it is closed. Apart from the edging strip 18, the composite board 9 as shown in Fig. 4 therefore forms two wall sections of the interior construction, so that by using one single component, i.e. the composite board 9, it is possible to avoid cutting the several smaller boards which would otherwise be required and then re-connecting them by means of special profile strips.

Szabadalmi igénypontok

1. Temetési jármű (1) koporsóterének belső kialakítása, amelynek több álló és fekvő, lényegében sík falszakasza (2) van,
ahol legalább két falszakasz (2) egymással szöget bezáróan van elrendezve és ennek megfelelően a belső kialakítás peremét (10) képezve egymást szögben határolják,
azzal jellemezve, hogy
a falszakaszok (2) együttesen szendvicslapból (9) vannak kialakítva,
ahol a szendvicslapnak (9) a koporsótér belseje felé irányuló, látható oldalnak nevezett, oldala fémből lévő felületi réteggel (12) van ellátva,
és a szendvicslapnak (9) a felületi réteggel (12) összekötött, magnak (14) nevezett, műanyagból lévő rétege van,
és ahol a perem (10) mentén és a szendvicslapnak (9) a felületi réteggel (12) ellentétes oldalán egy marási vonal húzódik.

2. Az 1. igénypont szerinti belső kialakítás,
azzal jellemezve, hogy
a szendvicslapnak (9) fémből lévő második felületi rétege van,
amely a magnak (14) a látható oldallal ellentétes oldalán van elrendezve,
és hogy a marási vonal a második felületi rétegen átnyúlik.

3. A 2. igénypont szerinti belső kialakítás,
azzal jellemezve, hogy
a marási vonal a magba (14) benyúlik.

4. A 3. igénypont szerinti belső kialakítás,
azzal jellemezve, hogy
a mag (14) a marási vonal tartományában megmaradó csökkentett anyagvastagsággal rendelkezik.

5. Az előző igénypontok bármelyike szerinti belső kialakítás,
azzal jellemezve, hogy

a szendvicslapnak (9) két, fémből lévő felületi rétege van,
és a két felületi réteg (12) két, egymással szemben lévő marási vonallal van ellátva, és a mag (14) többszörösen hajlítható rugalmas műanyagból oly módon van kialakítva, hogy az a két felületi réteg (12) két marási vonala között zsanért (11) képez,
és a szendvicslap a belső kialakítás csapóajtaját vagy ajtaját képezi.

6. Az előző igénypontok bármelyike szerinti belső kialakítás,
azzal jellemezve, hogy
legalább egy felületi réteg (12) alumíniumból van.

7. Az előző igénypontok bármelyike szerinti belső kialakítás,
azzal jellemezve, hogy
a mag (14) polietilénből van.

8. Az előző igénypontok bármelyike szerinti belső kialakítás,
azzal jellemezve, hogy
a szendvicslap (9) több marási vonallal van ellátva, és konkáv vagy konvex íveltséggel rendelkezik,
és hogy a szendvicslapnak (9) ez az íveltsége a belső kialakítás egy nagyobb felületén belül úgy van elrendezve, hogy az ezen a felületen kiemelkedést vagy bemélyedést képez.

9. A 8. igénypont szerinti belső kialakítás,
azzal jellemezve, hogy
a szendvicslapnak (9) az íveltsége a nagyobb felületen bemélyedésként van kialakítva, és hogy a bemélyedést letakaró, eltávolítható fedéllel van ellátva.

10. A 8. vagy 9. igénypont szerinti belső kialakítás,
azzal jellemezve, hogy
a bemélyedés egy válaszfalban van elrendezve, amely a temetési jármű koporsóterét elöl, a vezetőfülke felé határolja.

FIG.1

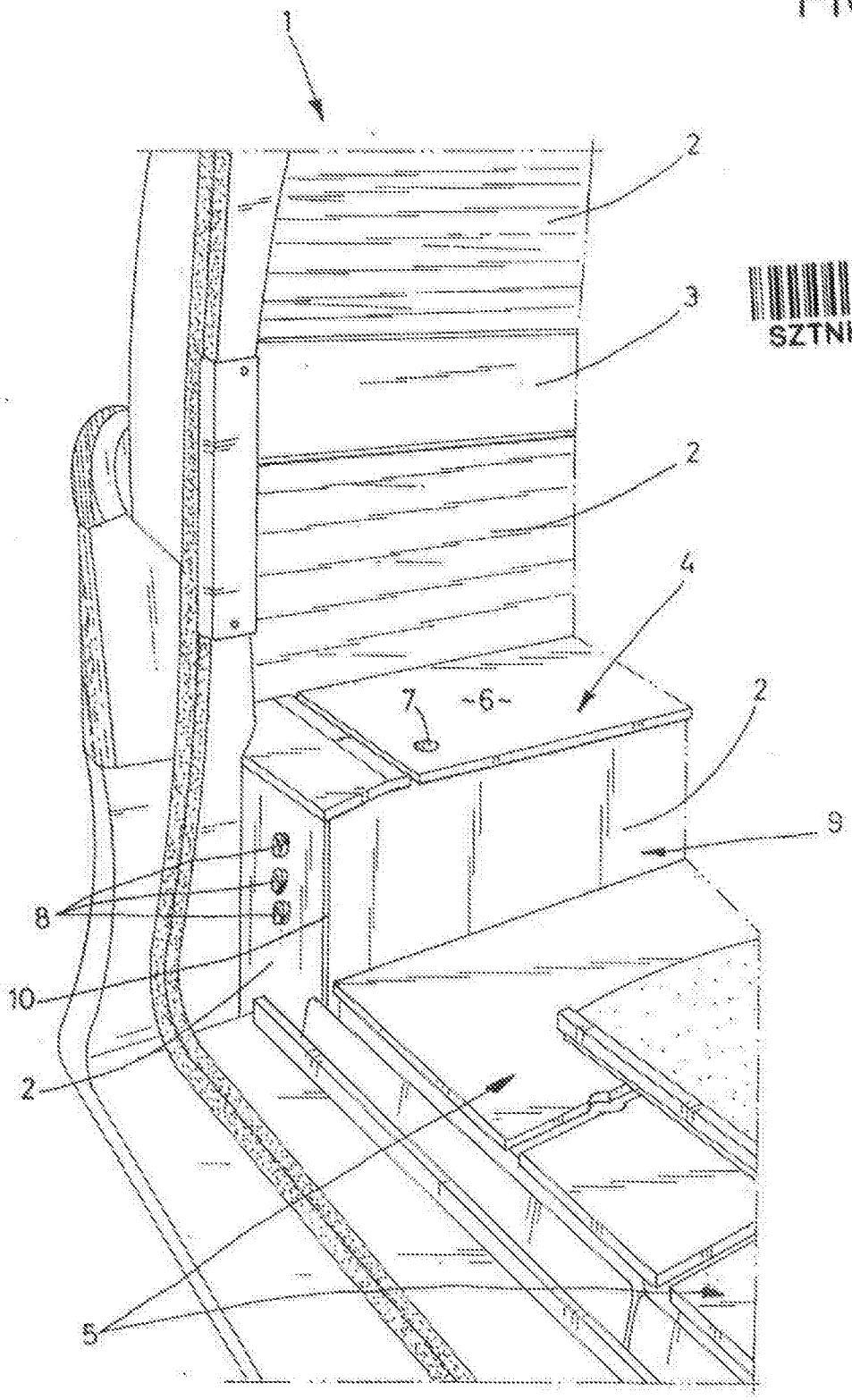

FIG.2

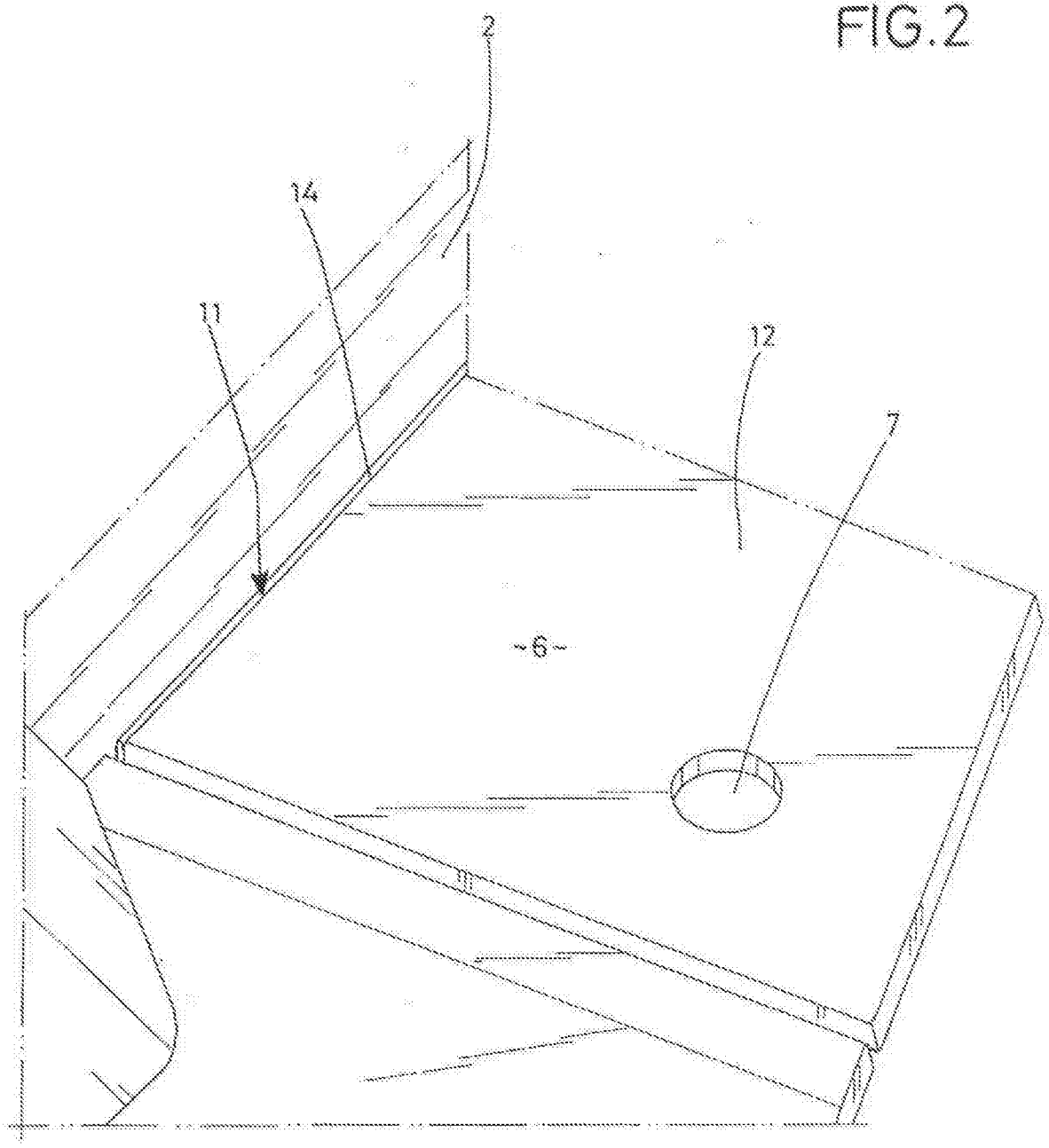

FIG.3

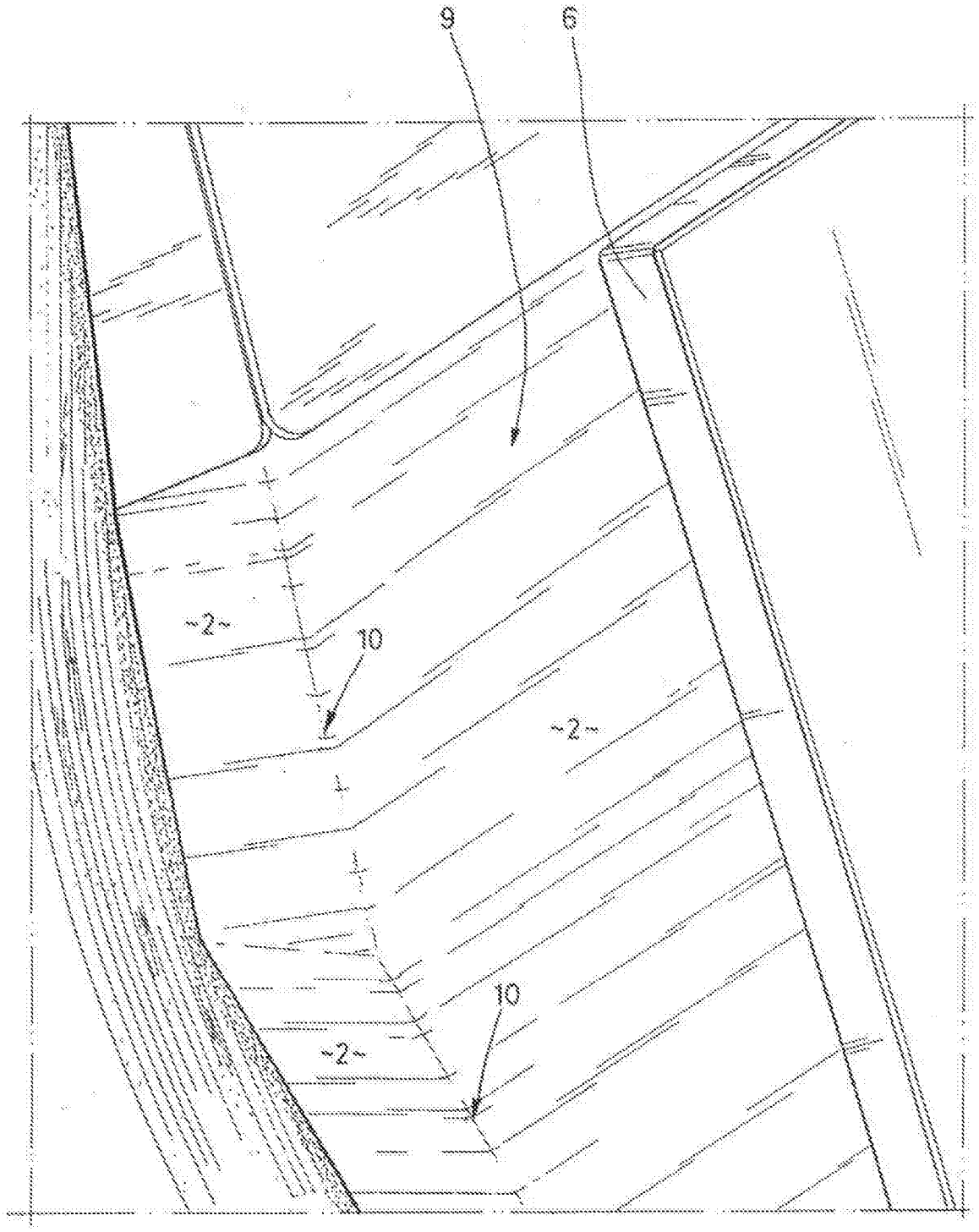

FIG.4