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(72) Inventor: **Pinzauti, Francesco**
50065 Pontassieve Firenze (IT)

(74) Representative: **Bardini, Marco Luigi et al**
c/o Società Italiana Brevetti S.p.A.
Corso dei Tintori, 25
50122 Firenze (IT)

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(71) Applicant: **Ciesse S.P.A.**
50012 Bagno a Ripoli (FI) (IT)

(54) **Tip-up table for passenger compartments of railway carriages**

(57) A tip-up table for passenger compartments of railway carriages comprising a support (3) integral with the structure of the vehicle with at least one housing (7); a guide (9) placed in said at least one housing in a substantially vertical position, having a first end hinged to the support and a second end hinged to an arm (11) pivotally connected to the support, the hinge axes being parallel. The table also comprises a top (8) in two leaves (8a,8b) hinged one to the other along respective adja-

cent sides, placed with the two leaves superimposed in the guide and connected slidingly and rotatingly thereto, so that, by transmitting an angular movement to the guide so as to place it in a tilted position and therefore making the top slide in the direction which goes from the first to the second end of said guide, it is possible to pull out the top from the guide. The top comprises travel end means designed to stop its sliding of the top at the second end and allow its rotation with respect to the guide so as to place it in a horizontal position.

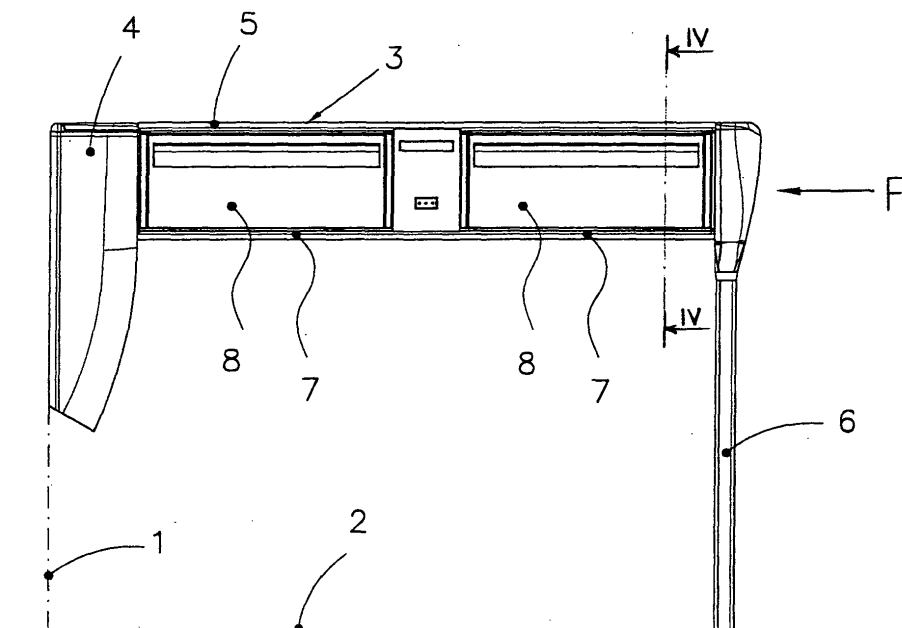


Fig.1

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Description

[0001] The present invention relates to a tip-up table for passenger compartments of railway carriages.

[0002] Tip-up tops and tables for the abovementioned purpose are already known. All known models have disadvantages relating mainly to their dimensions, both in the position of use and that of rest.

[0003] The problem of bulk is particularly felt in the case wherein the passenger compartment consists of four seats, two seats facing the other two, with a small table or worktop arranged in front of each seats used by the passenger to place documents, books, magazines, a portable computer or other personal items, or also food and drink. The width of the top should therefore be sufficiently large to allow also writing while comfortably seated.

[0004] To obtain these results the most common solution is that which involves a top fixed between the two pairs of seats, extending from the wall bordering the compartment at the window side and supported by an upright at the other side. In front of each seat a pull-out sliding top is thus provided which can be secured in a horizontal position in front of the passenger in order to be substantially coplanar or slightly lower in relation to the fixed top.

[0005] This solution moreover has the disadvantage of being bulky even when the pull-out top is in a rest position, and even more so when it is extended in a horizontal position obliging, for example, the passenger on the aisle side to stand up when the passenger on the window side wants to get by, or obliging him or her to return the pull-out top into its housing so as to create a sufficient space for the other passenger to get by.

[0006] The object of the present invention is to provide a tip-up table for passenger compartments of railway carriages which avoids the disadvantages mentioned above, more particularly with small overall dimensions both in the rest condition and in the extended condition and a pleasing external appearance.

[0007] This object is achieved with the tip-up table for passenger compartments of railway carriages according to the present invention whose basic features are disclosed in claim 1.

[0008] The invention will now be illustrated in greater detail by the following description of one of its embodiments, given by way of a non-limiting example with reference to the accompanying drawings, wherein:

- Figure 1 is a side elevation view of an assembly of tip-up tables for passenger compartments of railway carriages according to the invention;
- Figure 2 is a side elevation view of the assembly of Figure 1 along line F, with one of the tables partially pulled out;
- Figure 3 is a top plan view of the assembly of Figure 1 with the tip-up tables in a partially and fully extended position;

- Figure 4 is a cross section of the assembly of Figure 1 along line IV-IV;
- Figure 5 is a cross section of the assembly of Figure 1 showing a table being pulled out;
- Figure 6 is a cross section of the assembly of Figure 1 showing a table at the end of the pull-out travel and another table in an extended position, not tipped up;
- Figure 7 is a cross section of the assembly of Figure 1 showing a table in the horizontal position and fully tipped up, with an enlargement of the hinge placed between the two leaves of the table.

[0009] Referring to Figures 1, 2 and 3, 1 denotes schematically a wall, for example the wall at the window side, and 2 the floor of a passenger compartment of a railway carriage. 3 denotes generically a support structure formed by a rubbish bin 4 attached to the wall 1, a fixed top 5 attached to the front side of the bin 4 by one of its ends, and an upright 6 rising from the floor 2 and attached to the other end of the top 5.

[0010] The part of the support structure 3 which extends below the fixed top 5 preferably has a substantially C configuration so as to define on each of its sides two pairs of housings 7 wherein the same number of pull-out and tip-up tops 8 are placed.

[0011] As shown in Figures 4 and 5, inside of each housing 7 a channel-shaped support 9 is placed, acting as a sliding guide for the respective top 8. More particularly the channel-shaped support 9 has a lower end 9a hinged by its side edges to the sides of the housing 7 by means of respective pins 10. The upper end 9b of the channel-shaped support 9 is instead hinged by the same side edges to a pair of arms 11 hinged in turn to the sides of the housings 7. The axes of the relative hinges are all parallel one in relation to the other.

[0012] The tops 8 placed in the channel-shaped supports 9 are each formed by two leaves 8a and 8b hinged one to the other at two adjacent sides parallel to the fixed top 5. The two leaves 8a and 8b can be tipped up on one or the other when the top 8 is engaged inside the respective channel-shaped support 9.

[0013] To allow sliding of the top 8 along the respective channel-shaped support 9 and achieve its exit at the upper end 9b, respective grooves 12 are formed along two opposite side edges of the leaf 8b and two opposite pins 13, projecting from the side edges of the channel-shaped support 9, engage within grooves 12. On the face of the leaf 8b, visible when the top 8 is in the rest condition in the channel-shaped support 9, a cavity 14 is formed to grasp the top 8 with one hand and exert a traction action which allows it to slide along arrow H in Figure 5. Moreover, between the side edges of the top 8, in particular the edges of its leaf 8a, and the corresponding side edges of the channel-shaped support 9, a rotating insert 15 is provided to contrast the leaf 8a during the phase of sliding for its pulling-out.

[0014] Figure 4 illustrates the substantially vertical

position kept by the two tops 8 in the condition of non-use or rest. It can be seen how in this condition the tops 8, with the respective leaves 8a, b tipped up one on the other, are completely contained in the housings 7. In order to bring the tops 8 into the condition of use it is first necessary to rotate the channel-shaped support 9, together with the top 8 contained therein, around its own lower end so as to release the upper end 9b thereof, taking it outside of the profile of the fixed top 5, as shown in Figure 5. This is obtained by grasping the top 8 with a hand in the cavity 14 and pulling it outwards, up to the maximum rotation of the arms 11 in relation to the housing 7. Once the table has been placed in a tilted position, a traction action is exerted along arrow H of Figure 5, causing the sliding of the top 8 in relation to the channel-shaped support 9 until the pin 13 abuts on the lower end of the groove 12, that is to say constituting the upper travel end of the sliding motion, as shown in Figure 6.

[0015] At this point the top 8 rotates, with its leaves still tipped up one on the other, until it is placed in a horizontal position as shown in Figures 6 and 7. Rotation of the top 8 takes place around the pair of pins 13 engaged in the sliding groove 12. Since the distance between the axis of rotation of the pins 13 and the back wall of the channel-shaped support 9 is smaller, for reasons of keeping the dimensions to a minimum, than the distance between the same axis and the internal end of the top 8, to allow rotation of said table up to the horizontal position, the back wall of the channel-shaped support 9 has correspondingly an internally arcuate portion 16 with the same profile as the path followed by the internal end of the top 8 during this rotation. At the end of this rotation the top 8 abuts on the lower edge of the fixed top 5 and in particular engages inside it with a stabilisation pin 17 projecting from this end. Naturally, in order to allow subsequent tipping-up of the leaf 8a in relation to the leaf 8b, bringing it into a position coplanar with the latter, as shown in Figure 7, the leaf 8a is shorter than the leaf 8b to a sufficient extent so as to avoid any interference with the edge of the fixed top 5, as shown in Figure 6. The hinges 18 which pivotally connect the leaf 8a to the leaf 8b of the top 8, shown in detail in Figure 7, are embedded in the relevant leaves so as not to create discontinuity on the top formed by the two leaves when they are placed in a coplanar position.

Claims

1. Tip-up table for a passenger compartment of railway carriages **characterised in that** it comprises a support (3) integral with the structure of the vehicle with at least one housing (7); guide means (9) placed in said at least one housing in a substantially vertical position, having a first end hinged to said support and a second end hinged to an arm (11) pivotally connected to said support, the hinge axes being parallel; a top (8) in two leaves (8a, 8b) one

hinged to the other along respective adjacent sides, positioned with the two leaves superimposed in said guide means and connected slidably and rotatably thereto, so that, by transmitting an angular movement to said guide means in order to place them in a tilted position and then making said top slide in the direction which goes from the first to the second end of said guide means, it is possible to pull said top out from said guide means, said top comprising travel end means (12, 13) designed to stop its sliding at said second end and allow its rotation with respect to said guide means (9) so as to place it in a horizontal position.

2. Tip-up table according to claim 1, wherein said guide means have a channel-shaped structure and have, at said second end, two opposite pins (13), respective grooves (12) being provided along the opposite edges of a leaf of said top wherein said pins engage slidably.

3. Tip-up table according to claims 1 or 2, wherein said travel end means is formed by the end of said groove (12) against which the respective pin (13) abuts.

4. Tip-up table according to any one of the previous claims, wherein said guide means have at the second end an arched contrast side (16) so as to facilitate rotation of said top at the end of sliding.

5. Tip-up table according to any one of the previous claims, wherein said support (3) has a substantially C shape so as to define the housing for said top (8).

6. Tip-up table according to any one of the previous claims, wherein said support has two faces and two side edges, two housings (7) being formed on each of said faces, one of said side edges being connected to a wall (1) of the vehicle, the other having a support upright (6) rising up from the floor (2).

7. Tip-up table according to claim 6, wherein at one of said side edges a rubbish bin (4) is formed.

8. Tip-up table according to any one of the previous claims, wherein said top has means (17) for stabilisation in its horizontal position.

9. Tip-up table according to claim 8, wherein said stabilisation means comprise a pin (17) extending from said top which engages in said support (3).

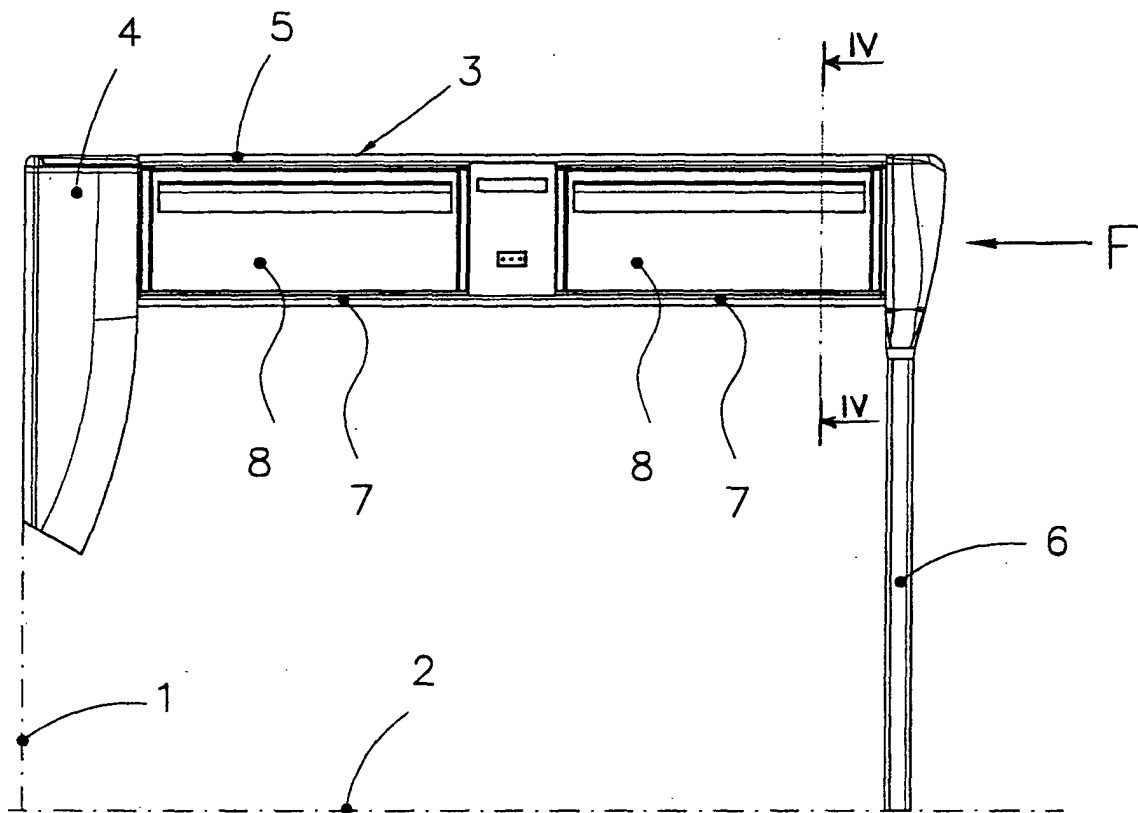


Fig. 1

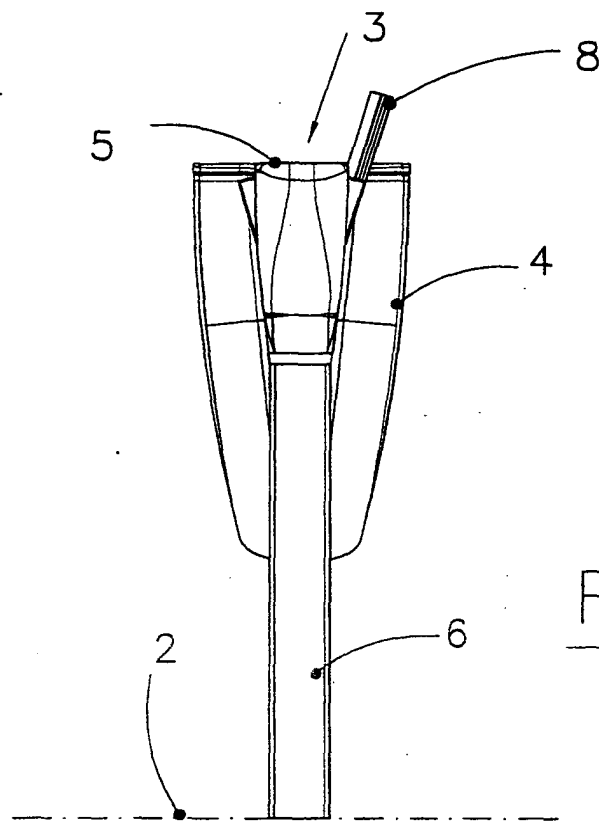
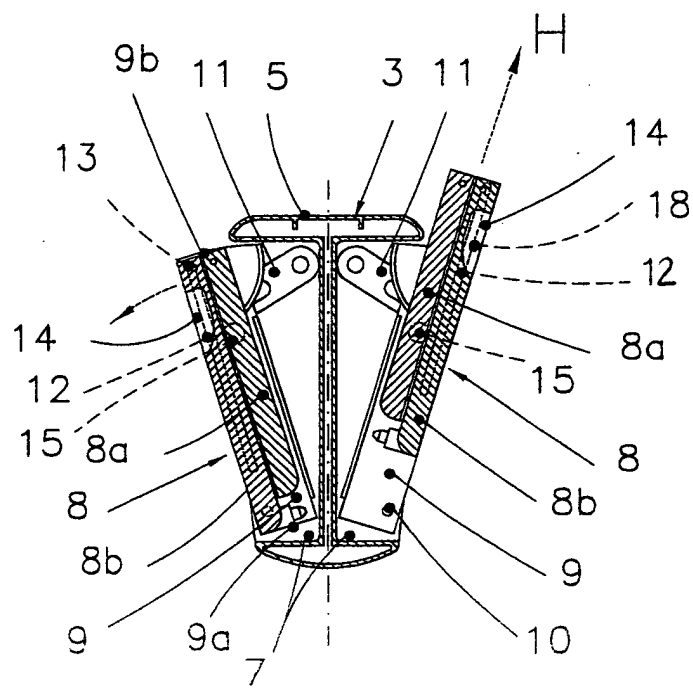
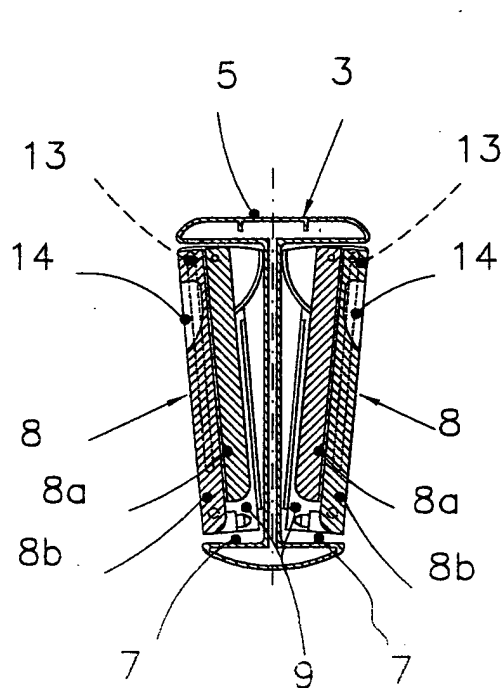
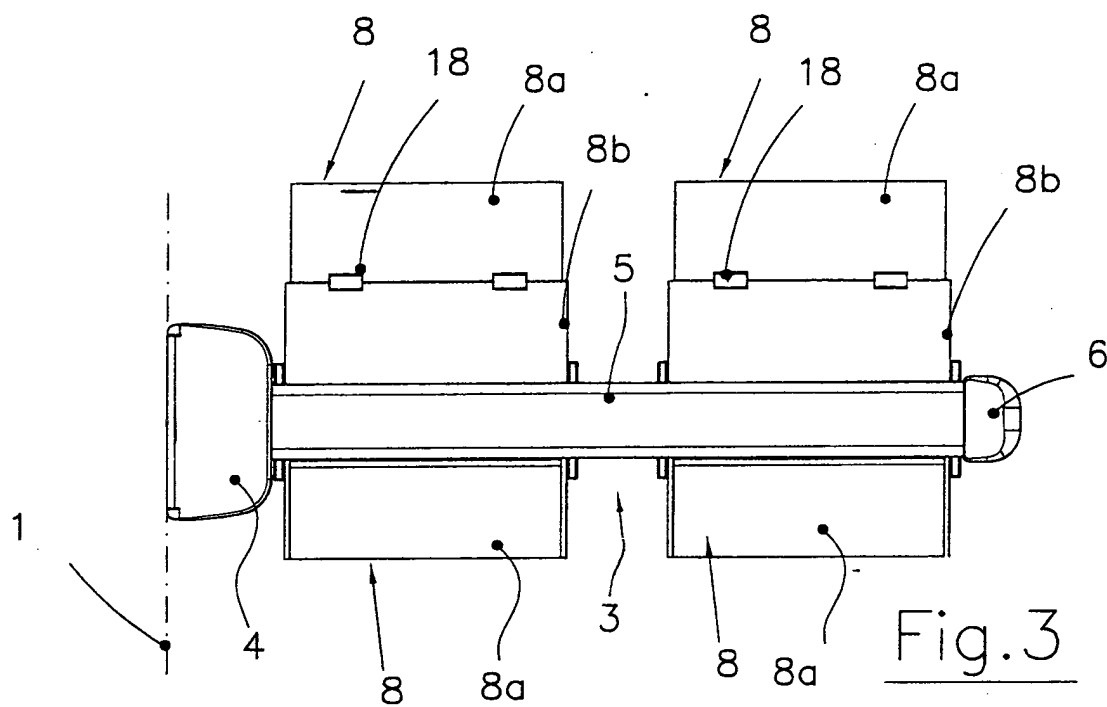
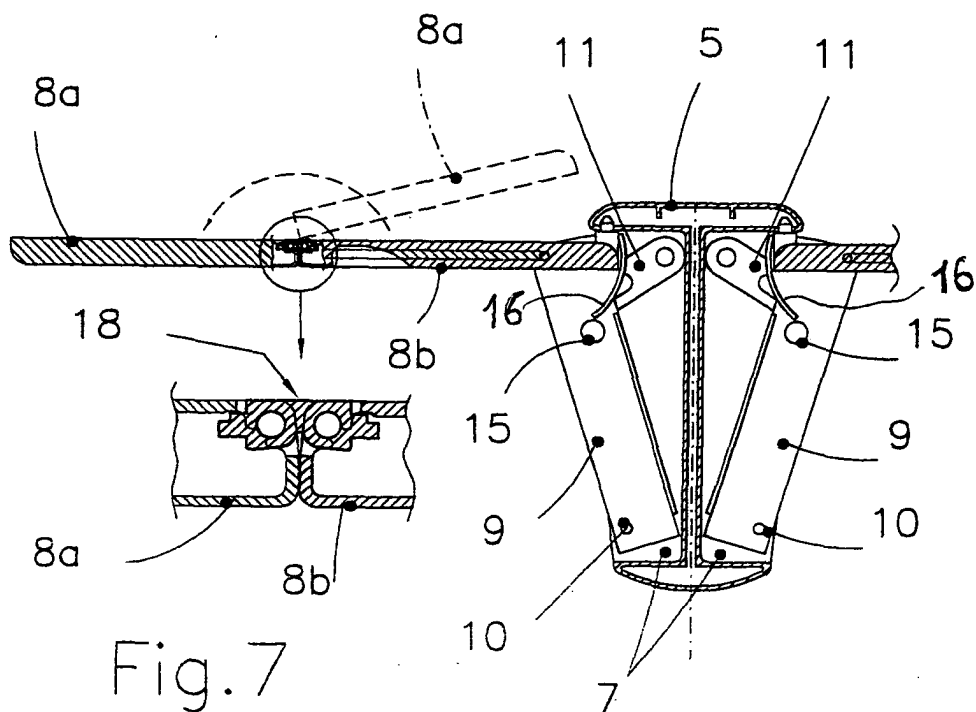
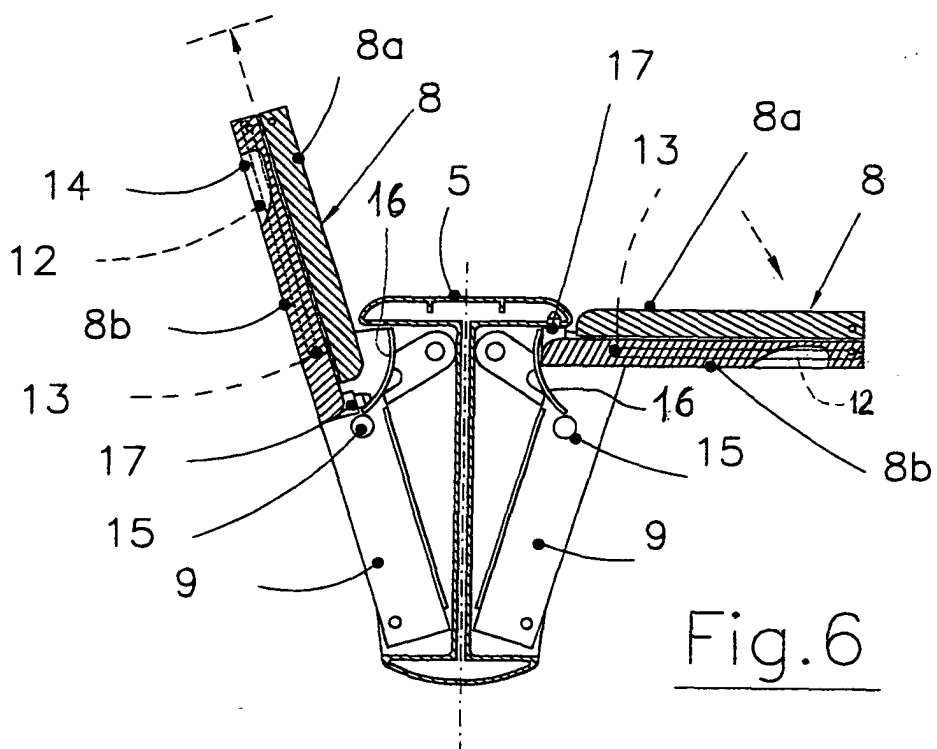


Fig. 2







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EUROPEAN SEARCH REPORT

Application Number
EP 04 42 5668

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	US 2003/047120 A1 (DETMERS PETER R) 13 March 2003 (2003-03-13) * paragraphs [0017] - [0021]; figures 1-3 *	1	B61D37/00 B60N3/00
A	FR 2 802 070 A (EMNI) 15 June 2001 (2001-06-15) * the whole document *	1	
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A	DE 200 16 393 U (HYMER LEICHTMETALLBAU GMBH & C) 14 February 2002 (2002-02-14) * abstract; figures 1-4 *	1	
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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 16 December 2004	Examiner Ferranti, M
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**ANNEX TO THE EUROPEAN SEARCH REPORT
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