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(54) Compact shelter

(57) A shelter (1), of the compact type, is apt to house equipment of electric, electromechanical or electronic type providing optimal protecting conditions during interventions of operators on said equipment, and has side removable walls (2), to allow said interventions, to which are associated: a portion of side wall (6, 7; 2), movable between a position of minimum hindrance and an access position, apt to define, in said access position, an operation room (9) operable for an operator to manoeuvre said equipment; and at least one door-panel (10, 13; 16), movable between a foldaway position and a protecting position, apt to shield, in the protecting position thereof, said operation room (9) from the outer environment, cooperating with said portion of side wall (6, 7; 2) and with the remaining walls (3, 4) of the compact shelter (1).

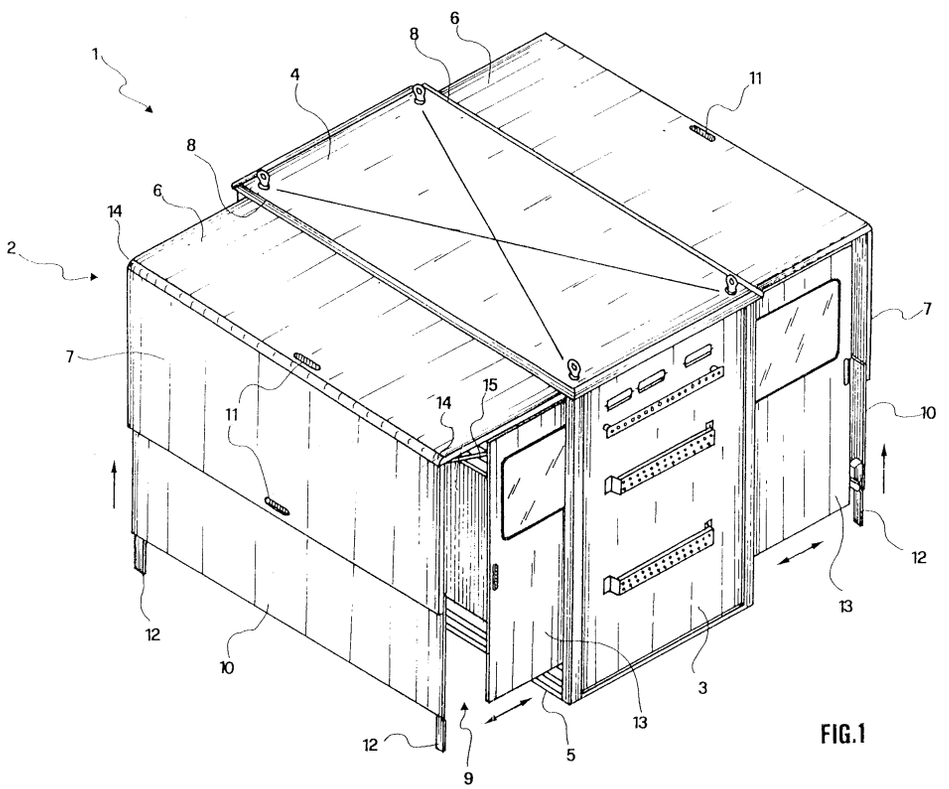

FIG.1

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Description

[0001] The present invention relates to a compact shelter, substantially box-shaped, for equipment of electric, electromechanical or electronic type, for instance equipment referring to a telephone antenna, having removable walls to allow the access to the equipment.

[0002] Such a container is generally known with the technical term *"shelter".*

[0003] A first type of shelters known in the art is of the so-called habitable type, not altogether compact, i.e., such as to allow, through a normal door, the entrance of an operator in the inside thereof.

[0004] This type of shelter has an apparent drawback consisting of the bulkiness thereof, making it the transport and the installation of the shelter difficult, particularly in sites difficult to reach, such as e.g., treadable roofs.

[0005] A second type of compact shelters is represented by the real, i.e. unhabitable, compact shelter as above specified, the walls thereof comprising a plurality of panels that can be opened by the operator during the maintenance or the use of the equipment housed therein.

[0006] Thus, the problem of the large dimension of the shelter is solved, since the operator performs his/her tasks from outside.

[0007] However, a drawback becomes apparent whenever unfavourable weather conditions do occur, making it difficult, if not downright impossible, to perform an operation on the equipment at issue from the outside.

[0008] In order to overcome this drawback, the compact shelters have been provided with extensible awnings, similar to those used to protect balconies or terraces.

[0009] However, this solution is unsatisfactory, on one hand because it cannot cope with weather conditions of the worst kind, that anyhow cause a marked inconvenience to the operator substantially exposed to the wind, to the slanting rain and to low temperatures.

[0010] On the other hand, according to the currently recognised standards, an awning or the like cannot offer a suitable protection against the bad weather to the sheltered equipment.

[0011] The technical problem underlying the present invention is that of providing a compact shelter allowing to overcome the drawbacks mentioned with reference to the known art.

[0012] Such problem is solved by a shelter as above specified, characterised in that to at least one of said walls are associated: a portion of side wall, movable between a position of minimum hindrance and an access position, apt to define, in said access position, an operation room, operable by an operator to manoeuvre said equipment; and at least one door-panel, movable between a foldaway position and a protecting position, apt to shield, in the protecting position thereof, said operation room from the outer environment, cooperating with said portion of side wall and with the remaining walls of the compact shelter.

[0013] The main advantage of the shelter according to the present invention lies in allowing optimal protection conditions in case of intervention of an operator on the housed equipment, while ensuring the maximum compactness in normal operative conditions thereof.

[0014] The present invention will be hereinafter disclosed according to two of its preferred embodiments, given by way of example and not for limitative purposes, referring to the annexed drawings, wherein:

- figure 1 shows a perspective view of a first example of shelter according to the invention, in an intervention condition;
- figure 2 shows a partially sectional perspective view of the shelter of figure 1 in different intervention conditions;
- figures 3a, 3b, 3c, 3d, 3e e 3f show side views of the shelter of figure 1, showing the complete functionality thereof; and
- figure 4 shows a perspective view of a second embodiment of shelter according to the invention, in an intervention condition.

[0015] With reference to figures 1 and 2, a shelter 1 of the compact type is represented, substantially box-shaped, apt to house equipment of electric, electromechanical and/or electronic type in the inside thereof.

[0016] Said shelter has wider vertical side walls, indicated with 2 and hereinafter referred to simply as side walls 2; narrower vertical side walls, indicated with 3 and hereinafter referred to as end walls 3; a roof 4 and a bottom wall 5.

[0017] The shelter 1 is substantially symmetrical with respect to the vertical, transversal and longitudinal planes of symmetry thereof, hence what is described for a side wall 2 can also be ascribed to the opposite one.

[0018] In the shelter 1, the side walls 2 are movable in order to allow the access of an operator to the equipment sheltered therein.

[0019] Each side wall 2 is substantially symmetrically and longitudinally divided in a first panel 6 and a second panel 7. The first panel 6 is rotatably connected to the shelter 1 at its upper corner 8 thereof.

[0020] Therefore, the first panel 6 can be rotated substantially of 90° from a position of minimum hindrance to an access position, in which the first panel 6 substantially forms the covering of an operation room 9, operable by an operator to manoeuvre the equipment.

[0021] The second panel 7 is in turn rotatably connected to the first panel 6 and it can also be rotated of 90°, passing from a position of minimum hindrance to the access position, in which it forms a portion of side wall of said operation room 9 and it assumes, with the

first panel 6, a 90° configuration.

[0022] Said panels 6, 7 form a portion of side wall that are altogether movable between the above defined positions of minimum hindrance and of access.

[0023] The shelter 1 further comprises a first door-panel 10 that is slidingly associated adjacently to the inner surface of the second panel 7, i.e., to the corresponding side wall 2.

[0024] Said first door-panel 10 is telescopically movable between a foldaway position, behind the second panel 7, and a protecting position, when the panels 6, 7 are placed at right angles.

[0025] The first door-panel 10 forms, in said protecting position, the extension of the second panel 7 completing the side wall of the operation room 9, thus being apt to shield the operation room from the outer environment and remarkably improving the conditions of protection from bad weather.

[0026] The shelter 1 comprises, associated to said panels 6, 7, first locking means in position of minimum hindrance, e.g., of the release lock type, that can be operated by handles 11 placed on the panels 6, 7.

[0027] The shelter 1 further comprises second locking means, of the panels 6, 7, in the access position. Such second means can comprise release joints such as to fix the first panel 6 rotated of 90° and parallel to the roof 4 and the second panel 7 placed at right angles with the first panel 6.

[0028] The first door-panel, in the protecting position, can lean on the floor that supports the shelter 1 thanks to a pair of sliding feet 12.

[0029] With reference to figure 2, a variation of the shelter 1 in figure 1 is shown wherein, in place of the first door-panel 10, a set 10a of first door-panels 10 mutually telescopic with respect to each other and extensible for an extension equal to the height of the shelter 1 is provided.

[0030] Thus, the panels 6, 7 can assume a roof-shaped coplanar configuration or an intermediate configuration, at a different height, to provide the operator with more room when it is needed and, preferably, with favourable weather conditions.

[0031] The shelter 1 of the present embodiment comprises, for each side wall 2, a pair of second door-panels 13, substantially door-shaped, placed adjacently to the inner surface of the respective end wall 3.

[0032] The door 13 is also movable between a foldaway position, behind the respective end wall 3, and a protecting position in which it forms a closed and sealed corner 14 of said room 9 with said first and second panel 6, 7 placed at right angles.

[0033] To this end, the door 13 is conveniently set on suitable slideways, not shown, mortising on respective strikers on the panels 6, 7.

[0034] The shelter 1 further comprises elastic means to ease the opening of the side wall 2. Such elastic means comprise, e.g. an extensible bar 15 having a spring inside as shown in the figures.

[0035] With reference to figures 3a to 3f, the opening modes of said walls 2 and forming of the operation room 9 are shown.

[0036] From a closed position, in which the shelter is in a normal operating state (figure 3a); acting on the handles 11 it is possible to lift the panels 6, 7 of the removable side wall 2 (figure 3b); form a right angle configuration with said panels 6, 7 (figure 3c) locking it with said second locking means; lowering the first door-panel 10 and the relative foot 12 (figure 3d); extracting the second door-panel 13 from behind the end wall 3 forming a closed corner 14 of the operation room 9 thus formed (figure 3e); and repeating the same operation with the opposite removable side wall (figure 3f).

[0037] With reference to figure 4, a second embodiment of the shelter 1 is shown, of the compact type, substantially box-shaped, apt to house equipment of the electric, electromechanical and/or electronic type.

[0038] Alike the former, such shelter has wider vertical side walls, indicated with 2 and hereinafter referred to simply as side walls 2; narrower vertical side walls, indicated with 3 and hereinafter referred to as end walls 3; a roof 4 and a bottom wall 5.

[0039] The shelter 1 is substantially symmetrical with respect to the vertical, transverse and longitudinal planes thereof, hence what is described for a side wall 2 can be ascribed to the opposite one as well.

[0040] In the shelter 1 the side walls 2 are movable in order to allow the access of an operator to the equipment sheltered therein.

[0041] To this purpose, the entire side wall 2 forms a movable portion, in particular that can be translated from a position of minimum hindrance to an access position in which an operation room 9 as previously described is defined.

[0042] To this purpose, each side wall 2 is fixedly connected, forming a 90° angle, to a respective first door-panel 16 that is slidingly movable between a foldaway position, below the roof 4, and a protecting position, in which it substantially forms the covering of said room 9.

[0043] The side wall 2, in the protecting position, can lean on the floor that supports the shelter 1 thanks to a pair of rollers 17 allowing the translation thereof, together with the slideways in which each door-panel 16 slides.

[0044] On the outer surface of the side wall 2 there is a handle 18 for the extraction and the insertion of the set comprising side wall 2 and first door-panel 16.

[0045] The shelter 1 of the present embodiment comprises, for each side wall 2, a pair of second door-panels 13, substantially door-shaped, placed adjacently to the inner surface of the respective end wall 3.

[0046] The door-panel 13 is also movable between a foldaway position, behind the respective end wall 3, and a protecting position in which it forms, with said side wall 2 and the first door-panel 16 placed at right angles, a sealed and closed corner 14 of said room 9.

[0047] To this purpose, the door-panel 13 is conveniently set on suitable slideways, not shown, mortising on

respective strikers on the side walls 2 and on the first door-panels 16.

[0048] Among the variations worth mentioning, the possibility of providing the above described shelters with remotely controlled systems for the opening and closing thereof can be mentioned.

[0049] Besides the above mentioned advantage, the above described shelters can easily be opened and closed manually, with no need of exerting an excessive force.

[0050] Moreover, they ensure an improved degree of protection, even in not completely closed configurations, for instance with the door or the first door-panel in a foldaway position.

[0051] Furthermore, they can be built and used in place of the known containers with no substantial cost increase.

[0052] To the above described compact shelter, a man skilled in the art, in order to satisfy further and contingent needs, may introduce several further modifications and variants, all of them comprised within the protection scope of the present invention, as defined in the annexed claims.

Claims

1. A compact shelter (1) substantially box-shaped, apt to house equipment of electric, electromechanical or electronic type, having removable side walls (2) to allow the access to the equipment, characterised in that to at least one of said walls (2) are associated: a portion of side wall (6, 7; 2), movable between a position of minimum hindrance and an access position, apt to define, in said access position thereof, an operation room (9), operable to an operator to manoeuvre said equipment; and at least one door-panel (10, 13; 16), movable between a foldaway position and a protecting position, apt to shield, in its protecting position, said operation room (9) from the outer environment, cooperating with said portion of side wall (6, 7; 2) and with the remaining walls (3, 4) of the compact shelter (1).

2. The shelter (1) according to claim 1, wherein said removable walls are the opposing wider vertical walls extension (2), the narrower vertical side walls (3) being substantially fixed.

3. The shelter (1) according to claim 2, wherein each removable side wall (2) forms said portion of side wall, comprising a first panel (6) rotatably connected to the shelter (1) at the respective upper corner thereof (8), apt to be rotated of substantially 90°, from said position of minimum hindrance to said access position.

4. The shelter (1) according to claim 3, wherein said portion of side wall comprises a second panel (7), rotatably connected to said first panel (6) so as to be capable of assuming with the latter a right angle configuration in said access position.

5. The shelter (1) according to claim 4, wherein first locking means in said position of minimum hindrance; second locking means, in said access position; and elastic means (15) apt to ease the opening of said removable side wall (2), are associated to said first and second panel (6, 7.

6. The shelter (1) according to claim 4, having a first door-panel (10), in a foldaway position adjacent to said second panel (7) and telescopically movable with respect thereof.

7. The shelter (1) according to one of the claims 4 to 6, having a door-panel (13), substantially sliding door shape, placed adjacently to said narrower vertical side walls (3) and movable to form a closed corner (14) of said operation room (9) with said first and second panel (6, 7).

8. The shelter (1) according to claim 2, wherein each removable side wall (2) forms said portion of side wall, being apt to be translated between said positions of minimum hindrance and of access, to said removable side wall (2) being connected, at the upper corner of the shelter (8), a first sliding door-panel (16), that can be inserted in a foldaway manner below the roof (4) of the shelter (1).

9. The shelter (1) according to claim 8, having a second door-panel (13), substantially sliding door shaped, placed adjacently to said narrower vertical side walls (3) and movable to form, with said removable side wall (2) and said first door-panel (16), a closed corner (14) of said operation room (9).

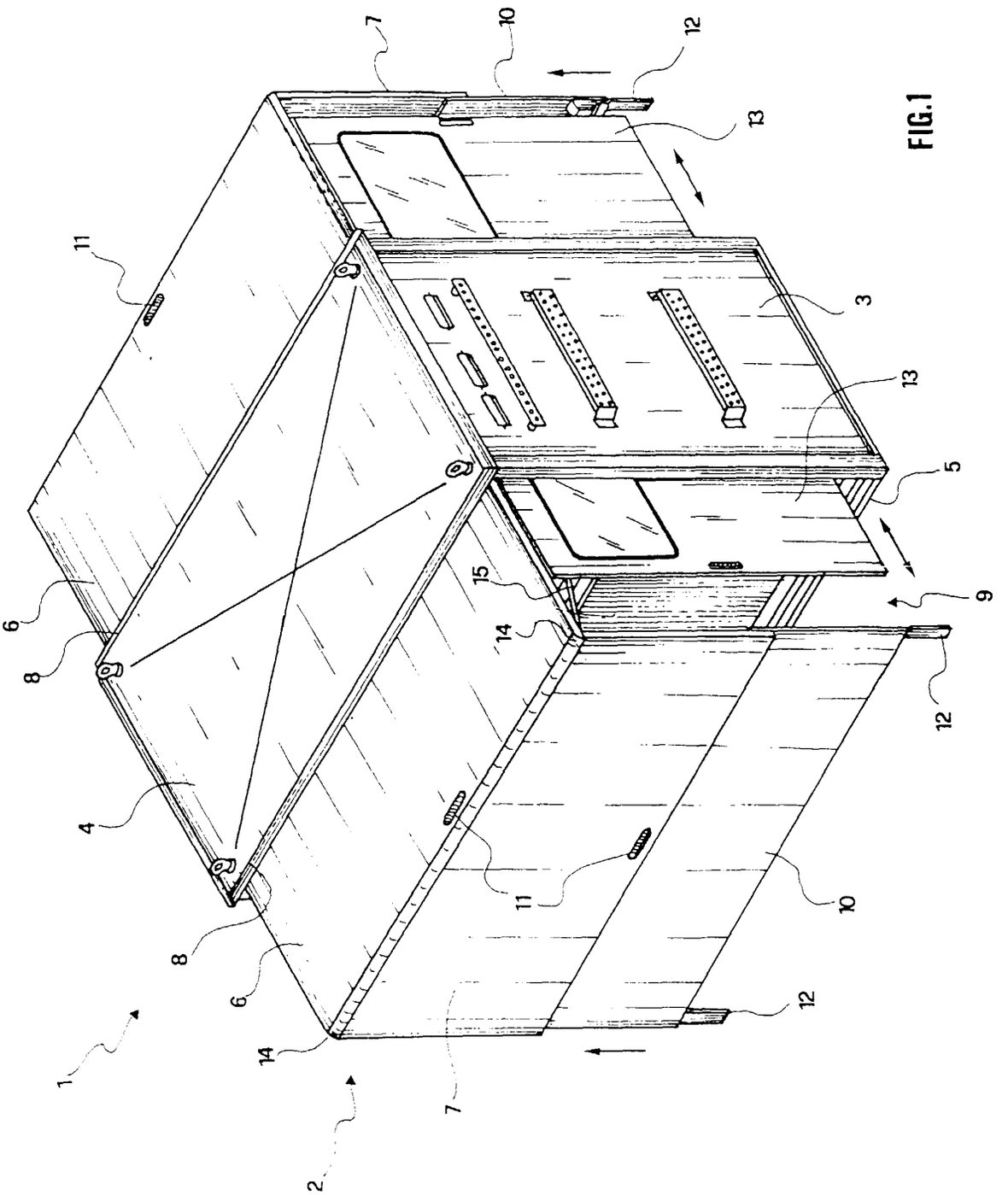

FIG.1

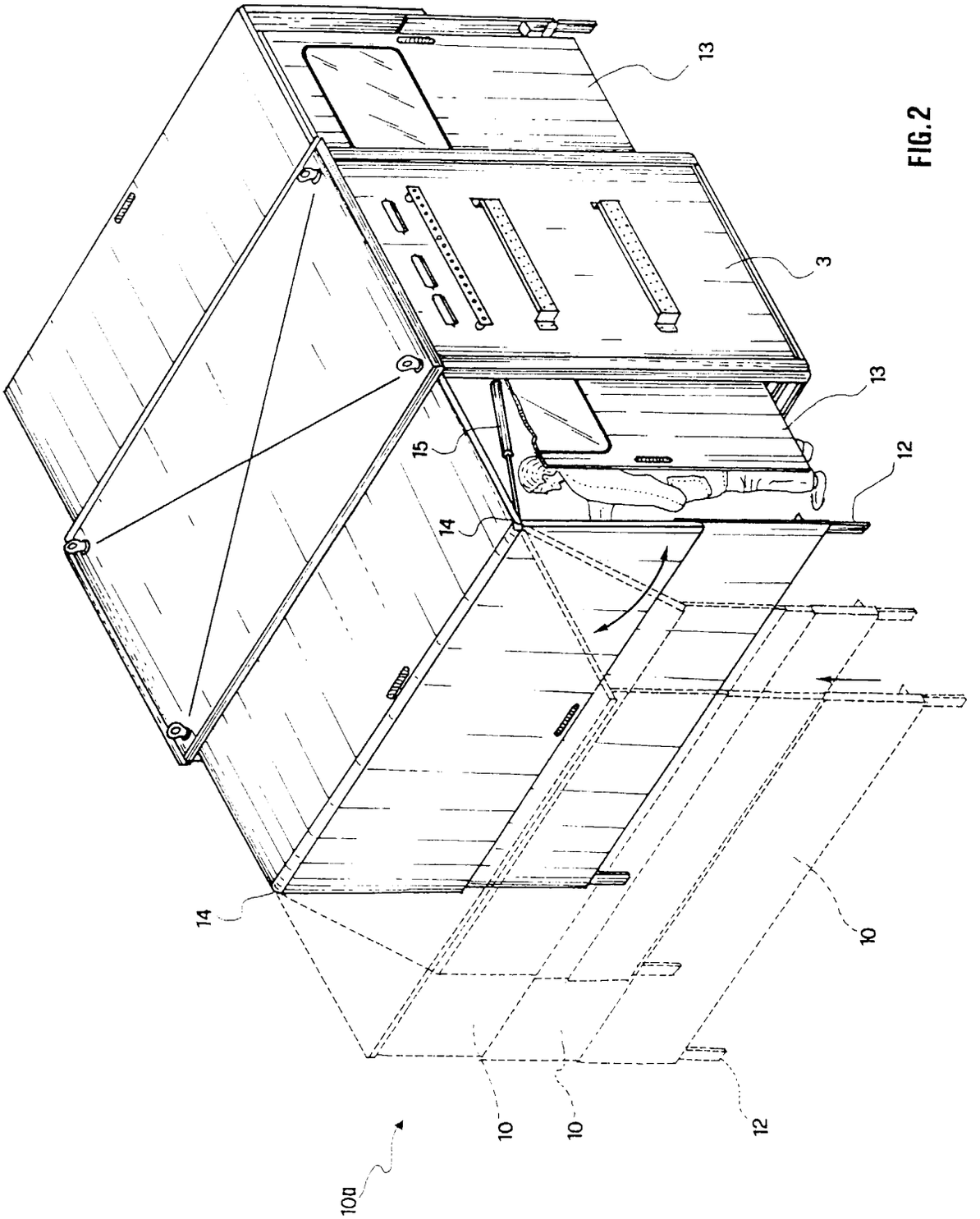

FIG.2

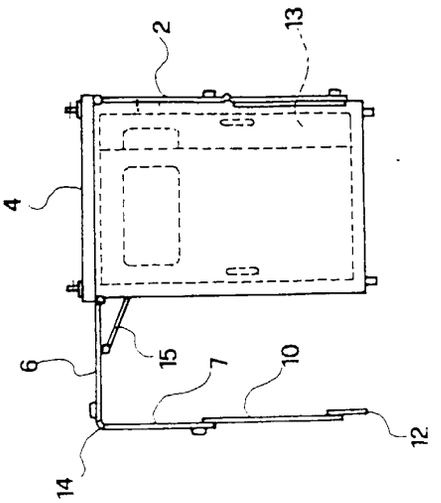

FIG.3d

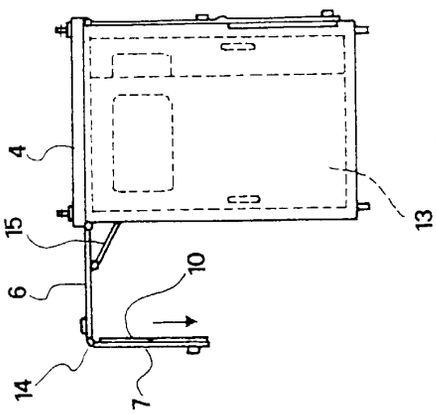

FIG.3c

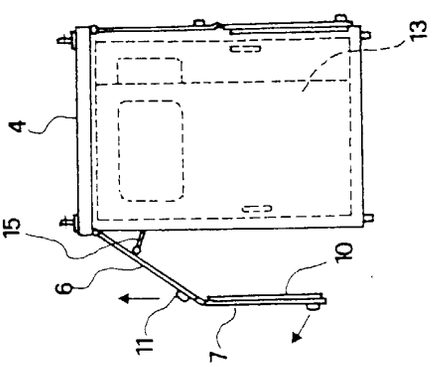

FIG.3b

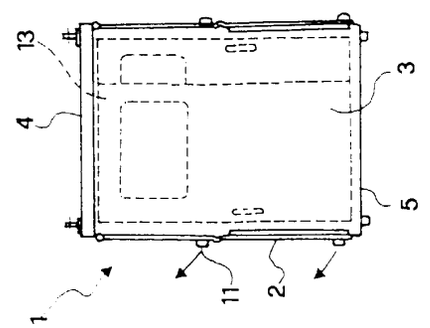

FIG.3a

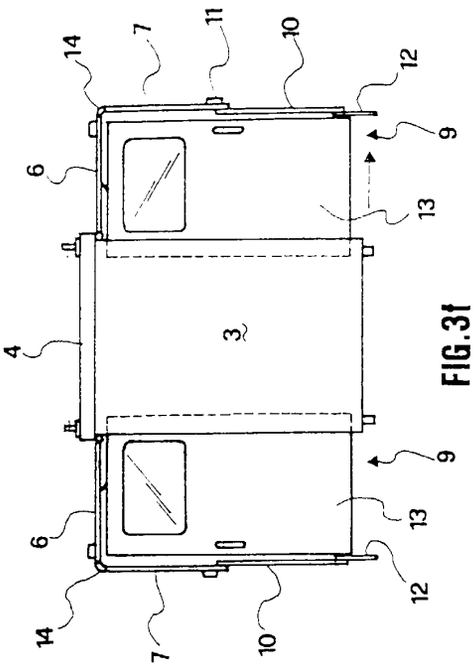

FIG.3f

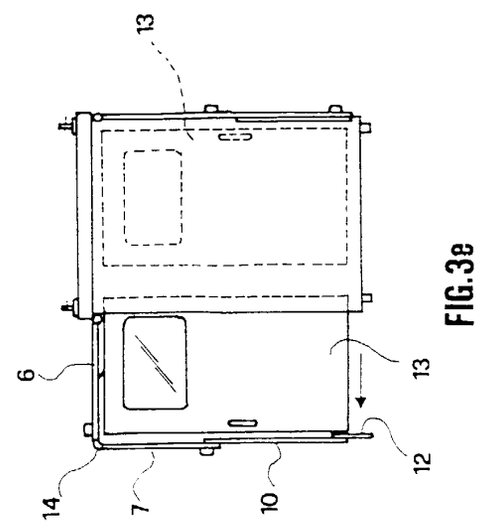

FIG.3e

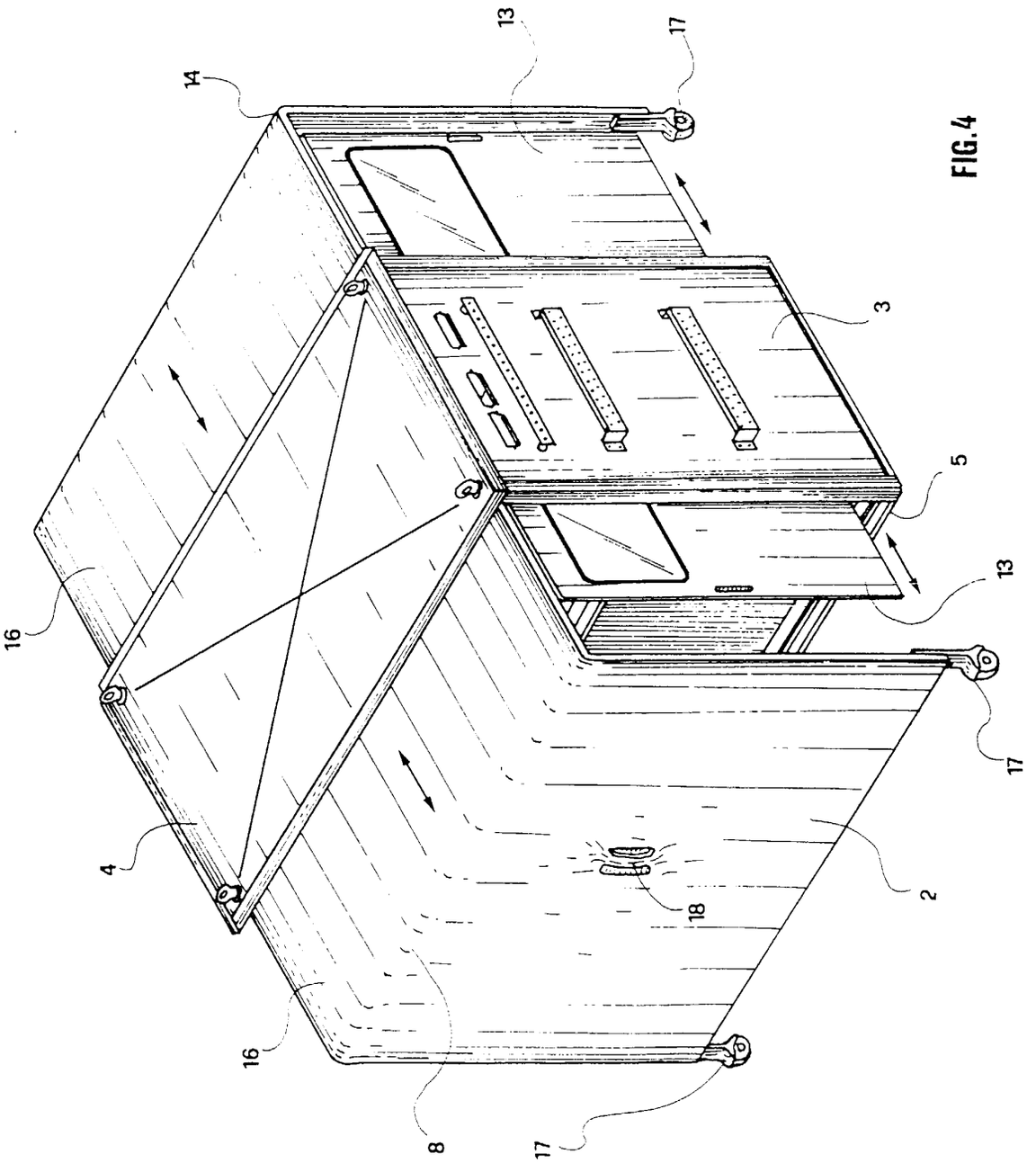

FIG.4

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EUROPEAN SEARCH REPORT

Application Number
EP 99 83 0309

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	11 October 1999	Kriekoukis, S

CATEGORY OF CITED DOCUMENTS

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