

(19)



(11)

EP 2 390 584 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:
11.07.2018 Bulletin 2018/28

(51) Int Cl.:
F24C 15/08 ^(2006.01)

(21) Application number: **10005609.2**

(22) Date of filing: **28.05.2010**

(54) **Oven cabinet**

Backofengehäuse

Boîtier de four

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO SE SI SK SM TR**

(43) Date of publication of application:
30.11.2011 Bulletin 2011/48

(73) Proprietor: **Electrolux Home Products
Corporation N.V.
1130 Brussels (BE)**

(72) Inventors:
• **Böckler, Marco
91596 Burk (DE)**

• **Dänzer, Stefan
91631 Wettringen (DE)**

(74) Representative: **Electrolux Group Patents
AB Electrolux
Group Patents
105 45 Stockholm (SE)**

(56) References cited:
**WO-A1-2009/141125 DE-A1- 10 314 500
DE-A1-102006 004 384 US-A- 3 826 553
US-A1- 2005 056 041 US-A1- 2006 151 483
US-A1- 2008 264 933**

EP 2 390 584 B1

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

Description

TECHNICAL FIELD

[0001] The present invention refers to an oven cabinet, comprising a rear panel, two side panels arranged at either side end of the rear panel, a top panel arranged at the upper ends of the rear panel and of the side panels, a front door pivotally arranged by means of hinges, and a bottom panel receiving at least one electronic component, in particular a steam generator and/or a heating element, and being arranged at the bottom ends of the rear panel and of the side panels.

[0002] Oven cabinets of the above mentioned kind are already known in the prior art. The bottom panel, which receives the steam generator and other electronic components, normally serves as the constructional base, onto which the rear panel, the two side panels as well as the hinges of the front door are fixed, mostly by means of screw connections. However, in the case of a breakdown of the steam generator or other electronic components arranged in the area of the bottom panel, such a construction of the cabinet makes the repair and maintenance work very cumbersome, because the side panels and the hinges of the front door need to be removed in order to gain access to the broken electronic components.

[0003] Starting from this prior art it is an object of the present invention to provide a cabinet of the above mentioned kind, in particular an oven cabinet, having a construction which is easy to maintain. Relevant prior art can be found in document US 2006/151483. In order to solve this object the present invention provides a cabinet of the above mentioned kind, in particular an oven cabinet, wherein the rear panel, the side panels, the top panel and the front door are attached to each other in such a manner that they together form an inherently stable and stiff unit, and the bottom panel is detachably fixed to said unit.

[0004] Since the rear panel, the side panels, the top panel and the front door together form an inherently stable and stiff unit in their assembled state, these components serve as the constructional base of the cabinet. Accordingly, the bottom panel can be removed from this unit without any problems in order to gain access to broken down electronic components received at the bottom panel during repair and maintenance work.

[0005] According to an embodiment of the present invention, the hinges of the front door are attached to the side panels. Thus, the bottom panel can be removed without the necessity to dismount the door hinges, too.

[0006] Preferably, the unit comprising the rear panel, the side panels, the top panel and the front door is provided with additional stiffening means in order to enhance the stability and stiffness of the unit.

[0007] The stiffening means may be provided in the form of brackets, to which at least the side panels are fixed, in particular by means of screw connections. Preferably, also the hinges of the front door and/or the bottom panel is/are fixed to such brackets too, in particular by means of screw connections. The bottom panel is provided at its side ends with upwardly projecting upstandings, which encompass the side panels, in particular from the outside, and which are detachably fixed to the side panels, in particular by means of screw connections. Accordingly, the upstandings of the bottom panel can be easily put over the side panels, where upon they can be fixed to the side panels and/or the stiffening means, in particular the brackets, e.g. by means of screw connections.

[0008] According to a further embodiment of the present invention, at least one of the upwardly projecting upstandings comprises a lug to be engagable into a corresponding recess arranged at the side panels and/or the rear panel. By means of this embodiment the worker is enabled to pre-fix the bottom panel to the cabinet and to finally screw it thereto without the need of holding the bottom panel by himself or to adjust the bottom panel precisely.

[0009] Further features and advantages of the present invention will become apparent by means of the following description of an embodiment of an oven cabinet according to the present invention with reference to the accompanying drawing.

[0010] In the drawing:

Figure 1 is a perspective view of a oven cabinet according to an embodiment of the present invention; and

Figure 2 is a side view of the oven cabinet shown in Figure 1.

Figure 3 is a side view of the muffle to be arranged in the oven cabinet

Figure 4 is detailed view of a lower rear corner of the oven cabinet

[0011] Figures 1 and 2 show an oven cabinet 10 according to an embodiment of the present invention. The cabinet 10 comprises a rear panel 12, two side panels 14 and 16, which are arranged at either side end of the rear panel 12, a top panel 18, which is arranged at the upper ends of the rear panel 12 and of the side panels 14 and 16, a front door 20 for opening and closing the cabinet 10, which is pivotally arranged by means of hinges 22, and a bottom panel 24, which receives a steam generator 26 and other electronic components and is arranged at the bottom ends of the rear panel 12 and of the side panels 14 and 16. The steam generator 26 and/or the heating element are mounted by means of a cover 44 to a muffle of the oven which is not shown in the figures.

[0012] Figure 3 shows a muffle 54 to be arranged within the oven cabinet shown in the figures 1 and 2. Stiffening means in the form of brackets 32 are provided in the

inside of the oven cabinet 10. The muffle of the oven is mounted to the cabinet 10 by means of these brackets. At these brackets 32 the side panels 14 and 16 are fixed by means of screws 34. Moreover, the hinges 22 of the front door 20 are attached to these brackets 32 by means of screws 36.

[0013] In order to fix the top panel 18 to the side panels 14 and 16 as well as to the rear panel 12, the top panel 18 is provided with downwardly bent side edges 18a, which are fixed to the rear panel 12 as well as to the side panels 14 and 16 by means of screws 38.

[0014] Thus, the rear panel 12, the side panels 14 and 16, the top panel 18 and the front door 20 together form an inherently stable and stiff unit, which is supported by the brackets 32 and the screws 34, 36 and 38.

[0015] To this unit the bottom panel 24 is detachably fixed. For that purpose the bottom panel 24 is provided at its side ends with upwardly projecting upstandings 40, which encompass the side panels 14 and 16 from the outside and which are detachably fixed to the side panels 14 and 16 by means of screws 42.

[0016] According to figure 4 a lower rear corner of the oven cabinet 10 is shown which is provided with a pre-fixing arrangement 46. The bottom panel 24 has upwardly projecting upstandings 40 at its lateral side 40a and at its rear side 40b. The side panel 14 has a bent off edge 48 which is provided with a recess 50. The recess 50 is adapted to receive a lug which is integrally formed to the upwardly projecting upstanding 40b. For mounting the bottom panel 24 to the cabinet 10, the bottom panel is attached to the side panels 14, 16 and is moved in a frontward direction until the lug engages into the recess 50 and a pre-fixed state of the bottom panel 24 is reached. After that the bottom panel 24 can be screwed to the cabinet 10. For demounting the screws have to be detached and the bottom panel 24 can be removed by moving it in a rearward direction.

[0017] In the case of a breakdown of the steam generator 26 or other electronic components arranged in the area of the bottom panel 24, the bottom panel 24 can be removed by simply releasing the screws 42. Thanks to the inherently stable and stiff unit, which is provided by means of the rear panel 12, the side panels 14 and 16, the top panel 18, the front door 20, the brackets 32 and the screws 34, 36 and 38, a removal of the side panels 14 and 16 or of the hinges 22 of the front door 20 is not necessary in order to perform the repair and maintenance work.

Claims

1. Oven cabinet, comprising

- a rear panel (12),
- two side panels (14, 16) arranged at either side end of the rear panel (12),
- a top panel (18) arranged at the upper ends of

the rear panel (12) and of the side panels (14, 16),

- a front door (20) pivotally arranged by means of hinges (22), and

- a bottom panel (24) comprising at least one electronic component, in particular a steam generator (26) or a heating element, whereby

- the rear panel (12), the side panels (14, 16), the top panel (18) and the front door (20) are attached to each other in such a manner that they together form an inherently stable and stiff unit serving as the constructional base of the cabinet, **characterised in that** the bottom panel (24) is arranged at the bottom ends of the rear panel (12) and of the side panels (14, 16) and

- the bottom panel (24) is detachably fixed to said unit, wherein the bottom panel (24) is provided at its side ends with upwardly projecting upstandings (40), which encompass the side panels (14, 16), in particular from the outside, and which are detachably fixed to the side panels (14, 16), in particular by means of screw connections (42).

2. Oven cabinet (10) according to claim 1, **characterised in that** the hinges (22) of the front door (20) are attached to the side panels (14, 16).

3. Oven cabinet (10) according to claim 1 or 2, **characterised in that** the unit comprising the rear panel (12), the side panels (14, 16), the top panel (18) and the front door (20) is provided with additional stiffening means (32).

4. Oven cabinet (10) according to claim 3, **characterised in that** stiffening means are provided in the form of brackets (32), to which at least the side panels (14, 16) are fixed, in particular by means of screw connections (34).

5. Oven cabinet (10) according to claim 4, **characterised in that** the hinges (22) of the front door (20) and/or the bottom panel (24) is/are fixed to the brackets (32), in particular by means of screw connections (40; 42).

6. Oven cabinet (10) according to claim 1, **characterised in that** at least one of the upwardly projecting upstandings (40) comprises a lug (52) to be engageable into a corresponding recess (50) arranged at the side panels (14, 16) and/or the rear panel (12).

Patentansprüche

1. Backofengehäuse, umfassend:

- ein hinteres Paneel (12),

- zwei Seitenpaneele (14, 16), die an beiden Seitenenden des hinteren Paneels (12) angeordnet sind,
- ein oberes Paneel (18), das an den oberen Enden des hinteren Paneels (12) und der Seitenpaneele (14, 16) angeordnet ist,
- eine vordere Tür (20), die schwenkbar mittels Scharnieren (22) angeordnet ist, und
- ein unteres Paneel (24), das mindestens eine elektronische Komponente umfasst, insbesondere einen Dampfgenerator (26) oder ein Heizelement,

wodurch

- das hintere Paneel (12), die Seitenpaneele (14, 16), das obere Paneel (18) und die vordere Tür (20) aneinander derart angebracht sind, dass sie gemeinsam eine inhärent stabile und steife Einheit bilden, die als Konstruktionsbasis des Gehäuses dient,

dadurch gekennzeichnet, dass das untere Paneel (24) an den unteren Enden des hinteren Paneels (12) und der Seitenpaneele (14, 16) angeordnet ist, und

- das untere Paneel (24) lösbar an der Einheit befestigt ist, wobei das untere Paneel (24) an seinen Seitenenden mit nach oben abstehenden Stützen (40) versehen ist, welche die Seitenpaneele (14, 16) umschließen, insbesondere von außen, und welche lösbar an den Seitenpaneeelen (14, 16) befestigt sind, insbesondere mittels Schraubverbindungen (42).

2. Backofengehäuse (10) nach Anspruch 1, **dadurch gekennzeichnet, dass** die Scharniere (22) der vorderen Tür (20) an den Seitenpaneeelen (14, 16) angebracht sind.
3. Backofengehäuse (10) nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** die Einheit, die das hintere Paneel (12), die Seitenpaneele (14, 16), das obere Paneel (18) und die vordere Tür (20) umfasst, mit zusätzlichen Versteifungsmitteln (32) versehen ist.
4. Backofengehäuse (10) nach Anspruch 3, **dadurch gekennzeichnet, dass** die Versteifungsmittel in der Form von Klammern (32) bereitgestellt sind, an denen mindestens die Seitenpaneele (14, 16) befestigt sind, insbesondere durch Schraubverbindungen (34).
5. Backofengehäuse (10) nach Anspruch 4, **dadurch gekennzeichnet, dass** die Scharniere (22) der vorderen Tür (20) und/oder das untere Pa-

neel (24) an den Klammern (32) befestigt ist/sind, insbesondere durch Schraubverbindungen (40; 42).

6. Backofengehäuse (10) nach Anspruch 1, **dadurch gekennzeichnet, dass** mindestens eine der nach oben abstehenden Stützen (40) einen Ansatz (52) umfasst, um mit einer entsprechenden Vertiefung (50), die in den Seitenpaneeelen (14, 16) und/oder dem hinteren Paneel (12) angeordnet ist, in Eingriff gebracht werden zu können.

Revendications

1. Boîtier de four, comprenant :

- un panneau arrière (12),
- deux panneaux latéraux (14, 16) disposés à chaque extrémité latérale du panneau arrière (12),
- un panneau supérieur (18) disposé aux extrémités supérieures du panneau arrière (12) et des panneaux latéraux (14, 16),
- une porte avant (20) disposée de manière pivotante au moyen de charnières (22), et
- un panneau de fond (24) comprenant au moins un composant électronique, en particulier un générateur de vapeur (26) ou un élément chauffant,

moyennant quoi

- le panneau arrière (12), les panneaux latéraux (14, 16), le panneau supérieur (18) et la porte avant (20) sont fixés l'un à l'autre de sorte qu'ils forment ensemble une unité intrinsèquement stable et rigide servant de base de construction du boîtier,

caractérisé en ce que le panneau inférieur (24) est disposé aux extrémités inférieures du panneau arrière (12) et des panneaux latéraux (14, 16), et

- le panneau inférieur (24) est fixé de manière amovible à ladite unité, le panneau inférieur (24) étant pourvu à ses extrémités latérales de montants (40) faisant saillie vers le haut, qui entourent les panneaux latéraux (14, 16), en particulier depuis l'extérieur, et qui sont fixés de manière amovible aux panneaux latéraux (14, 16), en particulier au moyen de raccords vissés (42).

2. Boîtier de four (10) selon la revendication 1, **caractérisé en ce que** les charnières (22) de la porte avant (20) sont fixées aux panneaux latéraux (14, 16).
3. Boîtier de four (10) selon la revendication 1 ou 2, **caractérisé en ce que** l'unité comprenant le pan-

neau arrière (12), les panneaux latéraux (14, 16), le panneau supérieur (18) et la porte avant (20) est munie de moyens de renforcement (32) supplémentaires.

- 5
4. Boîtier de four (10) selon la revendication 3, **caractérisé en ce que** des moyens de renforcement sont fournis sous la forme de supports (32), auxquels sont fixés au moins les panneaux 2018-04-05 Claims translation EN_FR P-13225/EP (ID 168820) latéraux (14, 16), en particulier au moyen de raccords vissés (34). 10
5. Boîtier de four (10) selon la revendication 4, **caractérisé en ce que** les charnières (22) de la porte avant (20) et/ou du panneau inférieur (24) sont fixées aux supports (32), en particulier au moyen de raccords vissés (40 ; 42). 15
6. Boîtier de four (10) selon la revendication 1, **caractérisé en ce qu'**au moins l'un des montants (40) faisant saillie vers le haut comprend une languette (52) qui peut venir en prise dans un évidement (50) correspondant disposé au niveau des panneaux latéraux (14, 16) et/ou du panneau arrière (12). 20 25

30

35

40

45

50

55

FIG 1

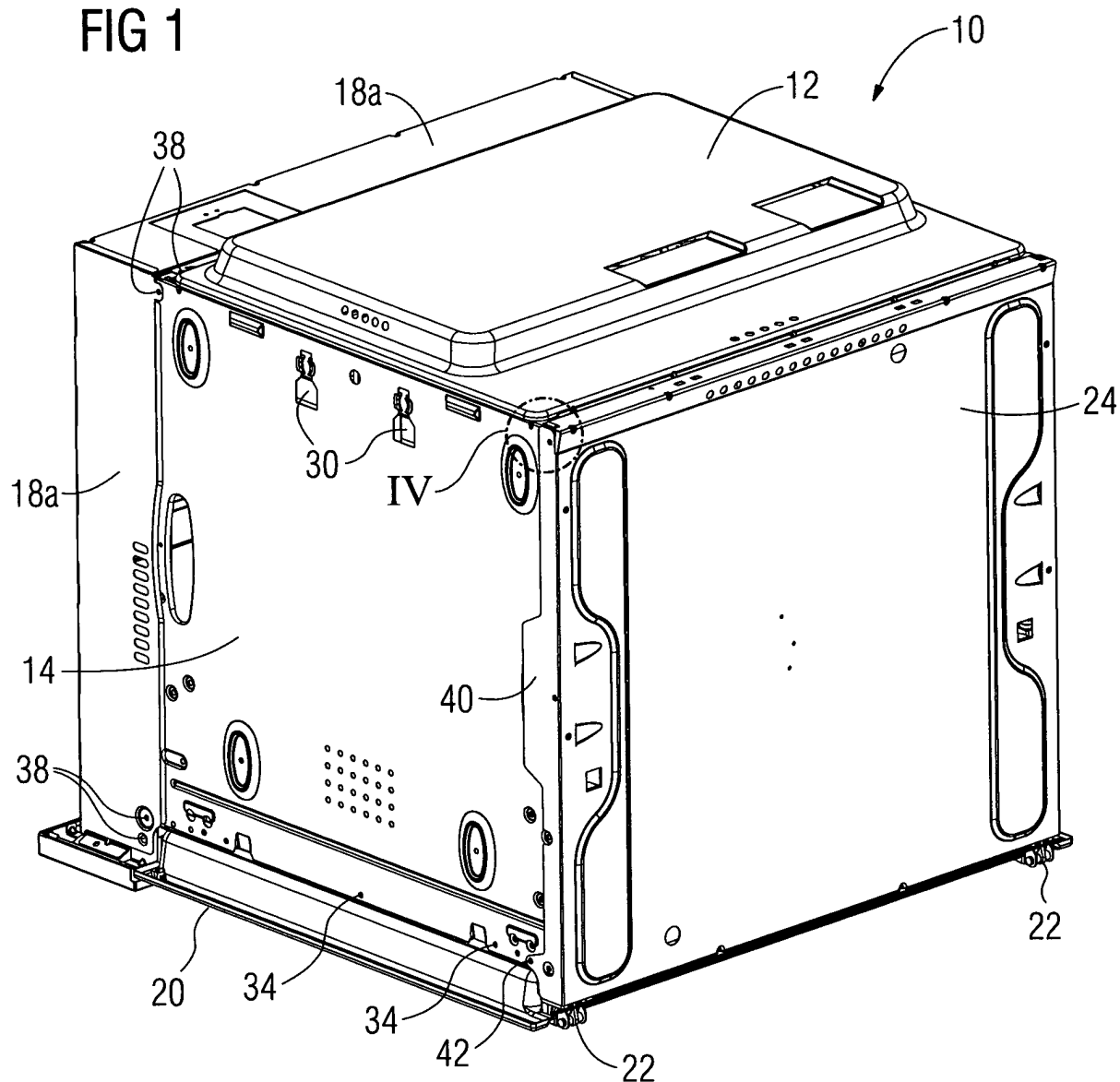


FIG 4

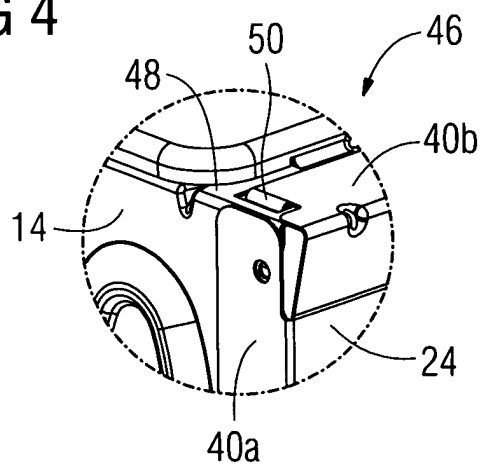


FIG 2

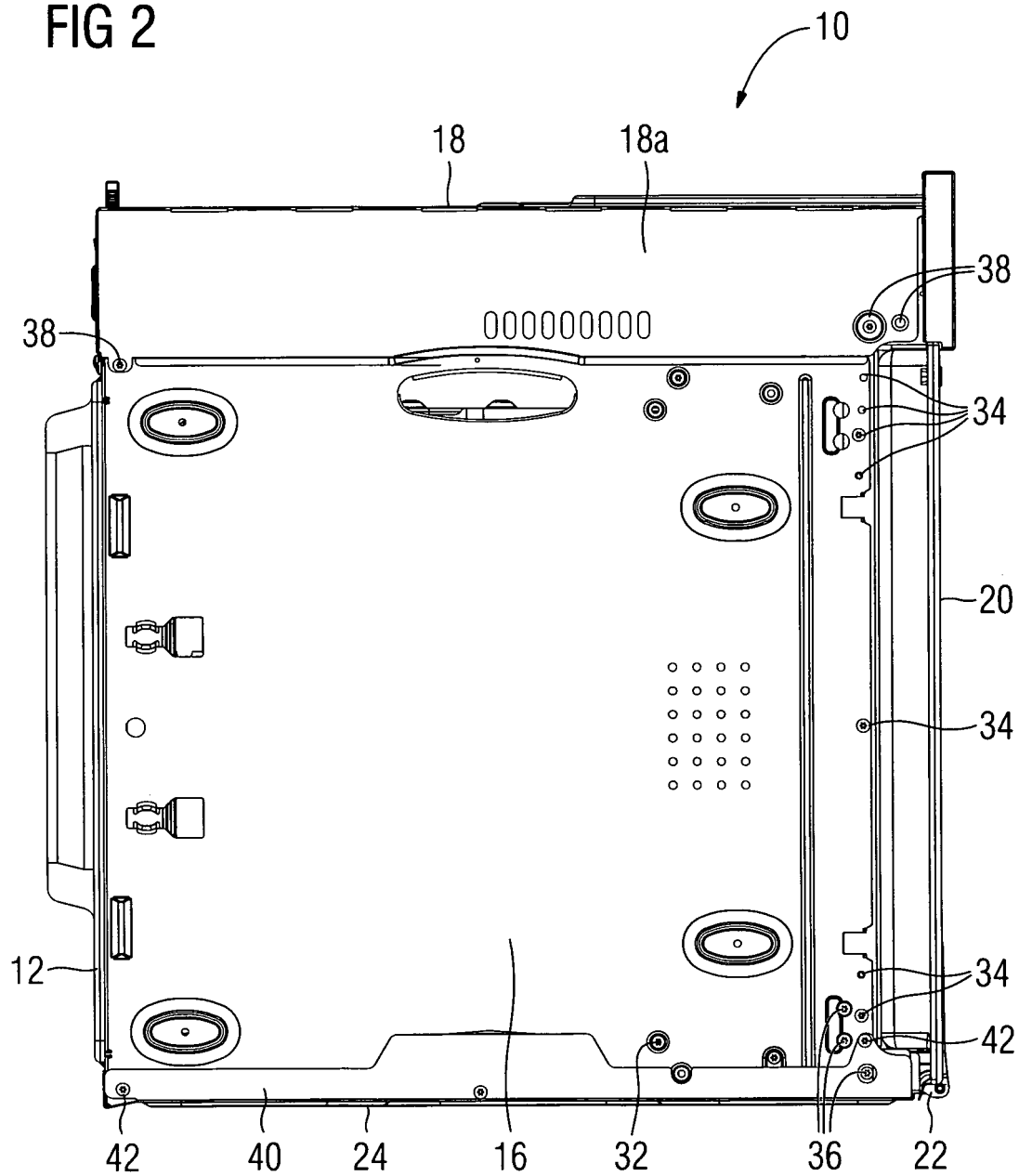
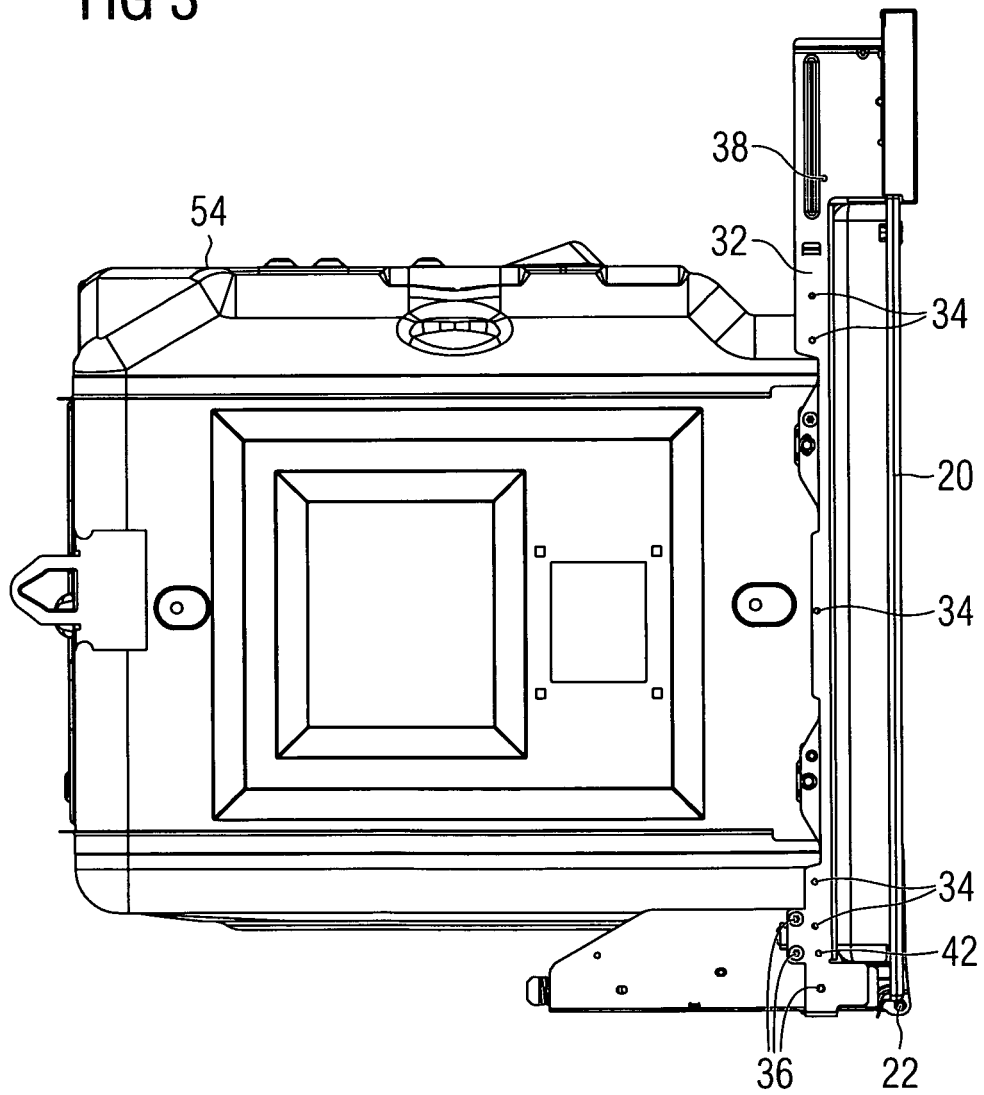


FIG 3



REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- US 2006151483 A [0003]