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(54) **A HOUSEHOLD APPLIANCE**

HAUSHALTSGERÄT

APPAREIL MÉNAGER

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## Description

**[0001]** The present invention relates to a household appliance comprising a door whereon a decorative panel is mounted.

**[0002]** Nowadays, household appliances, especially doors of refrigerators are covered with decorative panels such as glass and mirror in order to acquire an aesthetic appearance. However, by mounting a single-sheet-shaped glass panel onto the door, various problems are confronted due to reasons such as its weight and the sensitivity in its processing.

**[0003]** In the state of the art International Patent Application No WO2006120072, the decorative plate is fixed to the side wall of the door by means of a mounting member.

**[0004]** Another state of the art embodiment is explained in the United States Patent Application No US20070188059, which discloses a household appliance according to the preamble of claim 1. Also in this document, the decorative panel is fixed onto the door of the household appliance by means of a mounting member.

**[0005]** One of the biggest problems confronted when a glass panel is desired to be fixed to the door of household appliances is the mounting of a handle held by the user onto the glass panel. However, for this process, the handle is required to be fixed onto the glass panel by means of fixing elements. This process causes both the fragile material such as glass to be damaged and labor costs to increase.

**[0006]** The aim of the present invention is the realization of a household appliance wherein the glass panel can be easily assembled onto the door.

**[0007]** The household appliance realized in order to attain the aim of the present invention, explicated in the first claim and the respective claims thereof, comprises a mounting member having a U-shaped recess which is located between the door and the glass panel, which is fixed to the door from one edge by being bent and to the other edge of which the inner surface of the glass panel is adhered, and both providing the assemble of the glass panel onto the door and serving as a handle.

**[0008]** By means of the mounting member, the glass panel can be easily assembled onto the door. Since the mounting member serving as a handle remains between the glass panel and the door, a handle is not obliged to be mounted onto the glass panel. Thus, a flat sheet appearance is provided on the outside of the household appliance.

**[0009]** The recess on the sheet-shaped mounting member is provided by the open end of the mounting member being bent in U-shape such that it will face outside. In this embodiment, the width of the recess is sized such that a hand can fit in and grip it. Thus, the user can easily open and close the door by putting his/her hand into the recess.

**[0010]** In an embodiment of the present invention, the

mounting member is fixed to the side edge of the door such that it will cover the side edge of the door.

**[0011]** In another embodiment of the present invention, the household appliance comprises at least one housing, which extends along the door and wherein the recess is seated.

**[0012]** In another embodiment of the present invention, the mounting member has a knurled structure preventing the hand from slipping on the inner surfaces of the recess.

**[0013]** By means of the present invention, the mounting member both enables the glass panel to be assembled onto the door and serves as a handle. Furthermore, by means of the present invention, the external appearance of the household appliance gives the impression that it is covered with a single glass panel.

**[0014]** A household appliance realized in order to attain the aim of the present invention is illustrated in the attached figures, where:

**[0015]** Figure 1 - is the perspective view of a refrigerator.

**[0016]** Figure 2 - is the sideways view of the refrigerator.

**[0017]** Figure 3 - is the exploded view of the door, glass panel and mounting member.

**[0018]** Figure 4 - is the view of the refrigerator before the mounting of the glass panel and mounting member to the door.

**[0019]** Figure 5 - is the exploded view of the glass panel and mounting member.

**[0020]** Figure 6 - is the front perspective view of the glass panel and mounting member.

**[0021]** Figure 7 - is the view of cross-section A-A in Figure 6.

**[0022]** Figure 8 - is the rear perspective view of the glass panel and mounting member.

**[0023]** The elements illustrated in the figures are numbered as follows:

1. Household appliance
2. Door
3. Upper edge
4. Lower edge
5. Side edge
6. Inner panel
7. Outer panel
8. Glass panel
9. Inner surface
10. Outer surface
11. Mounting member
12. Recess
13. Extension
14. Housing
15. Cabinet

**[0024]** The household appliance (1) of the present invention comprises at least one cabinet (15) wherein items are disposed, a door (2) mounted onto the cabinet (15)

and providing access into the cabinet (15), comprising an upper edge (3), a lower edge (4), opposite side edges (5), an inner panel (6) and an outer panel (7), a glass panel (8) having an inner surface (9) and an outer surface (10), and a mounting member (11) which extends between the inner surface (9) and the outer panel (7) and whereon the glass panel (8) is mounted (Figure 1 and Figure 2). The outer surface (10) of the glass panel (8) can be transparent or semi-transparent glass as well as a decorative surface such as mirror.

**[0025]** The mounting member (11) comprises a recess (12) which extends almost along the door (2), which is disposed between the door (2) and the glass panel (8) and has a U-shape, which is fixed to the door (2) from one edge and to the other edge of which the inner surface (9) of the glass panel (8) is adhered, which enables the user to use it as a handle by putting his/her hand therein (Figure 3 and Figure 4). The mounting member (11) both provides the glass panel (8) to be mounted onto the door (2) and serves as a handle. The width of the recess (12) is sized such that a hand can easily grip it.

**[0026]** Since the mounting member (11) remains between the glass panel (8) and the door (2), any protrusion that can serve as a handle on the outer surface (10) of the glass panel (8) is not required. This facilitates the transport of the household appliance (1) as well as eliminating the design constraints on the outer surface (10) of the glass panel (8). Besides, also no process is performed on the outer surface (10) of the glass panel (8) that is produced of a fragile material such as glass. This both minimizes the probability of the outer surface (10) of the glass panel (8) being damaged by mechanical effects such as being pierced and scratched, and provides a saving of time while facilitating the labor of assembling the glass panel (8) onto the door (2). Furthermore, the household appliance (1) acquires an aesthetic appearance.

**[0027]** The sheet-shaped mounting member (11) is bent such that it will form a "U"-shaped recess (12) between its edges fixed to the door (2) and glass panel (8) with a width that enables a hand to fit between the door (2) and the glass panel (8) and such that the open end of the mounting member (11) will face outside.

**[0028]** In an embodiment of the present invention, the mounting member (11) is fixed to the side edges (5) of the door (2) such that it will entirely cover the side edge (5). In this embodiment, the mounting member (11) comprises an extension (13) extending along the side edge (5) of the door (2), fixed to the side edge (5), and a recess (12), one edge of which bears against the outer panel (7) by the extension (13) bending onto the outer panel (7) of the door (2), the other edge of which bears against the inner surface (9) of the glass panel (8). The extension (13) is connected to the edge of the recess (12) that bears against the door (2).

**[0029]** In this embodiment of the present invention, the mounting member (11) is adhered to the inner surface (9) of the glass panel (8) from one edge (Figure 5, Figure

6, Figure 7 and Figure 8). Then, when the other edge of the recess (12) bears against the outer surface (10) of the door (2), the mounting member (11) is fixed to the side edge (5) of the door (2) through the extension (13) by means of fixing elements. In this situation, the assembly of the glass panel (8) onto the door (2) is completed. The user can easily open and close the door (2) when the user puts his/her hand into the recess (12).

**[0030]** In another embodiment of the present invention, the edge of the mounting member (11), whereon the glass panel (8) is fixed, and the outer panel (7) are aligned almost at the same level. In this embodiment, the household appliance (1) comprises at least one housing (14) which is located on the door (2), which extends almost along the door (2) and wherein the mounting member (11) is seated. Thus, almost no space is left between the glass panel (8) and the outer panel (7).

**[0031]** In another embodiment of the present invention, the mounting member (11) has a knurled structure preventing the hand from slipping on the inner surfaces of the recess (12).

**[0032]** In an embodiment of the present invention, the said household appliance (1) is a refrigerator.

**[0033]** By means of the present invention, the mounting member (11) both enables the glass panel (8) to be assembled onto the door (2) and serves as a handle. Furthermore, by means of the present invention, the external appearance of the household appliance (1) gives the impression that it is covered with a single glass panel (8).

**[0034]** It is to be understood that the said present invention is not limited to the embodiments disclosed above and an expert in the technique can easily introduce different embodiments falling within the scope of the claims of the present invention.

## Claims

1. A household appliance (1) comprising a cabinet (15),
  - a door (2) mounted onto the cabinet (15) and providing access into the cabinet (15), comprising an upper edge (3), a lower edge (4), opposite side edges (5), an inner panel (6) and an outer panel (7),
  - a glass panel (8) having an inner surface (9) and a decorative outer surface (10), and
  - a mounting member (11) which extends between the inner surface (9) and the outer panel (7) and whereon the glass panel (8) is mounted,

said mounting member (11) having a recess (12) that is extending almost along the door (2), disposed between the door (2) and the glass panel (8) and having a U-shape, which is fixed to the door (2) from one edge and to the other edge of which the inner surface (9) of the glass panel (8) is adhered,

**characterized in that** the recess (12) enables the user to use the recess (12) as a handle by putting his/her hand therein.

2. A household appliance (1) as in Claim 1, **characterized by** a mounting member (11) that comprises an extension (13) extending along the side edge (5) of the door (2), fixed to the side edge (5).
3. A household appliance (1) as in Claim 1 or 2, **characterized by** at least one housing (14) which is located on the door (2), which extends almost along the door (2) and wherein the mounting member (11) is seated.
4. A household appliance (1) as in any one of the above Claims, **characterized by** a mounting member (11) that has a knurled structure preventing the hand from slipping on the inner surfaces of the recess (12).
5. A household appliance (1) as in any one of the above Claims, which is a refrigerator.

#### Patentansprüche

1. Haushaltsgerät (1), umfassend einen Schrank (15),

- eine Tür (2), die am Schrank (15) angebracht ist und Zugang zum Schrank (15) bietet und eine obere Kante (3), eine untere Kante (4), gegenüberliegende Seitenkanten (5), eine Innenplatte (6) und eine Außenplatte (7) umfasst,
- eine Glasplatte (8) mit einer Innenfläche (9) und einer dekorativen Außenfläche (10), und
- ein Befestigungselement (11), das sich zwischen der Innenfläche (9) und der Außenplatte (7) erstreckt und an dem die Glasplatte (8) befestigt ist,

wobei das genannte Befestigungselement (11) eine Vertiefung (12) aufweist, die sich nahezu an der Tür (2) entlang erstreckt und zwischen der Tür (2) und der Glasplatte (8) angeordnet ist und U-förmig ist, und die von einer Kante an der Tür (2) fixiert ist und an deren anderer Kante die Innenfläche (9) der Glasplatte (8) angeklebt ist,

**dadurch gekennzeichnet, dass** die Vertiefung (12) es dem Benutzer erlaubt, die Vertiefung (12) als Griff zu benutzen, indem er/sie seine/ihre Hand darin einführt.

2. Haushaltsgerät (1) nach Anspruch 1, **gekennzeichnet durch** ein Befestigungselement (11), das eine Verlängerung (13) umfasst, die sich an der Seitenkante (5) der Tür (2) entlang erstreckt und an der Seitenkante (5) fixiert ist.

3. Haushaltsgerät (1) nach Anspruch 1 oder 2, **gekennzeichnet durch** mindestens ein Gehäuse (14), das an der Tür (2) angeordnet ist und sich nahezu an der Tür (2) entlang erstreckt, und in dem das Befestigungselement (11) sitzt.

4. Haushaltsgerät (1) nach einem der vorangehenden Ansprüche, **gekennzeichnet durch** ein Befestigungselement (11), das eine gerändelte Struktur aufweist, die verhindert, dass die Hand an die Innenfläche der Vertiefung (12) abrutscht.

5. Haushaltsgerät (1) nach einem der vorangehenden Ansprüche, wobei das ein Kühlschrank ist.

#### Revendications

1. Un électroménager (1) comprenant une cuve (15),

- une porte (2) montée sur la cuve (15), permettant l'accès dans la cuve (15), comprenant un bord supérieur (3), un bord inférieur (4), des bords latéraux opposés (5), un panneau intérieur (6) et un panneau extérieur (7),
- un panneau de verre (8) ayant une surface intérieure (9) et une surface décorative extérieure (10), et
- un élément de montage (11) qui s'étend entre la surface intérieure (9) et le panneau extérieur (7) et sur lequel le panneau de verre (8) est monté

ledit élément de montage (11) ayant un évidement (12) qui s'étend presque le long de la porte (2), disposé entre la porte (2) et le panneau de verre (8) et ayant une forme en U, qui est fixé à la porte (2) d'un bord et à l'autre bord duquel la surface intérieure (9) du panneau de verre (8) est adhérente,

**caractérisé en ce que** l'évidement (12) permet à l'utilisateur d'utiliser l'évidement (12) comme une poignée en mettant sa main dans celui-ci.

2. Un électroménager (1) selon la Revendication 1, **caractérisé par** un élément de montage (11) qui comprend une extension (13) s'étendant le long le bord latéral (5) de la porte (2), fixé au bord latéral (5).

3. Un électroménager (1) selon la Revendication 1 ou 2, **caractérisé par** au moins un logement (14) qui est situé sur la porte (2), qui s'étend presque le long de la porte (2) et dans lequel l'élément de montage (11) est placé.

4. Un électroménager (1) selon l'une quelconque des revendications précédentes, **caractérisé par** un élément de montage (11) qui a une structure moletée empêchant la main de glisser sur les surfaces intérieures.

rieures de l'évidement (12).

5. Un électroménager (1) selon l'une quelconque des revendications précédentes, qui est un réfrigérateur.

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Figure 1

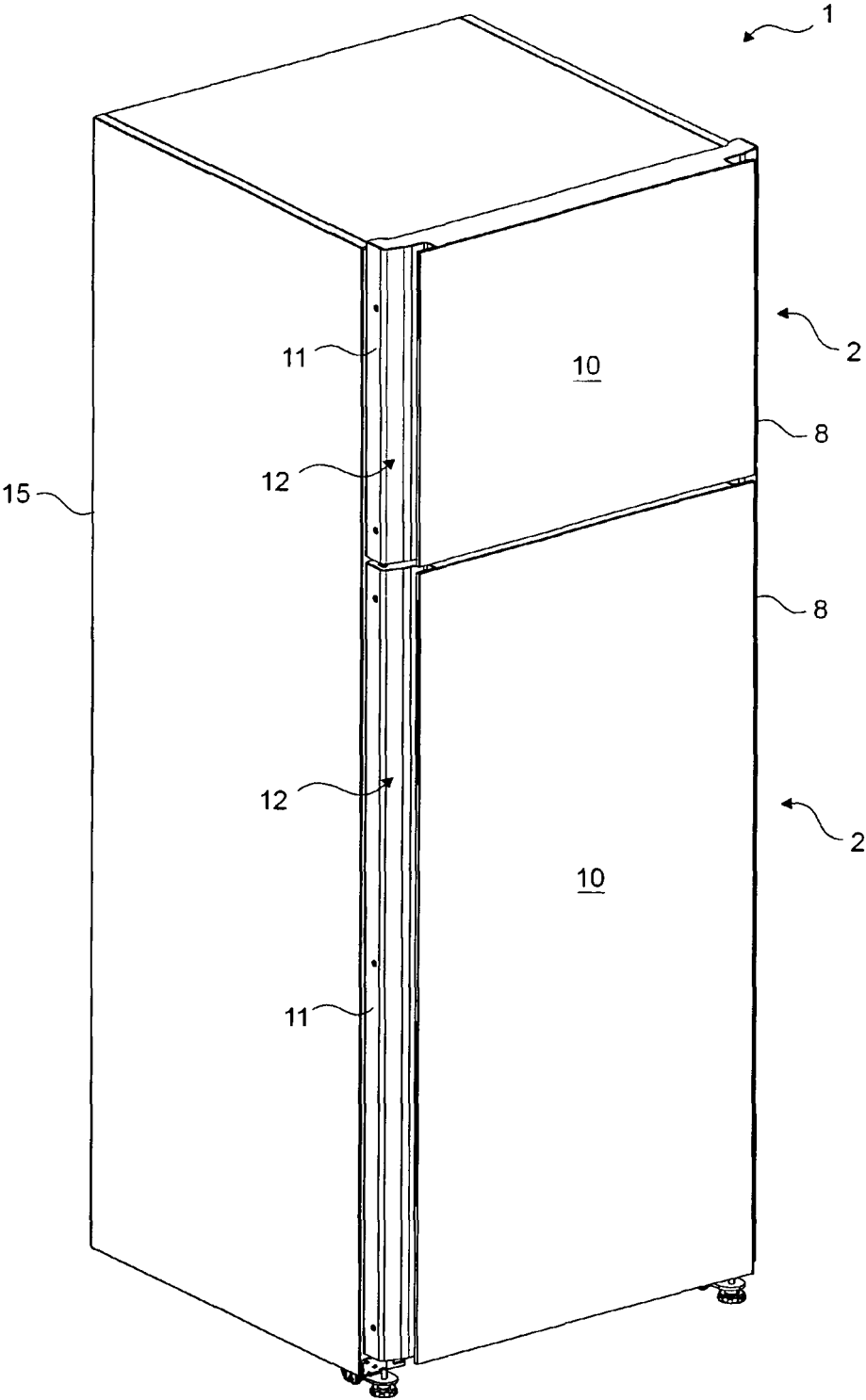
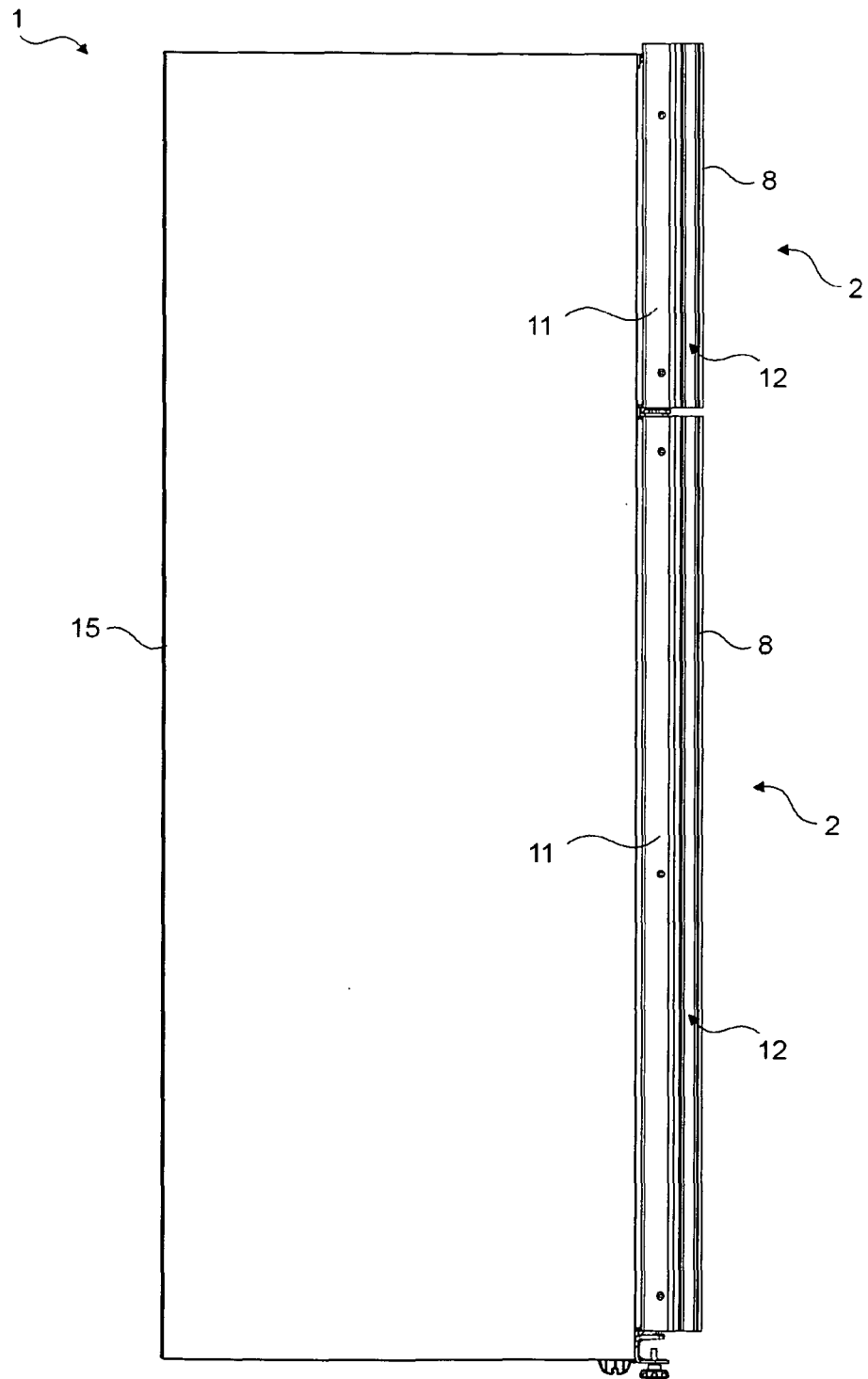


Figure 2



### Figure 3

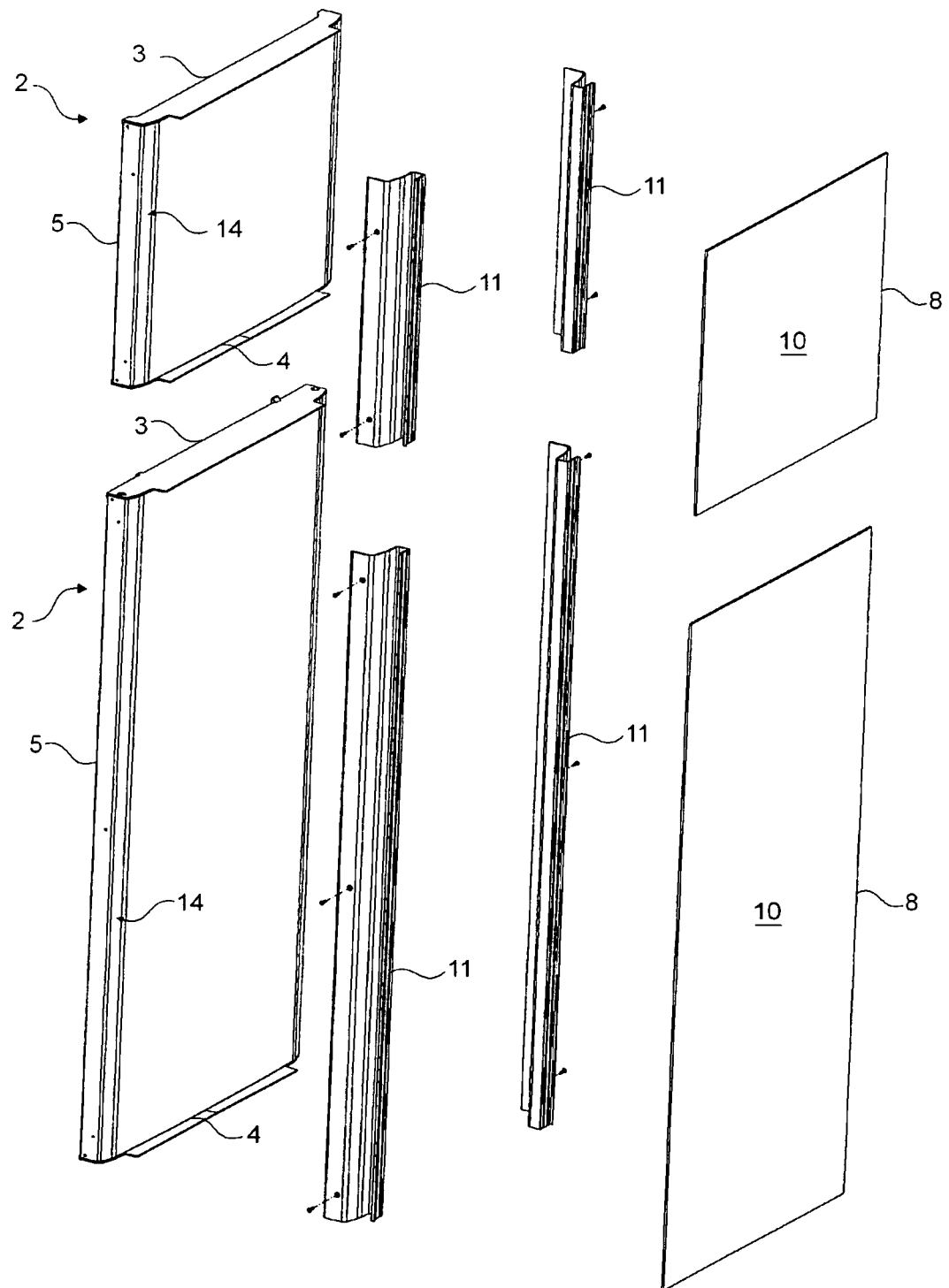


Figure 4

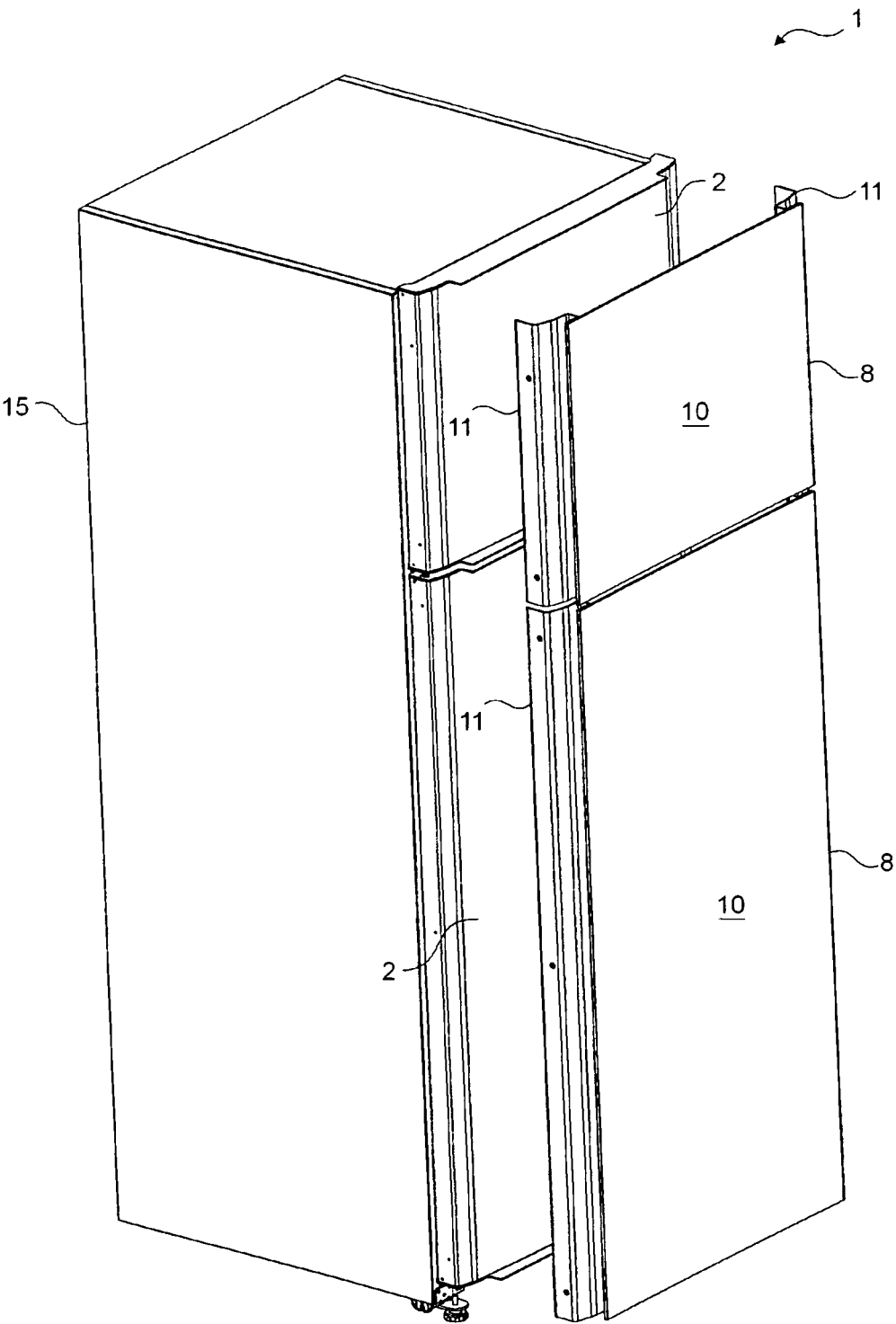


Figure 5

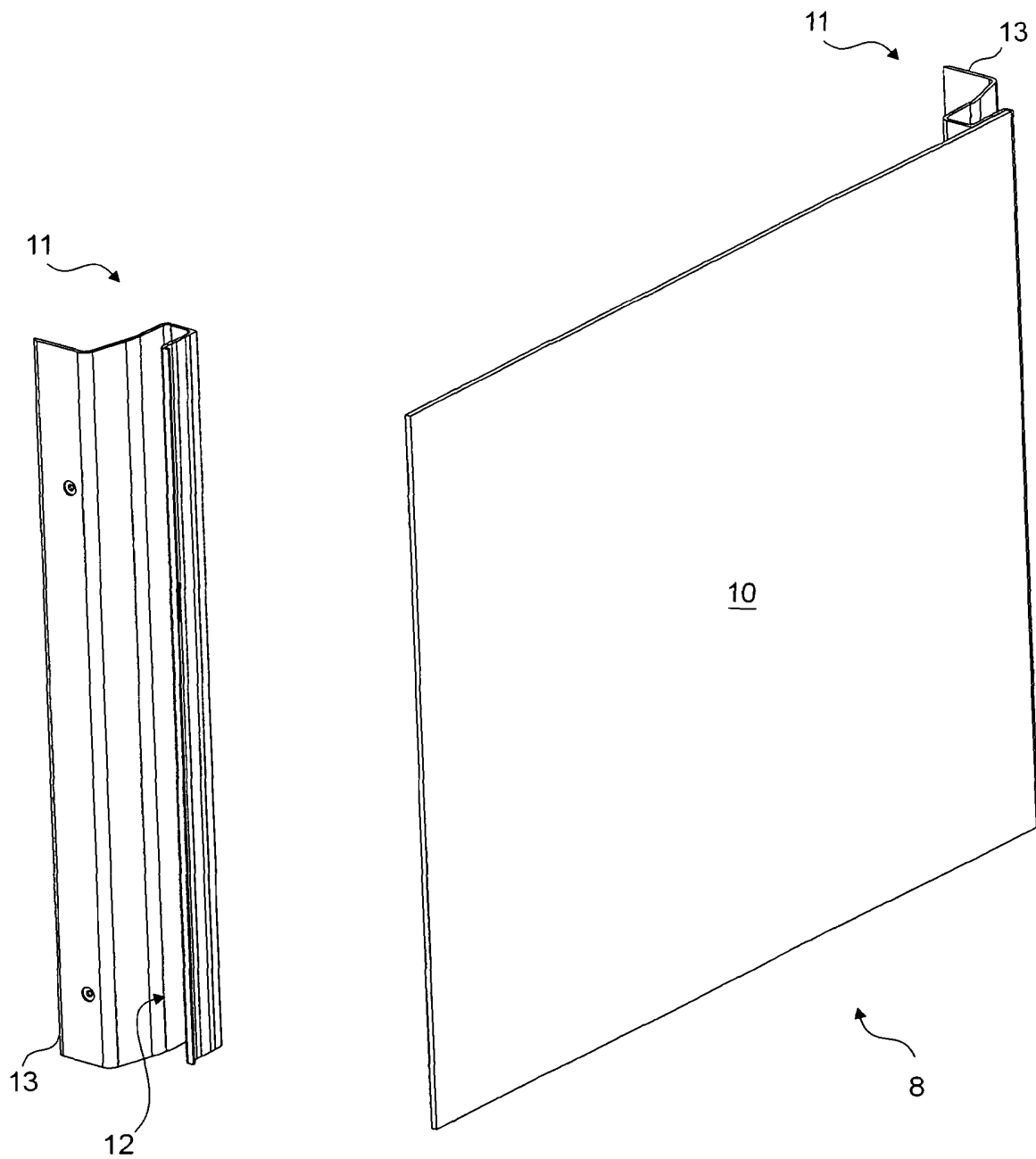


Figure 6

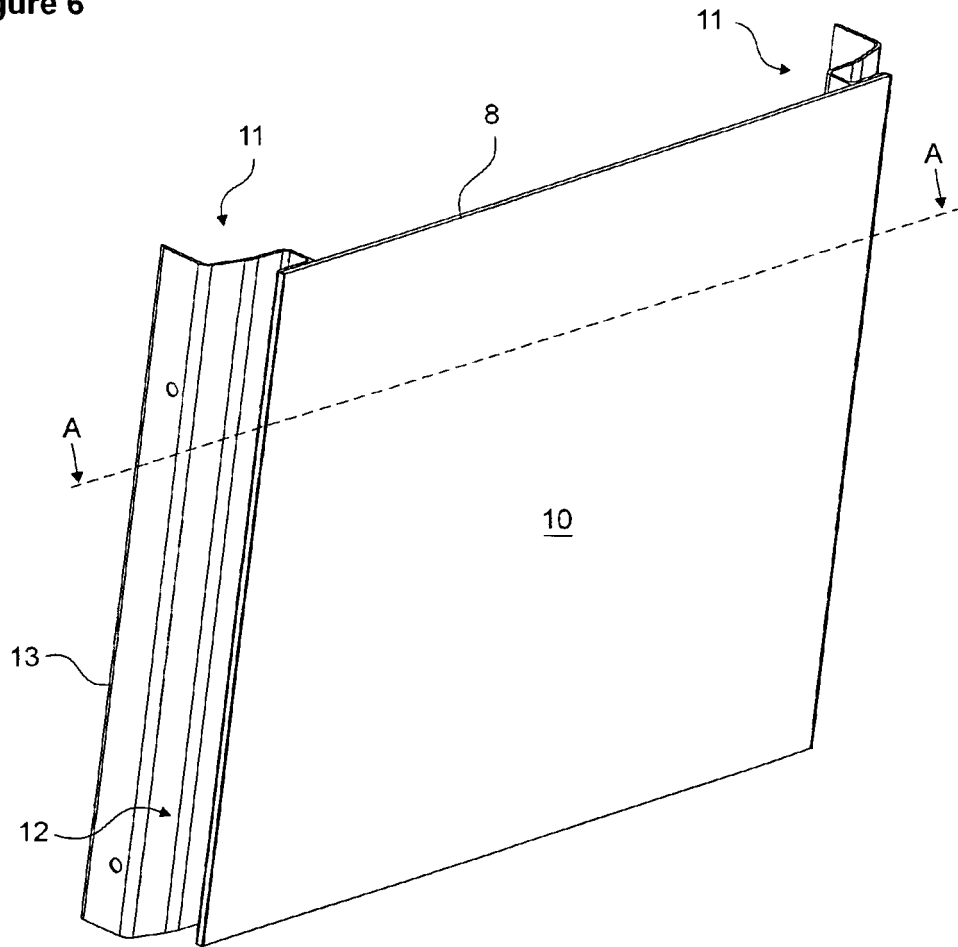


Figure 7

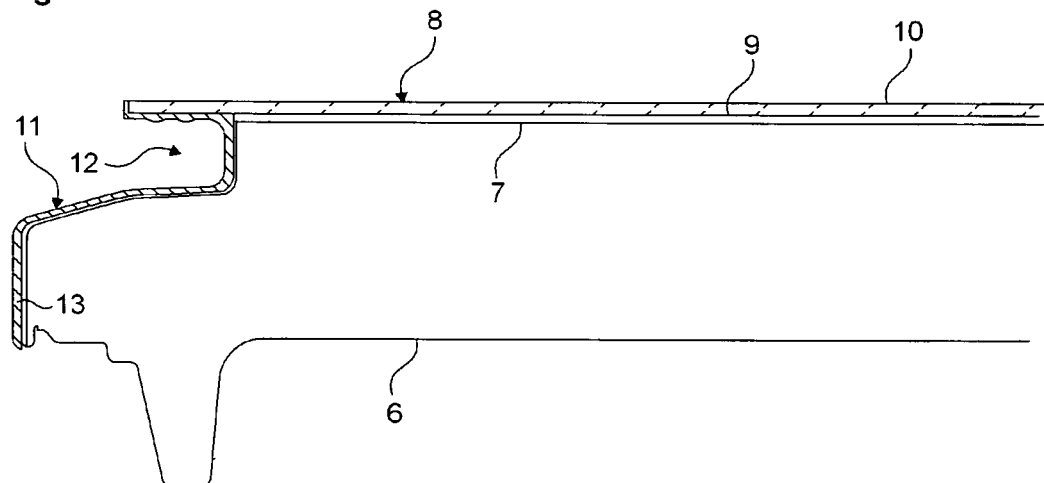
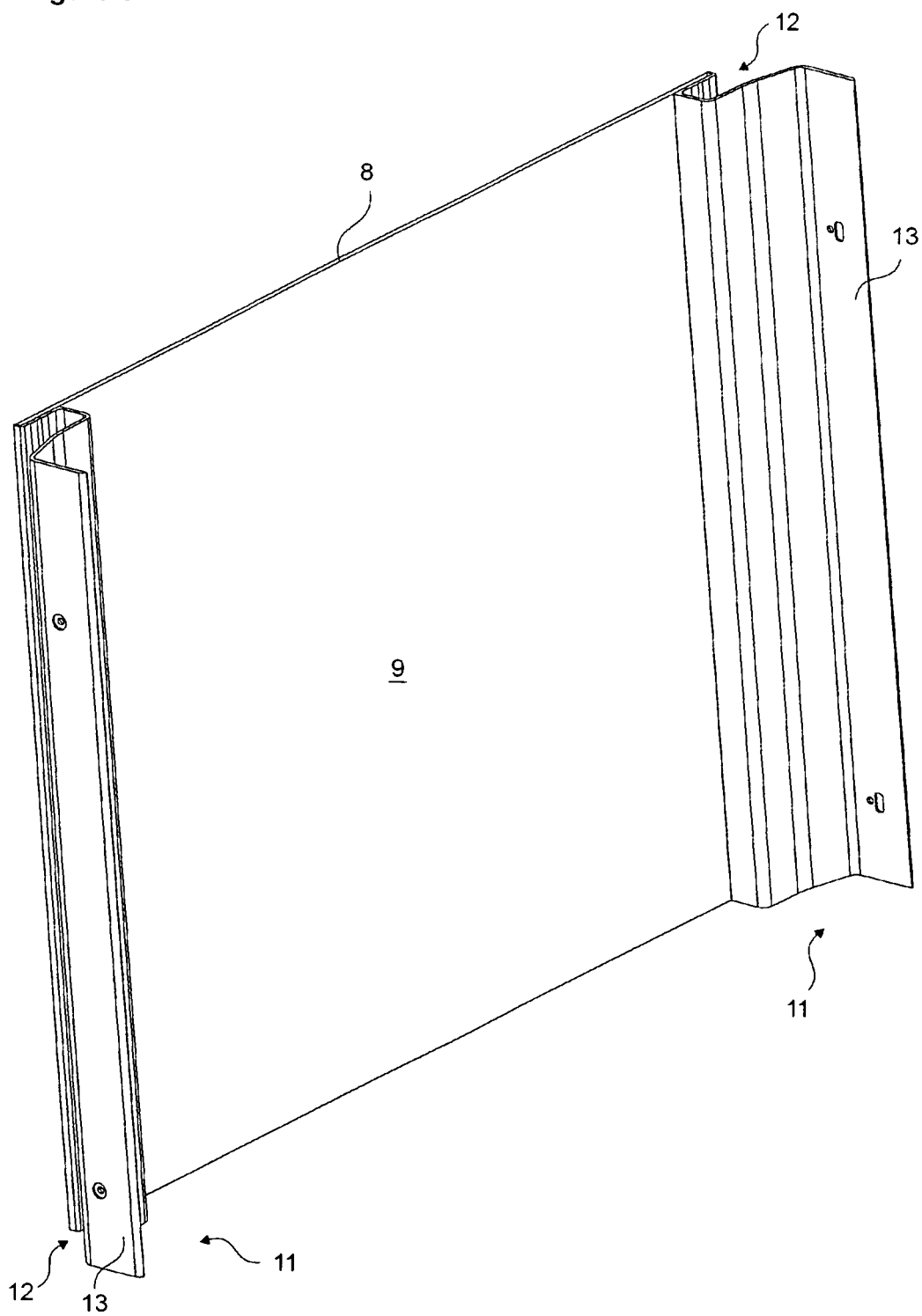


Figure 8



**REFERENCES CITED IN THE DESCRIPTION**

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**Patent documents cited in the description**

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