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(54) OVEN WITH VENTILATION UNIT AND HEAT PROTECTIVE SHIELD

OFEN MIT LÜFTUNGSEINHEIT UND HITZESCHILD

FOUR COMPRENANT UNE UNITÉ DE VENTILATION ET UN ÉCRAN THERMIQUE

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Description

[0001] The present invention relates to an oven, in particular a domestic pyrolytic oven which has a ventilation unit for expelling radiant heat to an outside. In a conventional oven, during a cooking/baking process an inner lining of the cooking/baking chamber is generally spoiled with food residues. The cleaning of the hardened food residues is usually very laborious. In a conventional oven having a pyrolytic mode, the food residues are burned off by heating the chamber up to temperatures above 500 °C. In general, in a conventional pyrolytic oven the inner lining of the chamber has a smooth surface. Thereby, the food residues easily peel off during the pyrolysis. After the chamber has sufficiently cooled down, the user can easily collect the ashes from the bottom of the chamber. Thus, the pyrolytic mode greatly facilitates cleaning of the cooking/baking chamber.

In the conventional pyrolytic oven the high temperatures prevailing inside the chamber during the pyrolytic mode poses a risk to the thermally sensitive component parts of the oven, in particular the electrical components which generally have a relatively low limit temperature. Also, the hot component parts of the oven which are exposed to an outside pose a severe risk to the health of the user. In particular these hot component parts can cause skin burns and scalding.

US2010/0276412 A1 discloses a cooking range which has a controller with a pyrolytic mode. This cooking range has an air circulation mechanism which expels the heat to an environment in order to reduce an amount of heat transmitted to the controller.

[0002] US 4 601 279 discloses an oven comprising a heat protective shield which is arranged through an air gap above a ventilation unit. The heat protective shield has a size and shape configured to screen a user interface and electrical components from radiant heat emanated from hot air inside the ventilation unit and a chamber during operation. The heat protective shield comprises a mounting plate. The electrical components are attached onto an upper surface of the mounting plate which is averted from the ventilation unit.

[0003] EP 2 107 317 A2 discloses an oven with a dividing plate which reinforces an upper wall of an outer case of the oven from below. The dividing plate is connected to supporting portions which are fixed to an upper plate.

[0004] A problem with the conventional pyrolytic cooking range is that if the air circulation mechanism is shut off, or fails to operate, then the electrical parts such as the controller are excessively heated and get rapidly aged and eventually damaged. On the other hand, in case the air circulation mechanism is continually operated the overall energy consumption of the oven increases. An objective of the present invention is to provide an oven which

overcomes the aforementioned drawbacks of the prior art in a cost-effective way and which enables an energy-efficient and effective ventilation of the critical component parts and a reliable protection of the electrical components from heat.

[0005] This objective has been achieved by the oven as defined in claim 1. Further achievements have been attained by the subject-matters respectively defined in the dependent claims.

[0006] The oven of the present invention comprises a heat protective shield which is arranged through an air gap above a ventilation unit which expels the radiant heat to an outside. The heat protective shield has a size and shape which is configured to screen the user interface and electrical components from the radiant heat emanated from the hot air inside the ventilation unit and the chamber during operation. The heat protective shield has a mounting plate. The electrical components are attached onto an upper surface of the mounting plate which is averted from ventilation unit.

[0007] The heat protective shield comprises a mounting bracket which is attached across the side walls so as to reinforce the entire ceiling of outer case from below.

[0008] In another embodiment, the heat protective shield comprises a throughlet for installing cables which lead to the electrical components.

[0009] The heat protective shield comprises a vertical partition plate which physically divides a region above the ventilation unit into two separate sub regions, namely a first sub region including the electrical components, and a second sub region which is close to the fan. Thereby, it is safeguarded that a temperature in the first sub region is always lower than the temperature in the second sub region during an operation of the oven.

[0010] In another embodiment, the ventilation unit has a duct and a fan inside the duct. The ventilation unit draws air from an interior of the door and from the chamber into the duct, and discharges the air inside the duct to the outside via an outlet formed underneath the control panel.

[0011] In another embodiment, the duct is partitioned into two sections one above the other. The lower section draws air from an interior of the door and from the chamber into the duct. The upper section discharges the air in the duct to the outside. The fan is arranged between the two sections.

[0012] With the heat protective shield of the present invention, the electrical components can be easily secured to their designated location and effectively protected from the radiant heat. The heat protective shield of the present invention can be easily mounted to its position by means of its mounting bracket. By the heat protective shield of the present invention the cables which lead to the electrical components can be easily installed by means of the throughlet. The heat protective shield of the present invention ensures by means of the partition plate that the sub region including the electrical components is relatively colder than the sub region close to the fan. The ventilation unit of the present invention ventilates the components parts exposed to an outside, in particular

the door, and thus, protects the user from skin burns. By the ventilation unit of the present invention, the hot air and food residues are prevented from diffusing into a space between an outer case and an inner case even when the fan is shut off. Also by the stacked sections, the ventilation performance has been improved.

[0013] Additional advantages of the oven of the present invention will become apparent with the detailed description of the embodiments with reference to the accompanying drawings in which:

Figure 1 - is a schematic partial perspective front view of an oven which has a heat protective shield according to an embodiment of the present invention;
Figure 2 - is a schematic partial perspective rear view of the oven which has the heat protective shield according to an embodiment of the present invention;
Figure 3 - is a schematic partial side view of the oven which has the heat protective shield according to an embodiment of the present invention;
Figure 4 - is a schematic partial front view of the oven which has the heat protective shield according to an embodiment of the present invention;
Figure 5 - is a schematic partial sectional view of the oven shown in Fig. 4, taken along the line A-A;
Figure 6 - is a schematic perspective view of the heat protective shield according to an embodiment of the present invention;
Figure 7 - is a schematic top view of the heat protective shield according to an embodiment of the present invention;
Figure 8 - is a schematic side view of the heat protective shield according to an embodiment of the present invention.

[0014] The reference signs appearing on the drawings relate to the following technical features.

1. Oven
2. Inner case
3. Chamber
4. Outer case
5. User interface
6. Electrical components
7. Control panel
8. Ventilation unit
9. Shield
10. Air gap
11. Mounting plate
12. Mounting bracket
13. Side wall
14. Upper wall
15. Throughlet
16. Partition plate
17. Region
17a. 17b. Sub region
18. Slot
19. Supporting base
20. Inner flange
21. Duct
21a. First section
21b. Second section
22. Fan
23. First inlet

[0015] The oven (1) comprises an inner case (2) which defines a chamber (3) for cooking/baking food, a heater unit (not shown) which is arranged to heat the chamber (3), a door (not shown) for accessing the chamber (3), an outer case (4) which encloses the inner case (2), a user interface (5) and electrical components (6) for controlling the oven (1), a control panel (7) which is arranged above the door, wherein the user interface (5) is mounted to the control panel (7) and a ventilation unit (8) for expelling radiant heat to an outside, wherein the ventilation unit (8) is arranged inside the outer case (4) and on an upper side of the inner case (2) (Figs. 1 to 5).

[0016] The oven (1) of the present invention comprises a heat protective shield (9) which is arranged through an air gap (10) above the ventilation unit (8). The heat protective shield (9) has a size and shape which is configured to screen the user interface (5) and electrical components (6) from the radiant heat emanated from the hot air inside the ventilation unit (8) and the chamber (3) during operation. The heat protective shield (9) comprises a mounting plate (11). The electrical components (6) are attached onto an upper surface of the mounting plate (11) which is averted from ventilation unit (8) (Figs. 1 to 8).

[0017] The heat protective shield (9) comprises a mounting bracket (12) which is attached across the opposing side walls (13) of the outer case (4) so as to reinforce an upper wall (14) of the outer case (4) from below.

[0018] In another embodiment, the heat protective shield (9) comprises a cable throughlet (15) for the cables which lead to the electrical components (6).

[0019] In a version of this embodiment, the cable throughlet (15) is formed into the mounting bracket (12).

[0020] The mounting bracket (12) comprises a vertical partition plate (16) which physically divides a region (17) above the ventilation unit (8) into two sub regions (17a, 17b). The partition plate (16) extends perpendicular to the opposing side walls (13) of the outer case (4).

[0021] In a version of this embodiment, the partition plate (16) comprises a slot (18) which surrounds an upper side of the ventilation unit (8) in contactless manner and two opposing lateral sides of the ventilation unit (8).

[0022] In another embodiment, the heat protective shield (9) comprises a supporting base (19) which is abutted against an inner flange (20) of the outer case (4). The inner flange (20) is formed underneath the control panel (7).

[0023] In a version of this embodiment, the supporting base (19) and the mounting bracket (12) are formed on opposing ends of the mounting plate (11).

[0024] In another embodiment, the mounting plate (11)

of the heat protective shield (9) is separated from the ventilation unit (8) by a predetermined distance in the height direction. The mounting plate (11) extends substantially parallel to an upper surface of the ventilation unit (8).

[0025] In another embodiment, the width of the mounting plate (11) matches of a width of the ventilation unit (8).

[0026] In another embodiment, the door has a hollow body, a lower aperture and an upper aperture which together allow ambient air to flow through the interior of the hollow body. In this embodiment, the ventilation unit (8) has a duct (21) and a fan (22) which is arranged inside the duct (21). The ventilation unit (8) is configured to draw air from the interior of the door via a first inlet (23) and from the chamber (3) via a second inlet (not shown) into the duct (21), and discharge the air inside the duct (21) to the outside via an outlet (24). The first inlet (23) faces the upper aperture. The second inlet opens into a ceiling of the chamber (3). The outlet (24) is underneath the control panel (7) and above the first inlet (23).

[0027] In another embodiment, the duct (21) is partitioned into a first section (21a) and a second section (21b). The second section (21b) is arranged above the first section (21a). The first section (21a) includes the first inlet (23) and the second inlet. The second section (21b) includes the outlet (24). The fan (22) is arranged between the first section (21a) and the second section (21b).

[0028] In another embodiment, a width of the first section (21a) narrows from the first inlet (23) towards the fan (22). A width of the second section (21b) widens from the fan (22) towards the outlet (24). A height of the first section (21a) increases from the first inlet (23) towards the fan (22). A height of the second section (21b) decreases from the fan (22) towards the outlet (24).

[0029] In another embodiment, the first inlet (23) comprises a plurality of slots which are arrayed in a width direction (L) of the door. The outlet (24) has at least one slot which extends parallel to the width direction (L).

[0030] In another embodiment, the oven (1) has a cooking/baking mode and a pyrolytic mode which are selectable by a user via the user interface (5).

[0031] In another embodiment, the heat protective shield (9) is made from a single metal plate.

[0032] With the heat protective shield (9) of the present invention, the electrical components (6) can be easily installed into the oven (1) and effectively protected from the radiant heat. The electrical components (6) can be prevented from early aging and overheating. With the ventilation unit (8) of the present invention a ventilation performance has been improved and the user has been protected from skin burns. In addition, with the ventilation unit (8), the hot air and food residues are prevented from diffusing into a space between an outer case (4) and an inner case (2) even when the fan is shut off. Thereby, the user interface (5) and the electrical components (6) are protected from moisture.

Claims

1. An oven (1) comprising

- an inner case (2) which defines a chamber (3) for cooking/baking food,
- a heater unit which is arranged to heat the chamber (3),
- a door for accessing the chamber (3),
- an outer case (4) which encloses the inner case (2),
- a user interface (5) and electrical components (6) for controlling the oven (1),
- a control panel (7) which is arranged above the door, wherein the user interface (5) is mounted to the control panel (7),
- a ventilation unit (8) for expelling radiant heat to an outside, wherein the ventilation unit (8) is arranged inside the outer case (4) and on an upper side of the inner case (2),
- a heat protective shield (9) which is arranged through an air gap (10) above the ventilation unit (8), wherein the heat protective shield (9) has a size and shape configured to screen the user interface (5) and electrical components (6) from the radiant heat emanated from the hot air inside the ventilation unit (8) and the chamber (3) during operation, wherein the heat protective shield (9) comprises a mounting plate (11) and wherein the electrical components (6) are attached onto an upper surface of the mounting plate (11) which is averted from ventilation unit (8), **characterized in that** the heat protective shield (9) further comprises a mounting bracket (12), wherein the mounting bracket (12) is attached across the opposing side walls (13) of the outer case (4) so as to reinforce an upper wall (14) of the outer case (4) from below, wherein the mounting bracket (12) comprises a vertical partition plate (16) which physically divides a region (17) above the ventilation unit (8) into two sub regions (17a, 17b), wherein the partition plate (16) extends perpendicular to the opposing side walls (13) of the outer case (4).

2. The oven (1) according to claim 1, **characterized in that** the heat protective shield (9) comprises a cable throughlet (15) for the cables which lead to the electrical components (6).

3. The oven (1) according to claim 2, **characterized in that** the cable throughlet (15) is formed into the mounting bracket (12).

4. The oven (1) according to any of claims 1 to 3, **characterized in that** the partition plate (16) comprises a slot (18) which surrounds an upper side of the ventilation unit (8) in contactless manner and two op-

posing lateral sides of the ventilation unit (8).

5. The oven (1) according to any one of claims 1 to 4, **characterized in that** the heat protective shield (9) comprises a supporting base (19), wherein the supporting base (19) is abutted against an inner flange (20) of the outer case (4) which is formed underneath the control panel (7).

6. The oven (1) according to claim 5, **characterized in that** the supporting base (19) and the mounting bracket (12) are formed on opposing ends of the mounting plate (11).

7. The oven (1) according to any one of claims 1 to 6, **characterized in that** the mounting plate (11) of the heat protective shield (9) is separated from the ventilation unit (8) by a predetermined distance in the height direction and extends substantially parallel to an upper surface of the ventilation unit (8).

8. The oven (1) according to any one of claims 1 to 7, **characterized in that** the width of the mounting plate (11) matches of a width of the ventilation unit (8).

9. The oven (1) according to any one of claims 1 to 8, **characterized in that** the door comprises a hollow body, a lower aperture and an upper aperture which together allow ambient air to flow through the interior of the hollow body and
the ventilation unit (8) comprises a duct (21) and a fan (22) which is arranged inside the duct (21), the ventilation unit (8) being configured to draw air from the interior of the door via a first inlet (23) and from the chamber (3) via a second inlet into the duct (21), and discharge the air inside the duct (21) to the outside via an outlet (24), wherein the first inlet (23) faces the upper aperture, wherein the second inlet opens into a ceiling of the chamber (3), and wherein the outlet (24) is underneath the control panel (7) and above the first inlet (23).

10. The oven (1) according to claim 9, **characterized in that** the duct (21) is partitioned into a first section (21a) and a second section (21b), wherein the second section (21b) is arranged above the first section (21a), wherein the first section (21a) includes the first inlet (23) and the second inlet, and wherein the second section (21b) includes the outlet (24), and wherein the fan (22) is arranged between the first section (21a) and the second section (21b).

11. The oven (1) according to claim 10, **characterized in that** a width of the first section (21a) narrows from the first inlet (23) towards the fan (22) and a width of the second section (21b) widens from the fan (22) towards the outlet (24) and a height of the first section (21a) increases from the first inlet (23) towards the fan (22) and a height of the second section (21b) decreases from the fan (22) towards the outlet (24).

12. The oven (1) according to any one of claims 9 to 11, **characterized in that** the first inlet (23) comprises a plurality of slots which are arrayed in a width direction (L) of the door and the outlet (24) has at least one slot extending parallel to the width direction (L).

13. The oven (1) according to any one of claims 1 to 12, **characterized by** comprising a cooking/baking mode and a pyrolytic mode which are selectable by a user via the user interface (5).

Patentansprüche

1. Ofen (1), umfassend

- ein Innengehäuse (2), das eine Kammer (3) zum Kochen/Backen von Lebensmitteln definiert,
- eine Heizeinheit, die zum Heizen der Kammer (3) angeordnet ist,
- eine Tür zum Zugang zur Kammer (3),
- ein Außengehäuse (4), das das Innengehäuse (2) umschließt,
- eine Benutzerschnittstelle (5) und elektrische Komponenten (6) zum Steuern des Ofens (1),
- ein Steuerpanel (7), das über der Tür angeordnet ist, wobei die Benutzerschnittstelle (5) an dem Steuerpanel (7) montiert ist,
- eine Lüftungseinheit (8) zum Abführen von Strahlungswärme nach außen, wobei die Lüftungseinheit (8) innerhalb des Außengehäuses (4) und auf einer Oberseite des Innengehäuses (2) angeordnet ist,
- ein Hitzeschutzschild (9), die durch einen Luftspalt (10) oberhalb der Lüftungseinheit (8) angeordnet ist, wobei der Hitzeschutzschild (9) eine Größe und Form aufweist, die konfiguriert ist, um die Benutzerschnittstelle (5) und elektrische Komponenten (6) von der Strahlungswärme abzuschirmen, die von der Heißluft innerhalb der Lüftungseinheit (8) und der Kammer (3) während des Betriebs abgegeben wird, wobei der Hitzeschutzschild (9) eine Montageplatte (11) umfasst und wobei die elektrischen Komponenten (6) auf einer Oberseite der Montageplatte (11) befestigt sind, die von der Lüftungseinheit (8) abgewandt ist,

dadurch gekennzeichnet, dass
der Hitzeschutzschild (9) ferner eine Montagehalterung (12) umfasst, wobei die Montagehalterung (12) über die gegenüberliegenden Seitenwände (13) des Außengehäuses (4) befestigt ist, um eine obere Wand (14) des Außengehäuses (4) von unten zu verstärken,

wobei
die Montagehalterung (12) eine vertikale Trennwand (16) umfasst, die einen Bereich (17) oberhalb der Lüftungseinheit (8) physikalisch in zwei Teilbereiche (17a, 17b) unterteilt, wobei sich die Trennwand (16) senkrecht zu den gegenüberliegenden Seitenwänden (13) des Außengehäuses (4) erstreckt.

2. Ofen (1) nach Anspruch 1, **dadurch gekennzeichnet, dass** der Hitzeschutzschild (9) eine Kabeldurchführung (15) für die Kabel aufweist, die zu den elektrischen Komponenten (6) führen.

3. Ofen (1) nach Anspruch 2, **dadurch gekennzeichnet, dass** die Kabeldurchführung (15) in die Montagehalterung (12) gebildet ist.

4. Ofen (1) nach einem der Ansprüche 1 bis 3, **dadurch gekennzeichnet, dass** die Trennwand (16) einen Schlitz (18) umfasst, der eine Oberseite der Lüftungseinheit (8) berührungslos und zwei gegenüberliegende Seitenflächen der Lüftungseinheit (8) umschließt.

5. Ofen (1) nach einem der Ansprüche 1 bis 4, **dadurch gekennzeichnet, dass** der Hitzeschutzschild (9) eine Stützbasis (19) umfasst, wobei die Stützbasis (19) an einem Innenflansch (20) des Außengehäuses (4) anliegt, der unterhalb der Steuerpanel (7) gebildet ist.

6. Ofen (1) nach Anspruch 5, **dadurch gekennzeichnet, dass** die Stützbasis (19) und die Montagehalterung (12) an gegenüberliegenden Enden der Montageplatte (11) gebildet sind.

7. Ofen (1) nach einem der Ansprüche 1 bis 6, **dadurch gekennzeichnet, dass** die Montageplatte (11) des Hitzeschutzschildes (9) um einen vorgegebenen Abstand in Höhenrichtung von der Lüftungseinheit (8) getrennt ist und sich im Wesentlichen parallel zu einer Oberseite der Lüftungseinheit (8) erstreckt.

8. Ofen (1) nach einem der Ansprüche 1 bis 7, **dadurch gekennzeichnet, dass** die Breite der Montageplatte (11) einer Breite der Lüftungseinheit (8) entspricht.

9. Ofen (1) nach einem der Ansprüche 1 bis 8, **dadurch gekennzeichnet, dass** die Tür einen Hohlkörper, eine untere Öffnung und eine obere Öffnung umfasst, die zusammen ermöglichen, dass Umgebungsluft durch das Innere des Hohlkörpers strömt und
die Lüftungseinheit (8) einen Kanal (21) und einen Ventilator (22) umfasst, der innerhalb des Kanals (21) angeordnet ist, die Lüftungseinheit (8) konfiguriert ist, um Luft aus dem Inneren der Tür über einen ersten Einlass (23) und aus der Kammer (3) über einen zweiten Einlass in den Kanal (21) zu saugen und die Luft innerhalb des Kanals (21) über einen Auslass (24) nach außen abzuführen, wobei der erste Einlass (23) der oberen Öffnung zugewandt ist, wobei der zweite Einlass in eine Decke der Kammer (3) mündet, und wobei sich der Auslass (24) unter dem Steuerpanel (7) und über dem ersten Einlass (23) befindet.

10. Ofen (1) nach Anspruch 9, **dadurch gekennzeichnet, dass** der Kanal (21) in einen ersten Abschnitt (21a) und einen zweiten Abschnitt (21b) aufgeteilt ist, wobei der zweite Abschnitt (21b) über dem ersten Abschnitt (21a) angeordnet ist, wobei der erste Abschnitt (21a) den ersten Einlass (23) und den zweiten Eingang beinhaltet, und wobei der zweite Abschnitt (21b) den Auslass (24) beinhaltet, und wobei der Ventilator (22) zwischen dem ersten Abschnitt (21a) und dem zweiten Abschnitt (21b) angeordnet ist.

11. Ofen (1) nach Anspruch 10, **dadurch gekennzeichnet, dass** sich eine Breite des ersten Abschnitts (21a) vom ersten Einlass (23) zum Ventilator (22) und eine Breite des zweiten Abschnitts (21b) vom Ventilator (22) zum Auslass (24) hin verbreitert und eine Höhe des ersten Abschnitts (21a) vom ersten Einlass (23) zum Ventilator (22) zunimmt und eine Höhe des zweiten Abschnitts (21b) vom Ventilator (22) zum Auslass (24) abnimmt.

12. Ofen (1) nach einem der Ansprüche 9 bis 11, **dadurch gekennzeichnet, dass** der erste Einlass (23) eine Vielzahl von Schlitzen umfasst, die in einer Breitenrichtung (L) der Tür aufgestellt sind und der Auslass (24) mindestens einen Schlitz aufweist, der sich parallel zur Breitenrichtung (L) erstreckt.

13. Ofen (1) nach einem der Ansprüche 1 bis 12, **dadurch gekennzeichnet, dass** er einen Koch-/Backmodus und einen pyrolytischen Modus umfasst, die von einem Benutzer über die Benutzerschnittstelle (5) wählbar sind.

Revendications

1. Four (1) comprenant

- un boîtier intérieur (2) qui définit une chambre (3) pour la cuisson/cuisson d'aliments,
- une unité de chauffage qui est agencée pour chauffer la chambre (3),
- une porte d'accès à la chambre (3),
- un boîtier extérieur (4) qui entoure le boîtier intérieur (2),
- une interface utilisateur (5) et des composants électriques (6) pour commander le four (1),

- un panneau de commande (7) qui est disposé au-dessus de la porte, dans lequel l'interface utilisateur (5) est montée sur le panneau de commande (7),
- une unité de ventilation (8) pour expulser la chaleur rayonnante vers l'extérieur, l'unité de ventilation (8) étant disposée à l'intérieur du boîtier extérieur (4) et sur un côté supérieur du boîtier intérieur (2),
- un écran de protection thermique (9) qui est disposé à travers un entrefer (10) au-dessus de l'unité de ventilation (8), dans lequel l'écran de protection thermique (9) a une taille et une forme configurées pour protéger l'interface utilisateur (5) et les composants électriques (6) de la chaleur radiante émanant de l'air chaud dans l'unité de ventilation (8) et la chambre (3) en fonctionnement, dans lequel l'écran de protection thermique (9) comprend une plaque de montage (11) et dans lequel les composants électriques (6) sont fixés sur une surface supérieure de la plaque de montage (11) qui est évitée de l'unité de ventilation (8),

caractérisé en ce que l'écran de protection thermique (9) comprend en outre un support de montage (12), dans lequel le support de montage (12) est fixé à travers les parois latérales opposées (13) du boîtier extérieur (4) de manière à renforcer une paroi supérieure (14) du boîtier extérieur (4) par le bas, dans lequel le support de montage (12) comprend une plaque de séparation verticale (16) qui divise physiquement une région (17) au-dessus de l'unité de ventilation (8) en deux sous-régions (17a, 17b), la plaque de séparation (16) étant perpendiculaire aux parois latérales opposées (13) du boîtier extérieur (4).

2. Four (1) selon la revendication 1, **caractérisé en ce que** l'écran de protection thermique (9) comporte une traversée de câble (15) pour les câbles menant aux composants électriques (6).

3. Four (1) selon la revendication 2, **caractérisé en ce que** la traversée de câble (15) est formée dans le support de montage (12).

4. Four (1) selon l'une quelconque des revendications 1 à 3, **caractérisé en ce que** la plaque de séparation (16) comporte une fente (18) qui entoure sans contact un côté supérieur de l'unité de ventilation (8) et deux côtés latéraux opposés de l'unité de ventilation (8).

5. Four (1) selon l'une quelconque des revendications 1 à 4, **caractérisé en ce que** l'écran de protection thermique (9) comprend une base de support (19), dans lequel la base de support (19) est appuyée contre une bride intérieure (20) du boîtier extérieur (4) qui est formée sous le panneau de commande (7).

6. Four (1) selon la revendication 5, **caractérisé en ce que** la base de support (19) et le support de montage (12) sont formés sur des extrémités opposées de la plaque de montage (11).

7. Four (1) selon l'une quelconque des revendications 1 à 6, **caractérisé en ce que** la plaque de montage (11) de l'écran de protection thermique (9) est séparée de l'unité de ventilation (8) par une distance prédéterminée dans la direction de la hauteur et s'étend sensiblement parallèlement à une surface supérieure de l'unité de ventilation (8).

8. Four (1) selon l'une quelconque des revendications 1 à 7, **caractérisé en ce que** la largeur de la plaque de montage (11) correspond à une largeur de l'unité de ventilation (8).

9. Four (1) selon l'une quelconque des revendications 1 à 8, **caractérisé en ce que** la porte comprend un corps creux, une ouverture inférieure et une ouverture supérieure qui, ensemble, permettent à l'air ambiant de circuler à travers l'intérieur du corps creux et l'unité de ventilation (8) comprend un conduit (21) et un ventilateur (22) qui est disposé à l'intérieur du conduit (21), l'unité de ventilation (8) étant configurée pour aspirer de l'air de l'intérieur de la porte via une première entrée (23) et de la chambre (3) via une deuxième entrée dans le conduit (21), et évacuer l'air à l'intérieur du conduit (21) vers l'extérieur via une sortie (24), la première entrée (23) faisant face à l'ouverture supérieure, dans lequel la seconde entrée s'ouvre dans un plafond de la chambre (3), et dans lequel la sortie (24) se trouve sous le panneau de commande (7) et au-dessus de la première entrée (23).

10. Four (1) selon la revendication 9, **caractérisé en ce que** le conduit (21) est divisé en une première section (21a) et une deuxième section (21b), dans lequel la deuxième section (21b) est disposée au-dessus de la première section (21a), dans lequel la première section (21a) comprend la première entrée (23) et la deuxième entrée, et dans lequel la deuxième section (21b) comprend la sortie (24), et dans lequel le ventilateur (22) est disposé entre la première section (21a) et la deuxième section (21b).

11. Four (1) selon la revendication 10, **caractérisé en ce qu'**une largeur de la première section (21a) se rétrécit de la première entrée (23) vers le ventilateur (22) et une largeur de la deuxième section (21b) s'élargit du ventilateur (22) vers la sortie (24) et une hauteur de la première section (21a) augmente de la première entrée (23) vers le ventilateur (22) et une

hauteur de la deuxième section (21b) diminue du ventilateur (22) vers la sortie (24).

12. Four (1) selon l'une quelconque des revendications 9 à 11, **caractérisé en ce que** la première entrée (23) comprend une pluralité de fentes qui sont disposées dans une direction de largeur (L) de la porte et la sortie (24) comporte au moins une fente s'étendant parallèlement à la direction de largeur (L).

13. Four (1) selon l'une quelconque des revendications 1 à 12, **caractérisé en ce qu'**il comprend un mode de cuisson/cuisson et un mode pyrolytique qui peuvent être sélectionnés par un utilisateur via l'interface utilisateur (5).

Fig. 1

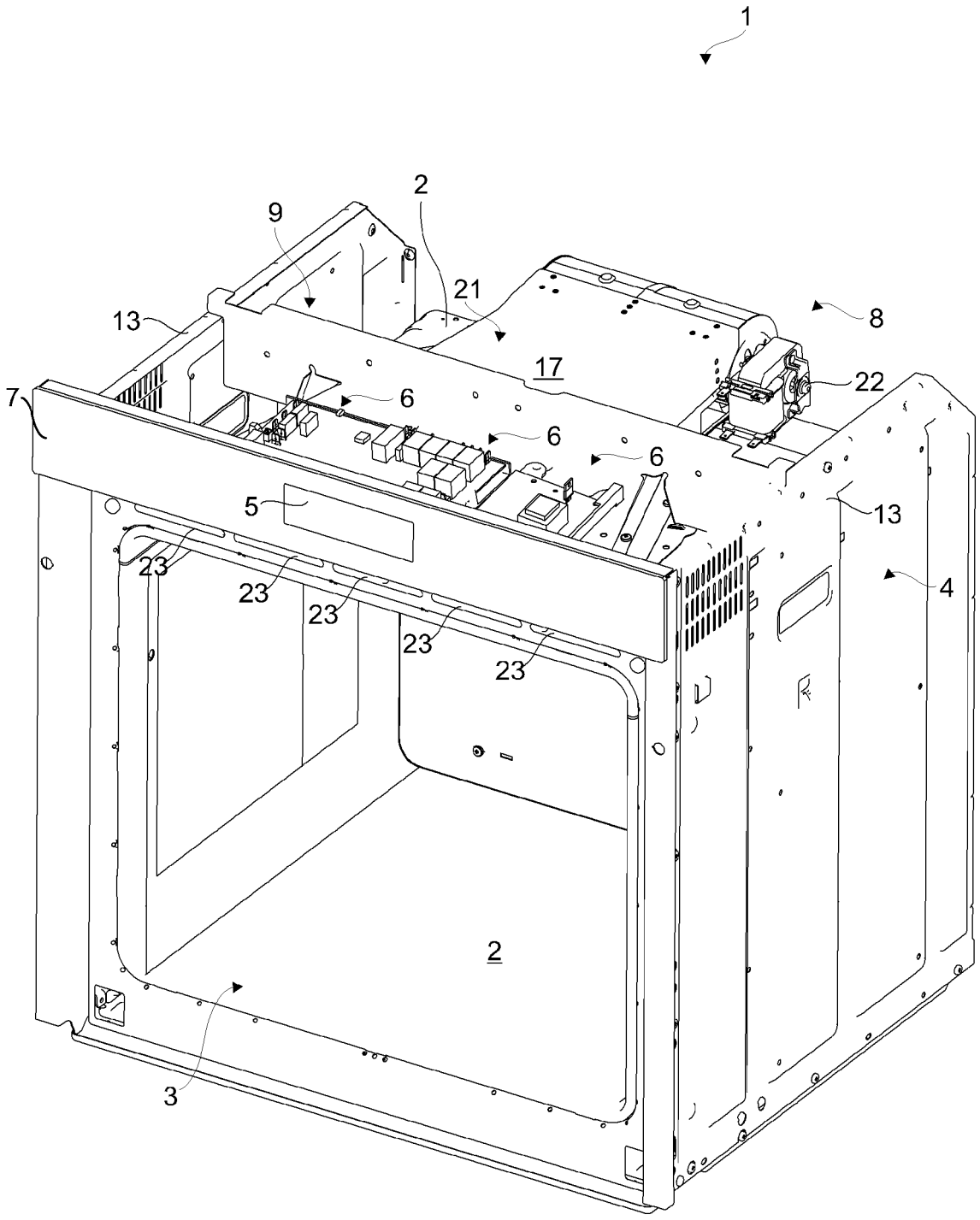


Fig. 2

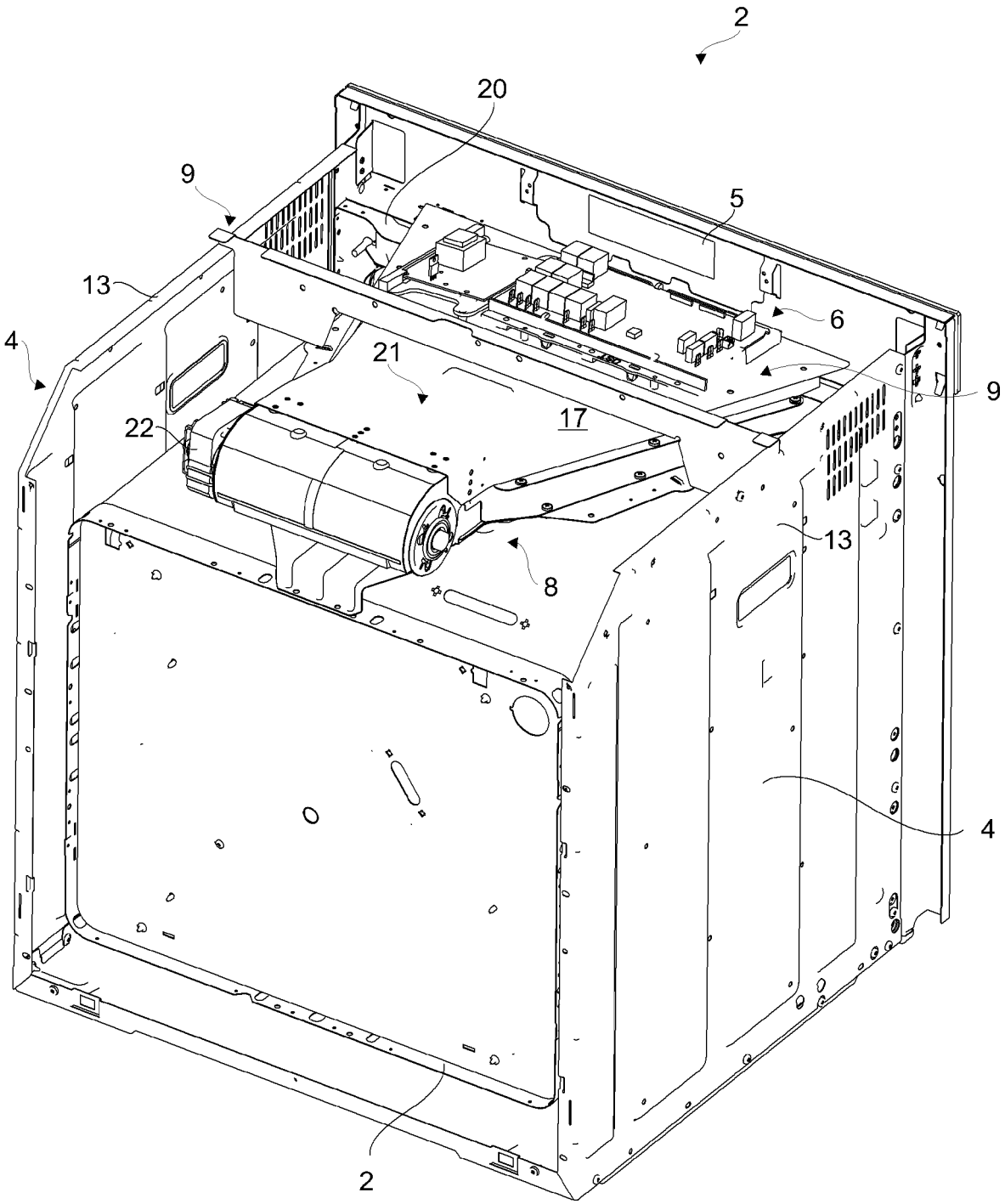


Fig. 3

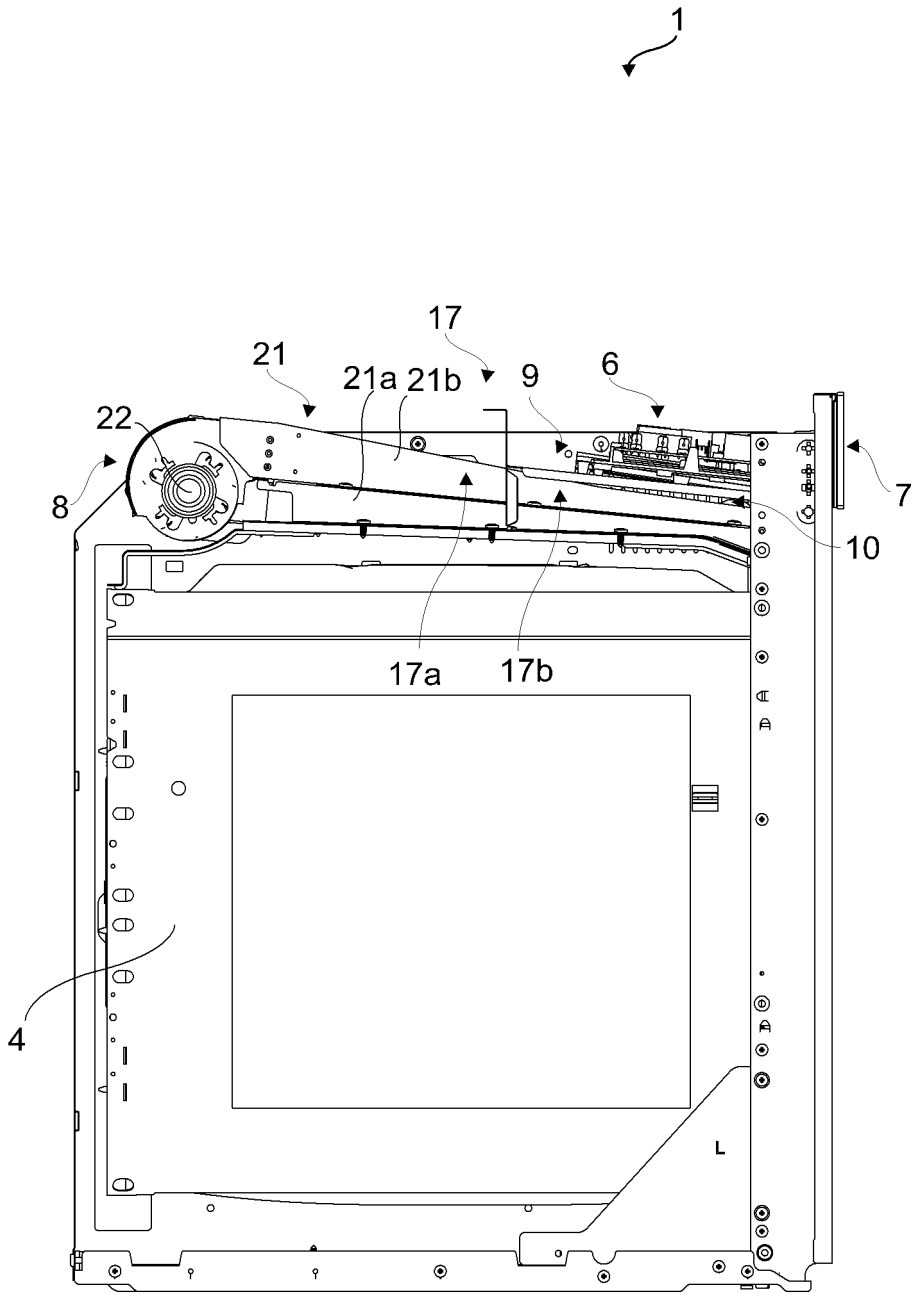


Fig. 4

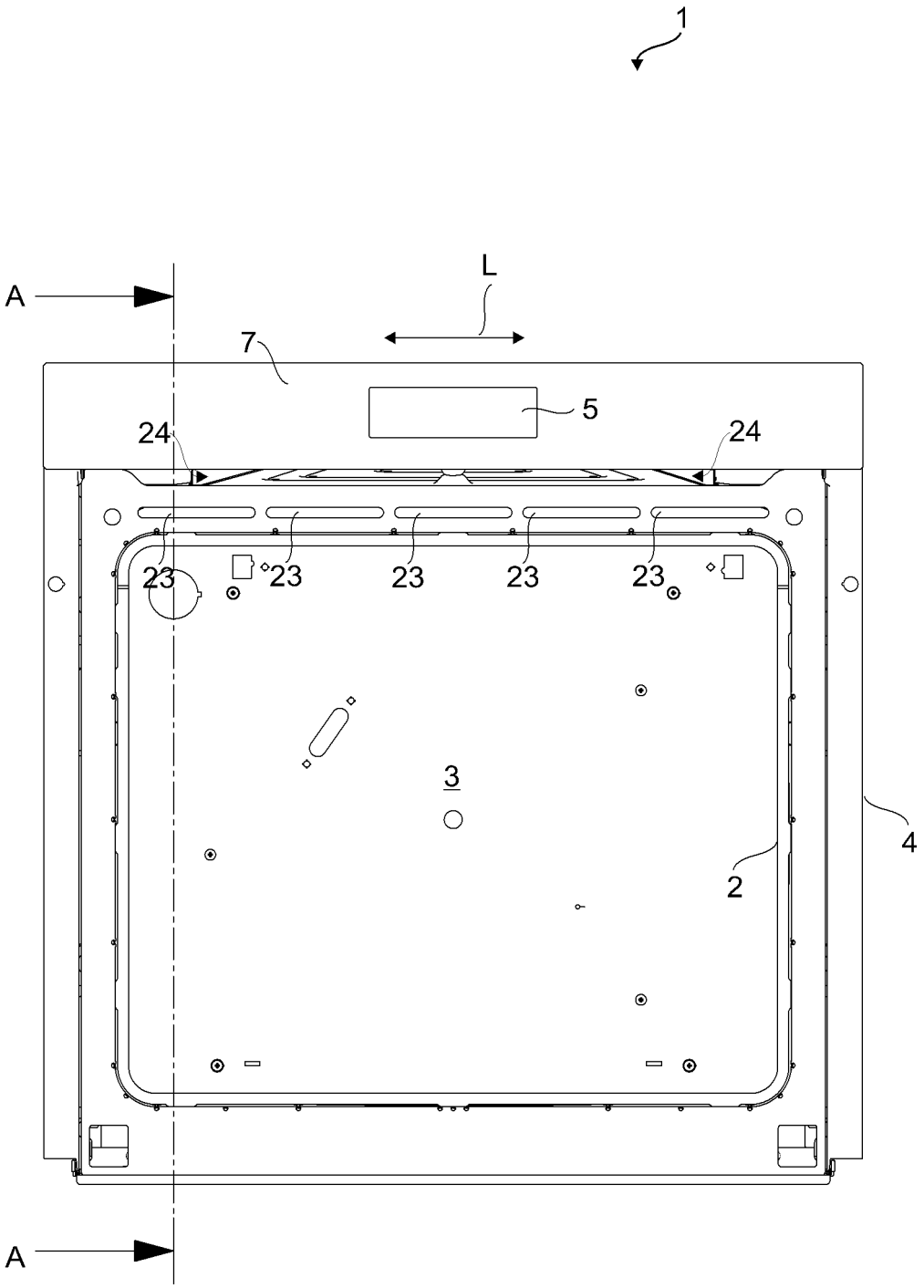


Fig. 5

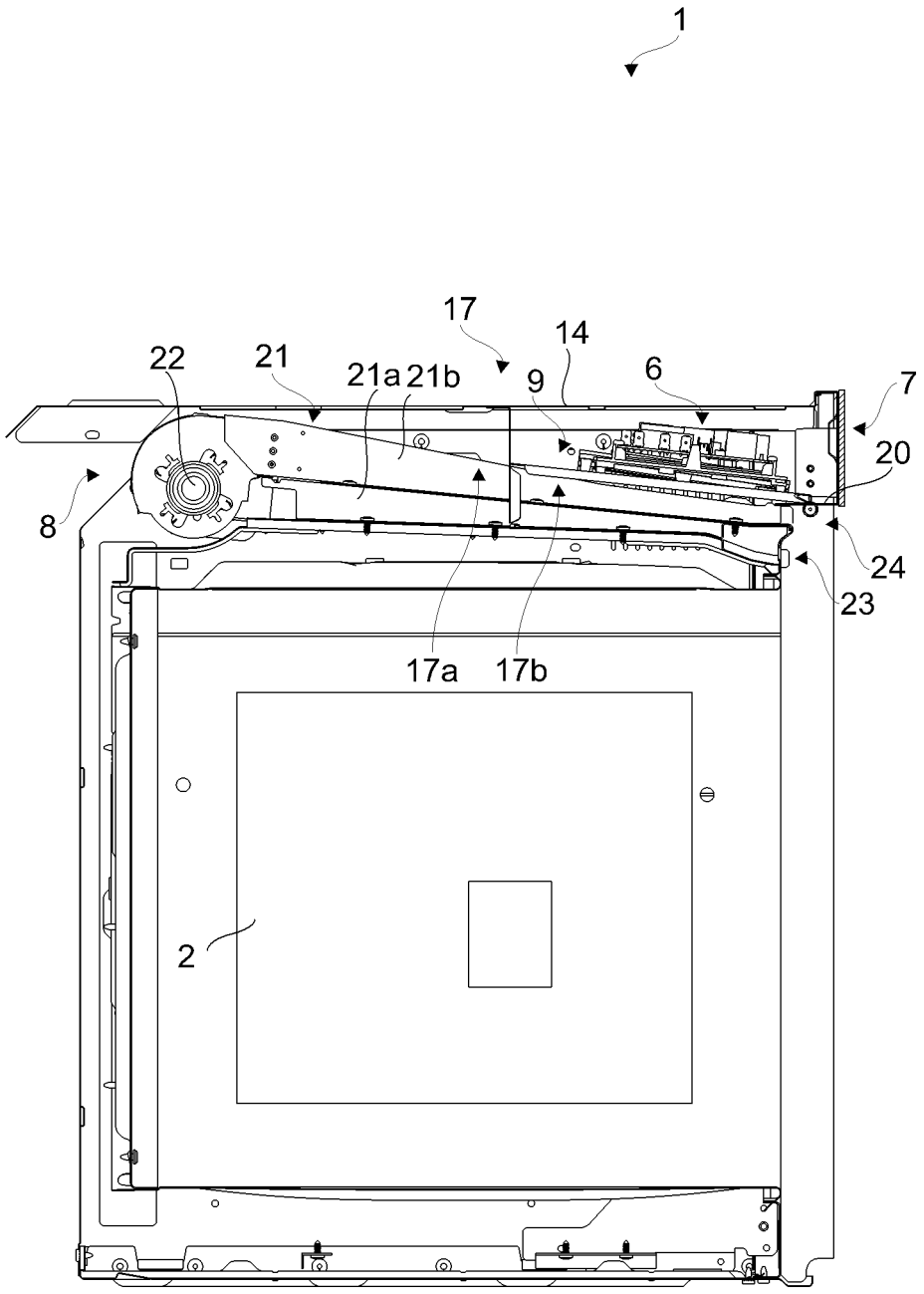


Fig. 6

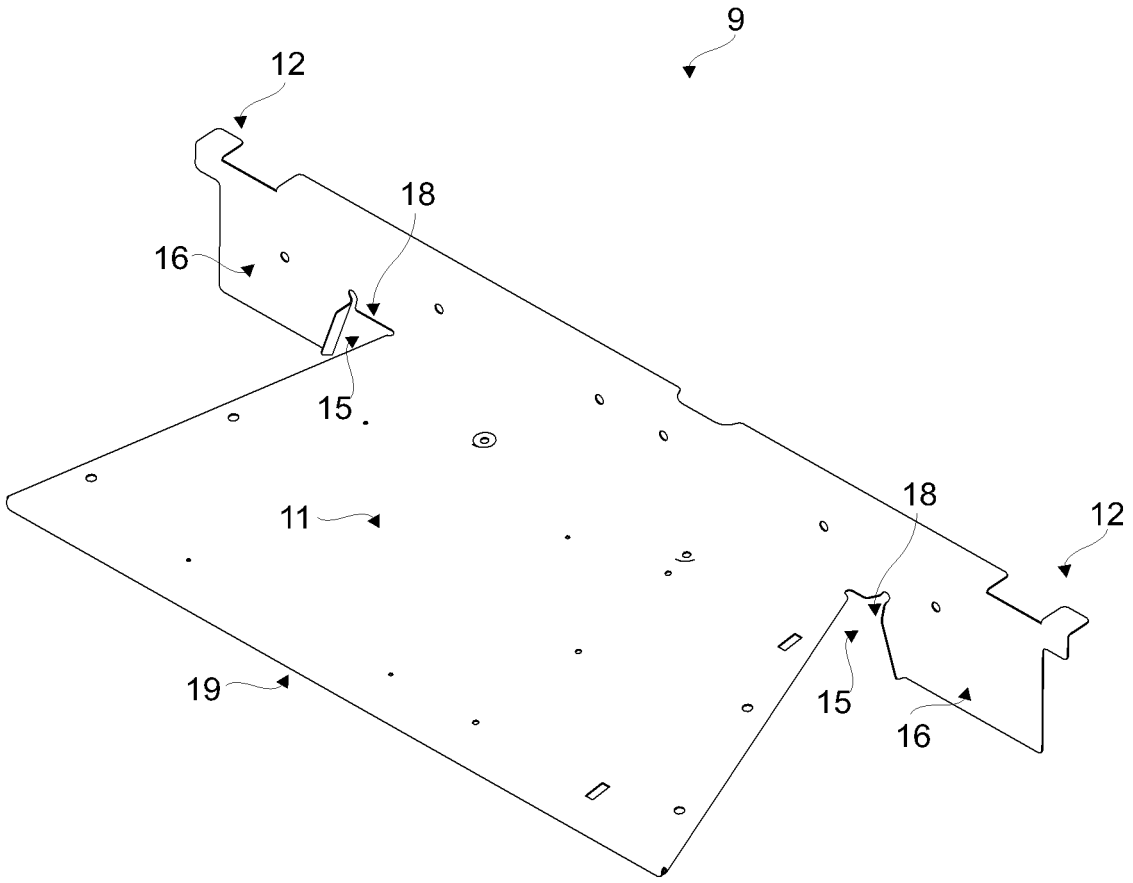


Fig. 7

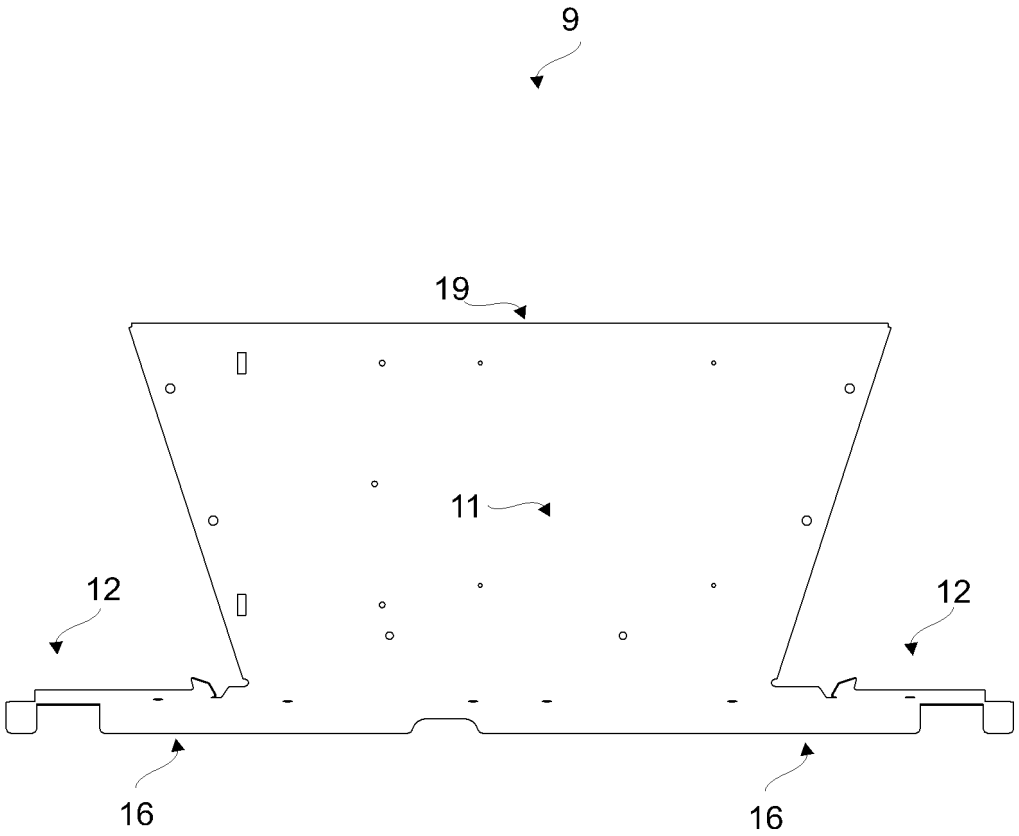
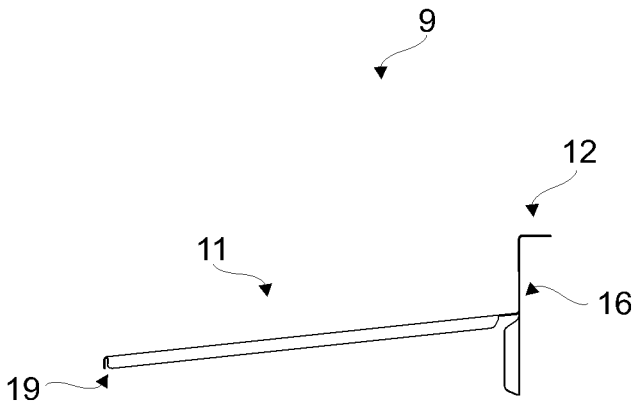


Fig. 8



REFERENCES CITED IN THE DESCRIPTION

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- US 4601279 A **[0002]**
- EP 2107317 A2 **[0003]**