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(54) **AIR EXTRACTION DEVICE**

(57) Air extraction device comprising at least one vertical air extraction duct (1), through which the air is drawn off according to a vertical draw-off direction, comprising one or more filter elements (2), which are arranged in the air extraction duct (1), for the retention of grease and water, and comprising at least one or more reservoirs (3) for the collection of the grease and water, wherein these one or more reservoirs (3) are substantially arranged at the bottom of the one or more filter elements (2), viewed according to the draw-off direction, wherein the air extraction device comprises one or more collecting elements (4) for the capture of the grease and water emanating from the one or more filter elements (2), wherein each collecting element (4) comprises a discharge opening for the discharge of the captured grease and water and each reservoir (3) is arranged at the bottom of a said discharge opening.

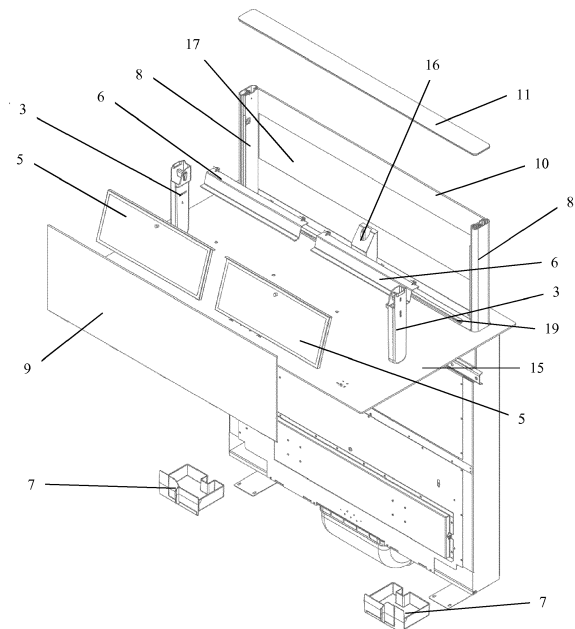


Fig. 2

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Description

[0001] This invention relates to an air extraction device, such as an extractor hood, comprising at least an upright air extraction duct, through which the air is drawn off according to an upright draw-off direction, comprising one or more filter elements, which are arranged in the air extraction duct, for the retention of grease and water present in the drawn-off air, and comprising at least one or more reservoirs for the collection of the grease and water emanating from these one or more filter elements, wherein these one or more reservoirs are substantially arranged at the bottom of the one or more filter elements, viewed according to the draw-off direction when the air extraction device is in use.

[0002] The air extraction device is preferably an extractor hood. An extractor hood can also be denoted by the term draught hood or vapour hood. Different types of extractor hoods exist. This invention specifically relates to extractor hoods having an upright air extraction duct, such as, for example, a chimney extractor hood, an island extractor hood or a worktop extractor hood.

[0003] In the case of an upright draw-off direction, the air is either drawn off upwards through the air extraction duct or drawn off downwards through the air extraction duct. For example, in a worktop extractor hood, the air is drawn off downwards.

[0004] The filter elements are capable of capturing most of the grease and water which is present in the drawn-off air. The filter elements are generally produced such that at least a part of this retained grease and water is also held fast by these filter elements. By then replacing and/or cleaning the filter elements at regular intervals, for example by washing them down by hand or cleaning them with the aid of a dishwasher, it is ensured that the air is always drawn off effectively and the grease and water is retained by the filter elements. A part of the grease and water retained by the one or more filter elements will flow out of the filter elements, however, inter alia as a result of gravity. In order to capture the grease and water emanating from these filter elements, the air extraction device is provided with one or more reservoirs, in which this grease and water can be captured and stored. The problem with the existing air extraction devices is that these reservoirs are located under the filter elements and extend according to a direction perpendicular to the draw-off direction. These reservoirs here locally ensure a strong decrease in the cross section/passageway of the air extraction duct, whereby these reservoirs ensure a decrease in the air extraction efficiency in the air extraction duct. As a result, the air must get drawn off faster, the energy consumption is high and there is thus more noise disturbance.

[0005] It is hence an object of the invention to produce an air extraction device of this type having a higher air extraction efficiency, and wherein the extraction of air is thus not, or only little impeded by the need to store the grease and water captured by the filter elements.

[0006] This object is achieved by providing an air extraction device, such as an extractor hood, comprising at least an upright air extraction duct, through which the air is drawn off according to an upright draw-off direction, comprising one or more filter elements, which are arranged in the air extraction duct, for the retention of grease and water present in the drawn-off air, and comprising at least one or more reservoirs for the collection of the grease and water emanating from these one or more filter elements, wherein these one or more reservoirs are substantially arranged at the bottom of the one or more filter elements, viewed according to the draw-off direction when the air extraction device is in use, wherein the air extraction device comprises one or more collecting elements for the capture of the grease and water emanating from the one or more filter elements, wherein each collecting element comprises a discharge opening for the discharge of the captured grease and water and each reservoir is arranged at the bottom of a said discharge opening, so that the grease and the water emanating from a said filter element falls into the reservoir.

[0007] The one or more filter elements extract the grease and the water from the drawn-off air. The grease and water is thus retained at the site of these one or more filter elements. A part of this grease and water remains stuck in these one or more filter elements, however a part will flow out of these one or more filter elements, and this, for example, under the influence of gravity. The grease and water which flows out of these one or more filter elements and thus does not get stuck in the one or more filter elements is here discharged at the site of the one or more discharge openings. The one or more reservoirs here stand each arranged under a said discharge opening and thus capture the grease and water at the site of the discharge opening. By working with discharge openings, the stream of grease and water is centralized at one or more places in the air extraction duct. Given that a discharge opening can have a small dimension, this means that the dimensions of the reservoir, viewed according to planes perpendicular to the draw-off direction, can also be designed small. In other words, these reservoirs can be designed such that the dimensions of the passageway of the air extraction duct, viewed according to planes perpendicular to the draw-off direction, decrease only slightly as a result of the reservoirs, so that the airflow efficiency is limited only a little by the reservoirs, and thus by the elements which are provided to store captured water and grease.

[0008] Preferably, per filter element there is only provided one, or at most two, discharge opening(s), this in order to reduce the airflow efficiency as little as possible. One discharge opening can also be provided for a plurality of filter elements.

[0009] Also preferably, the one or more filter elements divide the air extraction duct almost completely into an uppermost portion, which extends above these one or more filter elements, and a lowermost portion, which extends under these one or more filter elements, so that

almost all the grease and water is retained by the one or more filter elements. In this way, it is ensured that the grease and water present in the drawn-off air is filtered effectively out of the air.

[0010] The air extraction duct is also preferably arranged practically vertically, and hence the draw-off direction extends practically vertically.

[0011] Preferably, the air extraction device is a worktop extractor hood and the air is drawn off from top to bottom in the air extraction duct.

[0012] In a preferred embodiment, a said collecting element is connected to a said filter element, and this collecting element and this filter element together form a filter. This filter element and this collecting element here form a whole which can be regarded as a separate entity and can be denoted by the term filter. Here the filter thus comprises at least one discharge opening, and preferably only one discharge opening. By here providing a filter comprising a discharge opening, it can be provided in a low-complexity manner that the grease and water emanating from the filter element can be discharged. Here too, it is not necessary to provide separate collecting elements. This filter can be arranged, for example, removably in the air extraction duct, so that this filter can be cleaned and/or replaced at appropriate intervals.

[0013] Preferably, the collecting element comprises a profile, in which the bottom side of the filter element is arranged, wherein this profile comprises the said discharge opening. Preferably, the collecting element is the profile. The bottom side of a filter element, such as the bottom side of a plate-like filter element, can be easily arranged in a profile, such as a gutter-shaped profile. Since the bottom side of the filter element is arranged in the profile, grease and water is conducted effectively in the profile by gravity. The bottom side of the filter element is here then the bottom side of the filter element during use of the air extraction device. The discharge opening is here then preferably an opening through the profile. When the filter element has the shape of a rectangular plate, then the filter element is preferably arranged such that the bottom side extends practically perpendicular to the draw-off direction, and thus practically horizontally, when the draw-off direction is arranged practically vertically. The profile is here then a profile which extends practically horizontally.

[0014] Also preferably, a said filter element is a plate-like filter element, which extends substantially according to a plane which makes an angle of between 10° and 90°, preferably between 20° and 60°, with the draw-off direction. Yet more preferably, this filter element has a rectangular shape. Through the placement of this filter element, a part of the filter element will be higher than another part of the filter element, whereby grease and water will make its way to the lowermost portions or lowermost portion of the filter element as a result of gravity. The collecting element is then preferably also arranged at the site of this lowermost portion or these lowermost portions. With the aid of gravity, the grease and water is

then conducted to the discharge opening. These filter elements preferably exist of a plurality of small metal plates which lie one against another, wherein these plates are made of stainless expanded metal.

[0015] Yet further preferably, the collecting element forms part of a frame which encases the margins of the filter element, viewed according to the plane in which the filter element extends, and which comprises the said profile. The filter element is then completely surrounded by a frame, whereby the filter element is easily placeable in the air extraction duct and is also guarded by the frame.

[0016] Also preferably, the air extraction device comprises one or more holders, which are arranged in the air extraction duct, for the positioning of the one or more filters in the air extraction duct. Preferably, the filters then rest on the holders.

[0017] Further preferably, these one or more holders are designed as protection against objects falling through the air extraction duct. They then not only hold the filters at the desired place, but they also form an obstacle for objects, whereby objects cannot make their way past these holders. These holders then preferably divide the air extraction duct almost completely into two parts, so that objects cannot make their way from one part to the other part. This is above all of importance when the air extraction device is a worktop extractor hood. Here, the air is drawn off downwards into the air extraction duct and it is of importance that objects, such as cutlery, cooking utensils, etc., cannot make their way through the whole of the air extraction duct. These holders are then, for example, made of a perforated material, whereby these can support the filters and objects used in the kitchen, but air can still easily make its way through the holders.

[0018] These holders can in a specific embodiment also be designed to secure the one or more reservoirs. They hence form the supports for the one or more reservoirs. The reservoirs then easily remain at their desired position during use of the air extraction device, so that these are well capable of capturing grease and water. In an alternative embodiment, the air extraction device comprises positioning elements, which are arranged in the air extraction duct, for the positioning of the reservoirs.

[0019] Preferably, the reservoirs are removable and also the filters are removable, so that these filters and reservoirs can easily get cleaned, if desired, and this while the holders, and thus the fall-through protection if the holders serve also as fall-through protection, can remain in the air extraction duct during the cleaning of the filters and/or the reservoirs, so that objects cannot make their way past these holders.

[0020] In an alternative embodiment, each holder comprises a said reservoir.

[0021] In a specific embodiment, the holders of the filters do not serve as fall-through protection, but separate elements are provided, which latter serve as fall-through protection.

[0022] In a much preferred embodiment, viewed ac-

according to planes perpendicular to the draw-off direction, the one or more collecting elements and the one or more reservoirs ensure a surface area decrease of no more than 30% of the passageway of the air extraction duct. This surface area decrease is preferably at most 20% and, yet more preferably, at most 10%. The air extraction efficiency is here as optimal as possible at the site of the reservoirs.

[0023] The one or more reservoirs are preferably arranged at least partially in the air extraction duct. The air extraction device can in this way be realized in compact construction. It is here also easy to make certain parts extensible. In the case of a worktop extractor hood, this can be useful, because it can then be ensured that the extractor hood is little visible when the extractor hood is not in use. Yet more preferably, the reservoirs are arranged fully in the air extraction duct.

[0024] In a preferred embodiment, the air extraction device is a worktop extractor hood and the air is drawn off from top to bottom into the air extraction duct. The air is here then drawn off downwards in the air extraction duct. Preferably, this air extraction duct is arranged practically vertically. During use of the worktop extractor hood, at least a part of the air extraction duct is then preferably located above the hotplate, viewed according to the vertical direction, so that this at least one part of the air extraction duct is located next to the pots and pans which are on the hotplate. In this way, the air extraction duct is located close to the air which is to be drawn off.

[0025] A said reservoir is preferably elongate and extends practically according to the draw-off direction. By extending according to the draw-off direction, the reservoir can still capture a sufficient volume of grease and water, and this without a strong decrease in air extraction efficiency. In this way, the reservoirs can together, for example, still have a volume which is greater than 50 ml, or even greater than 90 ml. It is hence not necessary to frequently empty these reservoirs, which ensures a high ease of use of the air extraction device.

[0026] In a preferred embodiment, the air extraction device comprises at least two said filter elements, which are arranged in the air extraction duct. The dimensions of each filter element, or of the filter per se if the filter element is connected to its collecting element, are hereby limited, so that the filter element or the filter can be easily cleaned. This by manual washing down in a pump tank or by washing down with a dishwasher. As a result of these more limited dimensions, the filter elements can be easily placed in a dishwasher. In air extraction devices having movable components such as a worktop extractor hood, where, for example, a moving part is movable upwards and downwards so that this worktop extractor hood is located, for example, in the plane of a hotplate when the hotplate is not in use and this moving part is largely located above this hotplate when the extractor hood is in use, moving elements can be designed to effect the movement of this moving part. When these moving elements extend centrally, the filter elements can be provid-

ed, for example, on both sides of these moving elements.

[0027] Further preferably, these filter elements are arranged next to one another and they extend in the same plane. The height direction of the air extraction duct preferably corresponds to the draw-off direction. The air extraction duct then further has a width direction and a length direction, wherein preferably the dimension of the air extraction duct according to the length direction is greater than the dimension according to the width direction. This said plane then preferably extends according to this length direction and makes an angle with the width direction and the height direction. The filter elements then preferably extend practically fully over the entire width and length of the air extraction duct, so that they neatly divide the air extraction duct and grease and water is retained by these filter elements.

[0028] In addition, in a preferred embodiment, the air extraction duct extends according to a height direction which corresponds to the draw-off direction, the air extraction device comprises two filter elements and only one discharge opening for each filter element, wherein these discharge openings are arranged on both sides of the air extraction duct, viewed according to a direction perpendicular to the height direction of the air extraction duct. The discharge openings, and thus the reservoirs located under these discharge openings, thus extend on both sides of the air extraction duct, whereby these have little adverse effect on the air extraction efficiency.

The air extraction duct here has, apart from height direction, also a width direction and a length direction, wherein this width direction and length direction both extend perpendicular to the height direction. The dimensions of the air extraction duct, viewed according to the length direction, can be greater, for example, than the dimension of the air extraction duct, viewed according to the width direction. The length direction of the air extraction duct then preferably extends in the said plane in which the one or more filter elements extend. When the air extraction duct is then viewed according to the width direction, the discharge openings are located to the left and right of the air extraction duct. The discharge openings, and thus the reservoirs which are under these discharge openings, are thus also located on the left and right, whereby these have little adverse effect on the air extraction efficiency.

[0029] Preferably, the one or more filter elements and/or the one or more reservoirs are arranged removably in the air extraction duct. In this way, the filter elements can easily get cleaned and/or replaced, and/or the reservoirs can easily get emptied.

[0030] At the site of the bottom side of the air extraction device, one or more collecting trays are preferably arranged. Should grease and water make its way past the filter elements and not be captured by the reservoirs and/or should the reservoirs overflow, these collecting trays ensure that this grease and water does not remain in the drawn-off air. This is of importance if the air extraction device brings the filtered air back into the room from which the air was originally drawn off. In extractor hoods

having a recirculation system, this is the case.

[0031] In a much preferred embodiment, the air extraction device is a worktop extractor hood, and the air extraction duct comprises an upwardly and downwardly extensible moving part, wherein this moving part is delimited by two mutually opposing side profiles, which are distanced apart and are arranged so as to be upwardly and downwardly movable according to the draw-off direction, a front wall and a rear wall, which extend parallel to one another and mutually connect both the side profiles, a top profile, which extends atop the side profiles according to a direction perpendicular to the draw-off direction and mutually connects both the side profiles, and wherein an opening is present between the front wall and the top profile, wherein this opening is an intake opening for drawing air into the air extraction duct. The dimensions of the front wall, viewed according to the draw-off direction, are here smaller than the corresponding dimensions of the rear wall. This moving part can preferably also be placed at several positions (heights), depending on the pots and pans which are used.

[0032] Further preferably, the top profile is removable. In this way, the air extraction duct can be easily cleaned, and/or the removable components, such as the filter elements and/or the reservoirs, can be easily taken out of the air extraction duct. The front wall, too, is preferably removable, so that the filter elements can be accessed still more easily. An additional advantage is present if, when the air extraction device is not in use, the top rail is located in the plane of a hotplate and the top rail is easily removable by an upwardly directed force. This means that, if objects or a body part find their way into the draw-off opening and if the moving part moves downwards, these objects or the body part cannot get jammed between the top rail and the hotplate, given that the top rail then comes loose from the side profiles. Damage is hereby avoided.

[0033] Also further preferably, the top profile comprises a guide element in order to guide the air from the draw-off opening into the air extraction duct, and this guide element comprises a gutter, which extends perpendicular to the draw-off direction for the capture of grease and water. With the aid of the guide element, the air is oriented into the air extraction duct. With the aid of the said gutter, already a part of the grease and water has been extracted from the air, so that the filter elements have to be less frequently cleaned. In the case of a removable top rail, this gutter is, moreover, easily emptiable and cleanable.

[0034] Also further preferably, the front wall and the rear wall are at least partially made of a transparent material. It is thereby possible to look through the front wall and the rear wall, so that the appearance of worktop extractor hoods of this type is seen as aesthetic. Further preferably, the air extraction device comprises at least one fan and a motor for driving this fan, wherein this air extraction device is realized in compact construction, and this motor and at least one fan are located under the air extraction duct, and their dimensions, viewed according

to horizontal directions, extend past this air extraction duct.

[0035] This invention is now more closely explained with reference to the hereinafter following detailed description of a preferred embodiment of an air extraction device according to this invention. The aim of this description is solely to provide illustrative examples and to indicate further advantages and particularities, and can thus by no means be interpreted as a limitation of the field of application of the invention or of the patent rights claimed in the claims.

[0036] In this detailed description, reference is made by means of reference numerals to the accompanying drawings, wherein

- **Figure 1** is a perspective representation of a worktop extractor hood according to the invention and a hotplate, in the usage state of the worktop extractor hood;
- **Figure 2** shows an exploded view of Figure 1;
- **Figure 3** is a cross section perpendicular to the length direction of a worktop extractor hood and a hotplate as represented in Figure 1, incorporated in a kitchen cabinet;
- **Figure 4** is a perspective representation of a worktop extractor hood and a hotplate as represented in Figure 1, incorporated in a kitchen cabinet, and whereof the top profile is detached from the rest of the worktop extractor hood;
- **Figure 5** is a perspective representation of Figure 4, wherein the top profile has been removed and during the removal of the front wall;
- **Figure 6** is a perspective representation of Figure 5, wherein the front wall has been removed;
- **Figure 7** is a top view of Figure 4, wherein the top profile is not visible;
- **Figure 8** is a top view of Figure 7, wherein the filters have additionally been removed;
- **Figure 9** is a representation of Figure 3, wherein the airflow is indicated with arrows;
- **Figure 10** is a perspective representation of a filter of a worktop extractor hood according to the invention;
- **Figure 11** is a perspective representation of a reservoir of a worktop extractor hood according to the invention;
- **Figure 12** is a representation of Figure 1 during non-use of the worktop extractor hood.

[0037] In the figures, one embodiment is represented of a worktop extractor hood according to the invention. Of course, other embodiments are also possible.

[0038] The worktop extractor hood is designed to be incorporated in a kitchen cabinet (18) at the site of a hotplate (15). The worktop extractor hood comprises a moving part, so that this worktop extractor hood can assume at least two positions with respect to the hotplate (15). During use of the worktop extractor hood, this moving

part extends through the hotplate (15) such that a part thereof is higher than the hotplate (15) (see Figures 1, 3 and 9). In this way, air can proceed to be drawn off at the site of the top side of the pots and pans which are placed on the hotplate (15) and/or at a height which is above the pots and pans. When the worktop extractor hood is not being used, the top side of the moving part extends in the plane of the hotplate (15), so that the visibility of the worktop extractor hood is minimal and the worktop extractor hood forms one aesthetic whole with the hotplate (15) (see Figure 12).

[0039] As is clearly visible in Figure 9, this worktop extractor hood is designed to draw off the air downwards. To this end, this worktop extractor hood comprises a vertically directed air extraction duct (1), wherein the moving part comprises a part of this air extraction duct (1). In the air extraction duct (1), the air is drawn off downwards through a vertical draw-off direction (A). In this air extraction duct (1) are arranged the following elements: two filters (5), two holders (6) for the filters (5), two reservoirs (3), which are arranged at the bottom of the filters (5) (see Figures 7 and 8), a moving column (16) comprising moving elements to move the moving part upwards and downwards. Each filter (5) consists of a plate-like filter element (2) consisting of a plurality of plates of expanded metal, wherein this filter element (2) extends according to a plane and wherein the filter (5) comprises a frame which encases the margins of the filter element (2), viewed according to the said plane. The filters (5) are right-angled in shape. The filter elements (2) are capable of retaining grease and water from the drawn-off air.

[0040] The worktop extractor hood is positioned in such a way in the kitchen cabinet (18) and with respect to the hotplate (15) that the moving part moves upwards and downwards according to the vertical direction (A). We can also refer to this direction (A) as the height direction (A) of the air extraction duct (1). The hotplate (15) is designed to be arranged horizontally and has normally a defined length direction (B) and depth direction (C). This length direction (B) corresponds to the length direction of the air extraction duct (1), and the depth direction (C) corresponds to the width direction of the air extraction duct (1). The dimension of the air extraction duct (1) according to the length direction is somewhat smaller than the corresponding dimension of the hotplate (15), so that the air extraction duct (1) can extend through an opening of the hotplate (15), but can nevertheless still draw off air over a sufficient length.

[0041] The moving column (16) is arranged centrally in the air extraction duct (1), viewed according to the length direction of the air extraction duct (1). The two filters (5) are arranged on both sides of the moving column (16) and are arranged such that they both extend in the same plane and this plane makes an angle with the height direction (A) and the width direction of the air extraction duct (1), and that the length direction of the air extraction duct (1) extends in this plane. In addition, each filter (5) extends over the entire width of the air extraction

duct (1) and both filters (5) together extend over almost the entire length of the air extraction duct (1), except for at the site of the moving column (16). The length direction of the filters (5) corresponds to the length direction of the air extraction duct (1), and the bottom sides of the filters (5), when these are placed in the air extraction duct (1), rest on the holders (6) arranged under these filters (5). In this way, the air extraction duct (1) is divided practically fully in two in a portion which extends above the filters (5) and a portion which extends under the filters (5). This means that almost all drawn-off air will make its way through the filter elements (2), whereby grease and water is filtered effectively out of the drawn-off air.

[0042] The bottom side of each filter (5) when this is placed in the air extraction duct (1), i.e. the lowermost profile (4) of the frame, serves as a collecting element (4) of grease and water. The fact is that not all the water and grease which is retained by the filter elements (2) remains stuck in these filter elements (2). As a result of gravity, a part of the grease and water will also make its way downwards along the filter elements (2) and thus end up in the lowermost profile (4) of the frame. In order to ensure proper functioning of the worktop extractor hood and to avoid unnecessary dirtying of the air extraction duct (1), this grease and water must be captured. To this end, each lowermost profile (4) comprises a discharge opening located at the site of a side edge of the air extraction duct (1). Under each discharge opening is arranged an elongate reservoir (3), which extends according to the height direction (A) of the air extraction duct (1), thus according to the draw-off direction (A). The dimensions of each reservoir (3) perpendicular to this draw-off direction (A) are limited, but are sufficient to capture the grease and water coming out of the discharge opening. In other words, the grease and the water which does not remain stuck in the filter elements (2) ends up in the reservoirs (3). As a result of the limited dimensions of the reservoirs (3) and given that the frame encases the margins of the filter element (2), such reservoirs ensure only a limited decrease in the dimensions of the air extraction duct (1), viewed according to planes perpendicular to the draw-off direction (A), so that the air extraction efficiency decreases little as a result of these reservoirs (3) and filters (5).

[0043] The moving part comprises two side profiles (8), which are distanced apart according to the length direction and which are movable upwards and downwards, a rectangular rear wall (10), which extends according to the length direction and height direction (A) and which mutually connects the two side profiles (8), a rectangular front wall (9), which extends according to the length direction and height direction (A) and which mutually connects the two side profiles (8) and rests on a holding element (19) at the site of the bottom side of the moving part, and wherein the dimension of the front wall (9), viewed according to the height direction (A), is smaller than the corresponding dimension of the rear wall (10). In addition, the moving part comprises a removable top

profile (11), which mutually connects the two side profiles (8) and rests on the rear wall (10). Between this top profile (11) and the front wall (9), a rectangular draw-off opening (12) is present in order to draw off air up to the air extraction duct (1). In order to improve the guidance of the air, the top profile (11) comprises a guide element (13). This guide element (13) comprises at the bottom a gutter (14), which extends practically horizontally during use of the worktop extractor hood and serves to capture already a first quantity of grease and water.

[0044] The filters (5) and reservoirs (3) are arranged removably in the air extraction duct (1), so that these can be easily cleaned or replaced. In order to extract the filters (5) and the reservoirs (3) from the air extraction duct (1), the worktop extractor hood is placed such that the moving part extends practically fully above the hotplate (15). Then the top profile (11) is removed (see Figure 4), and also the front wall (9) (see Figure 5). The filters (5) are now easily accessible (see Figure 6) and can thus be easily removed. After the removal of the filters (5), the reservoirs (3) located under the filters (5) can also be easily removed in order to be emptied and cleaned. The holders (6) are perforated and extend practically according to the full width direction and the length direction, so that these prevent objects from being able to find their way into the air extraction duct (1) when the filters (5) are removed for cleaning or replacement. Thus the holders (6) here additionally form a fall-through protection.

[0045] The holders (6) can possibly also be removable. If this is the case, these holders (6) preferably rest on rods which are placed sufficiently close together that a filter (5) cannot fall therebetween if one wishes to put the filters (5) back and one has forgotten to first install the holders (6).

[0046] In addition, the worktop extractor hood comprises at the bottom a further two additional collecting trays (7) in order to capture excess grease and water.

[0047] In addition, the front wall (9) and that part (17) of the rear wall (10) which is designed to extend at the same height as the front wall (9) are made of a transparent material.

Claims

1. Air extraction device, such as an extractor hood, comprising at least an upright air extraction duct (1), through which the air is drawn off according to an upright draw-off direction (A), comprising one or more filter elements (2), which are arranged in the air extraction duct (1), for the retention of grease and water present in the drawn-off air, and comprising at least one or more reservoirs (3) for the collection of the grease and water emanating from these one or more filter elements (2), wherein these one or more reservoirs (3) are substantially arranged at the bottom of the one or more filter elements (2), viewed according to the draw-off direction (A) when the air

extraction device is in use, **characterized in that** the air extraction device comprises one or more collecting elements (4) for the capture of the grease and water emanating from the one or more filter elements (2), wherein each collecting element (4) comprises a discharge opening for the discharge of the captured grease and water and each reservoir (3) is arranged at the bottom of a said discharge opening, so that the grease and the water emanating from a said filter element (2) falls into the reservoir (3).

2. Air extraction device according to Claim 1, **characterized in that** the air extraction device is a worktop extractor hood and the air is drawn off from top to bottom in the air extraction duct.
3. Air extraction device according to Claim 1 or 2, **characterized in that** a said collecting element (4) is connected to a said filter element (2), and **in that** this collecting element (4) and this filter element (2) together form a filter (5).
4. Air extraction device according to Claim 3, **characterized in that** the collecting element (4) comprises a profile (4), in which the bottom side of the filter element (2) is arranged, wherein this profile (4) comprises the said discharge opening.
5. Air extraction device according to Claim 3 or 4, **characterized in that** a said filter element (2) is a plate-like filter element (2), which extends substantially according to a plane which makes an angle of between 10° and 90°, preferably between 20° and 60°, with the draw-off direction (A).
6. Air extraction device according to Claim 4 and 5, **characterized in that** the collecting element (4) forms part of a frame, which encases the margins of the filter element (2), viewed according to the plane in which the filter element (2) extends, and which comprises the said profile (4).
7. Air extraction device according to one of the preceding claims, **characterized in that**, viewed according to planes perpendicular to the draw-off direction (A), the one or more collecting elements (4) and the one or more reservoirs (3) ensure a surface area decrease of no more than 30% of the passageway of the air extraction duct (1).
8. Air extraction device according to one of the preceding claims, **characterized in that** the one or more reservoirs (3) are arranged at least partially, preferably fully, in the air extraction duct (1).
9. Air extraction device according to one of the preceding claims, **characterized in that** a said reservoir (3) is elongate and extends practically according to

the draw-off direction (A).

10. Air extraction device according to one of the preceding claims, **characterized in that** the air extraction device comprises at least two said filter elements (2), which are arranged in the air extraction duct (1). 5
11. Air extraction device according to Claim 10, **characterized in that** these filter elements (2) are arranged next to one another and extend in the same plane. 10
12. Air extraction device according to Claim 11, **characterized in that** the air extraction duct (1) extends according to a height direction which corresponds to the draw-off direction (A), the air extraction device comprises two filter elements (2) and only one discharge opening for each filter element (2), wherein these discharge openings are arranged on both sides of the air extraction duct (1), viewed according to a direction perpendicular to the height direction of the air extraction duct (1). 15
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13. Air extraction device according to one of the preceding claims, **characterized in that** the air extraction device is a worktop extractor hood, and **in that** the air extraction duct (1) comprises an upwardly and downwardly extensible moving part, wherein this moving part is delimited by two mutually opposing side profiles (8), which are distanced apart and are arranged so as to be upwardly and downwardly movable according to the draw-off direction (A), a front wall (9) and a rear wall (10), which extend parallel to one another and mutually connect both the side profiles (8), a top profile (11), which extends atop the side profiles (8) according to a direction perpendicular to the draw-off direction (A) and which mutually connects both the side profiles (8), and wherein an opening (12) is present between the front wall (9) and the top profile (11), wherein this opening (12) is an intake opening (12) for drawing air into the air extraction duct (1). 25
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14. Air extraction device according to Claim 13, **characterized in that** the top profile (11) comprises a guide element (13) in order to guide the air from the draw-off opening (12) into the air extraction duct (1), and this guide element (13) comprises a gutter (14), which extends perpendicular to the draw-off direction (A) for the capture of grease and water. 45
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15. Air extraction device according to Claim 13 or 14, **characterized in that** the front wall (9) and the rear wall (10) are at least partially made of a transparent material. 55

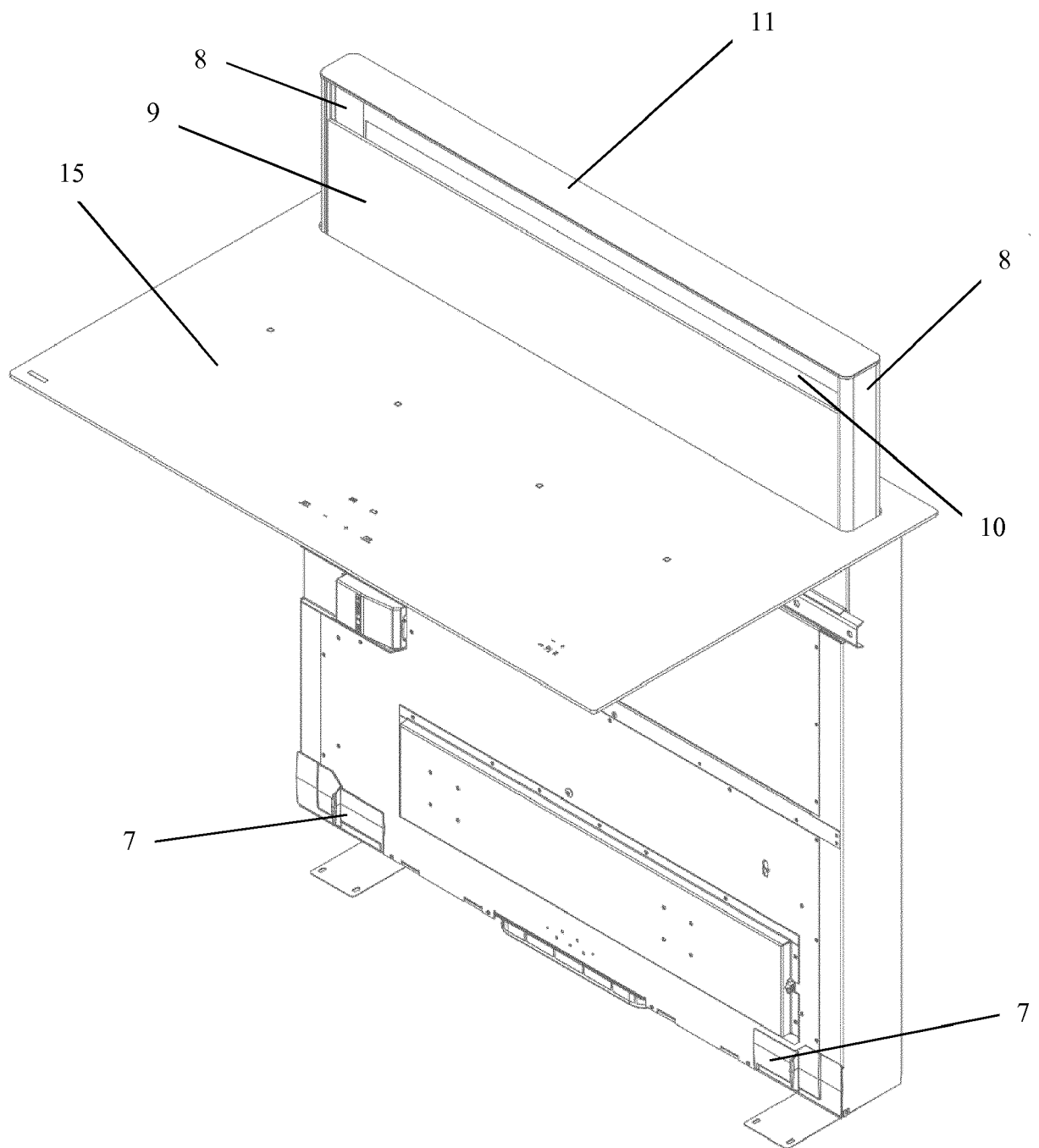


Fig. 1

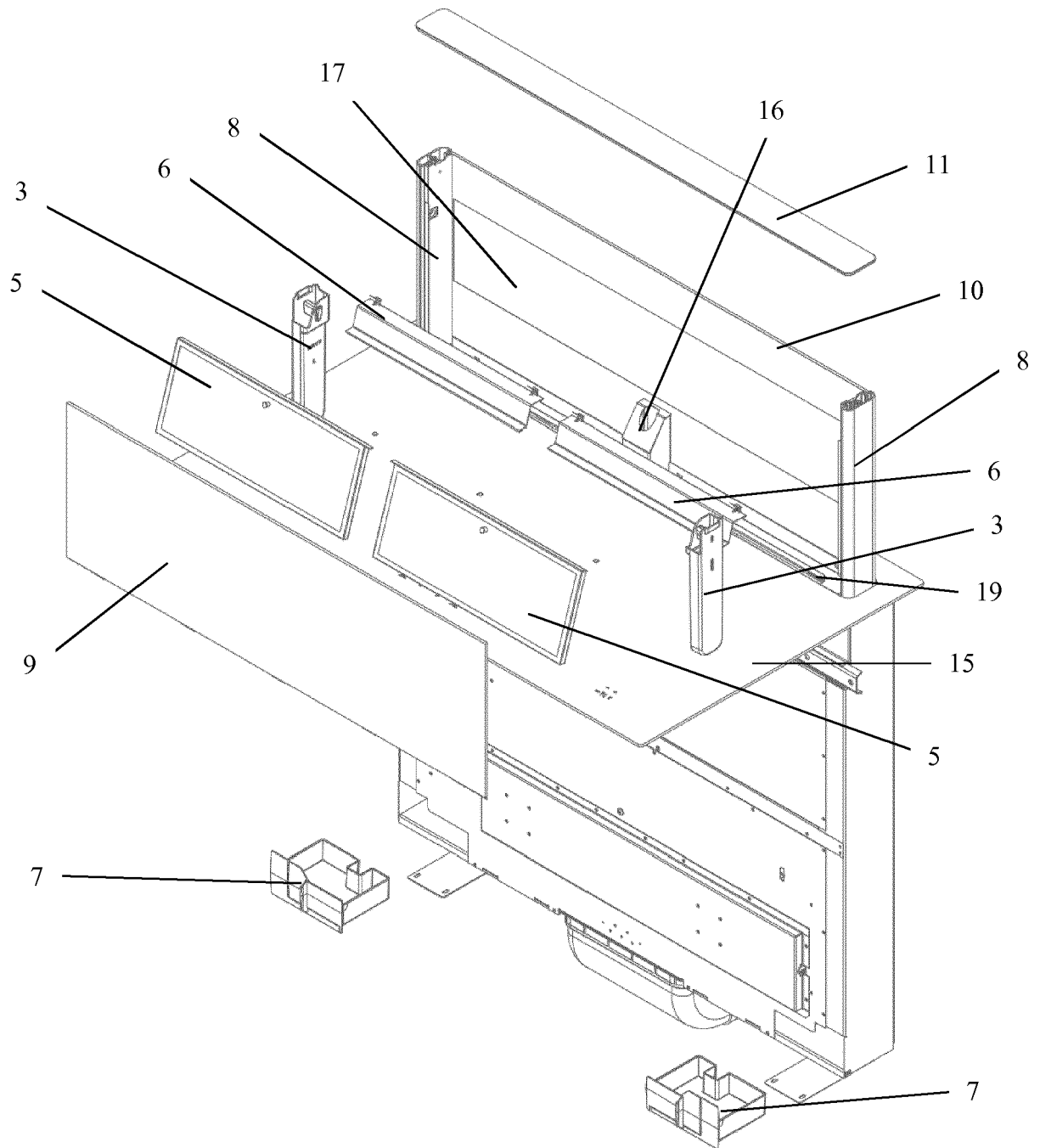
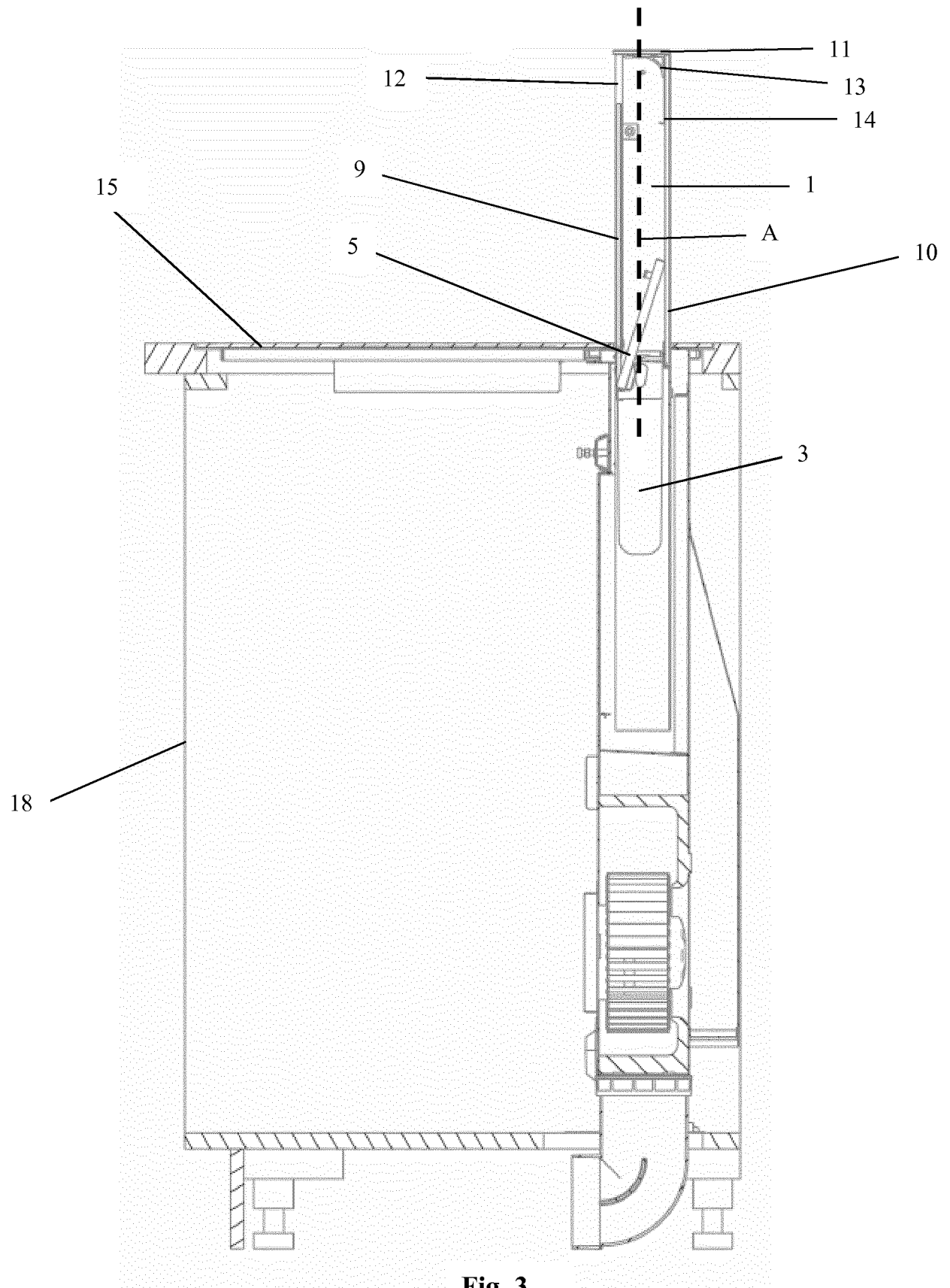


Fig. 2



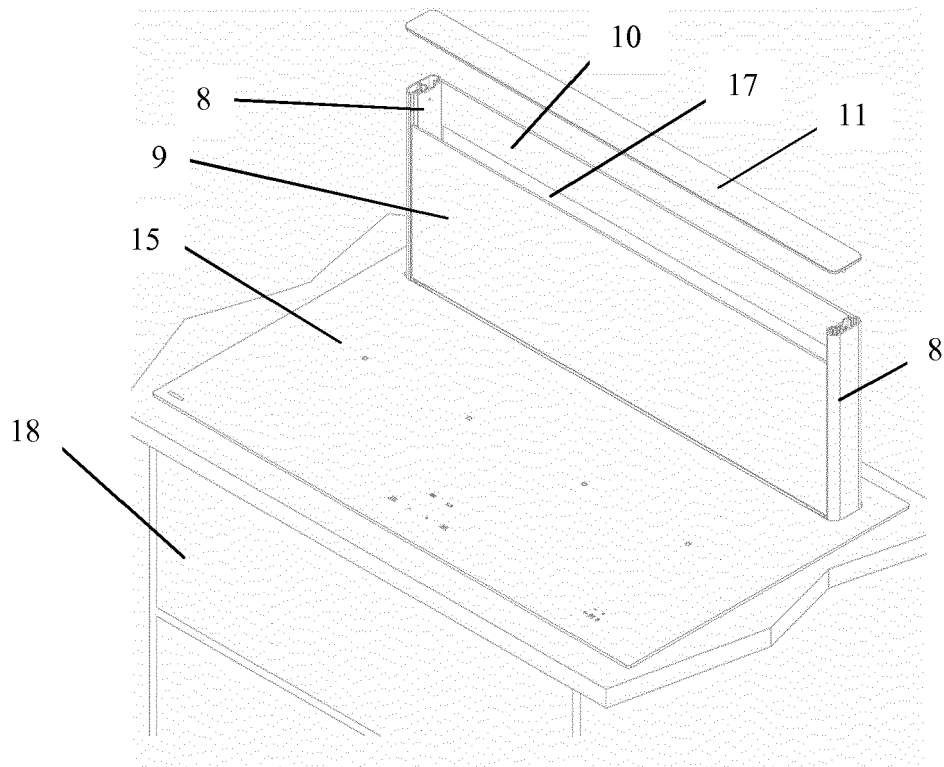


Fig. 4

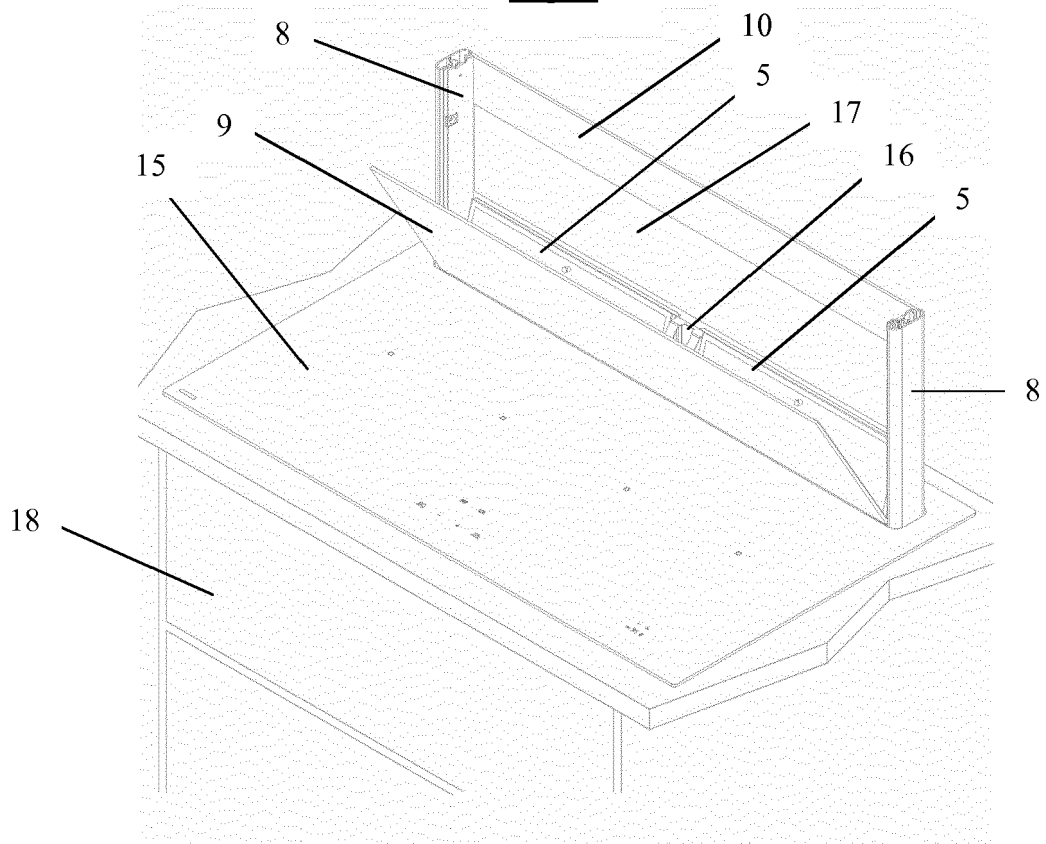


Fig. 5

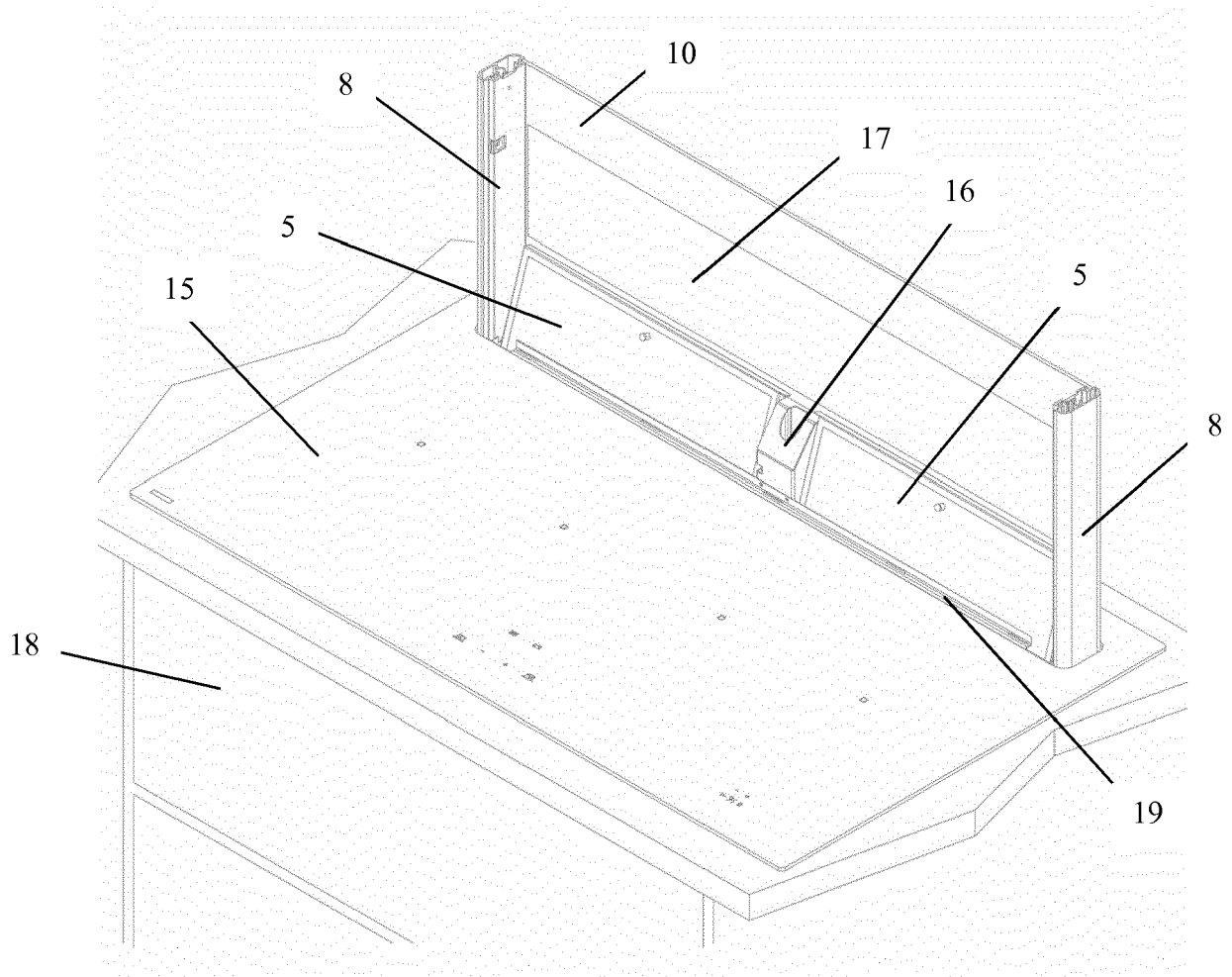


Fig. 6

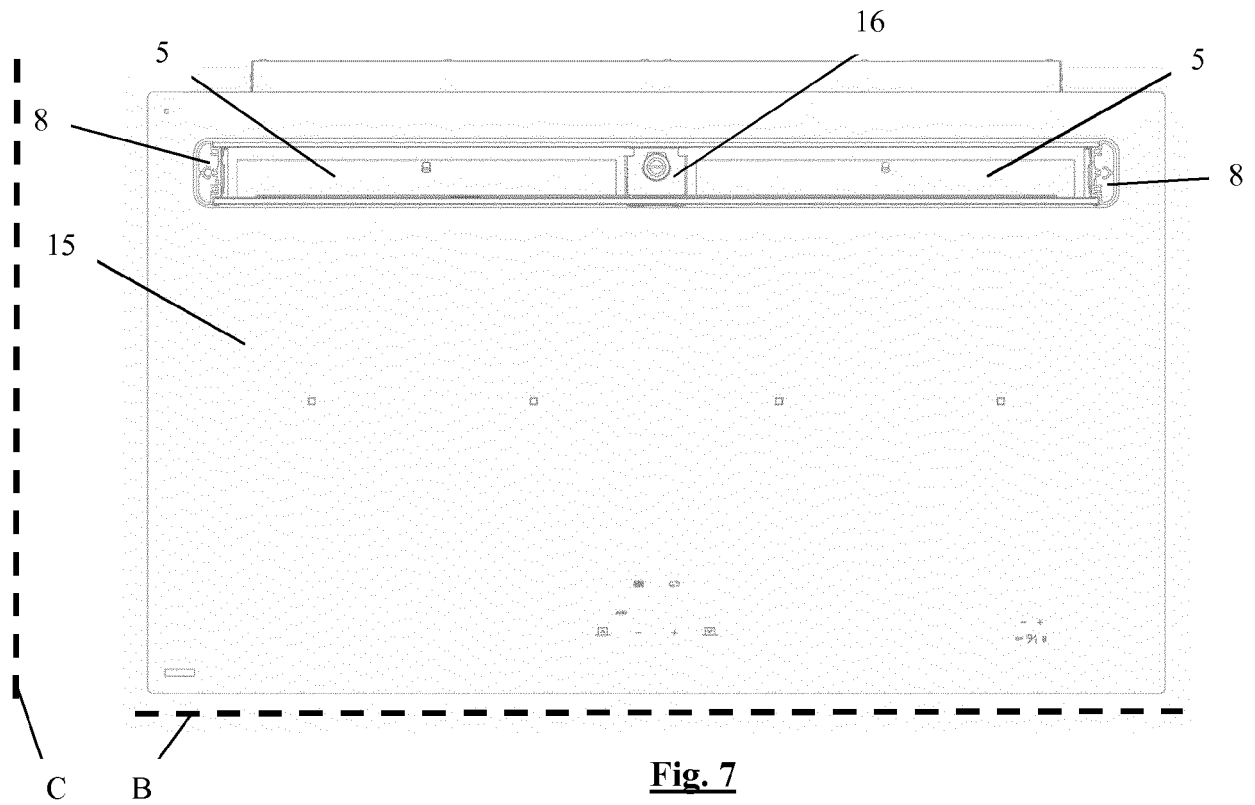


Fig. 7

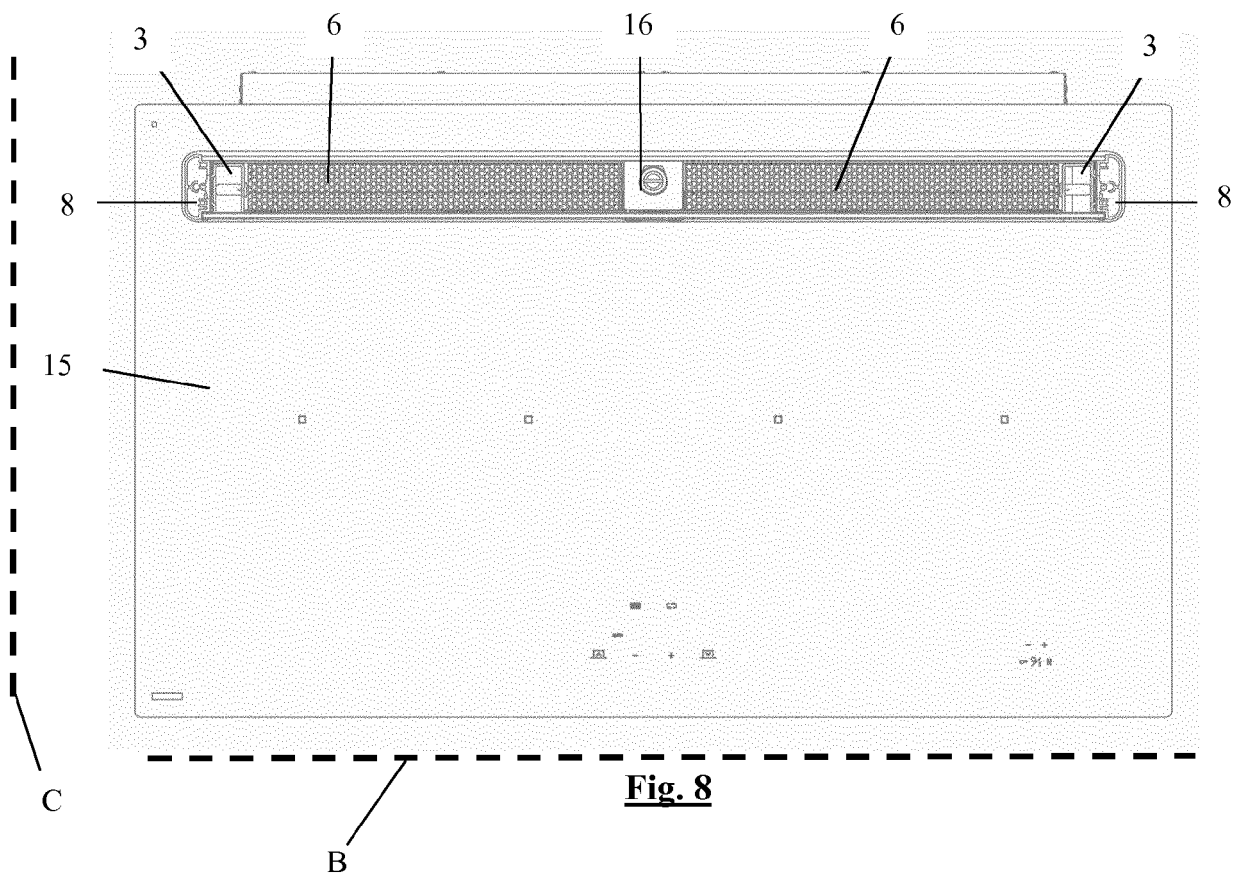


Fig. 8

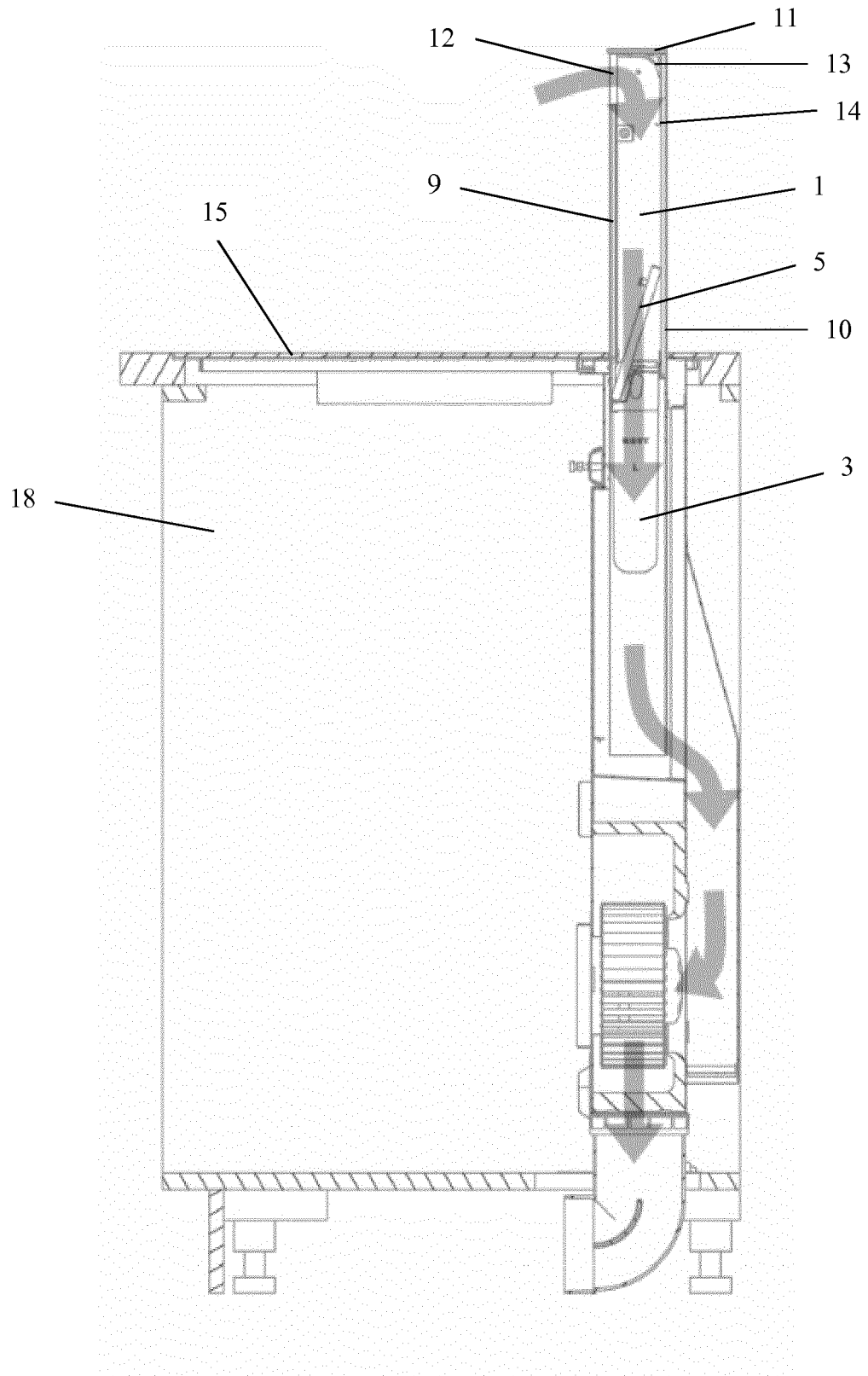


Fig. 9

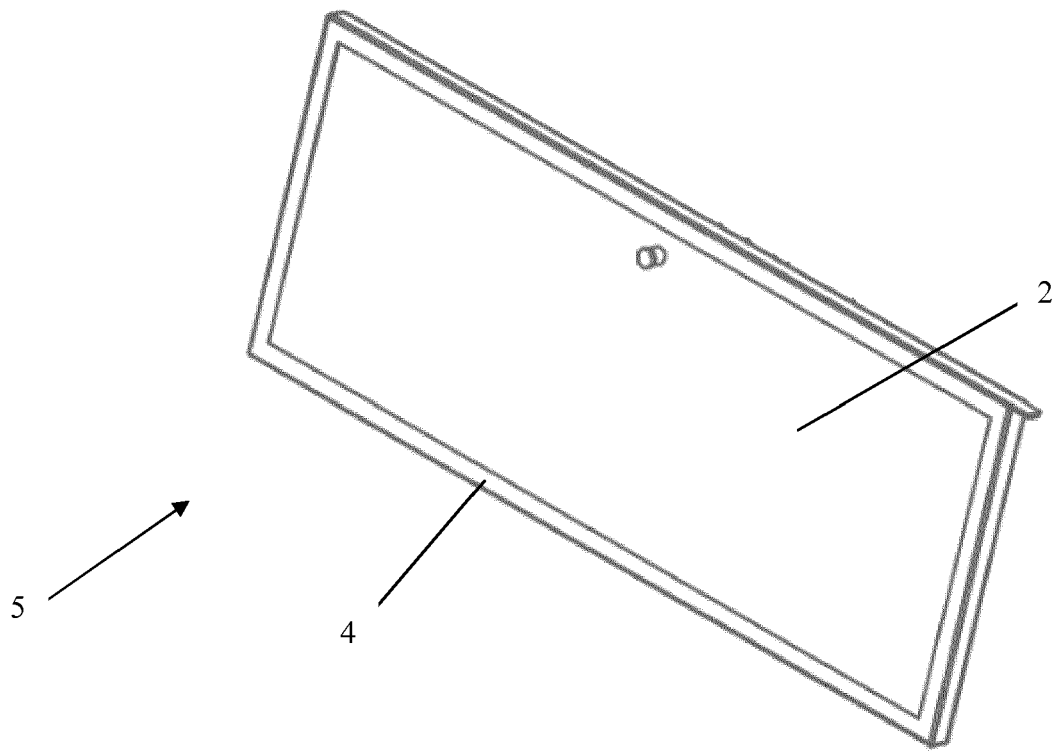


Fig. 10

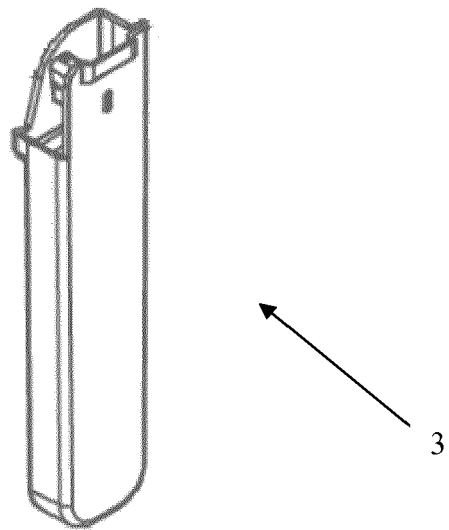


Fig. 11

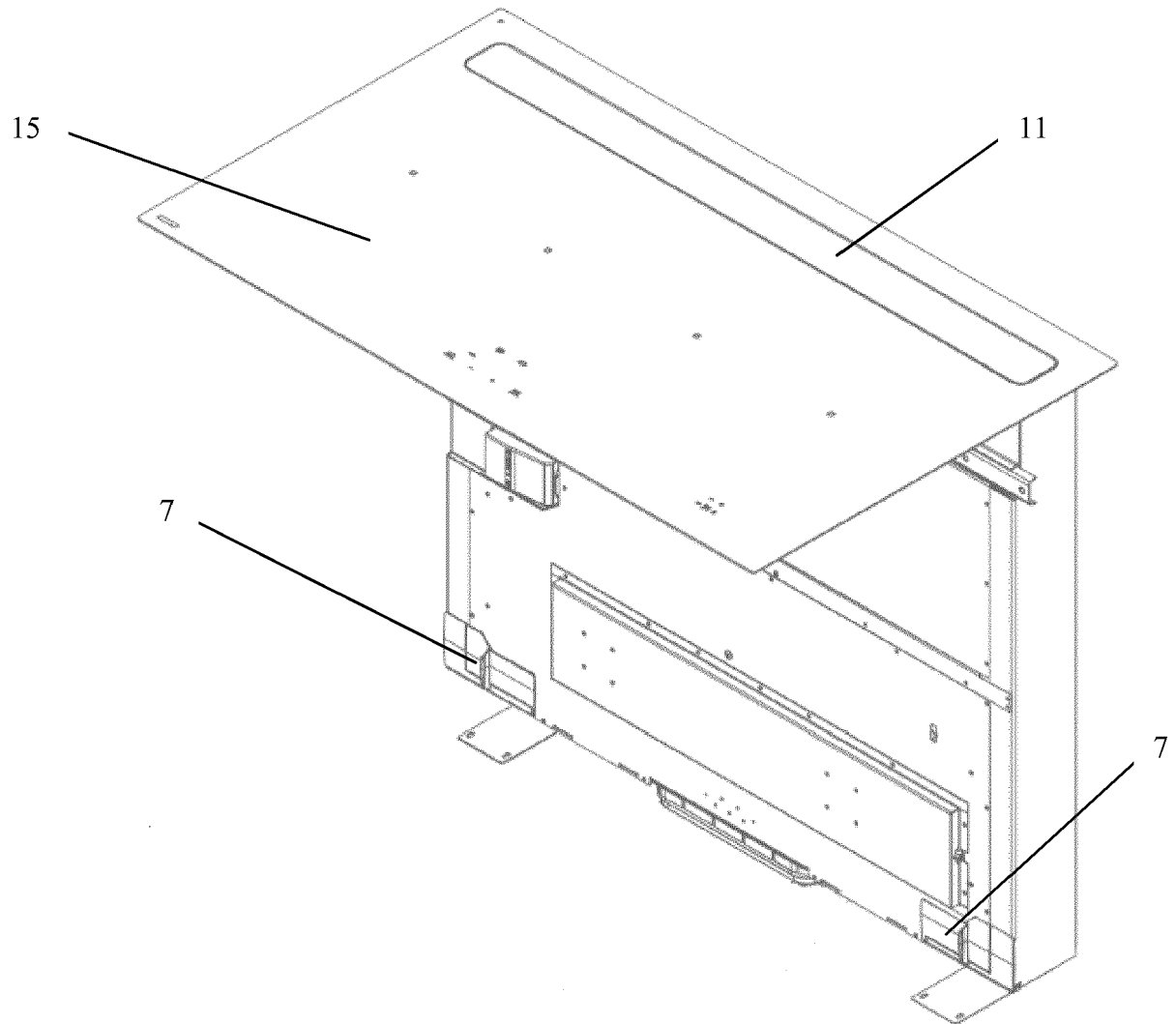


Fig. 12



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Application Number
EP 18 19 2389

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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 17 January 2019	Examiner Baumgärtel, Tim
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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