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(54) **HOOD FOR EXTRACTING COOKING FUMES**

(57) Hood (10) for extracting cooking fumes, comprising a box-shaped body (11) having an opening (12) for extracting cooking fumes; a cover panel (13) positioned externally and rotatable with respect to the box-shaped body (11) to switch between a closed configuration, in which it faces the opening (12), and an open configuration, in which an internal environment of the box-shaped body (11) is accessible by means of the opening (12); at least one hinge (1) comprising a fixed element (2) fixed to the box-shaped body (11) and a movable element (3) comprising: a main arm (4) having a first end (41) fixed to the cover panel (13) and a second end (42) rotatably connected to the fixed element (2) and rotatable with respect to a first rotation axis (Ri); an anchoring arm (5) rotatably connected to the main arm (4) and rotatable with respect to a second rotation axis (R_2), the anchoring arm (5) having a first end (51) reversibly coupleable with the fixed element (2) to lock the cover panel (13) in the open configuration.

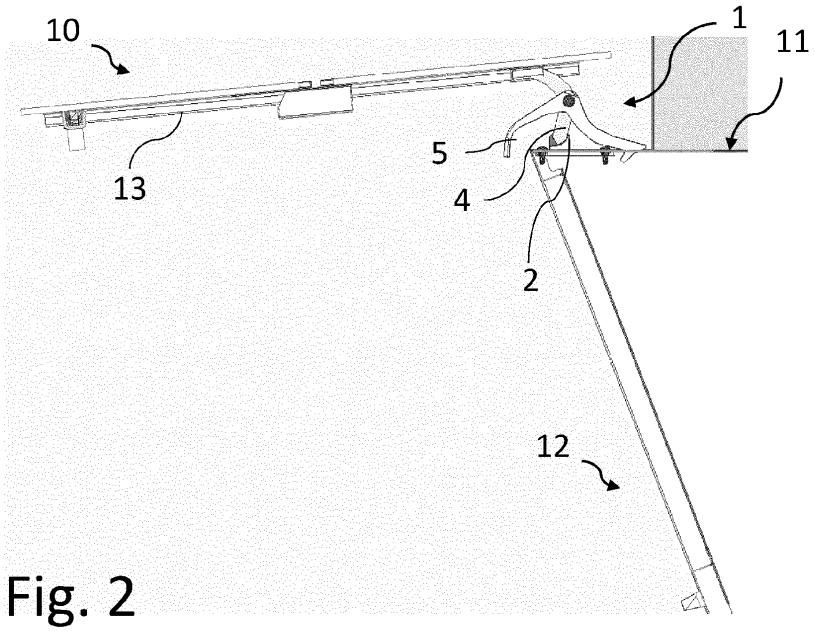

Fig. 2

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Description

SCOPE OF APPLICATION

[0001] The present invention relates to a vertical hood for extracting cooking fumes, having an openable cover panel. This hood is used in domestic or work environments, such as, for example, restaurants.

Description of the prior art

[0002] In the state of the art, vertical hoods for extracting cooking fumes are known. Such hoods comprise a box-shaped body having a rear wall, arranged to be fixed to a wall, and an opposite front wall, which has an opening adapted to allow extracting fumes.

[0003] The known vertical hoods also comprise a cover panel positioned outside the box-shaped body and adapted to cover at least in part the opening. In particular, said cover panel is connected to the box-shaped body at the respective upper ends. Furthermore, the panel can be rotated with respect to the end of the box-shaped body to which it is hinged, so as to bring it into an open configuration to allow, for example, the cleaning of the inside of the box-shaped body or routine maintenance.

[0004] It is also known, in the state of the art, to connect the cover panel to the box-shaped body by means of two hinges connected to the upper end of the panel and to the upper end of the box-shaped body. In particular, these hinges allow the rotation of the panel with respect to the box-shaped body and, therefore, the transition from the open configuration to the closed configuration and vice versa.

[0005] Document WO 2021/019397 shows a vertical hood provided with hinges that allow switching the panel of the hood between the open configuration and the closed configuration and locking it in the open configuration. In more detail, such hinges comprise a fixed element, joined to the box-shaped body of the respective hood, and a movable element fixed to the panel and engaged with the fixed element, in such a way that the movable element, by sliding with respect to the fixed element, allows the panel to be locked in the open configuration.

Problem of the prior art

[0006] Disadvantageously, known hoods turn out to be impractical. In detail, the hinges of the known hoods, which are constrained to a cover panel of a hood, require both a rotary movement to allow rotation of said panel, and a sliding movement to lock the panel in the open configuration. This combination of movements makes opening the hood uncomfortable.

[0007] Still disadvantageously, the hinges of the known vertical hoods are expensive and difficult to manufacture and assemble.

SUMMARY OF THE INVENTION

[0008] The object of the invention in question is to propose a hood for extracting cooking fumes that overcomes the drawbacks of the aforementioned prior art.

[0009] In particular, it is an object of the present invention to provide a hood for extracting cooking fumes capable of allowing a more easy and practical opening of the hood itself.

[0010] It is a further object of the present invention to provide a hood for extracting cooking fumes that makes it possible to simplify the production and assembly of the hood itself and, consequently, reduce the associated production costs.

[0011] The stated technical task and specified objects are substantially achieved by a hood for extracting cooking fumes comprising the technical features set forth in one or more of the appended claims.

Advantages of the invention

[0012] In particular, the hood comprises a box-shaped body, having an opening for extracting cooking fumes, and a cover panel, positioned externally to the box-shaped body. The cover panel is switchable between a closed configuration, in which it faces the opening, and an open configuration, in which an environment internal to the box-shaped body is accessible by means of the opening. Furthermore, the hood comprises a hinge comprising a fixed element, fixed to a box-shaped body of the hood, and a movable element rotatably connected to the fixed element and to the cover panel. The movable element comprises a main arm, having a first end fixed to the cover panel and a second end rotatably connected to the fixed element and rotatable with respect to a first rotation axis. The movable element also comprises an anchoring arm, rotatably connected to the main arm and rotatable with respect to a second rotation axis. The anchoring arm has a first end reversibly couplable with the fixed element to lock the cover panel in the open configuration.

[0013] This hood for extracting cooking fumes solves the technical problem. Advantageously, the rotation between the anchoring arm and the main arm allows to simplify the action of locking and unlocking the rotation of the cover panel. In more detail, the anchoring arm locks the rotation of the cover panel by reversibly coupling with the fixed element. This action is carried out through a simple rotation of the anchoring arm.

[0014] As a result, no sliding movement is necessary between the fixed element and the movable element.

BRIEF DESCRIPTION OF THE DRA WINGS

[0015] The features and advantages of the present invention will become apparent from the following detailed description of a possible practical embodiment thereof, illustrated by way of non-limiting example in the accom-

panying drawings, in which:

- figure 1 shows a side view of a hood for extracting cooking fumes according to the present invention in a first operating configuration;
- figure 2 shows a side view of the hood of figure 1 in a second operating configuration;
- figure 3 shows a side view of a first embodiment of a detail of the hood of figures 1 and 2 in a first operating configuration;
- figure 4 shows a side view of the detail of figure 3 in a second operating configuration;
- figure 5 shows a perspective view of the component of figure 3;
- figure 6 shows a perspective view of the component of figure 3;
- figure 7 shows an exploded perspective view of a detail of the hood of figures 1 and 2 in a second embodiment.

DETAILED DESCRIPTION

[0016] The present invention relates to a hood 10 for extracting cooking fumes, comprising a box-shaped body 11, preferably arranged to be installed on a wall. In alternative embodiments of the present invention, not illustrated, the box-shaped body 11 can be recessed or partially recessed inside the wall. In the continuation of the present description, reference will be made to the installation on a vertical wall, without however losing in generality.

[0017] The box-shaped body 11 has a front side 11a having an opening 12 for extracting cooking fumes. In more detail, this front side 11a corresponds to the side that, once the hood 10 is installed, is opposite the wall on which the hood 10 is installed.

[0018] According to the preferred embodiment of the invention, illustrated in figures 1 and 2, the box-shaped body 11 has a rear side 1 1b, directly facing the wall and opposite the front side 11a. In addition, the box-shaped body 11 has an upper side 11c, preferably facing a ceiling perpendicular to the wall on which the hood 10 is installed. In addition, the box-shaped body has a lower side 11d, facing a hob.

[0019] Preferably, the hood 10 comprises suction means, not illustrated, positioned internally to the box-shaped body 11 for extracting the cooking fumes through the opening 12. Still preferably, the hood 10 comprises a filter, not illustrated, positioned at the opening 12 and adapted to separate the box-shaped body 11 from an external environment on which the hood 10 faces.

[0020] According to one aspect of the invention, the opening 12 is inclined downwards, i.e. towards the hob, in such a way as to be turned towards the cooking fumes.

[0021] The operation mechanism of the suction means and the internal structure of the hood 10 will not be described further, as they are known to the person skilled in the art.

[0022] The hood 10 further comprises a cover panel 13 positioned externally to the box-shaped body 11. The cover panel 13 is rotatable with respect to the box-shaped body 13 to switch between a closed configuration, in which the cover panel 13 faces the opening 12 so as to cover it, and an open configuration, in which an environment internal to the box-shaped body 11 is accessible by means of the opening 12, as shown in figures 1 and 2. This operation allows access to the environment inside the hood to, for example, clean the inside of the box-shaped body 11 and/or clean or replace the filter.

[0023] Optionally, the cover panel 13 may be semi-transparent or opaque. Still optionally, the cover panel 13 may be made of glass and/or of polymeric material and/or of metal.

[0024] The hood 10 comprises at least one hinge 1. Preferably, the hood 10 comprises two hinges 1 spaced apart along a horizontal direction parallel to the upper side 11c.

[0025] The hinge 1 comprises a fixed element 2 fixed to the box-shaped body 11, shown in the attached figures 1-7.

[0026] According to the preferred embodiment of the invention, shown in figure 6, the upper side 11c of the box-shaped body 11 comprises a seat 6 adapted to receive the fixed element 2, which is precisely inserted in said seat 6.

[0027] The hinge 1 further comprises a movable element 3 rotatably connected to the fixed element 2 and fixed to the cover panel 13.

[0028] In detail, the movable element 3 comprises a main arm 4, which has a first end 41 fixed to the cover panel 13 and a second end 42 rotatably connected to the fixed element 2 and rotatable with respect to a first rotation axis Ri. In detail, the rotation axis Ri is parallel to the horizontal direction.

[0029] According to one aspect of the invention, the fixed element 2 of the hinge 1 is connected to the upper side 11c by connection means 21, such as, by way of example only, threaded members. These connection means 21 make it possible to disconnect the fixed element 2 of the hinge 11 from the box-shaped body 11 of the hood 10 and, consequently, the cover panel 13 from the box-shaped body 11.

[0030] The movable element 3 further comprises an anchoring arm 5 rotatably connected to the main arm 4 and rotatable with respect to a second rotation axis R_2, parallel to the first rotation axis Ri.

[0031] The anchoring arm 5 has a first end 51 reversibly couplable with the fixed element 2 to lock the cover panel 13 in the open configuration. Preferably, the anchoring arm 5 has a second free end 52, i.e. not connected to any further element of the hood 10 or of the hinge 1.

[0032] According to the preferred embodiment of the invention, shown in figures 3 and 4, the hinge 1 is switchable between at least two operating configurations, i.e. between a first configuration, shown in figure 3, and a second configuration, shown in figure 4.

[0033] In the first configuration, the first end 41 of the main arm 4 is positioned in front of the opening 12 of the box-shaped body 11 for positioning the cover panel 13 in the closed configuration. In the second configuration, the first end 41 of the main arm 4 is raised with respect to the opening 12 for positioning the cover panel 13 in the open configuration. Thus, the hinge 1 is configured to switch the cover panel 13 between the closed configuration and the open configuration when the hinge 1 itself switches between the first configuration and the second configuration, respectively.

[0034] For the purposes of the present description, "raised" means that the first end 41 of the main arm 4 is spaced from the opening 12 along a plane parallel to the rear side 11b of the hood 10, and faces away from the lower side 11d.

[0035] Note that the hinge 1 of the present invention can be switched into a plurality of intermediate configurations, comprised between the first configuration and the second configuration. In more detail, the main arm 4 in the intermediate configurations identifies an angle with respect to the upper side 11c of the box-shaped body 11 comprised between the angle identified with respect to the upper side 11c in the first configuration and the angle identified with respect to the upper side 11c in the second configuration.

[0036] According to the preferred embodiment of the invention, the anchoring arm 5 is switchable between at least two operating configurations, i.e. between an unlocking configuration, visible, for example, in figures 3 and 6, and a locking configuration, shown in figure 4. It is worth noting that the anchoring arm 5 in the locking configuration fixes the cover panel 13 in the open configuration.

[0037] In the unlocking configuration, the first end 51 of the anchoring arm 5 is movable with respect to the fixed element 2. In the locking configuration, on the other hand, the first end 51 of the anchoring arm 5 is reversibly coupled to the fixed element 2.

[0038] Note also that the anchoring arm 5 is switchable between the unlocking configuration and the locking configuration when the hinge 1 is in the second configuration. In fact, once the internal environment of the box-shaped body 11 has been made accessible by rotating the cover panel 13 into the open configuration, it is useful to lock the cover panel 13 in this configuration to prevent it from rotating again into the closed configuration due to its weight.

[0039] In accordance with the preferred embodiment of the invention, the hinge 1 comprises first rotation members 1a adapted to connect the main arm 4 to the fixed element 2. In detail, the first rotation members 1a are configured to make the main arm 4 rotatable with respect to the first rotation axis R_1 in order to switch the hinge 1 between the first configuration and the second configuration.

[0040] Preferably, the first rotation members 1a comprise a first hole 22 and a first pin 44 insertable into the first hole 22. In detail, the first pin 44 is configured to rotate with respect to the first rotation axis Ri inside the first hole 22. Still preferably, as visible in figure 7, the fixed element 2 comprises the first hole 22 while the main arm 4 comprises the first pin 44, which protrudes from the second end 42 of the main arm 4, in approach to the fixed element 2.

[0041] According to the preferred embodiment of the invention, the hinge 1 comprises second rotation members 1b adapted to connect the main arm 4 to the anchoring arm 5. The second rotation members 1b are configured to make the anchoring arm 5 rotatable with respect to the second rotation axis R_2 in order to switch the anchoring arm 5 between the unlocking configuration and the locking configuration.

[0042] According to the preferred embodiment of the invention, the second rotation members 1 1b comprise a second hole 53 and a second pin 43 insertable into the second hole 43. In more detail, the second pin 43 is configured to rotate with respect to the second rotation axis R_2 inside the second hole 53. Preferably, as is visible in figure 7, the anchoring arm 5 comprises the second hole 53 while the main arm 4 comprises the second pin 43, which protrudes from a central portion of the main arm 4, away from the fixed element 4. Note that the second pin 43 protrudes from the main arm 4 in the opposite direction with respect to the first pin 44.

[0043] Note that in an alternative embodiment, not illustrated, the placement of the first hole 22 and/or of the second hole 53 can be exchanged, respectively, with that of the first pin 44 and/or of the second pin 43.

[0044] With particular reference to figures 4 and 7, the main arm 4 is defined by a first pair of rods 4a, 4b, wherein each rod comprises a respective end of the main arm 4.

[0045] Similarly, the anchoring arm 5 is defined by a second pair of rods 5a, 5b, wherein each rod comprises a respective end of the anchoring arm 5.

[0046] In further detail, the rod 5b of the second pair of rods, which comprises the second end 52 of the anchoring arm 5, is in turn defined by a further pair of rods $5b_1$, $5b_2$.

[0047] According to a preferred aspect of the invention, the fixed element 2 comprises a base 25 connectable to the box-shaped body 11, on which the first hole 22 is preferably made. In detail, the base 25 is parallel to the upper side 11c of the box-shaped body 11.

[0048] According to a further aspect of the invention, the fixed element 2 comprises a coupling portion 23 and the first end 51 of the anchoring arm 5 is at least partly fixable to the coupling portion 23. In detail, the first end 51 of the anchoring arm 5 is at least partly countershaped to the coupling portion 23 and is adapted to engage said coupling portion 23.

[0049] Preferably, as shown in figures 6 and 7, the coupling portion 23 has a coupling profile 24 engageable by the first end 51 of the anchoring arm 5, in detail, in the locking configuration of the anchoring arm 5.

[0050] According to a first embodiment of the invention,

shown in figures 1-4 and 6, the coupling portion 23 protrudes from the base 25, internally to the box-shaped body 11, and defines the coupling profile 24. In detail, the coupling portion 23 is located between the base 25 of the fixed element 2 and the upper side 11c of the box-shaped body 11, preferably inside the seat 6. In further detail, the first end 51 of the anchoring arm 5 is inserted internally to the seat 6, between the base 25 of the fixed element 2 and the upper side 11c of the box-shaped body 11.

[0051] According to a second embodiment of the invention, shown in figure 7, the coupling portion 23 is placed near a lateral edge 25a of the base 25 of the fixed element 2, and protrudes from the fixed element 2 away from the upper side 11c of the box-shaped body 11. In detail, the coupling portion 23 comprises a pair of parallel walls 23a, which are spaced from each other by the coupling profile 24 placed perpendicularly to the two walls 23a and internally to the two walls 23a. In further detail, the first end 51 of the anchoring arm 5 has a hook shape, counter-shaped to the coupling profile 24, insertable at least in part between the two parallel walls 23a of the coupling portion 23.

[0052] Optionally, the anchoring arm 5 may comprise a gripping portion 54 positioned at the second end 52 of the anchoring arm 5, as shown in figure 5. In more detail, this gripping portion 54 is graspable by a user to allow gripping the anchoring arm 5 in order to uncouple the anchoring arm 5 from the fixed element 2 and, consequently, bring the anchoring arm 5 into the unlocking configuration. Still consequently, in this way it is possible to bring the cover panel 13 into the closed configuration. Preferably, the gripping portion 54 comprises a plate parallel to the front side 11a.

Claims

1. Hood (10) for extracting cooking fumes, comprising:

   - a box-shaped body (11) having a front side (11a) having an opening (12) for extracting cooking fumes;
   - a cover panel (13) positioned externally to said box-shaped body (11) and rotatable with respect to the box-shaped body (11) to switch between a closed configuration in which it faces the opening (12) and an open configuration in which an environment internal to the box-shaped body (11) is accessible by means of the opening (12);
   - at least one hinge (1) comprising a fixed element (2) fixed to the box-shaped body (11) and a movable element (3) rotatably connected to the fixed element (2) and fixed to the cover panel (13), the movable element (3) comprising a main arm (4) having a first end (41) fixed to the cover panel (13) and a second end (42) rotatably connected to the fixed element (2) and rotatable with respect to a first rotation axis (Ri);

   characterized in that:

   - the movable element (3) comprises an anchoring arm (5) rotatably connected to the main arm (4) and rotatable with respect to a second rotation axis (R_2), parallel to the first rotation axis (Ri), the anchoring arm (5) having a first end (51) reversibly coupleable with the fixed element (2) to lock the cover panel (13) in the open configuration.

2. Hood (10) according to claim 1, wherein:

   - the hinge (1) is switchable at least between a first configuration, wherein the first end (41) of the main arm (4) is positioned in front of the opening (12) of the box-shaped body (11) for positioning the cover panel (13) in the closed configuration, and a second configuration, in which the first end (41) of the main arm (4) is raised with respect to the opening (12) for positioning the cover panel (13) in the open configuration, and
   - the hinge (1) is configured to switch the cover panel (13) between the closed configuration and the open configuration by switching between the first configuration and the second configuration.

3. Hood (10) according to claim 2, wherein:

   - the anchoring arm (5) is switchable between an unlocking configuration, in which the first end (51) of the anchoring arm (5) is movable with respect to the fixed element (2), and a locking configuration, in which the first end (51) of the anchoring arm (5) is reversibly coupled to the fixed element (2); and
   - the anchoring arm (5) in the locking configuration is configured to lock the cover panel (13) in the open configuration.

4. Hood (10) according to claim 3, wherein the anchoring arm (5) is switchable between the locking configuration and the unlocking configuration when the hinge (1) is in the second configuration.

5. Hood (10) according to any one of claims 2 to 4, wherein the hinge (1) comprises first rotation members (1a) adapted to connect the main arm (4) to the fixed element (2) to make the main arm (4) rotatable with respect to the first rotation axis (Ri) and switch the hinge (1) between the first configuration and the second configuration.

6. Hood (10) according to any one of claims 3 to 5, wherein the hinge (1) comprises second rotation members (1b) adapted to connect the main arm (4) to the anchoring arm (5) and configured to make the

anchoring arm (5) rotatable with respect to the second rotation axis (R_2) to switch the anchoring arm (5) between the unlocking configuration and the locking configuration.

7. Hood (10) according to any one of the preceding claims, wherein the fixed element (2) comprises a coupling portion (23), the first end (51) of the anchoring arm (5) being at least partly fixable to the coupling portion (23).

8. Hood (10) according to claim 7, wherein the first end (51) of the anchoring arm (5) is at least partly countershaped to the coupling portion (23) and is adapted to engage the coupling portion (23).

9. Hood (10) according to any one of the preceding claims, wherein the anchoring arm (5) has a second end (52) and comprises at the second end (52) a gripping portion (54), said gripping portion (54) being graspable by a user to allow gripping the anchoring arm (5), uncoupling/coupling the anchoring arm (5) to/from the fixed element (2), bringing the anchoring arm (5) into the unlocking configuration and the cover panel (13) into the closed configuration.

10. Hood (10) according to any one of the preceding claims, wherein the box-shaped body (11) has an upper side (11c) comprising a seat (6) configured to receive the fixed element (2), the fixed element (2) being inserted into the seat (6) of the box-shaped body (11).

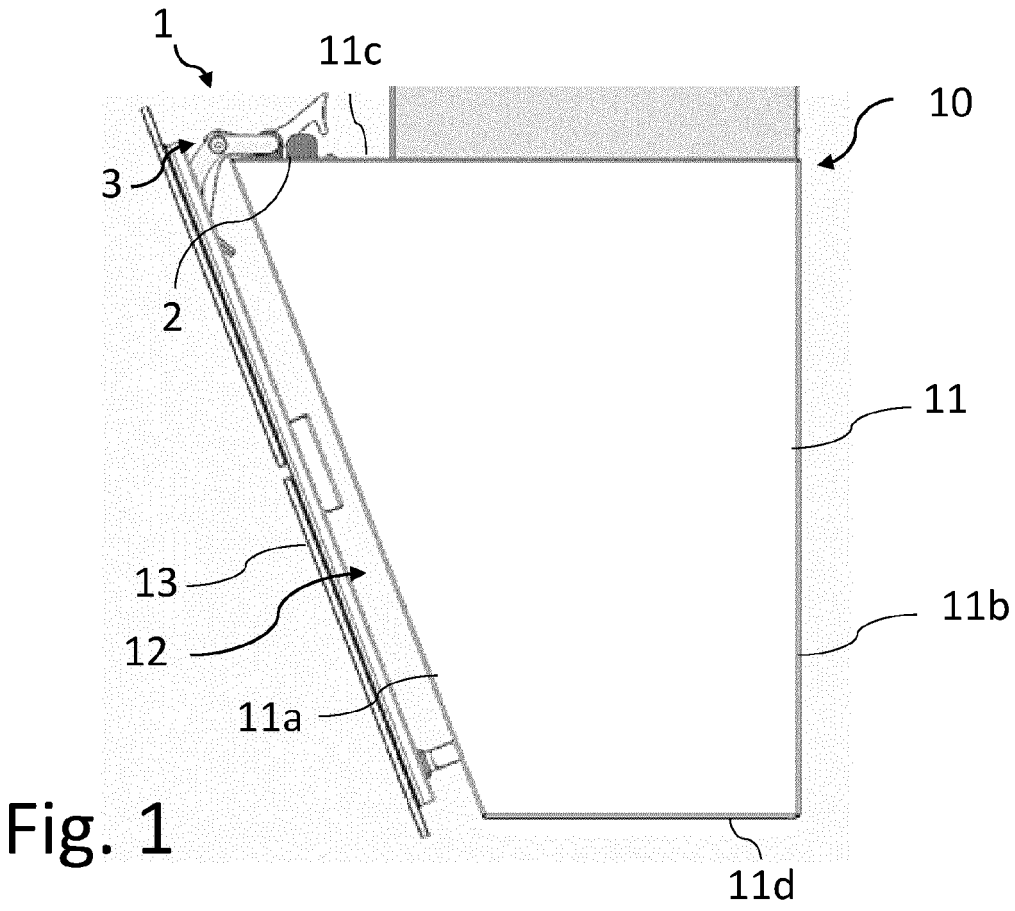

Fig. 1

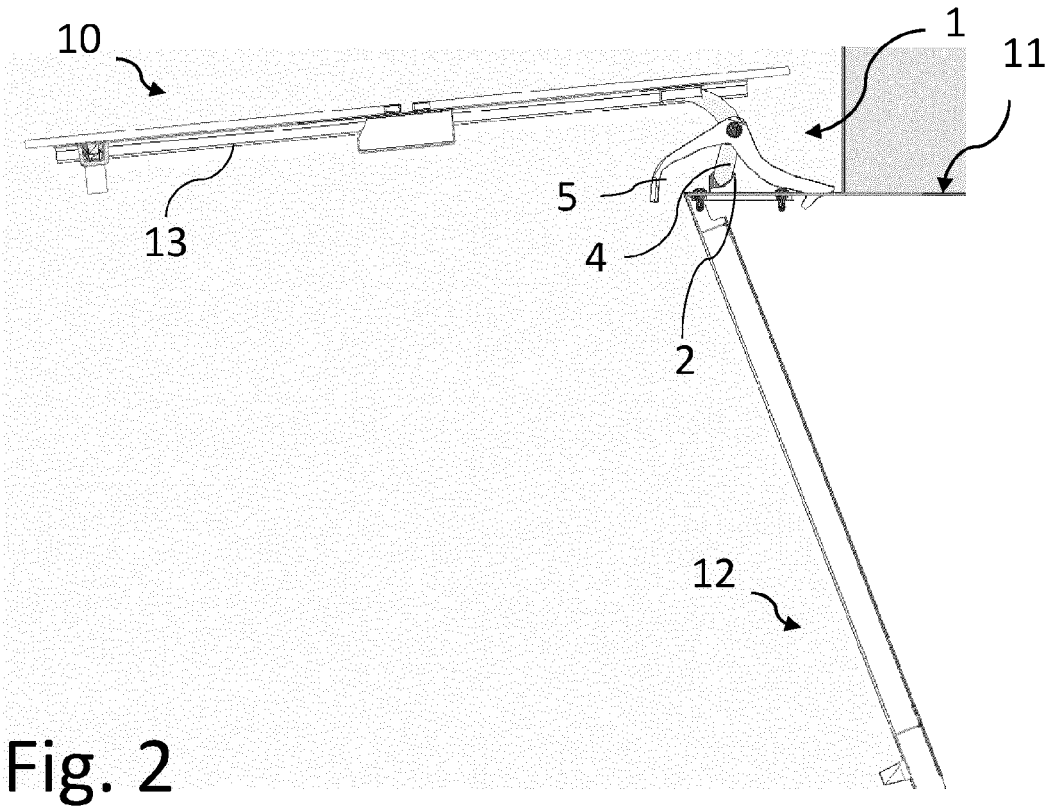

Fig. 2

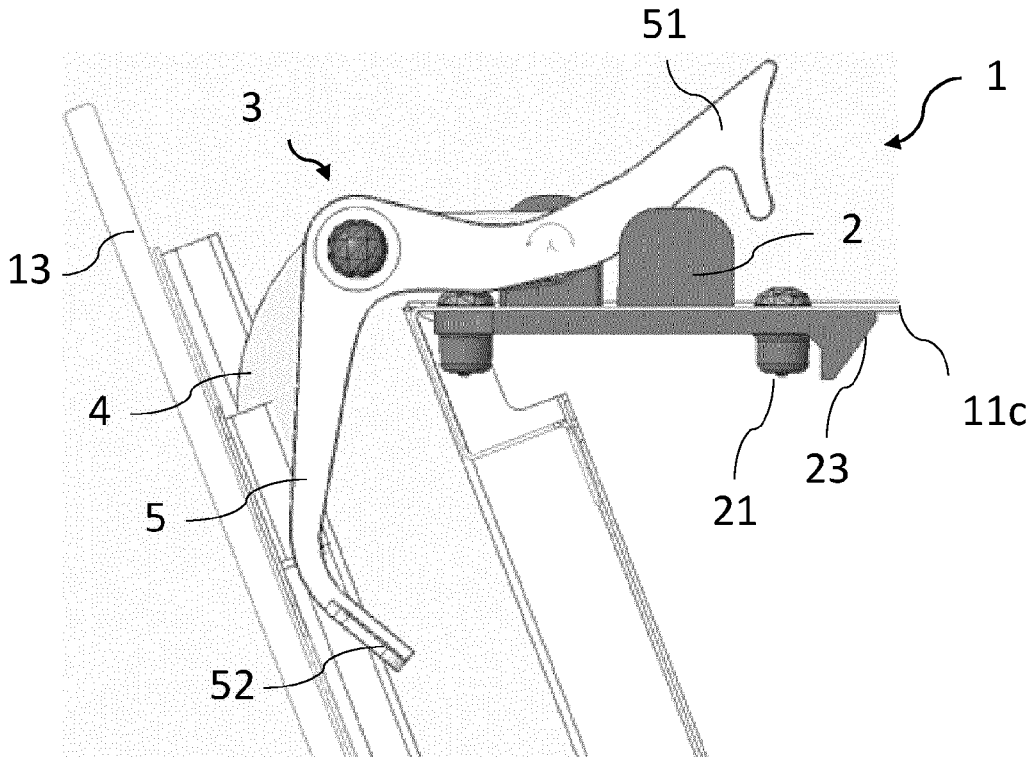

Fig. 3

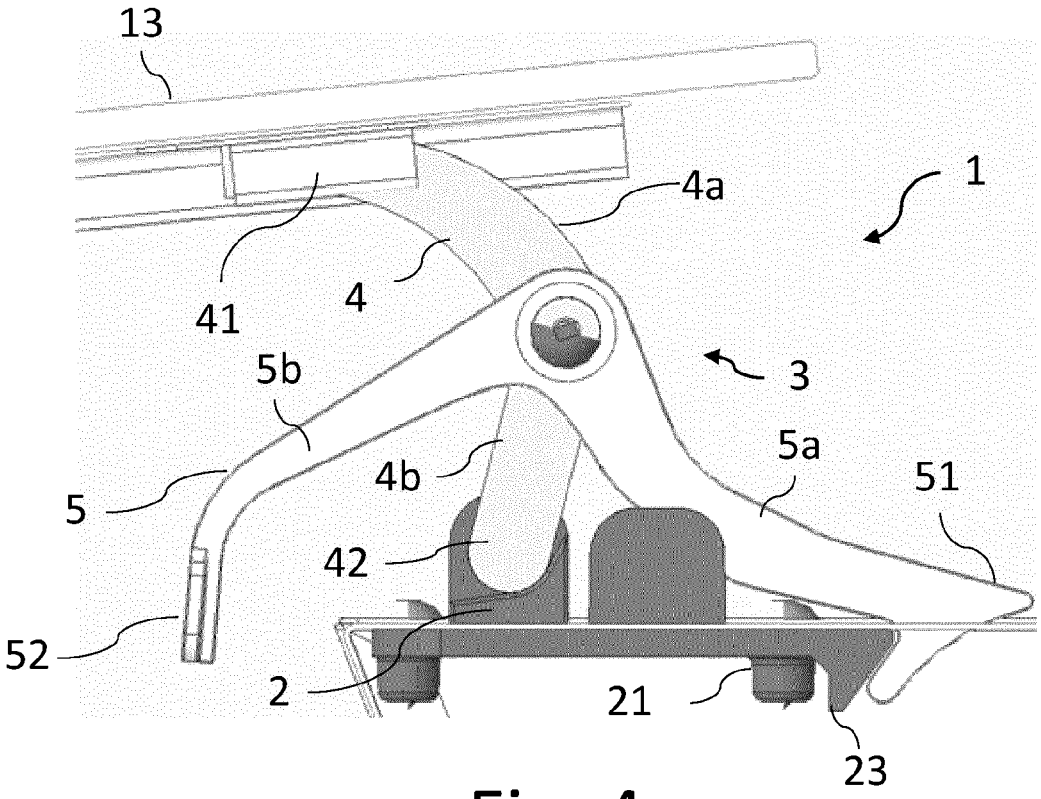

Fig. 4

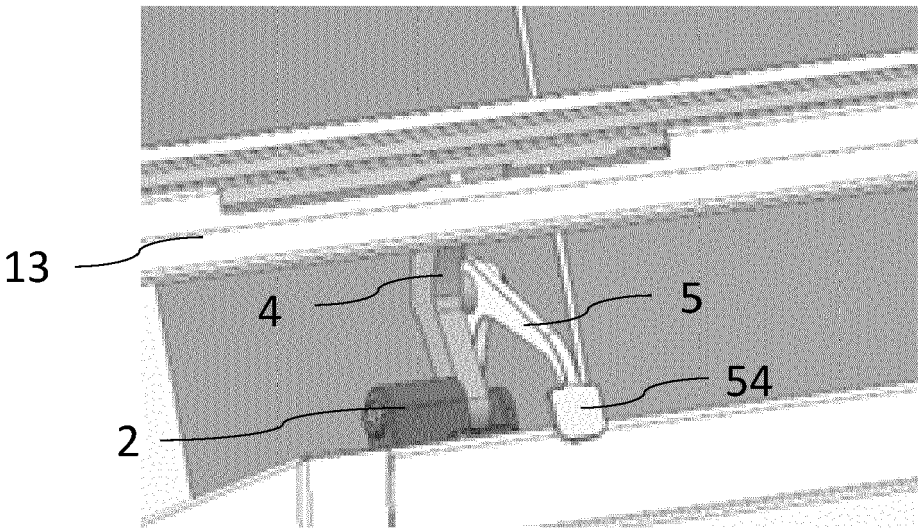

Fig. 5

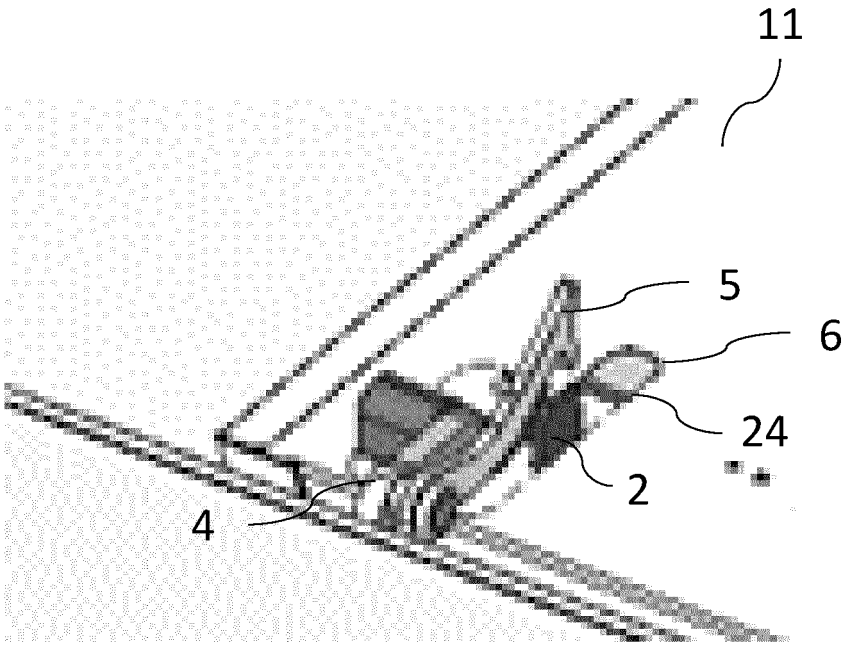

Fig. 6

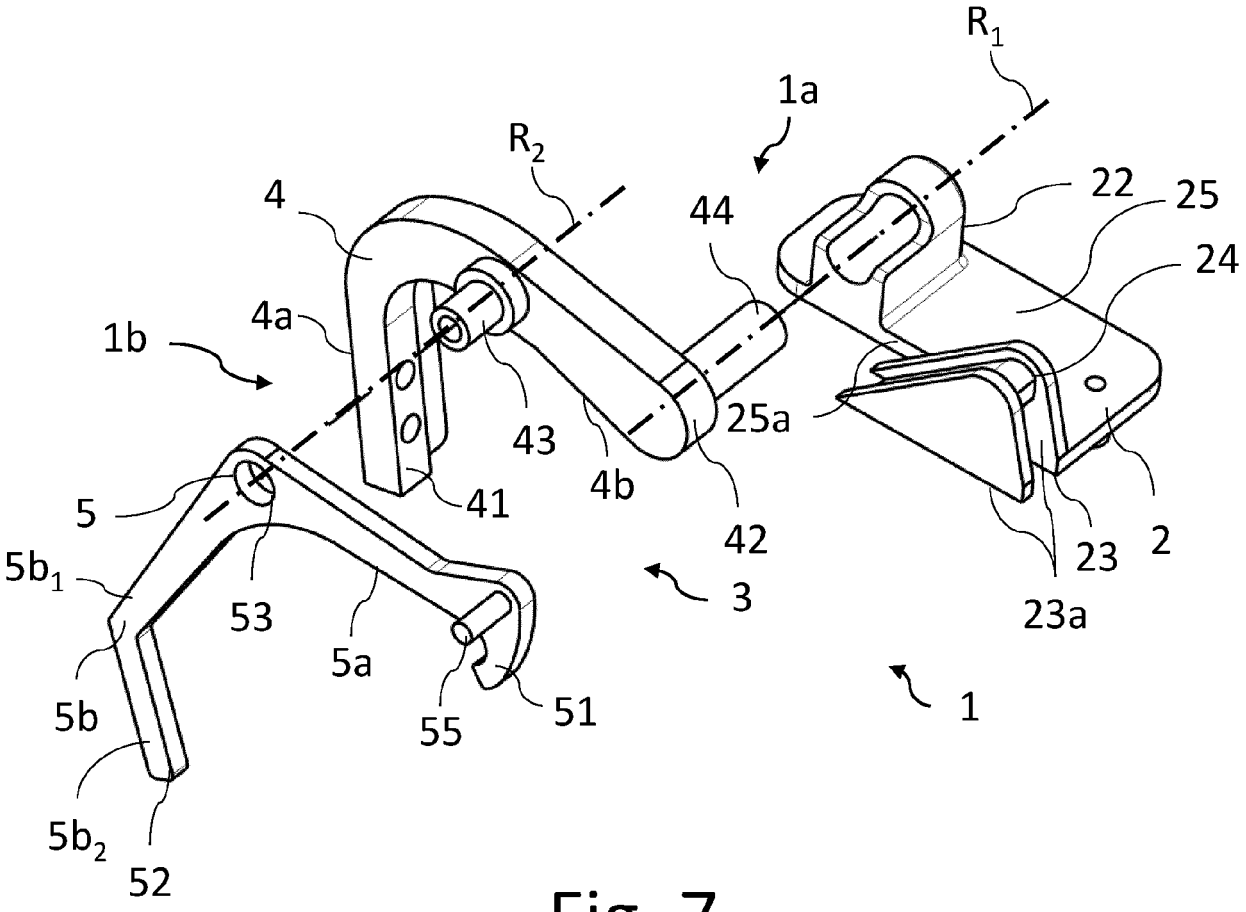
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Fig. 7

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EUROPEAN SEARCH REPORT

Application Number
EP 24 16 5027

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	CN 106 839 045 A (GREE ELECTRIC APPLIANCES INC ZHUHAI) 13 June 2017 (2017-06-13) * figures *	1-10	INV. F24C15/20 E05C17/00 E05C17/50
A	CN 113 898 982 A (FOSHAN SHUNDE MIDEA WASHING APPLIANCES MFG CO LTD) 7 January 2022 (2022-01-07) * figures *	1-10	
A	EP 3 922 914 A1 (ELICA SPA [IT]) 15 December 2021 (2021-12-15) * paragraphs [0033] - [0036]; figures *	1-10	

TECHNICAL FIELDS SEARCHED (IPC)

F24C
E05C
F24F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	20 June 2024	Verdoodt, Luk

CATEGORY OF CITED DOCUMENTS

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
CN 106839045 A	13-06-2017	NONE	
CN 113898982 A	07-01-2022	NONE	
EP 3922914 A1	15-12-2021	NONE	

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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