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Vertical support with cut-outs for snapping mechanism _ID-06256

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Vertical support with cut-outs for snapping mechanism _ID-06256 (A Defensive Publication)

1. Summary of the disclosure

The invention relates to the simplified and quick installation of the kitchen hood at the ceiling above an island (or wall) positioned the cooking hob at a certain height, without the need to measure the height of the kitchen hood at the same time, by the assembling of the functional unit of the kitchen hood (venting part-chimney) with a support structure of the kitchen hood, already positioned, oriented and fixed.

To support the concept of simplified installation of the hood, the vertical section of the hood support is done in the form of the vertical "U-profile" channel that has more cut-offs, displaced at its back wall following a matrix form, and marked by numbers indicating the hood installation height. The range of the hood's vertical positioning into the channel could variate up to 300mm, with steps of 50mm.

Through the hood installation approach, it is predicted that the hood chimney section should be inserted into the cavity of the vertical channel up to a certain height, being hooked here into cut-offs, by the snapping mechanism in form of a spring hook or the quick-release fasteners.

Once inserted and hooked at the final position the hood should be screwed, afterwhile the aesthetic panels could be fixed (by magnetic snapping) to its ventilation section and support structure, following a specific procedure.

2. Applicable Patent categorization

F16L41/00	Branching pipes; Joining pipes to walls
F16L9/003	Rigid pipes with rectangular cross-sections;
F24C15/2035	Removing cooking fumes, arrangement of mounting of filters);
F24C15/2071	Removing cooking fumes, mounting of cooking hood;

3. Technology domain

The kitchen hood installation on the ceiling over the hob with flexible highness extension by the hood support structure.

4. References

1. [US2021348771AA; System for mounting kitchen extractor hoods and methods for executing the mounting.](#)

Abstract

The invention relates to a system for mounting a kitchen extractor hood to a vertical wall of a kitchen between a pair of hanging cabinets of the kitchen furniture, which have a given depth relative to the surface of the wall, such system comprising: a hood comprising filter devices for filtering the extracted air, an extraction motor unit, a channel for ejecting the extracted air and a casing having an inverted T-shape, wherein the casing comprises a horizontal bar configured to contain the filter devices for filtering the extracted air and a vertical stem configured to contain the extractor motor unit and the channel for ejecting the extracted air; a first frame, adapted to be secured to the vertical wall of the kitchen, between the pair of hanging cabinets, such first frame having means for supporting the extraction motor unit of the hood and means for adjusting the position of the extraction motor unit relative to the wall, based on the depth (H) of the hanging elements; a second frame, adapted to be placed and fixed above the first frame, such second frame having means for receiving and holding the casing of the hood; wherein the first frame comprises right-angled elements whose vertical long sides are adapted to be fixed to the wall by expansion means, such right-angled elements of the first frame comprise overhanging short sides, perpendicular to the wall of the kitchen, when the frame is attached thereto, such short sides forming a bracket for positioning and supporting the extraction motor unit.

2. US2021123602A; Kitchen hood with height adjustment.

Abstract

A kitchen hood has a first housing and a second housing that slides into and out of the first housing to adjust the length of the kitchen hood. The first housing has a fan to suction air, an outlet, and an air quality sensor assembly to continuously detect air quality in a kitchen. The second housing has an inlet and suction grill through which air is suctioned, a steam cleaning assembly to automatically steam clean the interior of the kitchen hood, and a height sensing assembly to sense the height of cookware seated on a cooktop surface below the second housing. The kitchen hood may be lengthened or shortened based on the sensed height of the cookware, and the speed of the fan and the height of the kitchen hood may be automatically adjusted based on detections by the air quality sensor assembly.

3. WO14012470A1; Range hood ventilation module and assembly method thereof.

Abstract

A range hood ventilation module and assembly method thereof, the module comprising a primary tube, and an auxiliary tube both made of integrally spun tubes; the auxiliary tube is provided with an oil screen in the front, and a connecting tube in the back mated with the inner diameter of the primary tube; after an axial fan is installed in the primary tube, the primary tube is abutted with the auxiliary tube to form the ventilation module. The assembly method of the ventilation module comprises installing a fixing bracket on the range hood ventilation module, the ventilation module is disposed in a smoke collection box at the top of the range hood and is connected to the smoke collection box via the fixing bracket. The primary tube and the auxiliary tube, is made by spinning a tube to form a cylinder, therefore have no seams or welded spots on the outer side. By installing an axial fan in the cylindrical range hood, oil smoke is directly discharged after passing through the fan. With an unobstructed duct, the present invention improves fan efficiency and reduces working noise and energy consumption.

5. Problem to be solved

Nowadays, the installation of the cooking hood is a difficult operation due its configuration, weight, installation height and the request to be placed at the specified highness over the cooking hob.

In particular, the hood installation at the ceiling could be difficult because of certain highness of fixing, the hood weight and need for the synchronous measurements of specified highness over the cooking hob.

Moreover, the hood mounting process doesn't predict the availability of any handler or auxiliary tools and support that could be used for hood lifting, hanging, and screwing to the ceiling.

In additional, excluding some minor parts like filters and the aesthetic surfaces, a kitchen hood represents an integral structure and could not be disassembled and successively assembled to simplify the hood installation process and make it easier and faster, to be done by one person, possibly.

6. Proposed solution

The idea is to perform the fast and simple installation of the kitchen hood at the ceiling, over the island or wall-positioned cooking hob at the right height above the same, by assembling the hood unit (without aesthetic surfaces and filters) within an already fixed, rightly positioned and oriented hood support structure, that has a previously signed or numbered cut-outs enable a fast hood hanging by the suitable snapping mechanism and screwing, without a synchronous measurement of hood's height.

For that scope, the hood support structure should have a more cut-outs, displaced at its vertical plane in a matrix form with a pitch of 50mm and height range of 300 mm. To enable technicians to find simply the hood installation height, the hood support structure will have numbered each cut-out row, to indicate the full height of the hood at a specific position. Once placed at the final highness, the hood will be fixed into the hood support structure by 4 screws.

By this approach, it should be avoided complex hood positioning operations (considering its weight and complex geometrical form) to the ceiling and simultaneous measurement of the hood highness and/or distance over the hob. In addition, once fixed into the support structure, the hood needs to be connected to the venting channel and el. power supply installation.

Moreover, upon the hood fixing on the support, the hood's upper L-profile aesthetic panels should be fixed onto the hood support structure, while the lower L-profile of aesthetic panels should be positioned onto the hood venting section itself. All aesthetic panels should be fixed by magnets.

7. Description

The present invention relates to the simplified installation and assembly of the kitchen hood to the ceiling.

In one embodiment as shown in (Fig.1). the hood comprises a hood installation structure, positioned and fixed (also oriented to the ceiling), and a functional hood section with a ventilation chimney and canopy structure, placed under the same.

Hood installation in the support structure enables the simplified and faster assembly of the hood functional structure at a certain highness over the cooking hob.

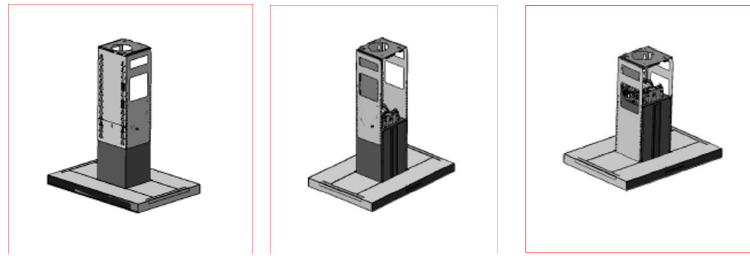


Fig. 1.: The hood is placed into vertical support according to the numbered cut-outs

The hood assembling in the support structure begins with its upper section (the ventilation section) inserted into the vertical channel of the support structure.

Following this approach, all sides of the hood ventilation section should be in touch with the inner surfaces of the support structure vertical channel. In this way, the back side of the vertical channel, characterized and perforated with more cut-outs, aligned in the matrix form, is in touch with the back side of the hood ventilation section, where, for the scope of a hood preliminary and fast hanging onto the support structure, the snapping elements are fixed, following an identical matrix configuration with cut-outs.

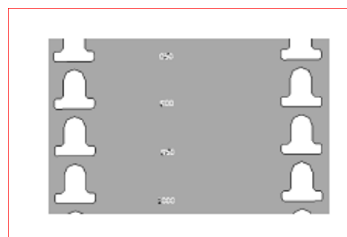


Fig. 2.: Aligned cut-outs for the hood hooking and fixing

Once in contact with the back wall perforated surface (Fig.2.) the hood ventilation unit could be easily inserted vertically into the support channel (to reach a certain hood highness itself and hood highness over the cooking hob) and hook at an adequate row with aligned cut-outs (with a pitch of 50 mm within the range of 300 mm).

Once preliminary positioned and hanged functional hood structure could be simply fixed onto the hood support structure (channel) by four screws. Throughout this approach, the hood functional section and hood support structure (already fixed to the ceiling) become one tightly connected unique structure, enabling the hood installation completion phase. Accordingly, the

hood installation completion phase comprises the installation and fixing of two groups the L-profiled aesthetic panels.

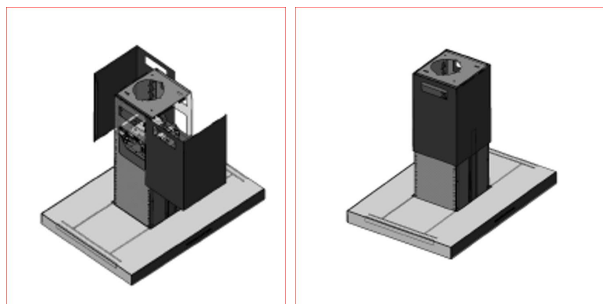


Fig. 3.: Installation and fixing of L-profiled aesthetic panels to the hood support structure by magnets.

The first group of L-panels is to be fixed onto the hood support structure (Fig. 3.) creating a quadratic cross-section channel covers all hood fixing structures.

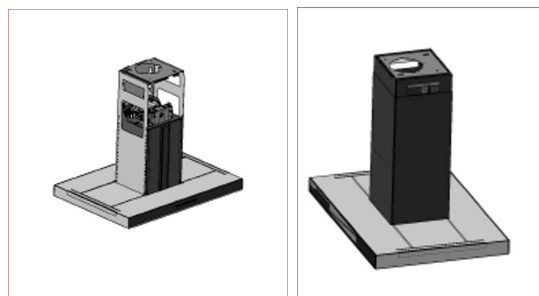


Fig. 4.: Installation and fixing of L-profiled aesthetic panels to the hood ventilation section by magnets.

The second group of L-profiled panels (Fig.4.) is fixed onto the hood ventilation section (chimney), anyhow, under the first group of panels.

This group of panels has a slightly larger quadratic cross-section than the upper one, overlapping partially the upper same and making the hood support structure and hood functional section (venting unit) covered completely with the aesthetic panels within the whole hood extension range of 300 mm (from 850 to 1150 mm). All L-profile aesthetic panels are fixed onto hood structures by magnetic joints.