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Ceiling plate bracket - ID-06257

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Ceiling plate bracket

1. Summary of the disclosure

The invention relates to a kitchen hood rapid fixing solution to the kitchen ceiling by applying of a universal hood installation module, which enables the simple installation of more types of kitchen hoods, with similar dimensions of the hood's ventilation section, independently of hood air ventilation (air extraction or recirculation).

The hood installation module makes part of the hood structure and consists of two elements: the ceiling plate bracket and the vertical support channel.

The mounting of hood support module to the ceiling begins with the fixing of the ceiling plate bracket element, followed by the hood support channel assembling to the same bracket.

2. Applicable Patent categorization

24C15/2035;	Arrangement for mounting of the filter;
B08B1/04; B08B3/00;	Using rotary operative members; Cleaning by methods involving the use or presence of liquid or steam;
F24C15/2064;	Illumination for the cooking hood
F24C15/2071; FC15/2085.	Mounting of the cooking hood, adjustable in height

3. Technology domain

The invention relates to kitchen hood simple and fast installation to the ceiling, independently of hood ventilation solution (air extraction/recirculation).

4. References

1. EP1177842A2; An apparatus to fix kitchen hoods to the ceiling.

Abstract

The present invention relates to an apparatus used to fix kitchen hoods to the ceiling, which comprises a support structure for the hood and a plate to be screwed into the ceiling, it is provided that the structure is coupled to the plate by means of suitable automatic fixing means, of snap type, mounted on the plate and engaging into the corresponding holding means located on the upper opening of the structure.

2. EP2570733A1; System for fixation of fumes extraction device.

Abstract:

The arrangement has a support element, which is fixed to the ceiling. A holding element, which is formed as a frame, is arranged between the support element and a chimney housing for pre-assembly of the chimney housing. The chimney housing is held on the holding element and is movable from a lower pre-assembly position into an upper-end position. The chimney housing is locked in the upper-end position on the support element for forming a shadow gap between the chimney housing and the ceiling surface.

3. DE102008047155A1; Fastening system for fastening island extractor hood to building ceiling.

Abstract

The system has side wall sections (7) connected with each other by a connecting element e.g. nut, such that the distance between the upper and lower parts (5, 6) is variably adjustable. The sections are integrally connected with the parts, and a side wall of a circumferentially closed box-shaped upper or lower case is formed by folding the sections. A recess is arranged in a region of diagonally opposite corners at the sections. The recess extends from an open edge of the case perpendicularly over the sections, where the maximum depth of the recess corresponds to the height of the sections.

5. Problem to be solved

Nowadays, the installation of the cooking hood on the ceiling is a complex operation and poses a problem in the mounting and commissioning of the hood. Typically, the hood is produced in a one-piece prismatic form, characterized by a certain configuration and request to be installed easily and simply at certain highness over the cooking hob, independently of the hood ventilation version (extraction or recirculation) and weight.

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

A modern kitchen hood consists of the canopy and the venting sections. Accordingly, a canopy section represents the lower part of the kitchen hood, placed directly over the cooking hob surface. Over the canopy section, the hood has integrated a venting unit, done in a prismatic form, which contains a suction fan and air-conducting or recirculation elements and aesthetic covers. Hood is usually fixed to the ceiling by the upper surface of the venting unit.

The canopy and venting sections are making a kitchen hood an integral part and could not be disassembled and/or assembled to simplify the installation process. For that reason, a hood configuration and its weight representant a specific installation problem.

6. Proposed solution

The present invention discloses the method and solution for the kitchen hood fast and simple mounting to the kitchen ceiling. Accordingly, the hood structure should be divided into two modules: the hood support structure and hood functional structure (the hood, in general sense of word) could be easily assembled to the first one through a few steps. Accordingly, the hood support structure, as a smaller and/or lighter hood section, represents the module

that should be placed and fixed to the ceiling simply and easy as a base for the successive mounting of the hood functional section.

Moreover, the hood support structure module comprises two basic elements: the ceiling plate bracket element and the hood support channel element. The ceiling plate bracket element is the base for the hood support structure fixing to the ceiling. By its form, it is a quadratic plate, with a bigger hole in its center, for the air ducting channel passage, assembly and fixing.

Additionally, two lateral borders of the ceiling plate bracket are folded outward to sustain its assembly with hood support channel element. The ceiling plate bracket is a simple and light mechanical element, easily fixable to the ceiling by four screws. Once the ceiling plate bracket is fixed to the ceiling, the hood support channel element could be assembled onto the same, to create a hood support structure module.

The hood support channel represents one single piece deformed and machined metal sheet of the suitable thickness. It has a form of an "U" rectangular profile. The upper borders of its two lateral sides are inward folded to enable its fast and simple assembling to the fixed ceiling plate bracket.

Moreover, the assembling of the hood support channel with the ceiling plate bracket (at the already fixed ceiling bracket plate) is to be done in two steps.

Firstly, by sliding the vertical channel by its lateral upper inward folded borders onto fixed ceiling plate bracket, afterwhile the hood support channel element is to be screwed onto the ceiling plate bracket, to get a rigid hood support structure.

7. Description

In an embodiment of the innovation, the hoods support structure (3) module enables a simple and easier completion of the whole canopy hood installation activity to the kitchen ceiling, independently of the hood installation highness over the hob, the applied ventilation system type and/or its orientation within the kitchen appliances arrangement.

Moreover, the hood support structure (3) module should enable the installation of more hood types into the same structure, provided that the hood's fixing section has an adequate cross-section profile. Essentially, the hood support structure module comprises two elements: the ceiling plate bracket (1) element and the hood support channel (2) element.

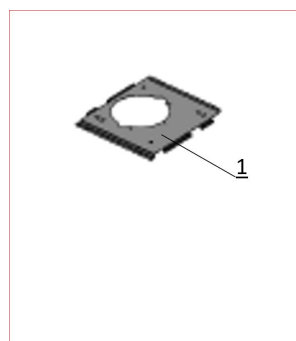


Fig. 1.: The ceiling plate bracket element

Accordingly, the ceiling plate bracket (1) element is made in the form of a quadratic plate with a round hole (H) in its center (with more holes h1, h2, etc., positioned circularly around,

for flange screwing) for the ventilation channel passage and sustainment of the hood air extraction feature. There are also other four holes, for screwing the ceiling plate bracket (1) element to the ceiling, positioned close to plate corners.

Accordingly, when placed on the ceiling, the ceiling plate bracket (1) element touches the ceiling by its all-available planar surface, excluding borders. Moreover, the ceiling plate bracket (1) element has an universal form for both types of hood air ventilation: the recirculation within the kitchen and venting into external environment.

In addition, the ceiling plate bracket (1) element has two parallel outward folded borders, prepared to enable its simply and fast assembly with the hood support channel (2) element.

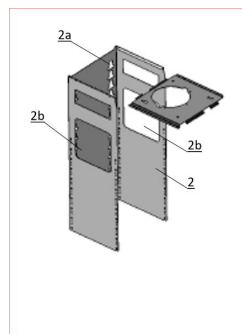


Fig.2.: The hood support channel element

Accordingly, the hood support channel (2) element is done in the form of a rectangular “U” profile. Following this, the upper borders of its lateral sides have the inward folded border form to enable the hood support channel (2) element to slid onto ceiling plate bracket (1) element borders through the fast-assembling approach.

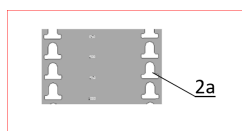


Fig.3.: The support channel back surface, with cut-offs matrix configuration

There are big two rectangular holes (2b) at the hood support channel (2) element lateral sides, make the hood support channel (2) element an open structure, should enable a good visibility of the hood venting section (chimney) structure assembly process and functional installation and screwing into hood support structure (3) module.

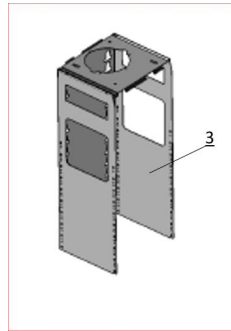


Fig.4.: The hood support structure module

Moreover, the back surface of the hood support channel (2) element has a more cut-out holes (2a), arranged in the matrix configuration, should enable that hood ventilation column section could be simply and fast hooked onto hood support structure (3) module and fixed to the same by the snapping mechanism and successively by screws.

Accordingly, the ceiling plate bracket element (1) is to be installed and fixed at the ceiling firstly, followed by the vertical support channel (2) element, should slide onto its folded borders up to endpoints afterwhile the hood support channel (2) element must to be screwed on the ceiling plate bracket (1) element rigidly, in order to ensure their tight assembly and capability to support the foreseen hood types (structures), considering their specific structural height, the highness over the hob, the orientation toward the kitchen appliances arrangement and appropriate weights.