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Hidden and tool-free installation of an appliance in the furniture_ID-05343

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Hidden and tool-free installation of an appliance in the furniture

1. Summary of the disclosure

The invention proposes an installation for fixing an appliance in furniture, wherein a fastening element, e.g., a clip, which allows a tool-free installation/mounting of the appliance and the furniture. The installation solution provides no visible mark/cavity on the furniture. The invention uses prefixed clips on walls of the appliance, which allows their easy installation with home furniture.

2. Applicable Patent categorization

From applicable patent references, always with kitchen appliances

A47 J	Kitchen Equipment; Coffee Mills; Spice Mills; Apparatus for Making Beverages
F16 M1	Other supports for positioning apparatus or articles; Means for hand-held steadying apparatus or articles for supporting on, or attaching to, an object, e.g. tree, gate, window-frame, cycle repositionable
A47 F5	Rail constructions; Brackets

3. Technology domain

The invention is for a prefixed fastening element built-in with an appliance such as ovens, for fixing the appliance with home furniture. The proposed solution allows a tool-free installation of an appliance.

4. References

1. [EP3354246B1 EQUIPMENT MOUNTING SYSTEM](#)

Abstract:

A track mounting system including a mount with a mounting plate with a back surface and a front surface, the back surface is opposite the front surface and at least one mounting stud coupled to the back surface of the mounting plate, each mounting stud includes a stem portion that extends outwardly from the back surface and an enlarged head portion disposed at a distal end of stem portion. The mount also includes a release mechanism coupled to the front surface to release the mount from a track. The track mounting system also includes an adaptor coupled to the front surface of the mounting plate wherein the adaptor releasably couples with an equipment interface of a piece of equipment.

2. [US2016186925A1 CLIP AND RAIL ATTACHMENT SYSTEM](#)



Abstract:

A clip and rail attachment system, for mounting an accessory, comprises at least one rail member having a longitudinal axis, a first end, a second end, a channel that extends substantially along the longitudinal axis, at least one end opening, and a longitudinal opening. The system also comprises at least one rail clip, having a channel engagement member and a mounting member. The rail clip is suitable for slidable movement along the rail member and for supporting the accessory on the mounting member. The channel communicates with the at least one opening and the longitudinal opening allows for the mounting member to extend out from the channel while clip is supported by the rail. The channel and the at least one opening are each of suitable size and dimension to receive the channel engagement member, so as to allow rail clip to be captured by the rail member and to slide there along in a direction that is substantially parallel to the longitudinal axis.

5. Problem to be solved

In general, a kitchen appliance, such as an oven, is installed on a furniture by using screws. Such an installation requires additional tools, i.e., screwdrivers, and a time consuming process and causes the furniture to be damaged or have visible marks on its walls. Therefore, a person skilled in the art desires to find a solution to improve the above-mentioned issues.

6. Proposed solution

The proposed invention provides an engagement structure between an appliance and a furniture by applying at least one prefixed clip to the appliance. A hole is formed in the walls of the furniture to engage with the prefixed clip. During the installation, a user directly aligns the prefixed clip to the hole and engage them with each other so as to fix the appliance into the furniture. Accordingly, the solution can reduce the installing time, provide a simplified installation without extra tools, and avoid the walls of the furniture from occurring structure damages during the installation.

7. Description

Embodiment 1

As shown in figs. 1 to 2, an illustrative embodiment of an installation process of the invention indicates how an oven is installed into a furniture (4). The oven comprises a housing and a front frame (3) covering the housing, wherein the housing is formed by sidewalls (2). Further, the oven comprises two clips (1) respectively prefixed with the right and left sides formed by the connections



of the right and left sidewalls (2) and the front frame (3). The furniture (4), e.g., a cabinet, has a space for receiving the oven and comprises a housing having a number of side plates. Each of two side plates of the furniture (4) corresponding to the right and left sidewalls

(2) of the oven has a hole (7) formed on the interior surface and is engaged with the corresponding clip (1).

As shown in fig. 2, one end of the clip (1) is formed in a claw shape to engage with the hole (7), and the other end of the clip (1) is formed as a hook portion (8) for releasing the installation status of the furniture (4) and the oven. Preferably, clip (1) is made of materials having good resilience. Alternatively, the clips (1) will be prefixed on the central position of the sidewalls (2) of the oven and comprises a rib (5) for enhancing the stable fixation level.

During an installation process, a customer or a worker for the appliance assembly service directly pushes the oven into the space of the furniture (4). Therein each clip (1) is pressed into and thus engaged with the corresponding hole (7) so that a steady engagement structure between the oven and the furniture (4) is formed. As a result, the customer finishes the installation with external tools in a short time.

On the other hand, during a process of removing the oven from the furniture (4), the customer presses the hook portion (8) of the clips on both sides of the oven to release the clip (4) from the holes (7). He or she thus removes the oven easily without any external tools.

In addition, such an engagement structure as an interlocking mechanism is formed inside the furniture (4) so that no visible marks appear on the outer appearance of the furniture (4).

Embodiment 2

As shown in figs. 3 and 4, the other embodiment of the installation process of the invention indicates how the oven is installed into the furniture (4). In comparison with embodiment 1, the difference is that embodiment 2 discloses that the hole (7) size of the sidewall (2) is deeper in-depth and wider in width. If a user directly pushes the oven into the furniture (4) during an installation process, an engagement structure formed by the clip (4) and the hole (1) may be unstable and easily released. In order to form a steady installation of the oven and the furniture (4), a distance clip (6) for fitting and engaging with the clip (1) is prefixed on the hole (7). Therefore, the oven and the furniture (4) still have a steady engagement structure by snapping the clip in the distance clip (6).

Accordingly, the invention provides an engagement structure between an appliance and a furniture to reduce the installing time, provide a simplified installation without extra tools, and avoid the walls of the furniture from occurring structure damages during the installation.

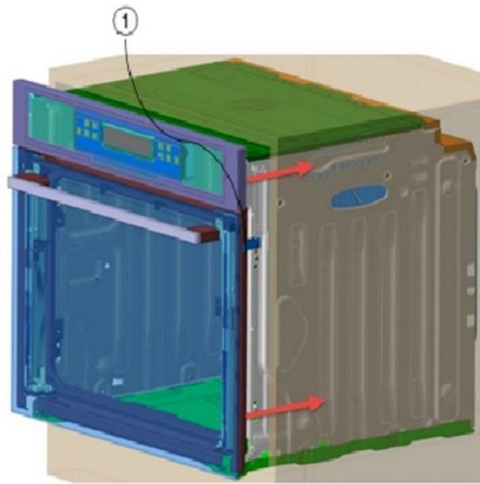


Fig. 1

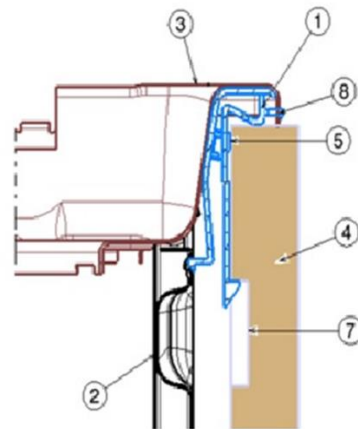


Fig. 2

Figure 1 showing an illustration of an installation process for an oven and a furniture according to embodiment 1 of the invention.

Figure 2 showing an illustration of an engagement structure of a clip and a hole according to embodiment 1 of the invention.

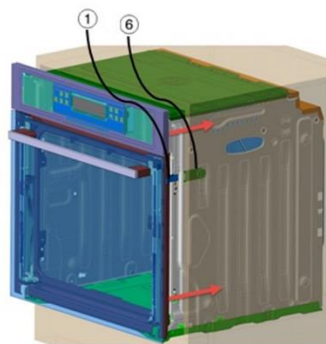


Fig. 3

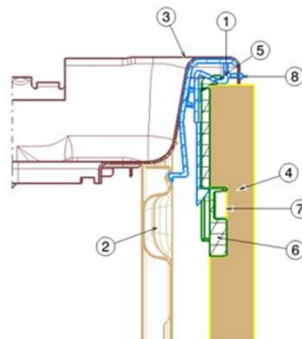


Fig. 4

Figure 3 showing an illustration of an installation process for an oven and a furniture according to embodiment 2 of the invention.

Figure 4 showing an illustration of an engagement structure of a clip and a hole according to embodiment 2 of the invention.

List of components:

- | | |
|----------------|------------------|
| 1. Clip | 5. Ribs |
| 2. Sidewall | 6. Distance clip |
| 3. Front frame | 7. Hole |
| 4. Furniture | 8. Hook portion |



8. Machine translations

German, French, Chinese,