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(54) Cover for terminals of the electric system in cooking plates

(57) Cover for the lodging and the connection for the terminals of the electronic system in cooking plates, being of the kind of covers that remain under the ceramic glass and in which the electronic control system of the heater elements is placed and connected and being formed by a support body (1) that has in one of its lateral

surfaces a cope (2) in which it is defined a seat base (3) of bigger width than the upper seat base (10) of the lid, being the connector (4), which is endowed of the aligned connection terminals (5), placed on the cited base (3), so that the lateral surfaces of the cope (2) of the support (1) have each vertical clefts (7).

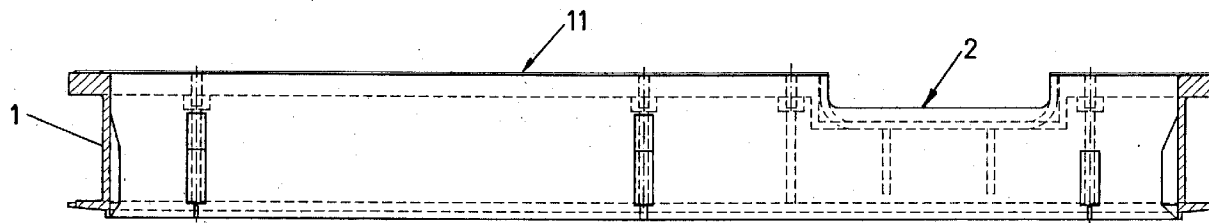


Fig. 2

EP 0 860 662 A2

Description

OBJECT OF THE INVENTION.

As is expressed in the title of the present of the present descriptive report, the following invention consists of a cover for the lodging and the terminals connector of the electric and/or electronic system in cooking plates, which is useful for its incorporation in the cooking plates of the glass-ceramic heater elements, by radiation, induction and/or halogen, so that the cover remains under the ceramic glass.

By means of the cover that is presented, a whole totally tight is obtained, impeding the humidity pass to the components that are lodged in its interior and besides, making easy the connection among all the terminals of the electronic system, since it has a connector that incorporates all the connection terminals aligned so that by a simple pressure, the fast connection among all them is allowed, connecting it with the terminals placed in the own cover that also are perfectly aligned.

In the other hand, in the connector in which all the terminals remain aligned, all the extremes of the cables remain integrated into the own connector body during the injection process for its manufacture and besides, the connector has some lateral projectings that are backed to some respective clefts in the cope of the support body of the cover where it is placed, and a whole of perimetric strengthenings that allow a closing perfectly tight, so that the internal part of the cover remains insulated from the humidity.

To collaborate in a totally tight closing, the upper base of the support body of the cover, on which the lid body is placed, has a pair of projectings according to all its outline.

FIELD OF APPLICATION.

The cover for the lodging and the connection of the terminals of the electronic system in cooking plates is applicable for insulating the components of the electronic system from the cooking plates and the terminals in which the corresponding connector is connected, remaining the cover under the ceramic glass, and being the heater elements by radiation, induction and/or halogen, so that the cover acts as an protecting element for the electronic system, both acting as a thermic barrier and as a tight element for avoiding the humidity pass that can cause an anomalous working of the whole.

BACKGROUND OF THE INVENTION.

Conventionally, among the different domestic appliances for cooking, we can quote those that have some calorific centres of gas or electric, which are controlled by the corresponding activation controls for the user for which, the activation controls are joined with their corresponding valve of gas pass or electric switch. Thus,

the cited union is realized through several ways, being one of them by means of a cardan transmission that consists on some telescopic bars for the regulation of the distance among them, with some ball-and-socket joints in their extremes for the fixing of the union elements.

In the other hand, as the activation controls of the calorific centres must have a position of security for impeding its free turn, the rod or spindle of the controls is supported by a spring that pushes it to the exterior, so that a projection of the same one must be lodged in a complementary mortise of the body that is fixed to the appliance.

With regard to the glass-ceramic plates that are usually utilized, they are placed in a lodging that is realized to that end in the hob and they can have some controls although usually, they have not any controls, being they placed in the frontal part of the oven for the control of the calorific centres.

Besides, in this kind of cooking systems, the apparatus must incorporate an electronic system for the control and working of the heater elements with the corresponding connections among all the system components and feed sources, so that all the system remains close to the own glass-ceramic plate and therefore, the system must be protected before the high temperatures that it must resist and before the humidity for avoiding the possible anomalous behaviour of the system.

Thus, the electronic control system is lodged in a box or cover of plastic material, that acts as a thermic barrier and as a tight body against the humidity, so that the several connectors, in which the terminals of the several connection cables will be connected, remain in the cover.

The several connectors are distributed by several zones of the cover, and the terminals of the corresponding connection cables are manually connected. This motive represents serious drawbacks because of the few space for the manipulation of the same ones that makes difficult the connection operation and besides some little particles can come off the own cables because of their manipulation, so that these particles can dirty the lodging of the support base of the electronic tracks that can cause anomalous behaviours of the electronic components and consistently, an erroneous working of the cooking apparatus.

Besides, the entrance pass of all the cables to the interior of the box or cover is blocked up by a tight joint, but because of the cables conglomerate, it is difficult to obtain a closing totally tight, and although it is avoided the pass of any liquid that can have been spilt, it is not obtained the appropriate tight closing against the humidity that also can act on the electronic components, so that these components have not the appropriate behaviour, being sometimes necessary the technical assistance for their repair.

DESCRIPTION OF THE INVENTION.

A box or cover for the lodging of the electric and/or electronic components and terminals connector of the same one in cooking plates is described in the present report, being of the kind of those covers that are assembled under the ceramic glass, acting as a thermic barrier and as a tight element in whose interior the electronic control system of the heater elements is lodged and connected, being made up of a support body, that is blocked up by the corresponding lid, one of whose lateral sides has a cope in which it is defined a seat base of bigger width than the upper base on which the closing lid is placed, so that the connector, which is endowed of the aligned connection terminals, is placed on the cited base that is related to the lateral cope.

The lateral surfaces of the cope of the support that contains all the electronic components of control in relationship to the internal part of the addition of thickness that defines upperly, has each vertical clefts.

Likewise, the upper base of the support that contains the electronic components, in which the connection of the electronic system is materialized, has a pair of projections so that the closing lid is placed on them, materializing a perfect tight closing and also avoiding the humidity pass.

The connector that carries the terminals of the connection cables is defined by an injection body of plastic material and/or resins in which both the connection cables and the terminals, with a little play for making easy their connection and above all their disconnection if it is necessary, are integrated so that they remain in the extreme part of bigger width than the seat zone on the base of the cover support, for allowing their connection on the terminals that are aligned in the own support in relationship to the internal part of the cope of its internal side.

Thus the free extremes of the terminals remain free in the injection process for maintaining the mechanical and elastic properties of the terminal for the assembly and disassembly of the connector whole easily.

Likewise, the connector, in relationship to the internal zone of seat on the support base, has a pair of lateral projections that are inserted in relationship to the clefts of the lateral surfaces of the lateral cope of the support, so that thus the connector body is placed, being fixed and avoiding any kind of stress on the terminals, in the case of causing a traction effort on the connection cables.

In the other hand, the connector has a whole of perimetric strengthenings in relationship to the seat zone on the base of the lateral cope that is made on the own support, so that they collaborate in the own tight closing with the lid.

In order to complement the description which is done hereinafter and for the purpose of providing a better understanding of its characteristics, the present descriptive report is accompanied by a set of drawings, in whose figures the most significant details of the inven-

tion are represented in an illustrative and not limitative way.

BRIEF DESCRIPTION OF THE DESIGNS.

Figure 1.- It shows a plan view of the support or the box that contains the electronic components and the connection connectors, where we can observe the narrow entrance and placement of the connector, as well as a detail A of the pair of perimetric projectings on which the closing lid is placed for obtaining a closing totally tight.

Figure 2.- It shows a sectioned view, according to a longitudinal plan I-I of the previous figure, of the support of the cover that contains the electronic components and the connection connectors, where we can observe the lateral surface that is endowed of a cope in which the connector is introduced for obtaining an adequate placement and a perfect tightness.

Figure 3.- It shows a plan view of the connector in which all the alined terminals have been concentrated and all the cables are integrated in the own connector body, which has a whole of perimetric strengthenings and some lateral projectings of placement, in relationship to its placement in the base box, so that the connection is done by a simple pressure of the connector on the terminals that are aligned in the cover support, making easy the cited operation.

Figure 4.- It shows a lateral elevation view of the connector of the previous figure, where we can observe the perimetric strengthenings that remain on the seat surface of the cover, as well as the representation of one of the connection terminals.

Figure 5.- It shows a detailed plan view of a connector terminal, where we can observe as its extremes remain free for making easy the operations of assembly and disassembly of the connector whole.

DESCRIPTION OF A PREFERRED EMBODIMENT.

In view of the above cited figure and in accordance with the adopted numbering, we can observe as the support (1) of the cover, that contains the electronic components of the system, has a general rectangular plan with round vertexes, so that we can see the cope (2) with a base surface (3) of bigger width than the upper base of the cover, on wich the connector (4) will be placed in its assembly, for executing the connection of the terminals (5) that are grouped in the same one.

The connector (4) shows aligned and perfectly placed all the terminals (5), since they are placed in their adequate position during the own manufacture process of the connector by injection, so that the connection of the same ones will be done by simple pressure on the terminals that are placed on the cover support (1), close to the placement cope (2) of the connector (4).

In the other hand, the connector (4) has a pair of lateral projectings (6) that, in its placement on the lateral

surface of the cover support, are fitted in some respective lateral clefts (7) of the same one, so that they let fix its position.

Likewise, the connector (4) has a whole of strengthenings (8) in relationship to seat surface on the narrow that defines the cover support (1) with the corresponding lid, so that they materialize a totally tight closing.

In the connector manufacture by a injection process, both the connection cables (9) and the terminals (5) are integrated in the own connector body, materializing a total tightness in relationship to the connection cables (9) and remaining a slight play (12) for making easy their connection and their disconnection in relationship to the terminals of the cover, so that this fact let us be able to obtain the disconnection in a simple way if it is necessary.

This peculiarity of the terminals (5) lodging and its configuration that is exempt from plastic material in its outline, let them to maintain easily the mechanical and elastic qualities of the terminal for the assembly and disassembly of connector whole.

In this way, a perfect connection among all the components of the system is obtained in a simple and fast way, so that the workforce is decreased radically and let us obtain a body that acts as a thermic barrier and that is endowed of a perfect tightness.

To collaborate in a perfect tight closing of the lid on the support (1) that forms the cover, the seat base (10) of the same one has a pair of little projections (11) that materialize a totally tight closing.

Claims

1. COVER FOR LODGING AND TERMINALS CONNECTER OF THE ELECTRIC AND/OR ELECTRONIC SYSTEM IN COOKING PLATES, being of the kind of those covers that remain under the ceramic glass and where the electronic system of control of the heater elements is lodged and connected, and characterized in that the support (1) body of the cover has a cope in one of its lateral sides, in which it is defined a seat base (3) of bigger width than the upper seat base (10) of the lid so that the connector (4), that is endowed of the aligned connection terminals (5), is placed on the cited base (3).
2. COVER FOR LODGING AND TERMINALS CONNECTER OF THE ELECTRIC AND/OR ELECTRONIC SYSTEM IN COOKING PLATES, according to the first claim and characterized in that the lateral sides of the cope (2) of the support (1) have each vertical clefts (7).
3. COVER FOR LODGING AND TERMINALS CONNECTER OF THE ELECTRIC AND/OR ELECTRONIC SYSTEM IN COOKING PLATES, accord-

ing to the first claim and characterized in that the upper base (10) of the cover support (1) has a pair of perimetric projectings (11) on which the closing lid is placed, materializing a perfect tight closing.

4. COVER FOR LODGING AND TERMINALS CONNECTER OF THE ELECTRIC AND/OR ELECTRONIC SYSTEM IN COOKING PLATES, according to the first claim and characterized in that the connector (4) is defined by an injection body in which the connection cables (9) and the terminals (5), with a little play (12) in relationship to their free extremes, remain integrated so that the body that contains the terminals (5) has a width bigger than the seat zone on the base (3) of the support for allowing the connection on the terminals that are aligned in the support (1) of the cover.
5. COVER FOR LODGING AND TERMINALS CONNECTER OF THE ELECTRIC AND/OR ELECTRONIC SYSTEM IN COOKING PLATES according to the first, second and fourth claims and characterized in that the connector (4), in relationship to the internal seat zone on the base (3) of the support (1), has a pair of lateral projectings (6) that remain in relationship to the clefts (7) of the lateral surfaces of the cope (2) of the support (1).
6. COVER FOR LODGING AND TERMINALS CONNECTER OF THE ELECTRIC AND/OR ELECTRONIC SYSTEM IN COOKING PLATES, according to the first and fourth claims and characterized in that the connector (4) has a whole of strengthenings (8) in relationship to the seat zone on the base (3) that is related to the cope (2) of the support (1) so that these strengthenings collaborate in the tight closing of the lid.

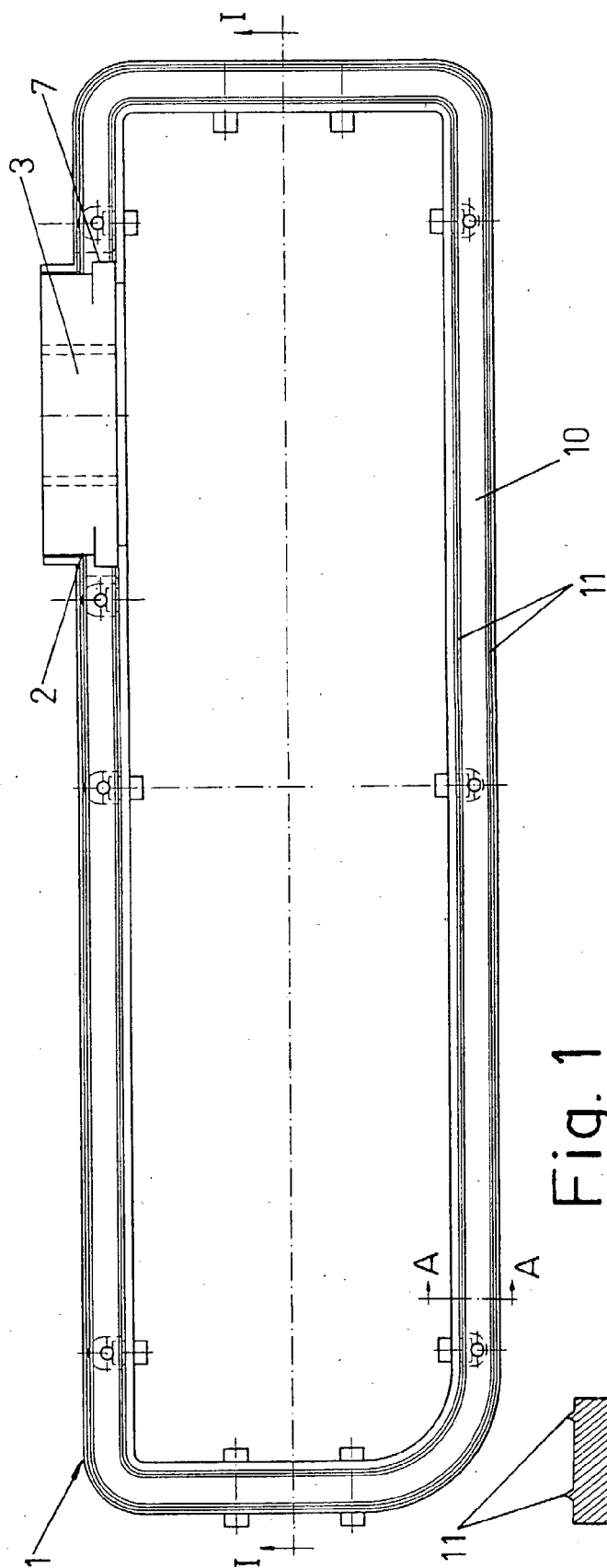


Fig. 1

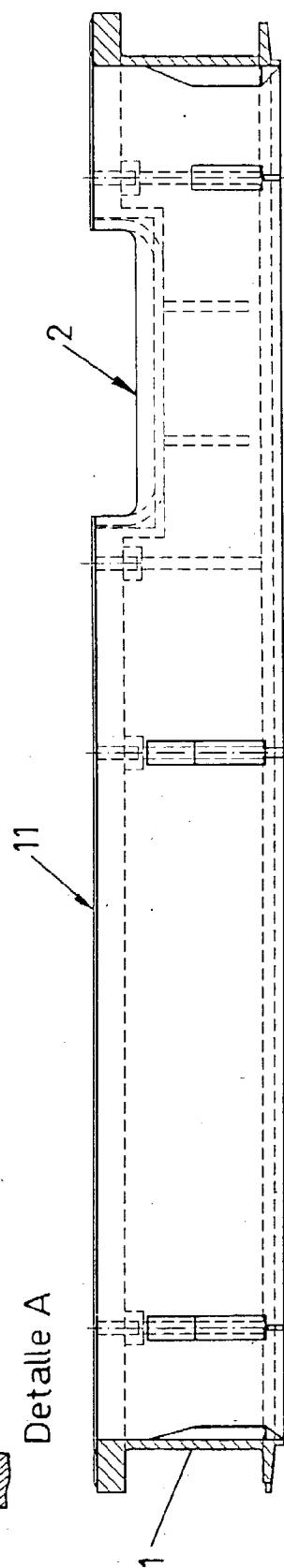


Fig. 2

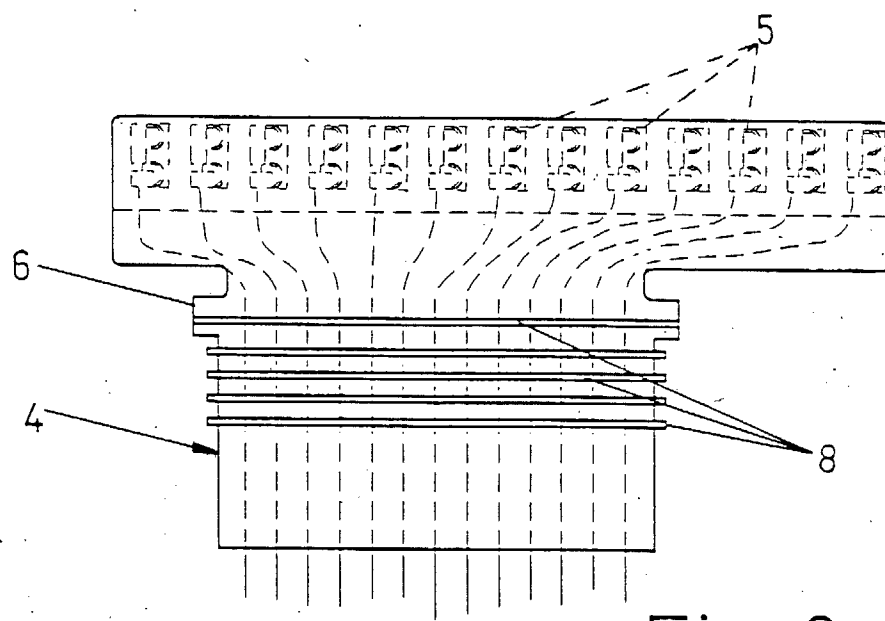


Fig. 3

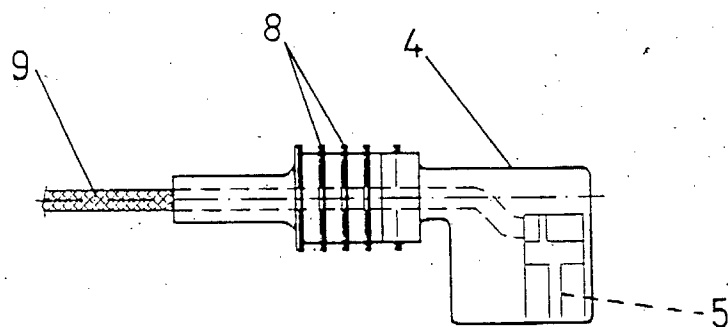


Fig. 4

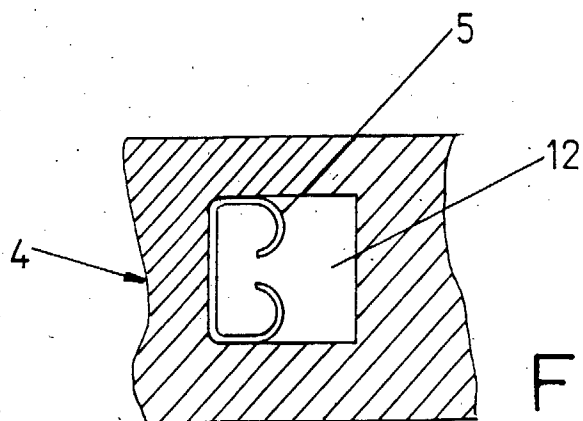


Fig. 5