



(12)

EUROPEAN PATENT APPLICATION

(21) Application number : **94500024.8**

(51) Int. Cl.⁵ : **H01R 23/10, H05B 3/74**

(22) Date of filing : **11.02.94**

(30) Priority : **17.02.93 ES 9300960**

(43) Date of publication of application :
12.10.94 Bulletin 94/41

(84) Designated Contracting States :
DE FR GB NL

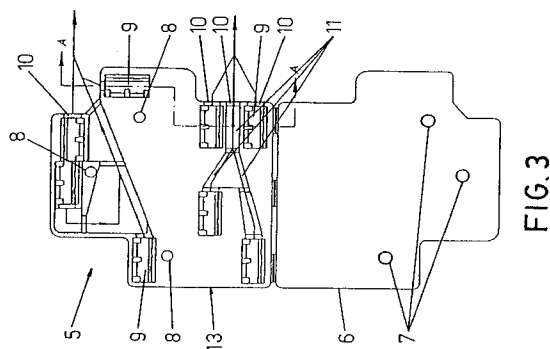
(71) Applicant : **BALAY, S.A.**
Ctra. Montanana, 19
E-50016 Zaragoza (ES)

(72) Inventor : **Lazaro Vela, Santiago**
Balay S.A.,
Carretera Montanana, 19
E-50016 Zaragoza (ES)

(54) **Connector system for cooking devices.**

(57) This system is available to join the internal electrical elements, being used in electrical and vitroceramic plates to connect the regulators/switches of the controls reciprocally and the lights indicating the existence of residual heat in the heaters. This connection is therefore performed through some connectors coupled in the terminals of the regulators/ switches and the support of the above-mentioned lights, being that support joined to the connector (1) supplied with some cavities (2) where the terminals of the conductor cables are inserted.

The connector (5) that is joined to the regulators/switches of the device controls has a support (13) to which a hinged cover (6) is fitted. Besides, it also has some cavities (9) to fit the terminals of the cables, being these ones located in some grooves (11) related to the cavities (9).



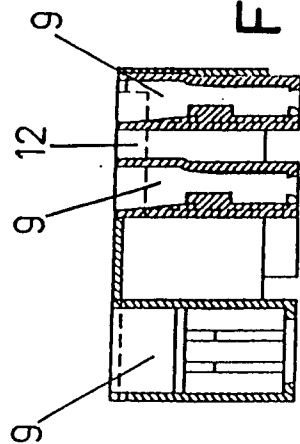


FIG. 5

OBJECT OF THE INVENTION

The following invention, as stated in the heading of this descriptive memory, consists of a connector system for cooking devices, available to join the internal electrical elements, being used in electrical plates and, mainly, in vitroceramic plates, in the connection of the regulators/switches of the controls reciprocally, and with the lights indicating the existence of residual heat in the heaters.

So, the connection to the regulators and the support of the lights indicating the existence of residual heat in the heaters is performed through some connectors with a variable number of tracks respectively, being that connection carried out by a simple coupling of the connectors in the respective terminals.

In this way, the connections should be made by fitting the connectors in relation to the terminals of the regulators and the support of the lights indicating residual heat in the heaters, just by pressing them easily and quickly, thus simplifying the industrialization and with an important rationalisation of the process, all of it representing a significant economic saving, with no need of so much time to carry out that operation.

In the same way, what matters is to avoid completely any intervention of the after-sales service because of a mismatched terminal, which may cause in the future overheatings and failures in the internal components.

Also, there is a reduction of the useful volume of its metallic frame, which makes its adjustment to all kind of kitchen furniture easy.

Finally, this system guarantees a connection of total reliability, thus avoiding possible mismatches in the assembly and future breakdowns.

BACKGROUND OF THE INVENTION

The support on which the lights indicating residual heat are assembled in the different heaters of the vitroceramic plates has a number of tabs, on which are connected the terminals of the ends of the conductor cables, joining them with different elements of the plate, such as the regulators/switches, being in the same way supplied with some tabs on which are connected the terminals of the ends of the respective conductor cables that carry out the connection among all the elements in the plate for its perfect operation.

In order to provide the appropriate connection of all the elements in the plate reciprocally, the cables show different colours and the joining of the terminal of the end of the conductor cables with the tabs of the different elements is carried out using an appropriated tool. This operation implies, despite the operator's ability, a waste of time, which means the increase of the product, given that it is performed individually.

As a result, some errors may occur in the connections and they should be detected by checking its operation in the quality control of the product, in such a way that if the device did not work properly, it may be returned to correct the errors in the connections, which also means a significant waste of time.

Besides, when carrying out the connections and disconnections of the terminals in the tabs, some distortions may occur and so the joining terminal-tab is not exact, thus producing overheating in some elements that could be damaged in the future. This is due, mainly, to the terminals made of steel since this material is not easily malleable and does not recover its original state. The terminals should be made of steel as a consequence of the high temperatures to which they can be exposed and follow the standards.

All the above-mentioned makes the assembly of the connections of all the elements forming the vitroceramic plate a very hard operation, and the connections between terminals-tabs may not be completely reliable.

So, the connections may get loose after being assembled, due to storage or transportation, which may produce the corresponding damage.

The complexity of the assembly may be easily understood when considering that the support of the lights indicating residual heat in the heaters has several tabs (for example, five), and the controls regulators, one for each heater, of the device controls, have more tabs (for example, eight), which means that the operator, in this case, should carry out, at least, 37 manual connections for each device.

DESCRIPTION OF THE INVENTION

In this memory it is described a connector system for cooking devices, which has a connector of several tracks for its coupling to the corresponding tabs of the support of the lights indicating residual heat in the heaters, and as many connectors of several tracks as heaters the device may have, for its coupling to the corresponding regulators of the device controls.

The coupling connector to the tabs of the lights support indicating residual heat has the cavities to fit the conventional terminals of the corresponding conductor cables lined up, while the coupling connector to the regulators of the device controls has a base frame where are the cavities to place the conventional terminals of the corresponding conductor cables, being the base opposite to the coupling regulator closed by a cover hinged to the support itself, thus allowing a perfect isolation.

The coupling connector to the regulators of the device controls has a number of grooves in which the conductor cables are inserted, in order to allow the perfect closing of the cover on the corresponding side of the connector, in such a way that the cover hinged to the support has a number of pivots that adjust into

the corresponding cavities of the support to do the closing of the cover on it.

In this way, the operator is provided with the connection cables together with the corresponding coupling connectors to the support of the lights indicating residual heat in the heaters, and the regulators/switches of the device controls, and the only assembly operation is the coupling of the connectors, which is performed quickly and easily.

To complement the description following below and in order to have a better understanding of its features, this descriptive memory is attached with a set of plans whose figures, in an illustrative and no limited way, show the most significant details of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1. Shows a perspective of the connector inserted to the tabs of the support of the lights indicating residual heat in the heaters, noticing the cavities to place the corresponding terminals of the conductor cables.

Figure 2. Shows a perspective in lateral front elevation of the connector in the above figure, where there is a longitudinal section, with regard to one of the cavities or tracks, to place the terminal of the corresponding conductor cable, noticing the lower base opened so that the tab to be connected can go through it.

Figure 3. Shows a perspective of the connector of regulators/ switches, with the hinged cover opened, noticing the grooves to place the conductor cables.

Figure 4. Shows a perspective in lateral front elevation, where are noticed the pivots to fit the cover to the support of the connector itself.

Figure 5. Shows a view according to a section of the connector shown in Figure 3, through section A-A.

DESCRIPTION OF A PREFERRED EMBODIMENT

In view of the above-mentioned figures and according to the numbering adopted, we can see how the connector 1 that is inserted to the support of the lights indicating residual heat in the heaters of the vitroc ceramic plate, is defined by a support supplied with the cavities 2 where are conventionally fitted the terminals of the ends of the conductor cables, which are related to the reductions 3 of one of the sides of the connector 1, in such a way that the tabs of the support of the lights indicating residual heat, are inserted through the lower part 4 of the connector 1 in order to make the connection.

The connector 5 that is inserted to the regulators/switches of the device controls, is defined by a support 13 supplied with the cavities 9 where are placed the conventional terminals of the conductor cables, in

such a way that the cavities or tracks 9 placed in relation to the perimeter of the support 13 have a reduction 10 through which the conductor cable appears, while the internal cavities or tracks 9 of the support 13, have a groove 11 through which the cable is conducted up to coming out of the support through its corresponding lateral reduction 12.

The base of the support 13 through which the terminals of the conductor cables are fitted is closed by a cover 6 hinged to the support 13, supplied with some pivots 7 that fit into the respective holes 8 of the support 13, allowing the closing for its perfect isolation.

Thus the tabs of the regulator/switch of the device controls are inserted in the cavities or tracks 9 in its lower side opposite to the cover 6.

In this way, the terminals of the conductor cables are perfectly inserted in the cavities or tracks of the connectors 1 and 5, avoiding any mismatch, damage or breakdown, all of it meaning an important advantage.

Besides, the operator receives the conductor cables with the corresponding connectors, in such a way that he only has to couple the connectors 1 and 5 in the respective tabs, operation carried out quickly and with no possibility of error in the connection, which, means an important saving of time which, consequently, leads to an economizing saving.

Claims

1.- CONNECTOR SYSTEM FOR COOKING DEVICES, which is designed to be used in electrical cooking devices and, preferably, in vitroc ceramic plates, mainly distinguished because the conductor cables of interconnection among all the elements in the plate are supplied with a connector (1) of several tracks, to couple to the tabs of the support of the lights indicating residual heat, and some connectors (5) of several tracks, to couple to the regulators of the device controls, noticing in advance that the connector (1) is defined as a support supplied with several cavities (2) lined up, a reduction (3) being in correspondence with its upper side, to fit to the terminals of the conductor cables.

2.- CONNECTOR SYSTEM FOR COOKING DEVICES, according to claim 1, distinguished because the connector (5) of several tracks, is defined by a support (3) to which a cover (6) is hinged, provided with some pivots (7) that fit in the respective holes (8) of a side of the support (13) to do the closing, noticing in advance that the side of the support (13) being closed by the cover (6) is the one through which the coupling of the terminals of the conductor cables is done, in such a way that the cavities or tracks (9) to fit the terminals of the conductor cables, which are attached to the perimeter of the support (13), have a re-

duction (10) so that the cable can go through, while the internal cavities or tracks of the support (13) are related to some grooves (11) to place the conductor cables coming out through the corresponding reduction (12) of the lateral side of the support (13).

5

10

15

20

25

30

35

40

45

50

55

5

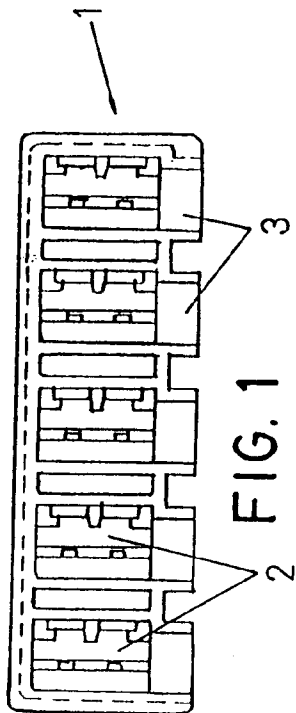


FIG. 1

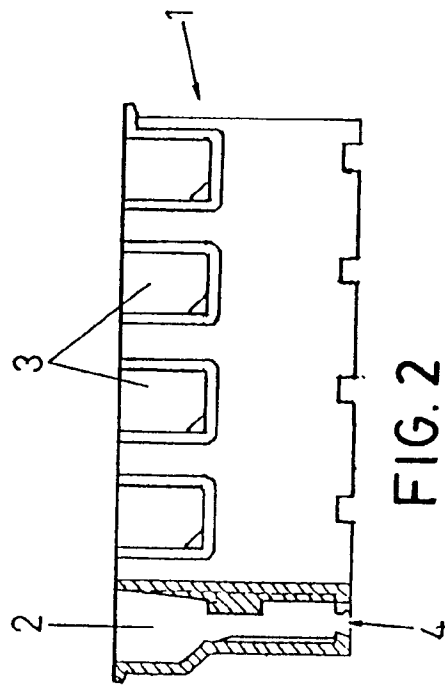


FIG. 2

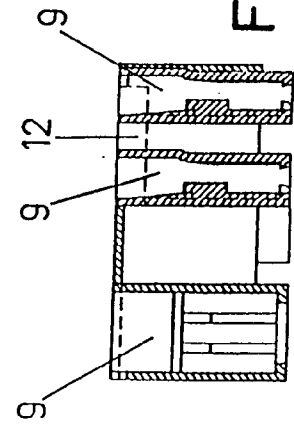


FIG. 5

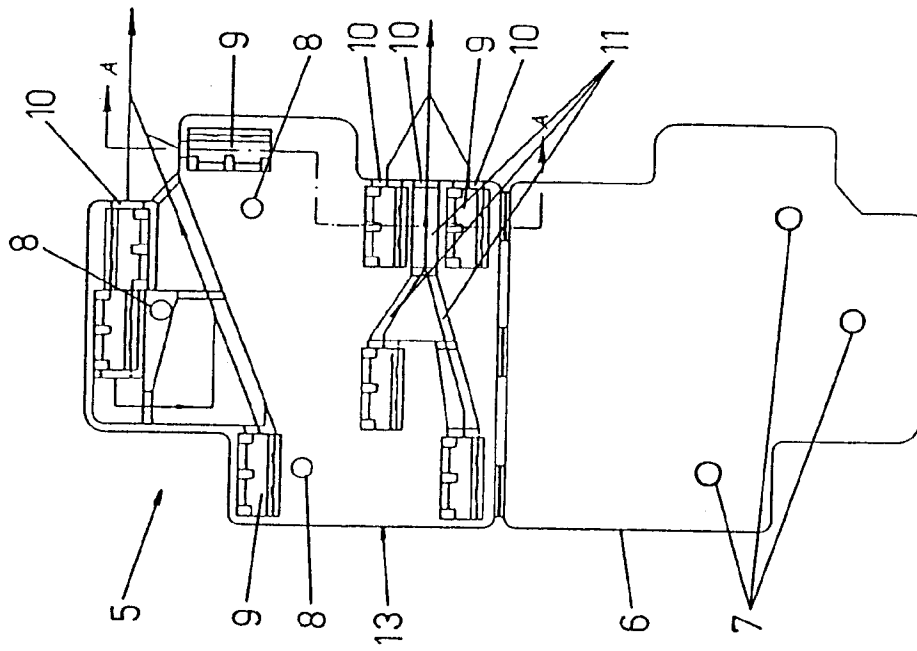


FIG. 3

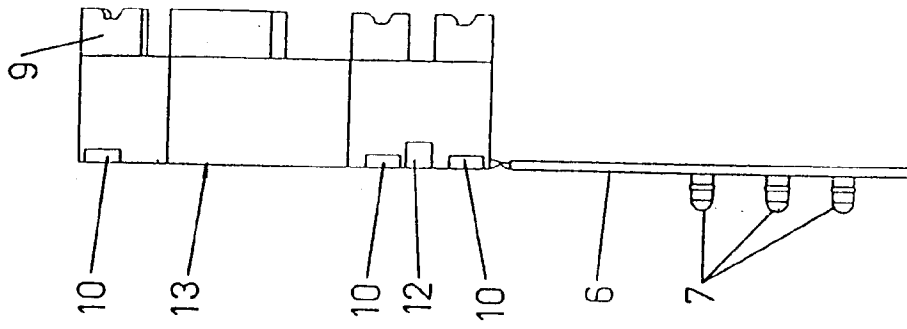


FIG. 4