

12 **EUROPEAN PATENT APPLICATION**

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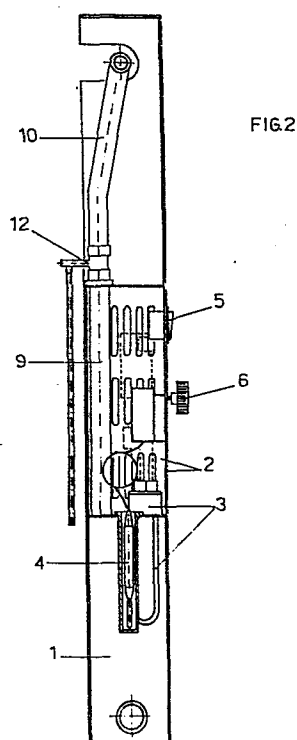
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54 Electric heating generator for already installed radiators.

57 The invention substantially consists of an electrical device which may be applied to radiators of any hot water heating system, already installed or new, the function of which is to heat desired areas during hours when the main central heating system is off, making use of the existing radiators.



- 1 -

Electric heating generator for already installed radiators.

This electrical heating generator may be applied to all static heating elements, radiators or plates, whether made of cast iron, steel or aluminium, which are part of an existing hot water heating system.

- 5 Whenever said heating system ceases to function, regardless of adverse climatic conditions, and once the upper valve of the radiator has been shut off in order to isolate it from the rest of the system, the electric integrator may be put into action to continue heating the area.
- 10 On the market there can be found simple, "en bloc", electric radiators, both fixed and mobile, which have one fundamental drawback in that the electric heating device (the system's boiler) is sold together with the radiator and the two pieces are not separable.
- 15 This means an unnecessary expense in cases where an already existing radiator heating system cannot be used for the purpose of electric heating.

- 20 Up until now electrical integration has only be possible by the addition of other heating elements, causing not only an increase in costs but also an unwanted reduction in serviceable space in the area in question, with, sometimes, the disagreeable consequence of upsetting the aesthetic appearance of the surroundings.

- 25 The electric integrator being proposed here, which may be applied to existing radiators, improves the present-day situation introducing new economic, practical and aesthetic advantages.

The accompanying drawings are for a clearer illustration and exemplify

only one embodiment of the herein described invention, wherein figure 1 is a frontview of the invention and figure 2 a side view from right to left of the same, but with the left side having been removed in order to reveal the internal components.

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The electric generator in question substantially consists of an external box of painted plate, quadrangular in shape, comprising a tank (1) positioned in the lower part, and a panel (2) with vented sides, located above the aforesaid tank (1).

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The tank (1) houses both an electric element (3) for heating the water inside, and a temperature sensor (4) with relative capillary.

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These two elements are connected, respectively, by a switch (5) and a thermostat for the regulation of the temperature, both found on the panel (2).

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Considering the hydraulic aspect of the electric generator, it should be noted that on the lower part of the tank (1) sides can be found two lateral and opposed holes, one of which is closed by means of a cap (7) whilst a nipple (8) is attached to the other; a rigid tube (9), provided in the panel (2), is inserted into the upper cover of the tank (1).

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Said tube (9), in turn, is connected at its top end to a flexible tube (10), fitted with a nipple (11) at its upper extremity, and projecting from the aforementioned panel (2).

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At this point it will be understood how the instant invention makes the circulation of water from one nipple to the other possible; via the flexible tube, the rigid tube and the tank where the water is heated.

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The device is completed by a safety valve (12) provided between the rigid tube (9) and the flexible one (10), and by a panel (13) to be fitted on top of the panel (2) in order to cover the flexible tube (10) which extends from it thus giving an aesthetic finish to the device.

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Should it/necessary to connect the herein described electric generator to the side of a radiator which does not correspond with the positioning of the nipples, simply invert the cap (7) and the nipple (8) provided on the tank (1), then rotate the flexible tube (10) through 180° and consequently the nipple (11) located at its top end.

No awkward manoeuvres are necessary when fitting the box onto one of the two sides of the radiator: in fact, it is sufficient, once the radiator caps have been unscrewed and the relative holder and valve closed, to place the box against the radiator and connect by adjusting the lower and upper nipples with a spanner.

The device may be fitted to radiators with different sized inlets by simply using nipples of the corresponding size.

To thermically insulate the radiator from the rest of the system merely close the upper valve; the lower one, left open, assures the expansion of the water.

However, the presence of the pressure control valve ensures the expansion of the water even when both the valves are closed.

The electric switch is connected to the socket by means of a three-core cable, the third cable being for the earthing of the box.

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Claims

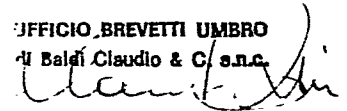
1) Electric heating generator for already installed radiators characterized by a plate box, fitted externally, comprising, from top to bottom, a tank closed on its side by a cap, a panel with vented sides ~~and a panel with vented sides~~ and a panel for purely aesthetic purposes.

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The tank houses an electric element and a temperature sensor connected respectively by a switch and a thermostat for the regulation of the water temperature, both found in the middle panel.

10 Said tank is hydraulically connected to the radiator on its lower part by means of a nipple fitted to one of its sides and above by a nipple, a flexible tube to which this nipple is coupled and a rigid tube a safety valve located between the flexible tube and the rigid one.

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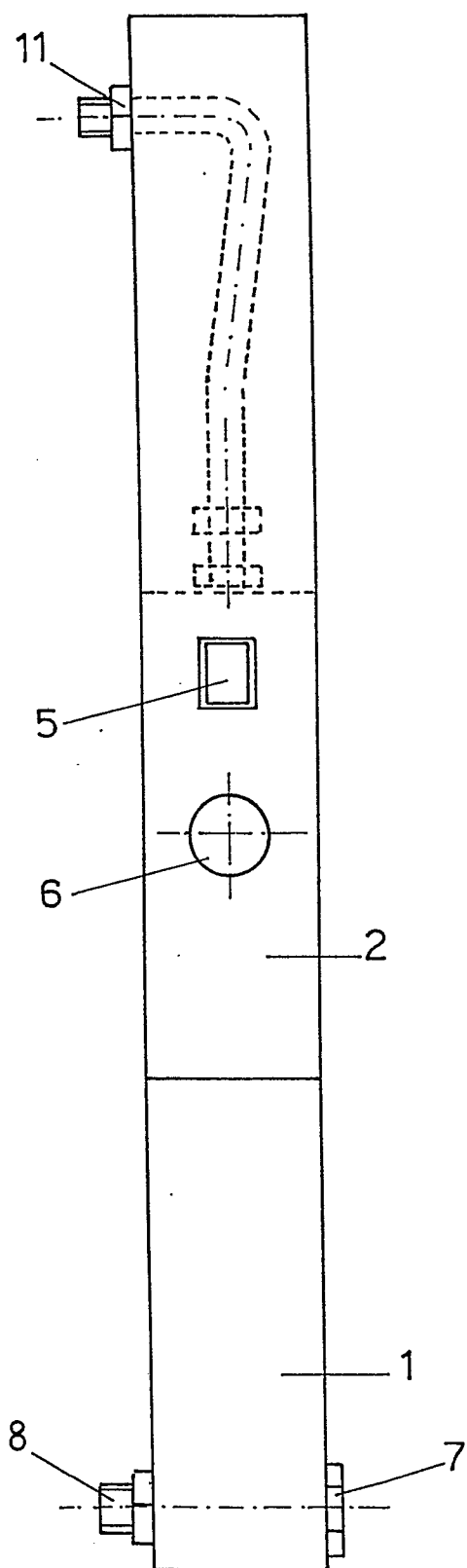


FIG.1

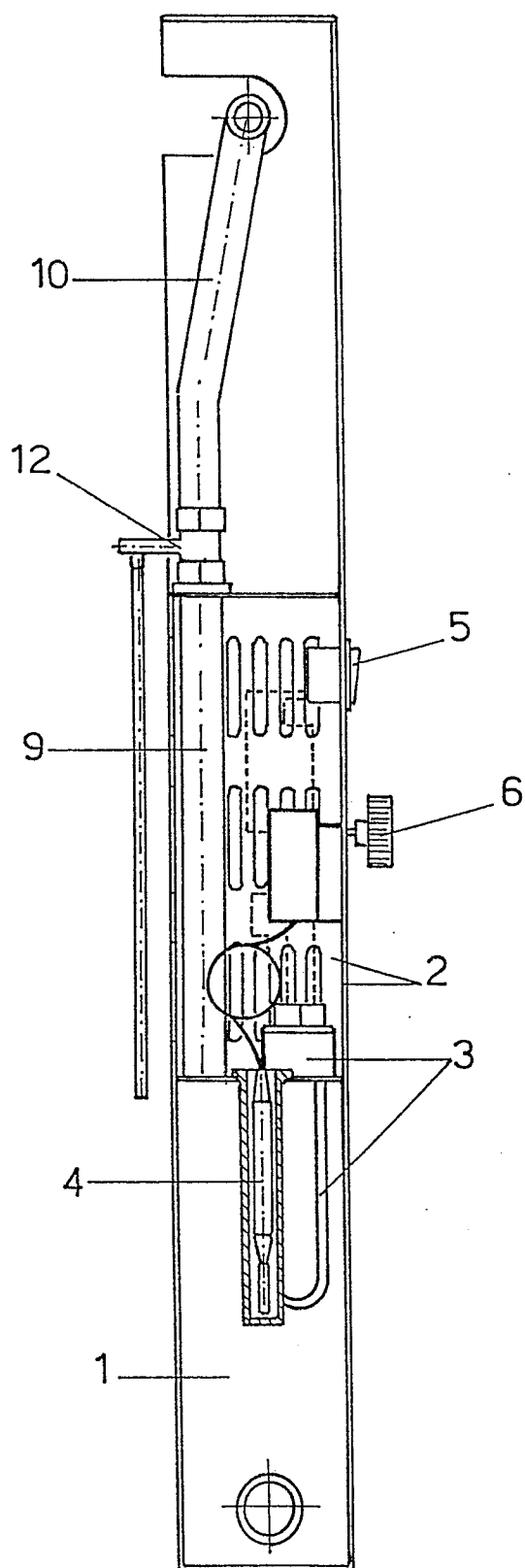


FIG.2



European Patent
Office

EUROPEAN SEARCH REPORT

0111460

Application number

EP 83 83 0252

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 3)
A	CH-A- 83 820 (BBC) * Whole document *	1	F 24 D 13/04
A	FR-A-2 351 361 (BRAPAL) * Claims 1,9 *	1	
			TECHNICAL FIELDS SEARCHED (Int. Cl. 3)
			F 24 D F 24 H
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 14-03-1984	Examiner VAN GESTEL H.M.
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			
T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			