



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
10.12.2008 Bulletin 2008/50

(51) Int Cl.:
F24H 3/00 (2006.01) F24H 9/20 (2006.01)

(21) Application number: **08380172.0**

(22) Date of filing: **06.06.2008**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR
Designated Extension States:
AL BA MK RS

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(30) Priority: **08.06.2007 ES 200701239 U**

(54) **Modular electric radiator**

(57) The present invention relates to a modular electric radiator comprising at least heating means [1] and a plurality of curved -profile diffuser modules [3], as well as a plurality of attachment bars which attach by their

upper and lower parts the different diffuser modules [3] in a tongue and groove manner, through the actual attachment means [6], and said bars being threaded in at least their ends and fixed at said ends by closing nuts [62].

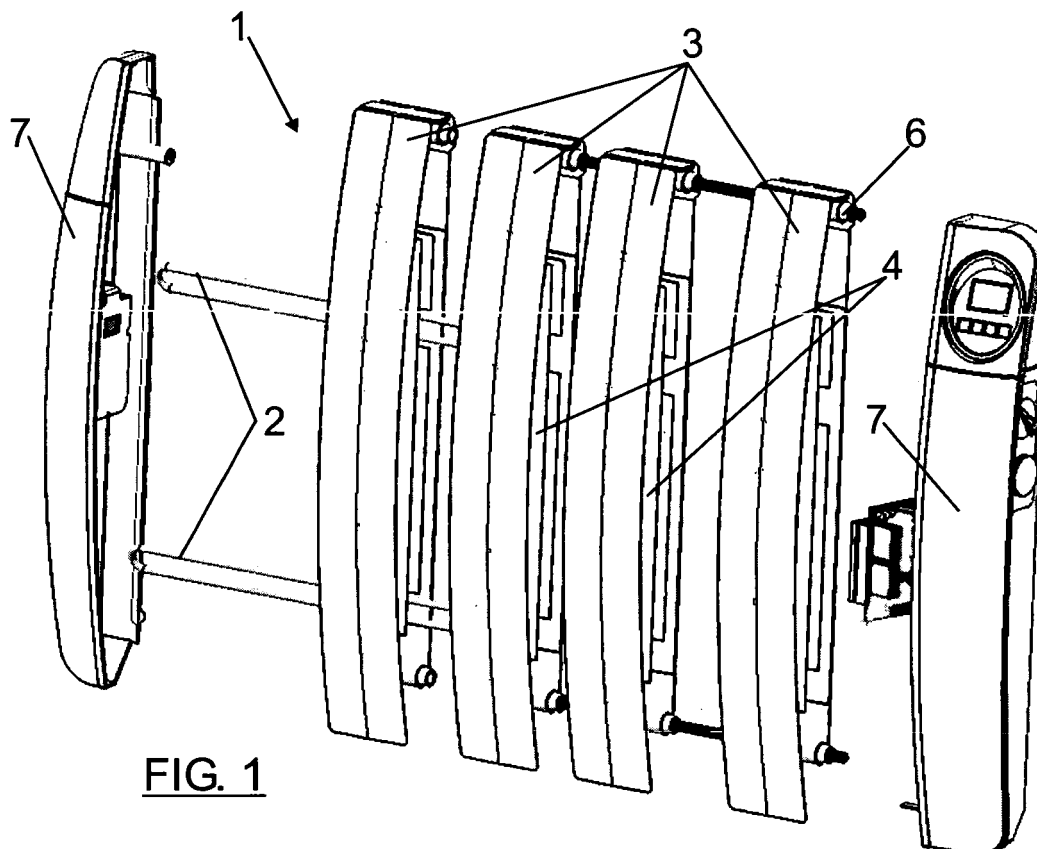


FIG. 1

DescriptionObject of the Invention

[0001] The object of the invention is to present a new electric type radiator formed based on a series of modules attached to one another housing a plurality of resistors transverse to the different modules.

Background of the Invention

[0002] Radiators of the type set forth, in which the body is formed by at least two horizontal conduits, an upper and a lower conduit, and a series of vertical conduits running between the horizontal conduits closed at their ends are already known. This body is completed with two series of outer diffuser flanges located at both sides of the horizontal and vertical conduit assembly in a coplanar position on each side. The assembly thus formed is closed on the sides by means of respective covers housing the control elements, such as the on-off switch, thermostats, etc.

[0003] It is also known that the assembly of the body is subdivided, according to planes perpendicular to the horizontal conduits, into identical independent modules, each of which modules includes horizontal conduit sections, a vertical conduit running between the horizontal conduit sections, into which it opens, and two vertical diffuser flanges running in coincidence with the vertical conduits attached thereto. The horizontal tube sections have an inner threading in a different direction after their end sections. Consecutive modules are attached by means of intermediate bushings which are externally arranged and after their end sections threaded in a different direction, coincident with the inner threading of the horizontal tube sections, such that upon rotating these intermediate bushings in the corresponding direction they are screwed at the same time in the opposing ends of the horizontal tube sections of two consecutive modules.

[0004] In these radiators the body formed from the horizontal and vertical conduits is filled with oil or a similar thermal fluid which is heated by means of resistors installed inside the same body. This configuration demands that the closing of the ends of the horizontal conduits be airtight for the purpose of preventing leaks of the thermal fluid. In addition the weight of these radiators is relatively high since the horizontal and vertical conduit assembly is filled with oil or another similar thermal fluid. Finally it must be pointed out that the fact that the radiator is filled with oil implies an increase in the cost of the radiator.

Description of the Invention

[0005] In order to alleviate the problems mentioned above, the modular electric radiator object of the invention is presented, comprising at least:

heating means comprising at least,

a plurality of thermal metal resistors,

a plurality of curved profile diffuser modules in turn comprising,

a plurality of inner flanges,
attachment means between diffuser modules

and in which the diffuser modules are comprised between two temperature control and supply modules of the heating means, preferably located on the left and right of the assembly of the plurality of modules.

[0006] As a result of this configuration, the resistors installed in the horizontal conduits of the radiator, and where applicable the additional resistors, will heat the air contained therein, there being a possibility that at least part of this air penetrates or exits through the lower outlets. The hot air contained in the radiator will directly heat the walls of the different conduits through these diffuser flanges.

[0007] The arrangement of the resistors and the heating of the air contained in the radiator allows the temperature thereof to be uniform, and the air contained to be completely dry, by the heating thereof. As has been indicated, the radiator lacks oil or another similar heating fluid, therefore its weight will be reduced and the manufacture more economical.

[0008] The connections between the different modules likewise enable an efficient and quick assembly of the radiator, resulting in a modular capacity that is evidently superior with regard to the known state of the art.

Brief Description of the Drawings

[0009] A series of drawings which aid in better understanding the invention will be very briefly described below and are specifically related to an embodiment of said invention, presented as non-limiting example thereof.

Figure 1 shows an exploded view of the modular electric radiator, object of the invention.

Figure 2 is a view of one of the diffuser modules.

Figure 3 is a view of the control module.

Figure 4 is a view of a detail of the attachment means.

Preferred Embodiment of the Invention

[0010] As can be seen in the attached figures, the modular electric radiator, object of the invention, comprises at least:

heating means [1] comprising at least,

a plurality of thermal metal resistors [2],

a plurality of curved profile diffuser modules [3] in

turn comprising,

a plurality of inner flanges [4],
attachment means [6],

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a plurality of bars, which attach by their upper and lower parts the different diffuser modules [3] through the actual attachment means [6], and said bars being furthermore fixed at their ends by closing nuts [62].

and in which the diffuser modules [3] are comprised between two temperature control and supply modules [7] of the heating means [1], preferably located on the left and right of the assembly of the plurality of diffuser modules [3].

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[0011] The temperature control and supply modules [7] further have a temperature control interface.

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[0012] The diffuser modules [3] are thus perfectly attached to one another by the attachment means [6] and bars assembly.

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Claims

1. A modular electric radiator, **characterized in that** it comprises at least:

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heating means [1] comprising at least,

a plurality of thermal metal resistors [2],

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a plurality of curved profile diffuser modules [3] in turn comprising,

a plurality of inner flanges [4],
attachment means [6],

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and a plurality of attachment bars, which attach by their upper and lower parts the different diffuser modules [3] in a tongue and groove manner, through said attachment means [6], and said bars being threaded in at least their ends and fixed at said ends by closing nuts [62].

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2. The modular electric radiator according to claim 1, **characterized in that** the temperature control and supply modules [7] are located on the left and right of the assembly of the plurality of diffuser modules [3].

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3. The modular electric radiator according to claim 1, **characterized in that** the temperature control and supply modules [7] have a temperature control interface.

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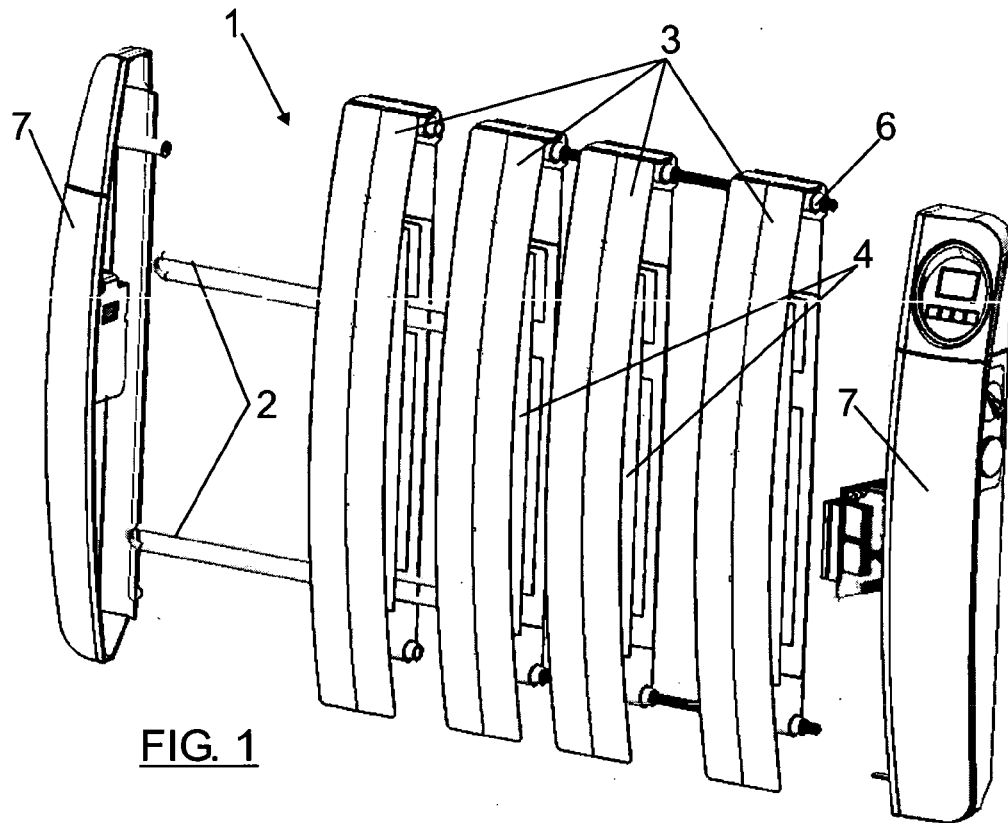


FIG. 1

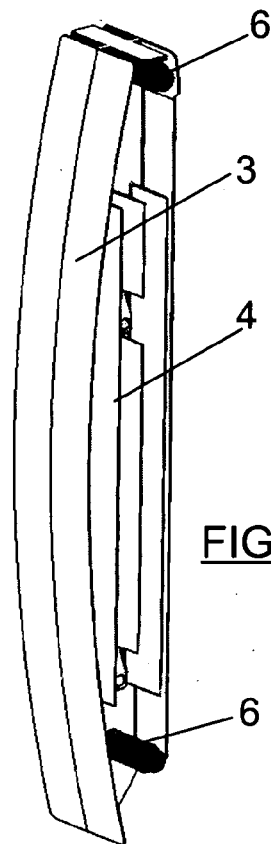


FIG. 2

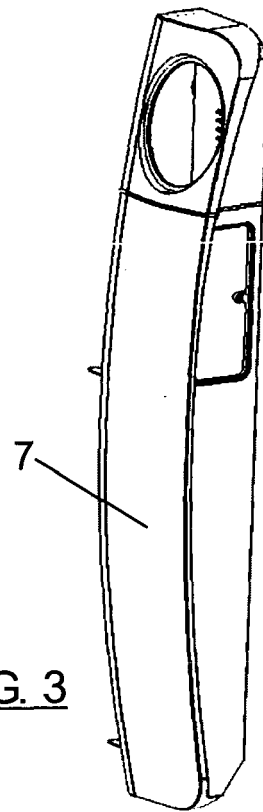


FIG. 3

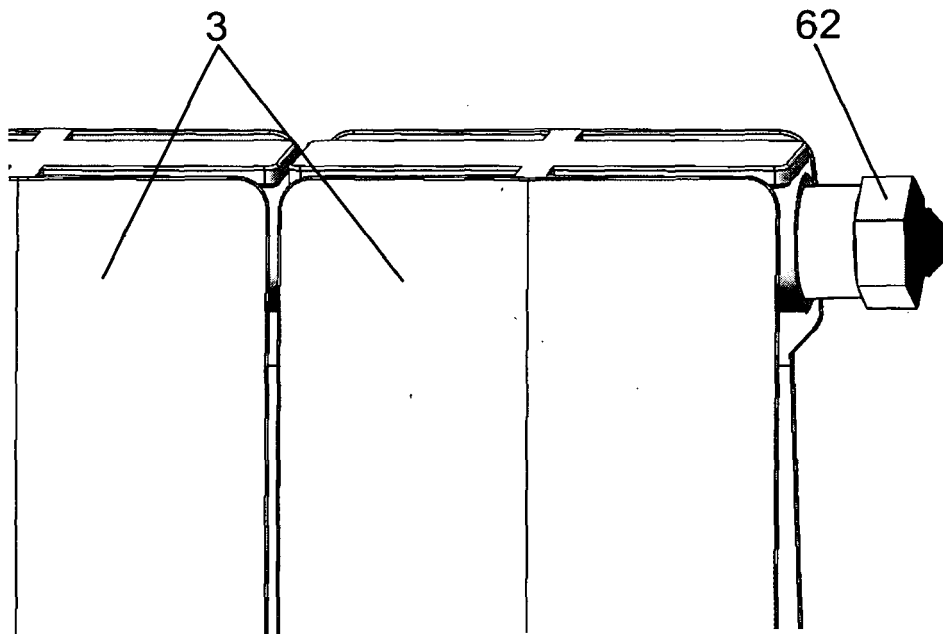


FIG. 4