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(54) **A die-cast aluminium modular radiant element**

(57) The present invention relates to a die-cast aluminium modular radiant element for thermosiphon heat-

ing systems, whose four hubs have an internal ending section with diameter higher than the threaded opening of the hub.

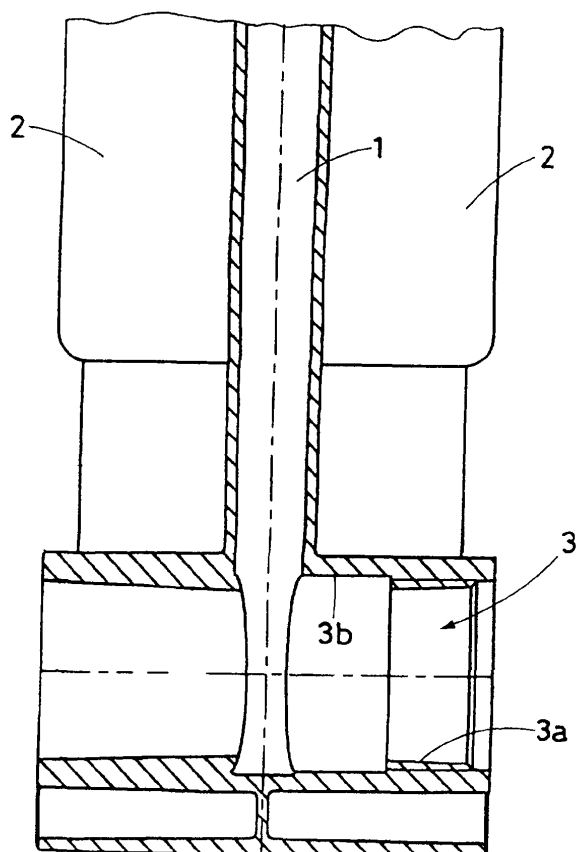


FIG. 1

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Description

[0001] The present patent application relates to a die-cast aluminium modular radiant element used in combination with identical elements to form the modular radiators that are generally used in thermosiphon heating systems.

[0002] As it is known, modular radiant elements consist in a tubular column externally provided with fins capable of favouring the thermal exchange between the hot water contained in the radiator and the air that touches the external surface of the radiator.

[0003] An opposed pair of threaded hubs is provided on the top and the bottom of each column. Connection nipples are screwed onto the hubs to join the adjacent pairs of radiant elements, as well as to provide communication between the columns of the radiator.

[0004] The purpose of the present invention is to reduce the production cost of the said die-cast aluminium modular radiant elements, by reducing the thickness of some parts of the die-cast piece in order to recover aluminium, melt it and reuse it as die-casting material.

[0005] Since the four hubs of each element need to be threaded, the same machine tool can be used to internally mill the hubs in order to remove and recover the largest quantity of aluminium possible, in compliance with mechanical resistance requirements.

[0006] During milling, the very internal section of the hub is enlarged to obtain a diameter higher than the external threaded opening. The enlargement of the internal ending section of the hub makes threading easier, since the tapping machine can penetrate the hub, ending in the enlarged section. The use of a special tool allows for milling and threading the hub in a sequence, when the tool moves backwards to exit the hub, after penetrating inside it.

[0007] Finally, another advantage of the hub enlargement is represented by the reduction of load losses.

[0008] For major clarity the description of the modular radiant element according to the present invention continues with reference to the enclosed drawings, which are intended for purposes of illustration and not in a limiting sense, whereby:

- Fig. 1 shows the ending section of the modular radiant element according to the invention, sectioned with a plane passing through the axis of the two opposed hubs, in which one hub is milled and threaded and the other hub is in die-cast state.

[0009] With reference to Fig. 1, the modular radiant element according to the invention traditionally comprises a tubular column (1) externally provided with fins (2) capable of favouring the thermal exchange between the hot water contained in the radiator and the air that touches the external surface of the radiator.

[0010] An opposed pair of threaded hubs (3) is provided on the top and the bottom of the tubular column

(1). Connection nipples are screwed onto the hubs to join the columns of the radiator, as well as to provide communication between them.

[0011] The modular radiant element according to the invention is characterised in that the threaded opening (3a) of each hub (3) has an internal ending section (3b) with diameter higher than the threaded opening (3a).

[0012] The section (3b) with increased diameter is obtained by placing the die-cast piece in a machine tool to mill the internal section (3b) of the hub (3) and then thread the opening (3a).

Claims

1. A die-cast aluminium modular radiant element for thermosiphon heating systems, of the type comprising a tubular column (1) externally provided with fins (2) and with an opposed pair of threaded hubs (3) on the top and the bottom, characterised in that the threaded opening (3a) of each hub (3) has an internal ending section (3b) with diameter higher than the threaded opening (3a).

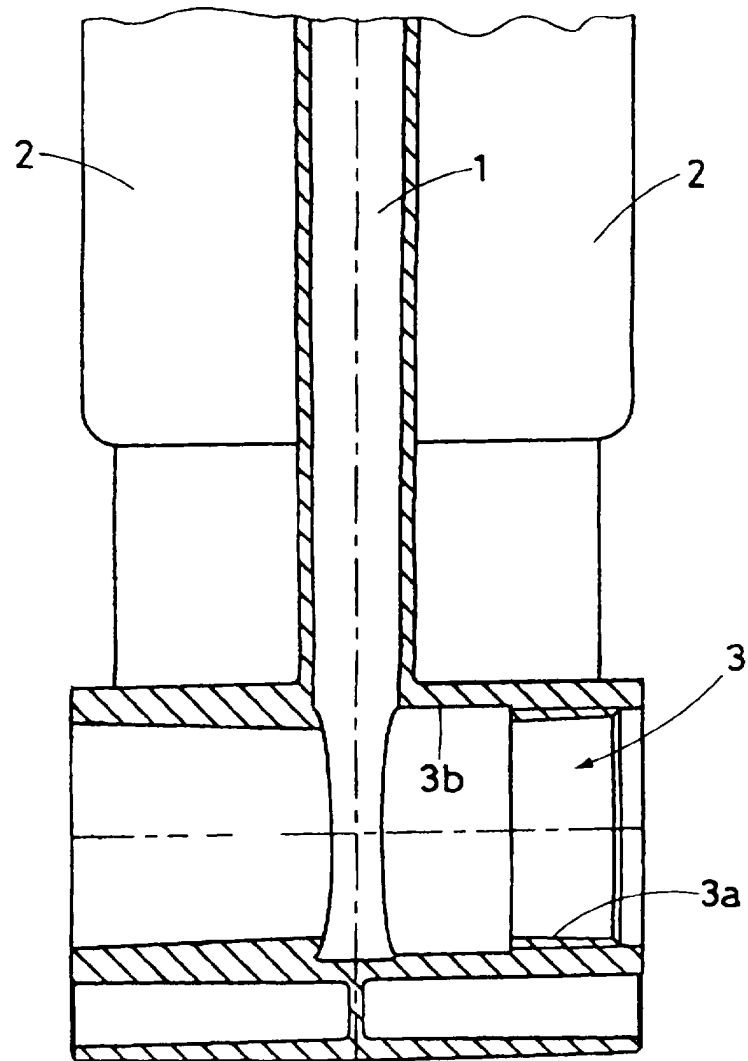


FIG. 1



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EUROPEAN SEARCH REPORT

Application Number
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			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			B23G B22D B23C F24D F28F
The present search report has been drawn up for all claims			
Place of search BERLIN		Date of completion of the search 16 October 2000	Examiner Kesten, W
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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 00 83 0464

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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