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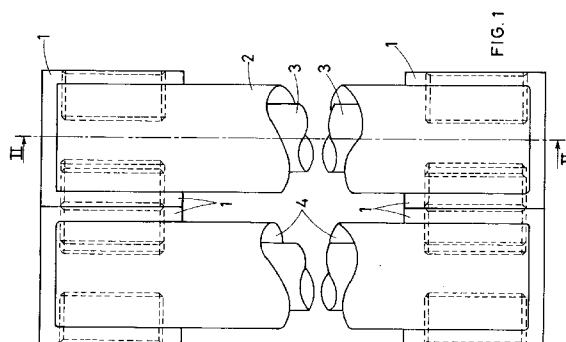
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(54) **Sectional radiator having a pair of concentric pipes.**

(57) This invention concerns a sectional radiator consisting of two tubes, one fitted inside the other, thereby forming an annular air space between the same sealed by two annular bottoms; said air space communicating by means of holes with two external manifolds fixed respectively at the top and the bottom of the exterior tube and consisting of a coupling having a horizontal axis threaded internally.



This invention concerns a sectional radiator having a pair of concentric tubes and utilizing the internal and external walls of the annular air space between the pair of concentric tubes as the radiating surface: two couplings being fixed laterally at the bottom and at the top of the external tube characterized in that the internal pipe of the couplings communicates with the above air space by means of a hole on the wall of the couplings and by means of a corresponding hole on the wall of the external tube of the above pair of concentric tubes. Each coupling being threaded internally in order to allow connection by means of standard nipples to the coupling of the adjacent module making it possible to construct a radiator in any size required.

Existing steel sectional radiators consist of identical tubular elements welded together having hot water circulating in each tubular element.

In the case of this type of conventional radiator the quantity of heat exchanged is limited in that as the surface area of exchange increases, for example by increasing the diameter and the number of the tubes, so will the volume of water in the same increase thereby increasing the heat inertia of the radiator and consequently the consumption of power.

The high volume of water makes it impossible to utilize these radiators in low temperature systems using alternative forms of power generation.

The purpose of this invention is to resolve the above mentioned problems.

The radiator as per the claim, consists of a sectional radiator having concentric tubes characterized by a large surface area of heat exchange and a low volume of water.

The model according to the invention consists of two radiating tubes, one fitted inside the other and connected to the manifolds so that the heating water flows into the air space; the air strikes the external wall of the large diameter tube and the internal wall of the small diameter tube.

The manifolds are fixed to the radiating tubes and join, by means of threaded nipples, each radiator element to the adjacent element thereby making it possible to construct sectional radiators of any capacity.

Compared with a conventional radiator of the same size, the radiator according to the invention contains 47% less water and increases the surface area of heat exchange by 54%.

For major clarity, the description continues with reference to the enclosed drawings which are intended for purposes of illustration and not in a limiting sense whereby:

- figure 1 illustrates two modules of the radiator according to the invention joined by means of threaded nipples;
- figure 2 is a cross-section of figure 1 with plane II-II.

With reference to the above figures it is evident

that the sectional radiator according to the invention can be connected with other identical radiators by means of standard nipples which not only fix the adjacent modules but also provides communication between the radiating modules making up the radiator as a whole.

Each radiating module consists of a pair of manifolds (1) each having a coupling with a horizontal axis threaded internally so as to allow connection by means of standard nipples to the manifold of the adjacent radiator module.

Each radiating module in addition consists of a concentric pair of tubes, an external tube (2) and an internal tube (3) forming an annular air space (4) being sealed both at the top and at the bottom by means of two annular bottoms (4a).

The top and the bottom of the external tube (2) having two holes (2a) providing intercommunication between the air space (4) and the manifolds (1), in turn characterized by a hole (1a) in proximity of the two holes (2a); one of the manifolds being designed for the hot water flowing from the boiler and the other being designed for the cold water returning to the boiler.

The surface area of water-air heat exchange consists therefore of the lateral surface of the tubes (2 and 3) in that the air not only strikes the external tube (2) but also enters the internal tube (3).

Claims

1) A sectional radiator having two concentric tubes, consisting of two tubes (2 and 3), one fitted inside the other, thereby forming an annular air space (4) between the same sealed by two annular bottoms (4a); said air space (4) communicating by means of holes (1a and 2a) with two external manifolds (1) fixed respectively at the top and at the bottom of the external tube (2) and consisting of a coupling having a horizontal axis threaded internally.

