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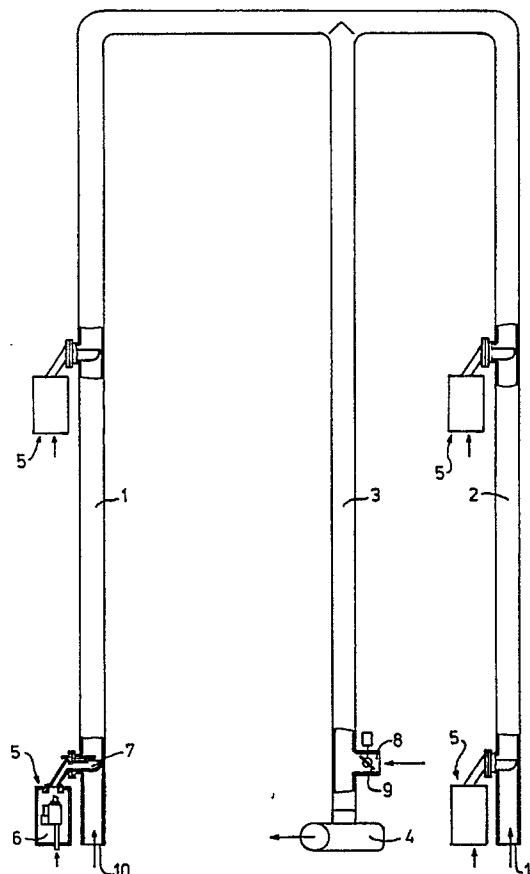
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54 **Infrared heating system.**

57 An infrared heating system comprising at least one heating pipe (1, 2) and a number of burner units (5) distributed over the length of said pipe for heating the pipe in such a way that it emits infrared radiation from its surface. The heating pipe at one end is provided with one or more air supply apertures and at the other end connected to a suction pump (4). For setting the heat capacity of the system, control means, having a throttle valve (9), are present. In order to place the control means outside the influence of the hot gases, while a good regulation of the heat capacity still can be achieved by means of the throttle valve, this valve is fitted in a branch (8) of the heating pipe (1, 2) or connecting pipe (3) to the suction pump (4), which branch is placed downstream of the burners (5) and is in communication with the environment.



## Infrared heating system

The invention relates to an infrared heating system, comprising at least one heating pipe and a number of burner units distributed over the length of said pipe for heating the pipe in such a way that it emits infrared radiation from its surface, said heating pipe at one end being provided with one or more air supply apertures, and at the other end being connected to a suction pump, while control means are present for setting the heat capacity of the system, said control means having a throttle valve.

Such a system is known from EP-B-0070360 and is used for heating, inter alia, shops, offices, warehouses and factories.

The above-mentioned control means make it possible not only to adjust the heat capacity of the system, but also to maintain the desired heat capacity by means of a simple setting if gaseous fuel with a different Wobbe index is used.

In the known system the above-mentioned throttle valve is placed in the heating pipe and is consequently subjected to the corrosive action of hot gases. This can lead to rapid wear and/or jamming of the throttle valve.

The object of the invention is to avoid this disadvantage, in other words, to place the control means outside the influence of the hot gases, while a good regulation of the heat capacity can still be achieved by means of the throttle valve.

According to the invention, the above-mentioned throttle valve is to this end fitted in a branch of the heating pipe or connecting pipe to the suction pump which (branch) is placed downstream of the burners and is in communication with the environment.

The throttle valve placed in the branch regulates the quantity of entrained air which may enter the heating system and, at a particular suction capacity of the suction pump, consequently the value of the partial vacuum in the system. This partial vacuum determines the heat capacity.

The invention will now be explained in greater detail with reference to the figure, in which an example of an embodiment of the heating system according to the invention is shown schematically.

The infrared heating system shown comprises two heating pipes 1, 2 which are connected to a common connecting pipe 3. A suction pump 4 is connected at the free end of the connecting pipe 3.

Each of the heating pipes 1, 2 is provided with a number of burner units 5 placed in series and having a control box 6 for regulating the amount of combustible gas and combustion air to the burner 7. Such burner units are described in the above-mentioned EP-B-0070360 and in EP-A-0034264.

These units consequently require no further explanation.

A plate 10 with at least one air supply aperture (so-called vent plate) is fitted at the free end of each heating pipe 1, 2.

A partial vacuum is created in the heating system by means of the suction pump 4, in which case additional air is sucked into the system through the aperture in the plates 10 and the mixture of combustion gases is discharged by means of the suction pump 4. The aperture in the plates 10 has a fixed cross-section.

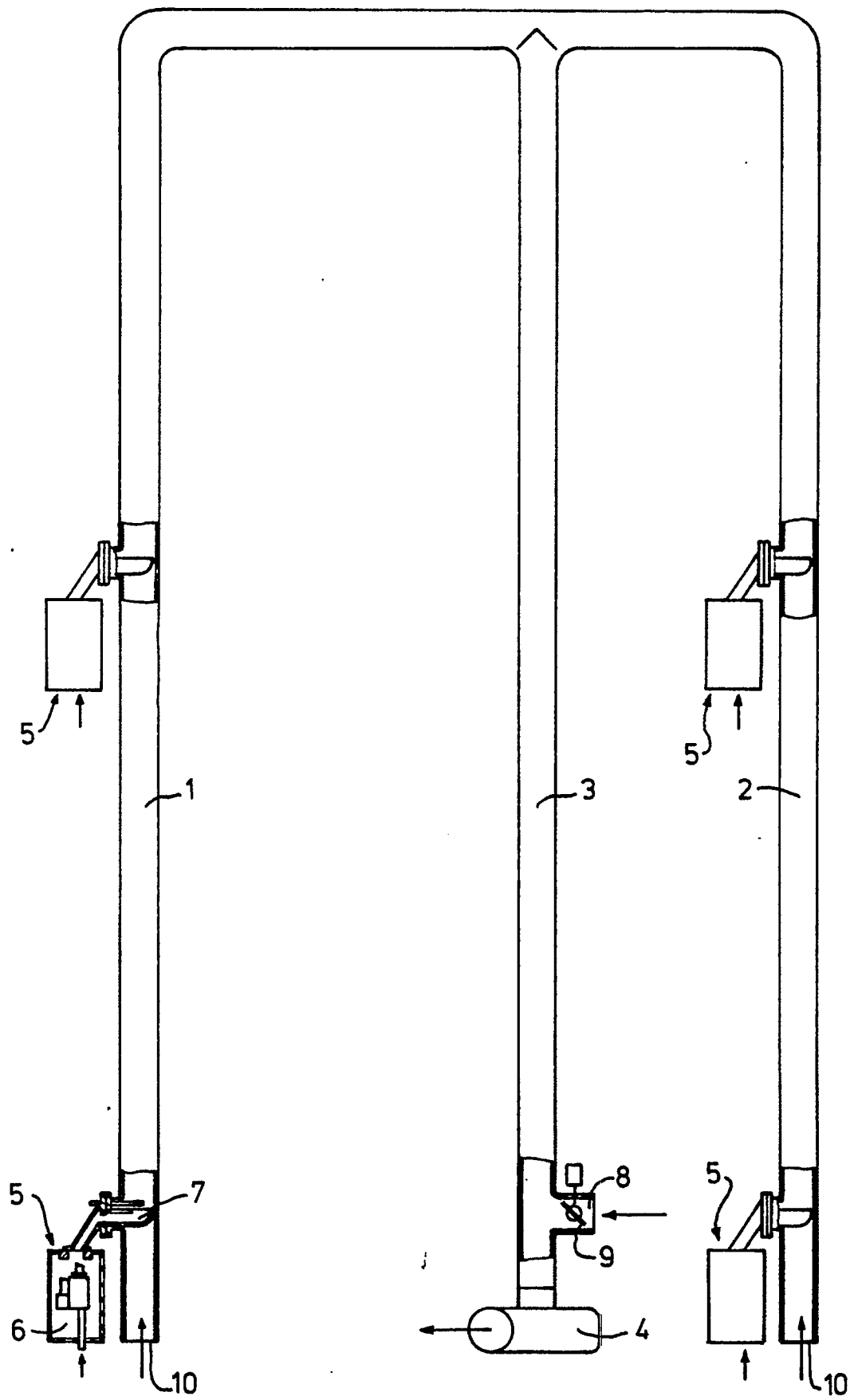
The partial vacuum in the system determines the heat capacity. In order to permit rapid and easy setting thereof, the connecting pipe 3 is provided with a branch 8 which is in communication with the environment, and in which a throttle valve 9 is placed. The quantity of entrained air which can flow into the system through the branch 8 is regulated by the setting of the throttle valve 9. This setting can be altered by means of a motor 9 (or other setting device).

The quantity of entrained air drawn in through the branch at a certain suction capacity of the pump 4 determines the level of the partial vacuum in the pipes 1, 2 and 3, and thus the heat capacity of the system.

The important factor is that the throttle valve 9 is not exposed to the corrosive action of the hot combustion gases during operation, but is situated in the cool air flowing in through the branch 8. No throttle valves are placed in the pipes 1, 2 and 3.

## Claims

1. Infrared heating system, comprising at least one heating pipe and a number of burner units distributed over the length of said pipe for heating the pipe in such a way that it emits infrared radiation from its surface, said heating pipe at one end being provided with one or more air supply apertures, and at the other end being connected to a suction pump, while control means are present for setting the heat capacity of the system, said control means having a throttle valve, characterized in that the above-mentioned throttle valve (9) is fitted in a branch (8) of the heating pipe (1, 2) or connecting pipe (3) to the suction pump (4) which branch is placed downstream of the burners (5) and is in communication with the environment.





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.5)
A,D	EP-A-0 070 360 (PHOENIX BURNERS LTD) * Abstract * -----	1	F 24 D 5/08
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			F 24 D
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 04-07-1990	Examiner VAN GESTEL H.M.
<b>CATEGORY OF CITED DOCUMENTS</b> 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			