(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 146 506**
A2

(12) EUROPEAN PATENT APPLICATION

(21) Application number: **84830245.1**

(22) Date of filing: **05.09.84**

(51) Int. Cl.⁴: **F 24 D 5/02**

(30) Priority: **28.11.83 IT 4422083**

(43) Date of publication of application: **26.06.85**
Bulletin 85/26

(84) Designated Contracting States: **AT BE CH DE FR GB LI NL SE**

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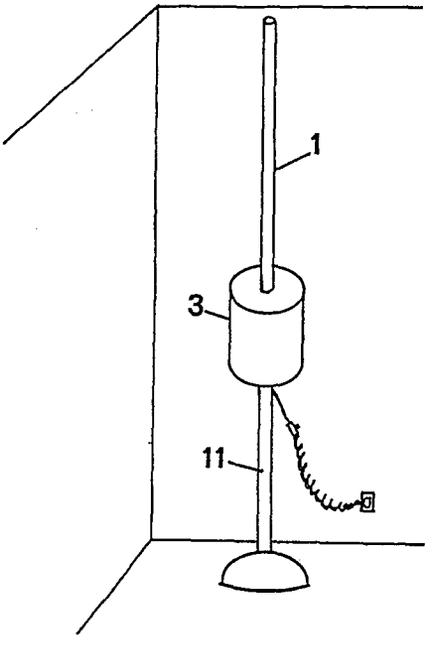
(54) A device for the heating of ambients and/or production of heat, for the exploitation of the radiant energy of filament lamps.

(57) A device for heating the ambient air or, by means of heat exchangers, increase the temperature of fluids and solids for home and industrial use, consisting in housing 3 for filament lamps 4 being insulated and transparent, in which the fan or aspirator 2 determins the forced circulation of the air, taken by means of hollow tube 1 nearby the ceiling of the ambients, around said lamps 4, with thermal exchange and consequent increase of the temperature and final emission of the heated fluid into the ambient. The same heat source, consisting in filament lamps, provides at the same time for the lighting with considerable energetic savings.



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"A device for the heating of ambients and/or production of heat, for the exploitation of the radiant energy of filament lamps"

Giuseppe MASCIARELLI

The present invention concerns a device for the heating of the air, the water and/or the production of steam and/or the thermal bunching in fluid or solid bodies, for the exploitation of the radiant energy of filament lamps, comprising a hollow structure for the forced air circulation, said air being taken from the ceilings of the ambients, led downwards for absorbing the heat produced by the one or more lamps and then downwardly let out with emission into the ambient.

It is already well known that the heating systems according to the art all show an energetic absorption for the functioning thereof and, until now, said systems proved to be rather different from the light producing systems which in turn request an energetic expense.

It is also well known that hot-water heating plants, combustion and electric stoves and similar determine an uneven heating of the ambients, due to the convector flow of the warm air that rises upwardly, whereby the warm air will be found near the ceilings and the cooler air near the floor, where people is living and working.

It is the aim of the present invention to realize a considerable energy saving in the heating of living and working

ambients, maintaining a nearly constant temperature throughout the whole ambient air volume.

The present invention, as it is characterized in the attached claims, solves the problem pf realizing a device for heating up ambients and/or the production of heat for the exploitation of teh radiant energy of the filament lamps.

By using such a device, the following results may be obtained: the heating and contemporary lighting of any room by means of only one energetic source; the regeneration of the heat by means of any fluid and solid body; the heating of water for sanitary use; the production of steam and heat for any home or industrial use.

The present invention will be hereinbelow described more in detail relating to the attached drawing which shows a preferred embodiment thereof.

Figure 1 shows a perspective view of a device according to the present invention, wherein the filament lamps have the double function of lighting and heating up the ambient.

Figure 2 shows a vertical section of the lamps' housing and of the tube for the forced air circulation.

The figures show a device for the heating of the ambients and the contemporary lighting thereof, mainly consisting in a vertical hollow tube 1, the upper end thereof nearly touching the ceiling, so that the aspirator or electric fan 2, placed inside housing 3 and particularly in the upper or

lower part thereof, makes the air circulate around lamps 4, housed in central part 5 and preferably out of glass or other transparent, heat refractory material, for being let in the ambient through the lower openings after the heat exchange.

Said housing 3 shows the feature of allowing the outlet of the visible components of the radiation of lamps 4 and at the same time, being closed and insulated, it prevents the diffusion of the infra-red components that heat up the air contained in part 5.

According to the present invention, inside said housing 3 a thermic bearing may be realized which, according to the variant of figure 2, consists in a plurality of concentrical cylindrical structures 6, being transparent and perforated and forming circular crowns 7, which will be filled and insulated with glass wool and/or pieces of glass material or similar, being provided with an end perforated plate 8, further insulated with more glass wool 9 and inclined so as to favour the outlet of the heated air through tube 11 that reached the floor.

In other embodiments the device according to the present invention shows a tray 10, containing water for the humidification of the air or, eventually, a solution containing perfums or deodorizers.

Lamps 4 may all be transparent for the lighting besides the heating, or one or more may be blackened for allowing an e-

ventual heating of the rooms also at night, or when it should be desired, without any light emission.

For what concerns the functioning, an operating exchanger of the known kind is provided in said device, determining the ligting of lamps 4 with light emission and gradual heating of the thermal bearing, and further the aspirator or fan 2 starts which forces the air to pass through said bearing, where said air is heated and let out from the lower part or from any other opening. In the operating exchanger an automatic security switch is further provided which, in case of damage of fan 2, causes the extinction of lamps 4 so as to prevent the same from burning in case of increase of temperature in part 5, now not ventilated.

In the embodiment provided for the heating of water or production of heat, a coil is provided around part 5 for the heat exchange. In another embodiment, the complete thermic bearing may have the form of a bulb and be immersed - being well sealed - into the water to be heated up.

Furthermore, it is evident that by means of the heat exchange, also the heating of solid bodies for different uses may be realized.

It is evident that the heat, in many possible variants, may be reclaimed from the lower as well as from the upper part of the device, or laterally or, at the same time, from different parts, and a plurality of thermic bearings and fans or aspira-

tors may be arranged in series or in parallel for realizing a multiple increased power device.

The present invention will be preferably realized like a lamp-stand, but may also work like a chandelier, on the ceiling, or like an abat-jour, applied to a wall, or similar.

CLAIMS

1. A device for the heating of ambients and/or production of heat for the exploitation of the radiant energy of filament lamps comprising a structure (1) for the forced ventilation of the air taken nearby the ceilings of the ambients and led downwards for absorbing the heat produced by filament lamps, characterized in that fan (2) causes the forced air circulation in housing (3), being transparent and insulated, around lamps (4) realizing the heat exchange and tehrefore the outlet, from the lower part, of the heated air.

2. A device for the heating of ambients and/or production of heat for the exploitation of the radiant energy of filament lamps according to claim 1, characterized in that housing (3) comprises a plurality of concentrical cylindrical structures (6) being transparent and perforated, forming circular crowns (7) which will be filled up and insulated with glass wool and/or pieces of glass material or similar, provided with an end perforated plate (8) being further insulated with glass wool (9) and being inclined so as to favour the outlet of the heated up air through tube (11) that reaches the floor.

3. A device for the heating of ambients and/or production of heat for the exploitation of the radiant energy of filament lamps according to claim 1, characterized in that lamps (4) are all transparent, so as to emit visible and infra-red radiations for contemporarily lighting and heating.

4. A device for the heating of ambients and/or production of heat for the exploitation of the radiant energy of filament lamps according to claim 1, characterized in lamps (4) with blackened surface, for heating without visible lighting.

5. A device for the heating of ambients and/or production of heat for the exploitation of the radiant energy of filament lamps according to claim 1, characterized in tray (10) containing liquids for the humidification and/or perfuming of the heated air.

6. A device for the heating of ambients and/or production of heat for the exploitation of the radiant energy of filament lamps according to claim 1, characterized in that an automatic security switch determins, in case of damage of aspirator (2), the extinction of lamps (4).

7. A device for the heating of ambients and/or production of heat for the exploitation of the radiant energy of filament lamps according to claim 1, characterized in that the heat reclaimed from the air in part (5) may be exchanged with liquids or solids for the heating thereof.

8. A device for the heating of ambients and/or production of heat for the exploitation of the radiant energy of filament lamps according to claim 1, characterized in that a plurality of fans or aspirators (2) may be coupled, being placed in different positions.

9. A device for the heating of ambients and/or production of heat

for the exploitation of the radiant energy of filament lamps according to claim 1, characterized in that said device is a lampstand.

10. A device for the heating of ambients and/or production of heat for the exploitation of the radiant energy of filament almps according to claim 1, characterized in that said device may be applied to the ceiling like a chandelier or to the wall like an abat-jour.

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FIG.2

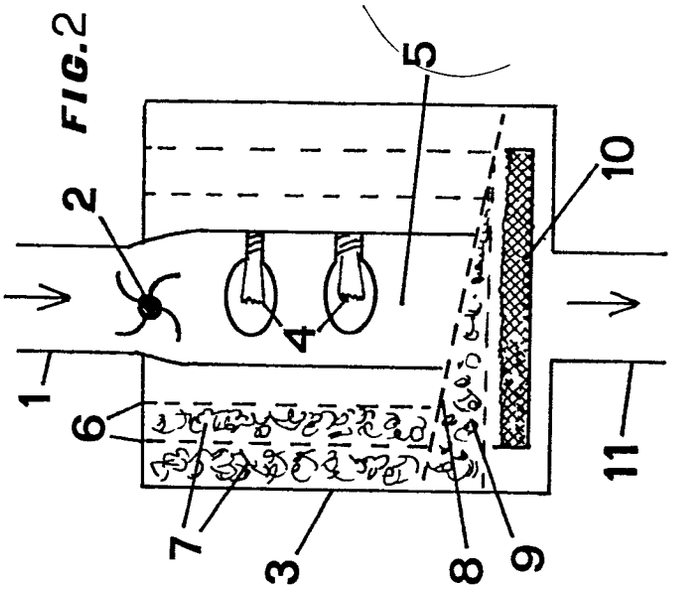

FIG.1