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AIR CONDITIONING APPARATUS

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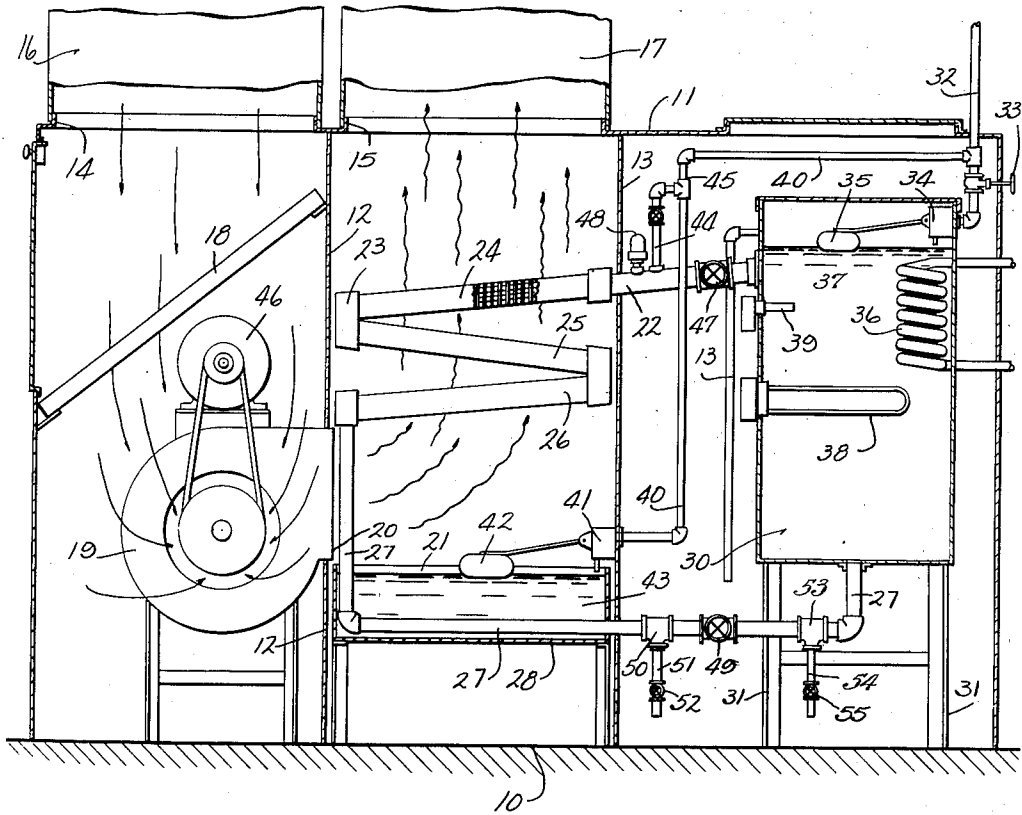


Fig. 1.

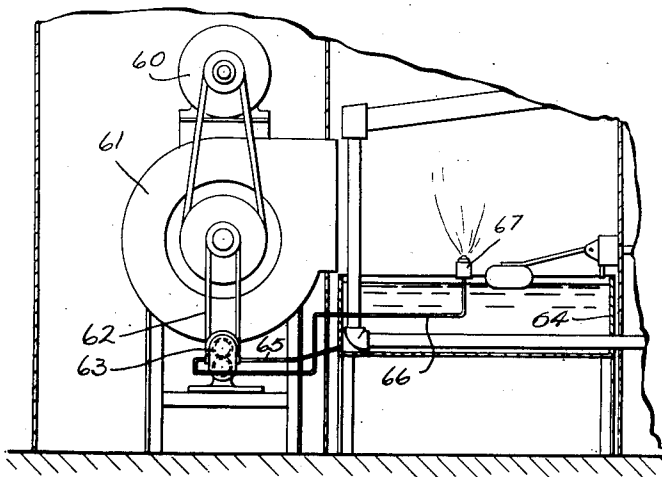


Fig. 2.

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AIR CONDITIONING APPARATUS

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2 Claims. (Cl. 219—39)

This invention relates to improvements in air conditioning apparatus, and more particularly to a novel air conditioning apparatus depending on an electrical source of heat.

An object of the invention is to provide a device of the type which will include a boiler having an immersion type electrical heater.

Another object is to provide a heating element of the type which will eliminate the necessity for cleaning and dismantling of the same at intervals, as is necessary in devices of the type now in use.

Other and further objects of the device will appear as the description proceeds, reference being had to the accompanying drawing, in which:

Fig. 1 is a side view partly in section and partly in elevation of an air conditioning apparatus embodying my invention.

Fig. 2 is a detail view partly in section and partly in elevation of a modified form of the invention, showing the pump and sprayer arrangement.

Referring more in detail to the drawing, the numeral 10 refers to the device generally, comprising a cabinet 11, having the vertical partitions 12 and 13, and the top apertures 14 and 15 communicating respectively with the ducts 16 and 17. Adjacent to interiorly of the aperture 14 is the filter element 18, through which the air is drawn into the inlet opening of the blower 19, which has its discharge opening 20 extending through the vertical partition 12 into the central compartment formed between the partitions 12 and 13.

A humidity pan 21 is disposed opposite the opening 20 in the central compartment. The upper part of the partition 13 admits an inlet pipe 22 into the central partition, connecting with the tri-segmental radiator 23, having the obliquely disposed cores 24, 25 and 26, the latter of which connecting with the angularly disposed outlet pipe 27, which, for the lower portion of its length, runs transversely of the bottom 28 of the humidity pan 21. The heat radiating from outlet pipe 27 is adapted to augment the evaporation of the water in humidity pan 21. The air on passing upwardly through the cores 24, 25 and 26, is expelled from the aperture 15 into the duct 17.

In the remaining compartment in cabinet 11, a hot water heating tank 30 is supported on the legs 31. An inlet pipe 32 enters near its top, and is provided with the manually operable shut-off valve 33. Interiorly of the tank 30, the inlet pipe 32 is provided with the automatic shut-off valve 34 operable by means of the float 35 to control the supply of cold water.

A service water heating coil 36 is housed within the tank, submerged in the water 37 which latter is heated by the immersion or other type electric heater 38, held in a wall of the tank 30. Also extending through the tank wall is a conven-

tional aquastat or thermostat 39, which controls the flow and stoppage of electrical current through the heater 38, according to the fall or rise of the temperature of the water 37.

Cold water inlet pipe 32 connects with a line 40, extending to the top of humidity pan 21, and having an automatic shut-off valve 41, operable by the float 42 on the surface of the water 43 in humidity pan 21. A short branch line 44 connects line 40 at 45 thereof with the radiator inlet pipe 22.

The source of power for the blower 19 is the electric motor 46. The inlet pipe 22 is provided with the gate valve 47 and the safety valve 48. A gate valve 49 is also disposed in the outlet pipe 27. On the high side of gate valve 49 is a T joint 50 provided with the discharge pipe 51 and the shut-off valve 52. On the low side of gate valve 49 in outlet pipe 27 is another T joint 53 having a discharge pipe 54 and the shut-off valve 55. Pipe 27 is connected from the low side of T joint 53 directly to the bottom of the tank 30.

In a modified form of the invention as shown in Fig. 2, a motor 60 furnishes a source of power for the blower 61, and through the secondary belt 62, for a water pump 63. A line runs from the humidity pan 64, represented by the numeral 65, to the pump 63, and a line 66 runs from the high side of the pump 63 to a spray nozzle 67. Action of the pump forces a continual fine spray into the air over the humidity pan.

It will be understood that the device is capable of many modifications in structure and design, without departing from the spirit of the invention within the scope of the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent of the United States is:

1. An air conditioning apparatus including a water heating tank, electrical means for heating the water in said tank, an aquastat immersed in said water for controlling said electrical means, a tri-segmental radiator connected with said tank, blower means for forcing air successively through the segments of said radiator, a humidity pan for evaporating water into the air adjacent said blower means, and a heating pipe submerged in the water in said humidity pan and connected with said water heating tank.

2. In a device of the character described including a water heating tank, a heating unit centrally of said tank relatively to the top and bottom thereof, a pipe circuit connecting said tank with a series of radiators, a water pan under said radiator assembly, the low side of said pipe circuit leading through said pan to heat the water therein, and means for forcing a current of air over the said pan and through the radiator assembly.

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