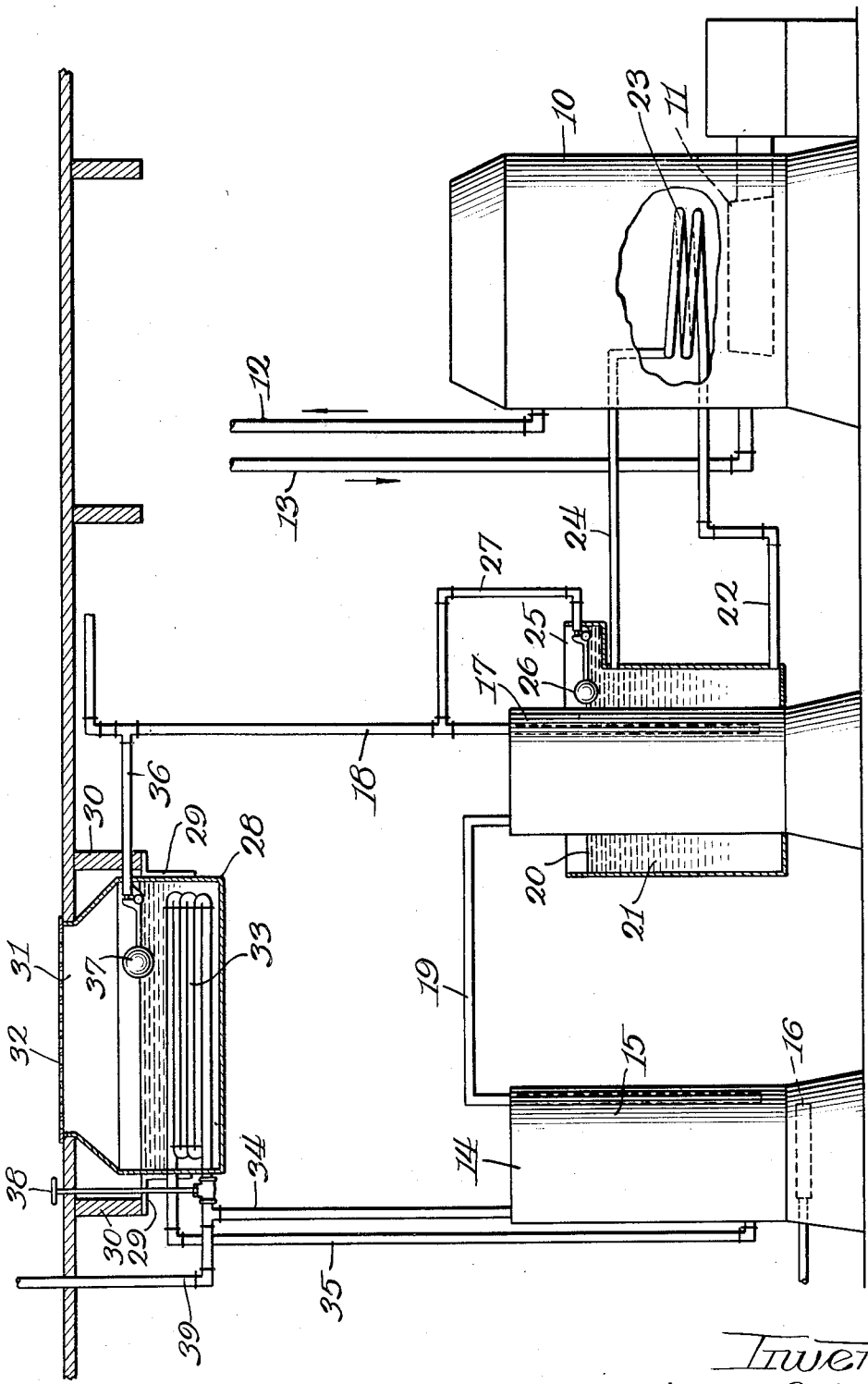
Oct. 24, 1933. A. S. COMSTOCK 1,931,719

HEATING SYSTEM

Filed April 21, 1930



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Patented Oct. 24, 1933 1,931,719

UNITED STATES PATENT OFFICE

1,931,719

HEATING SYSTEM

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Application April 21, 1930. Serial No. 445,855

5 Claims. (Cl. 126—344)

The conventional hot water heating plant for residences and similar buildings comprises a relatively large water tube boiler which serves to heat the house by means of a closed circulating system, and an automatic hot water heater for maintaining a constant supply of running hot water. Often, the lower portion of the smaller heater is tapped to receive a connection which is joined to a coil in the boiler, the water being circulated through the connection and the coil, and then returned to the top of the heater. This is a common construction and reduces the cost of operating the automatic heater.

This invention contemplates a somewhat similar arrangement, but combines with it a humidifier of sufficient size to deliver a proper amount of moisture to the house. An auxiliary humidifier is also provided to supplement the first one, and is provided with a valve, conveniently located, so that its functioning may be easily regulated.

Other and further objects and advantages will become apparent as the disclosure proceeds and the description is read in conjunction with the accompanying drawing which illustrates, somewhat diagrammatically, a heating system embodying one form of this invention.

The reference character 10 designates generally a water tube boiler, equipped with an automatic oil or gas burner 11, which is controlled in the usual manner by a thermostat located in one of the rooms. The top of the boiler is tapped by a hot water main 12 which carries the water to the rooms above, where it circulates through the radiators and then returns to the boiler through the return pipe 13.

A conventional automatic hot water heater is indicated at 14 and comprises a storage tank 15, equipped with a base burner 16 automatically controlled to keep the water in the tank within a certain range of temperatures.

The automatic heater draws its water from a tempering tank 17 connected to the cold water main 18. By such an arrangement, the operation of the hot water heater is made more economical, since the heat in the room raises the temperature of the water an appreciable amount before it is drawn into the heater. A pipe 19 runs from the top of the tempering tank to the bottom of the heater tank to make the connection.

Up to this point, the heating system which has been described is well known and is common in many heating installations. A more detailed description of these units is, therefore, deemed unnecessary.

Surrounding the tempering tank is an open cylindrical vat, 20, which forms an annular space 21 with the tempering tank. The bottom of the vat is provided with a pipe 22 which connects with a coil 23 in the combustion chamber of the boiler, the other end of which is connected to a return pipe 24 leading to the top of the vat.

In a pocket 25 at the top of the vat is a float valve 26 controlling the flow of water into the annular space from the arm 27 of the cold water main. The float is of standard construction and may be adjusted to maintain the water at the desired level.

When the burner 11 is started by the action of the thermostat switch upstairs, the coil 23 will be heated, causing the water in the vat to be circulated through the boiler and thereby heated. Since hot water vaporizes more quickly than cold, the vat will act as a large humidifier, delivering moisture to the air in sufficient quantities to properly humidify the house.

At the same time, the heated water in the humidifier will give up some of its heat to the tempering tank, and thus quickly raise the temperature of the water within the tank 17. This will effect a great saving in the cost of operating the hot water heater without adding to the cost of operating the main heating plant—the principle being analogous to the one referred to in the conventional hot water heater and boiler installation.

To supplement the action of the first humidifier, a second one may be provided, operated directly from the hot water heater. In this instance, the humidifier comprises an open pan 28 suspended by brackets 29 from the floor joists 30, and is positioned beneath an opening 31 cut in the floor and covered by a register 32. A coil 33 is placed in the pan and is connected at one end by the hot water flow pipe 34 and at the other by a return pipe 35. The pan is filled with water from an arm 36 of the cold water main and is kept at a constant level by a float valve 37. A screw valve 38 interposed between the coil 33 and the lead off 39 enables the rate of evaporation in the humidifier to be controlled. This control is very desirable for summer and winter adjustment.

It will be understood that this specific illustration and the corresponding specific description of one embodiment of this invention are for the purpose of disclosure only, various changes and modifications being possible without departing from the spirit of the invention.

What I claim is:

1. In a heating system, a boiler, an automatic

hot water heater, a tempering tank feeding the automatic heater, and a humidifier including an open vat around the tempering tank and a coil in the boiler in communication with the vat.

2. In a heating system, a boiler, an automatic hot water heater, a tempering tank feeding the heater, an open vat providing an annular space around the sides of the tank, water in the space, and means for heating the said water including a coil in the boiler.

3. In a heating system including a main heating unit, a hot water heater, and a tempering tank communicating with the hot water heater, the combination of a vat surrounding the tempering tank, means for supplying water to the space between the tank and the vat and maintaining it at a constant level, and means for heating the water including a closed circulating system through the main heating unit.

4. In a heating system including a main heating unit, a hot water heater and a tempering tank feeding the hot water heater, the combination of a cylindrical vat surrounding the tempering tank and supporting an open column of water, means for heating the column from the main heating unit, a humidifier having a coil connected to the hot water heater, and a valve for controlling the supply of hot water to said humidifier coil.

5. In a heating system including a main heating unit, a hot water heater, and a tempering tank interposed between the hot water heater and a source of water supply therefor, the combination of means for heating the tempering tank from the main heating unit, a humidifier having a coil connected to the hot water heater, and a valve for controlling the supply of hot water to said humidifier coil.

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