

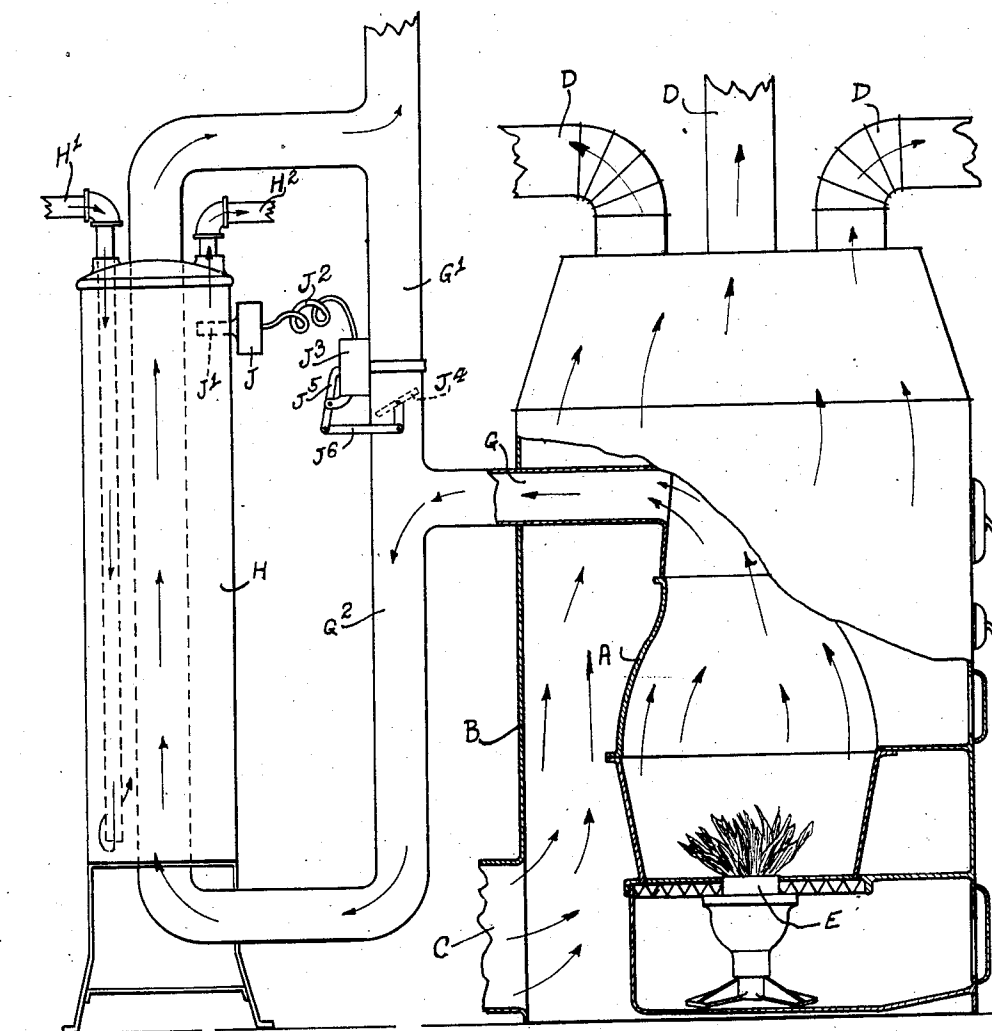
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THERMOSTATIC CONTROL FOR DOMESTIC AND HOT WATER HEATERS

Filed March 12, 1926



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THERMOSTATIC CONTROL FOR DOMESTIC AND HOT-WATER HEATERS.

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My invention relates to a thermostatic control for a hot water heater and particularly to thermostatic means for controlling and regulating the heat of a domestic hot water supply by the flue gases of a domestic furnace. One object is the provision of simple and effective means for employing the flue gases to heat a domestic hot water supply. Another purpose is the provision of means for controlling the passage of flue gases to limit or control the heat of the hot water supply tank. Other objects will appear from time to time in the course of the specification and claims.

I illustrate my invention more or less diagrammatically in the accompanying drawing which shows a side elevation of my installation with parts in skeleton outline and parts broken away and in section.

Like parts are indicated by like symbols throughout the specification and drawing.

A is any suitable furnace, herein shown in association with a hot air heating system.

B is any suitable hot air jacket or housing.

C is the cold air inlet or return and D, D, D are discharge outlets for conducting the heated air to the points of use.

E is any suitable heating means, herein diagrammatically shown as an oil burner, although it will be understood that my invention is applicable to a number of heating methods, such as oil, coal, gas, etc. G is the discharge pipe or flue extending from the top of the furnace A, the normal passage for the gases being upwardly along the pipe or chimney G¹. G² is a bypass herein shown as extending downwardly to the bottom of the vertically disposed hot water tank H and upwardly through the center thereof. H¹ is a cold water inlet to the tank H and H² a hot water outlet.

J is any suitable thermostatic member having a portion J¹ inwardly projecting into the tank H and adapted to receive and transmit the temperature of the water therein. J² is any suitable thermostatic member, for example a leaf or spiral formed of metals of diverse indices of expansion, which extends from the member J to the valve supporting member J³ secured about the flue or chimney G¹. J⁴ is any suitable valve positioned in the passage G¹, which may be operated in response to changes in length or location of the thermostatic member J², for ex-

ample through the lever J⁵ and the link J⁶ pivoted thereto.

It will be realized that, whereas I have shown a practical and operative device, many changes may be made in the size, shape, number, and disposition of parts, and that I do not wish to be limited specifically to the mechanisms described and shown.

The use and operation of my invention are as follows:

I provide a valve J⁴ which normally closes the flue G¹ and forces the flue gases to bypass through the passage G² and thus through the center of the tank H. The gases are thus utilized to heat the domestic water supply which circulates through the heat and storage tank H. When the water in the tank reaches a predetermined maximum the element J¹ transmits this temperature to the member J², which, in turn, in response to its increase in temperature, moves, and thereby moves the valve J⁴ and increases the opening of the passage G¹. The flue gases in increasing volume take their normal passage through G¹ instead of G², until a drop in the temperature of the tank H is reflected by a return of the valve J⁴ to partially or completely closed position. Obviously I may if I desire, employ elements having a graduated effect. In this wise the valve J⁴ may be entirely closed or entirely open or may occupy intermediate positions, the supply of flue gases being thus either entirely cut off or controlled from a minimum to a maximum.

I claim:

1. In association with a domestic heating plant, a domestic hot water supply tank, a chimney passage for said heating plant, a bypass therefrom adapted to heat said tank, and thermostatic means for regulating the passage of flue gases through said bypass in response to the temperature of the water in said tank.

2. In association with a domestic heating plant, a domestic hot water supply tank, a chimney passage for said heating plant, a bypass therefrom adapted to heat said tank, and thermostatic means for regulating the passage of flue gases through said bypass in response to the temperature of the water in said tank, comprising in part a valve in the flue passage, a thermostatic element associated with said tank and a connection

therebetween responsive to changes in the temperature of said thermostatic element.

3. In association with a domestic heating plant, a domestic hot water supply tank, a
5 chimney passage for said heating plant, a bypass therefrom adapted to heat said tank, and thermostatic means for regulating the passage of flue gases through said bypass
10 in response to the temperature of the water in said tank, comprising in part a valve in

the flue passage, a thermostatic element associated with said tank, and responsive to the temperature thereof, and an operative connection between the thermostatic element and the valve including a valve controlling
15 lever and a thermostatically actuated lever and a connection therebetween.

Signed at Chicago, county of Cook and State of Illinois, this 9th day of March, 1926.

JAMES L. BREESE, JR.