

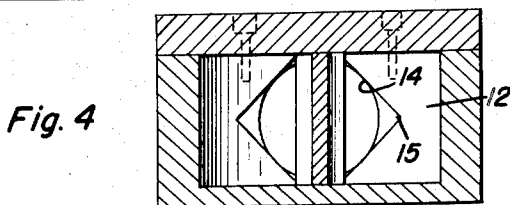
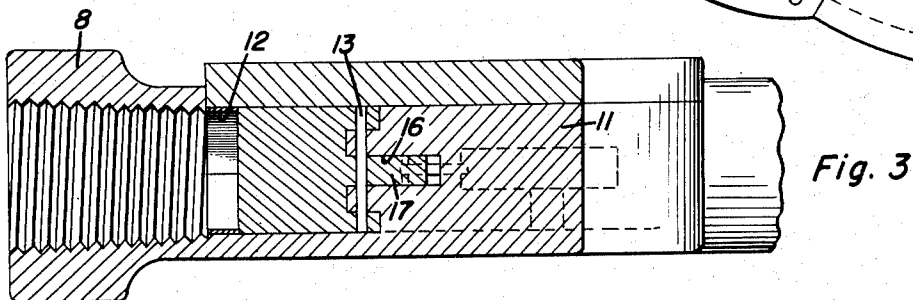
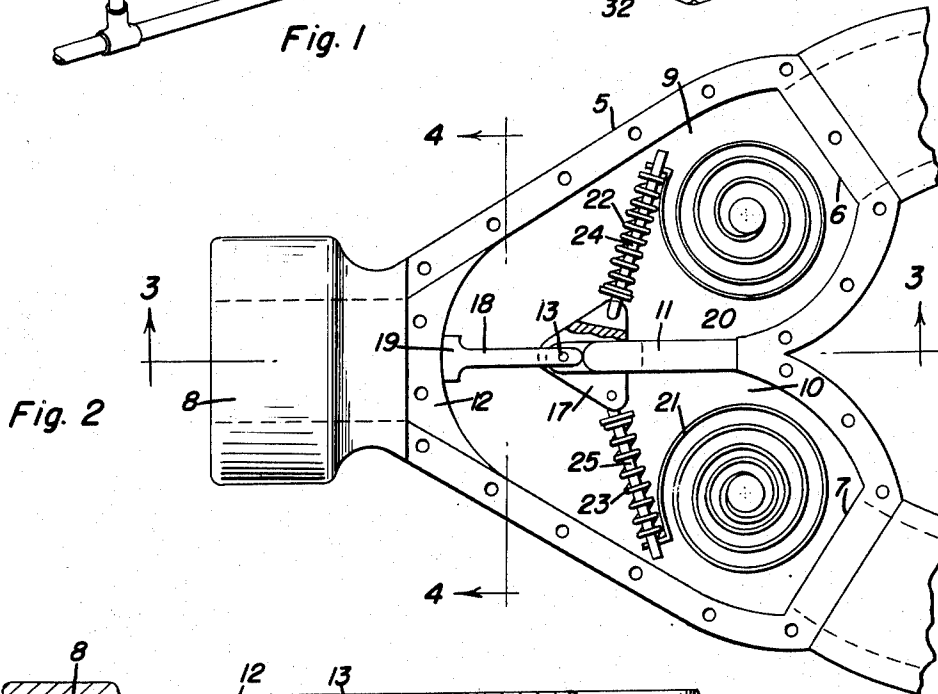
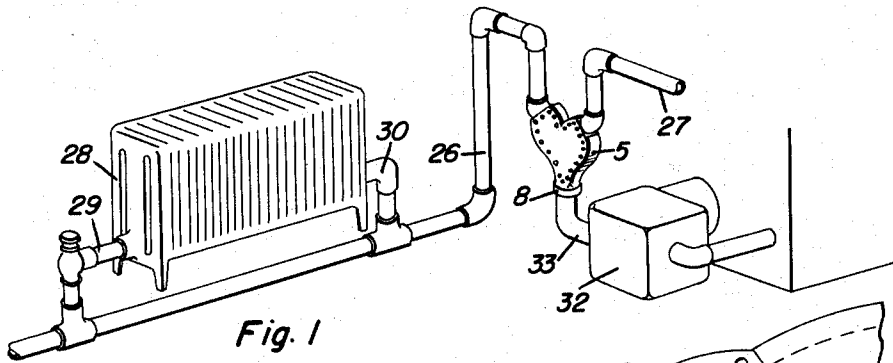
April 28, 1953

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2,636,684

AUTOMATIC TEMPERATURE EQUALIZER FOR HEATING SYSTEMS

Filed March 24, 1950



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UNITED STATES PATENT OFFICE

2,636,684

AUTOMATIC TEMPERATURE EQUALIZER
FOR HEATING SYSTEMS

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Application March 24, 1950, Serial No. 151,732

2 Claims. (Cl. 236—12)

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The present invention relates to new and useful improvements in temperature equalizers for hot water heating systems, and more particularly to an automatic valve for regulating the volume of water supplied to different parts of the system in accordance with the demands placed on the system, whereby the temperature of the water passing through the different parts of the system will be equalized.

An important object of the present invention is to provide a thermostatic valve connected in the return line from two different parts of hot water heating systems to automatically control the flow of water through each part of the system to vary the ratio of flow in accordance with the demands placed on each part of the system.

A further object is to provide a regulating valve of this character of simple and practical construction, which is efficient and reliable in operation, relatively inexpensive to manufacture and install in operative position in the system, and which is otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages in the details of construction and operation as more fully herein-after described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view showing the regulating valve connecting the return pipes of two branch lines of a hot water heating system to a circulator;

Figure 2 is an enlarged plan view of the thermostatic control valve with the cover plate removed;

Figure 3 is a longitudinal sectional view taken on a line 3—3 of Figure 2; and

Figure 4 is a transverse sectional view taken on a line 4—4 of Figure 2.

Referring now to the drawing in detail wherein, for the purpose of illustration, I have disclosed a preferred embodiment of the invention, the numeral 5 designates the valve body of substantially Y-shape to provide a pair of branch inlet ports 6 and 7 and an outlet port 8. The inlet ports 6 and 7 lead to chambers 9 and 10 separated from each other by a partition 11.

The end of the valve body 5 adjacent the outlet 14 is formed with a curved valve seat 12 having its axis at a pivot pin 13 supported at the adjacent end of partition 11.

Valve seat 12 is formed with a central opening 14 of substantially square shape with a pair of its opposite corners 15 positioned adjacent

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each side edge of the valve seat whereby the opening 14 tapers toward each side edge of the valve seat and valve body, as shown in Figure 4 of the drawings.

The end of the partition 11 in which the pivot pin 13 is positioned is bifurcated, as shown at 16, to receive a substantially triangular shaped plate 17 at the rear end of a valve 18 with one corner of plate 17 pivoted on pin 13 for swinging the head 19 at the front end of the valve from side to side across opening 14 of the valve seat 12. The valve 18 is of rectangular shape in cross-section and is of a width coextensive with partition 11 to work closely against the flat sides of valve body 5 to separate the chambers 9 and 10 from each other between the end of partition 11 and the valve seat 12.

Thermostats 20 and 21 of a bimetallic strip formed into a coil are anchored at their inner ends in the chambers 9 and 10 and with their outer end portions engaging the outer ends of coil springs 22 and 23 mounted on rods 24 and 25 which have their inner ends pivoted to adjacent corners of the triangular plate 17 and with the tension of the springs opposed to each other.

The inlet ports 6 and 7 of valve body 5 are connected to the return lines 26 and 27 of branch hot water heating systems having one or more radiators 28 connected therein by pipes 29 and 30 to permit the cutting off of the radiator without interrupting the flow of water through the system. The outlet port 8 of the valve body 5 is connected to the return side of a water circulator 32 by means of a pipe 33.

Should one or more of the radiators 28 of one of the branch systems be cut off, the demand on that system is reduced and the ratio of hot water supplied to the two systems is disturbed. The resulting difference in temperature of the water entering ports 6 and 7, accordingly, affects thermostats 20 and 21 to swing valve 18 toward one side to regulate the volume of water for each branch system according to the demand on each.

In view of the foregoing description taken in conjunction with the accompanying drawings, it is believed that a clear understanding of the device will be quite apparent to those skilled in this art. A more detailed description is accordingly deemed unnecessary.

It is to be understood, however, that even though there is herein shown and described a preferred embodiment of the invention, the same is susceptible to certain changes fully comprehended by the spirit of the invention as herein described and within the scope of the appended claims.

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Having described the invention, what is claimed as new is:

1. A hot water system having return branch lines, a temperature regulator for said branch lines comprising a valve body having a plurality of inlet ports and a single outlet port, said inlet ports being connected to the branch return lines of the system, a partition in the valve body forming a pair of chambers immediately inwardly of the inlet ports, a valve seat in the valve body immediately inwardly of the outlet port, a valve pivotally connected to the partition for swinging in opposite directions across the valve seat for proportioning the flow from the chambers to the outlet port, and thermostatic means in the chambers and connected to the valve for swinging the latter in opposite directions in accordance with variations in water temperature of the branch lines.

2. A hot water system having branch return lines, a temperature regulator for said branch lines comprising a valve body having a plurality of inlet ports and a single outlet port, said inlet ports being connected to the branch return lines of the system, a partition in the valve body forming a pair of chambers immediately inwardly of

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the inlet ports, an arcuate valve seat in the valve body immediately inwardly of the outlet port, a valve pivotally connected to the partition for swinging across the valve seat in wiping engagement therewith for proportioning the flow from the chambers to the outlet port, a thermostat in each chamber, and means connecting the thermostats to the valve to swing the same in opposite directions in accordance with variations in the temperature of water entering the chambers from the return lines.

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