Oct. 5, 1926. 1,602,352

T. J. FOLEY

THERMOSTAT

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Fig. 1.

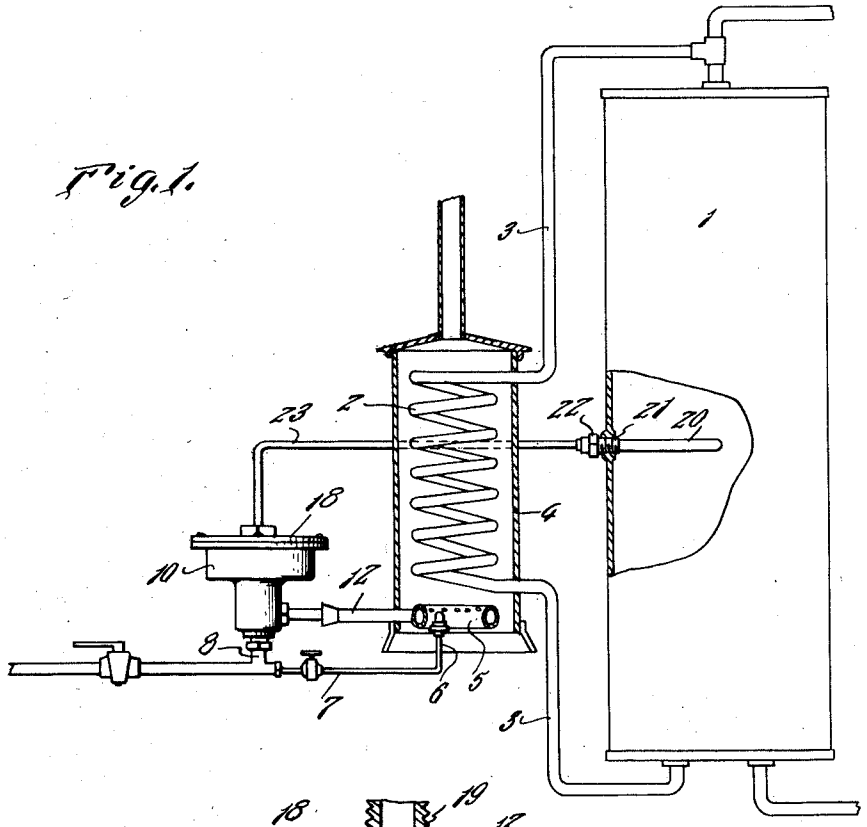
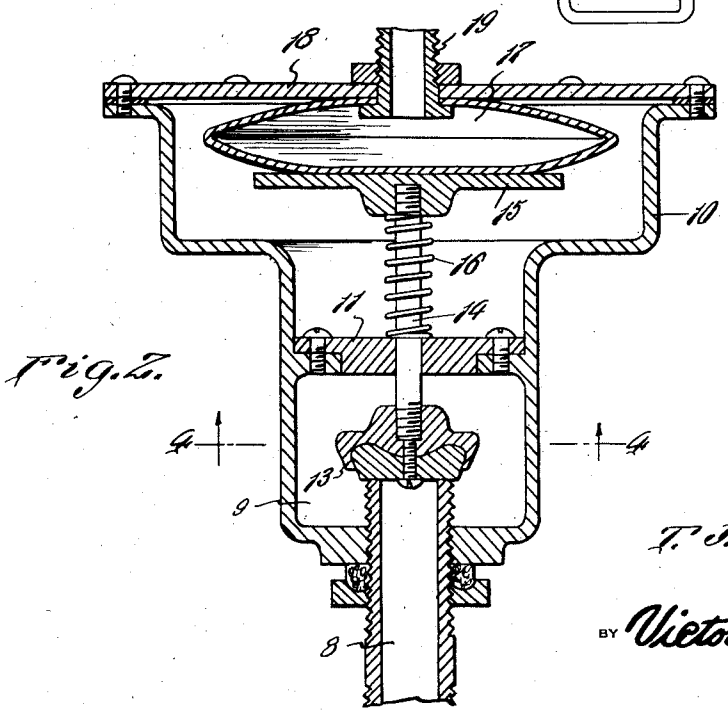


Fig. 2.



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Fig. 3.

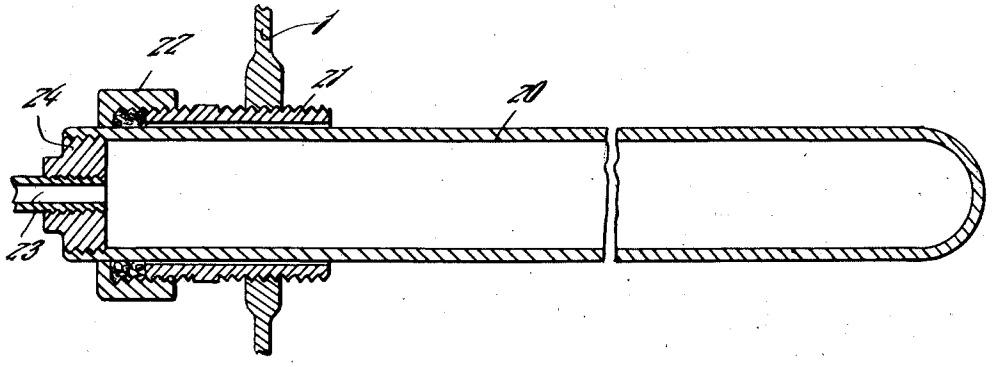
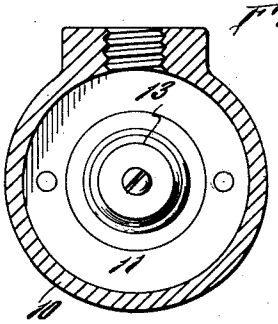


Fig. 4.



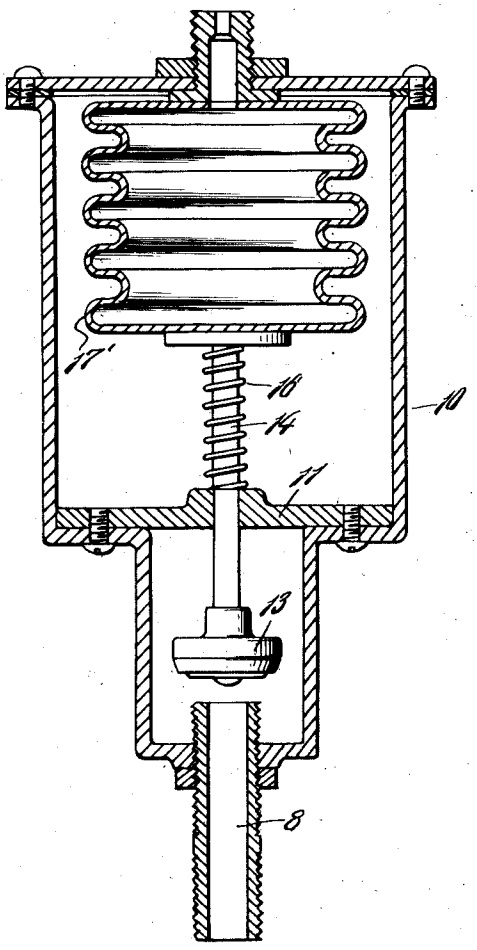


Fig. 5.

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1,602,352

UNITED STATES PATENT OFFICE.

THOMAS J. FOLEY, OF KANSAS CITY, MISSOURI.

THERMOSTAT.

Application filed January 13, 1926. Serial No. 81,016.

This invention relates to a thermostat, the general object of the invention being to provide means for automatically turning on and off the gas of a burner for heating a boiler so as to keep the temperature of the water in the boiler at a certain degree.

Another object of the invention is to provide a tube containing material which will expand under the action of heat and which is placed in the tank and which is connected to an expansible member which actuates the valve of the burner.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claim.

In describing my invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is a view partly in section, showing the invention in use.

Figure 2 is an enlarged sectional view through one form of the gas controlling means.

Figure 3 is a sectional view through the tube arranged in the tank for carrying the expansible material.

Figure 4 is a section on line 4—4 of Figure 2.

Figure 5 is a sectional view through another form of gas controlling means.

Referring to Figure 1, the water tank is shown at 1 and the coil is shown at 2, the coil being connected with the tank by the terminals 3. The housing for the coil is shown at 4 and the burner 5 for the housing is provided with a pilot burner 6 which is connected by the pipe 7 with the gas supply pipe 8. This supply pipe is in communication with a chamber 9 formed in a casing 10 by a partition 11 and the chamber is connected with the burner by the telescopic pipes 12, so that the gas must pass through the chamber to reach the burner. A valve 13 engages the top of the pipe 8 and the stem 14 of said valve passes through a hole in the partition 11 and has a plate 15 on its upper end which is engaged by a coiled spring 16 on the stem and arranged between the partition 11 and the plate. This spring tends to hold the valve in open position so that gas can pass to the burner. An expansible member 17 of disk shape is held to the cover 18 of the casing 10 by the nipple 19 and said member engages the plate 15 so that when said member is expanded, it presses upon the plate 15 and thus pushes the stem 14 downwardly to force the valve 13 upon its seat and thus shut off the passage of gas to the burner. A tube 20 projects into the tank 1 and is carried by a nipple 21 threaded in the tank and provided with a packing gland 22. A small tube 23 has one end connected with the outer end of the tube 20 by the plug 24 and its other end is connected with the nipple 19.

The tube 20 and the parts connected therewith are adapted to contain expansible material which, when acted upon by heat, will expand and thus cause the member 17 to expand, which will act upon the stem and valve to close the valve and thus shut off the supply of gas to the burner. When the water cools in the tank, the material will contract so that the spring 16 will be permitted by the member 17 to open the valve so that the burner will start up again, and in this way the temperature of the water in the boiler will remain constant.

Figure 5 shows a slight modification in which the member 17′ is made of bellows shape instead of disk shape. In other respects, this form of the invention is similar to that before described.

It is thought from the foregoing description that the advantages and novel features of my invention will be readily apparent.

I desire it to be understood that I may make changes in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claim.

What I claim is:—

In combination with a boiler and its heater, a casing having a partition therein dividing the casing into an upper and lower chamber, means for connecting the lower chamber with the gas supply and with the burner, a valve in the chamber for controlling the flow of gas therethrough, a stem connected with the valve and passing through the partition, a disk on the upper

end of the stem, a spring on the stem between the disk and partition acting to hold the valve off its seat, an expansible member forming a chamber arranged in the upper chamber of the casing and having its lower end engaging the disk, a nipple connected with the upper end of the expansible member and passing through the top of the casing, a tube projecting into the boiler and containing expansible material and a pipe connecting the tube with the nipple.

In testimony whereof I affix my signature.

THOMAS J. FOLEY.