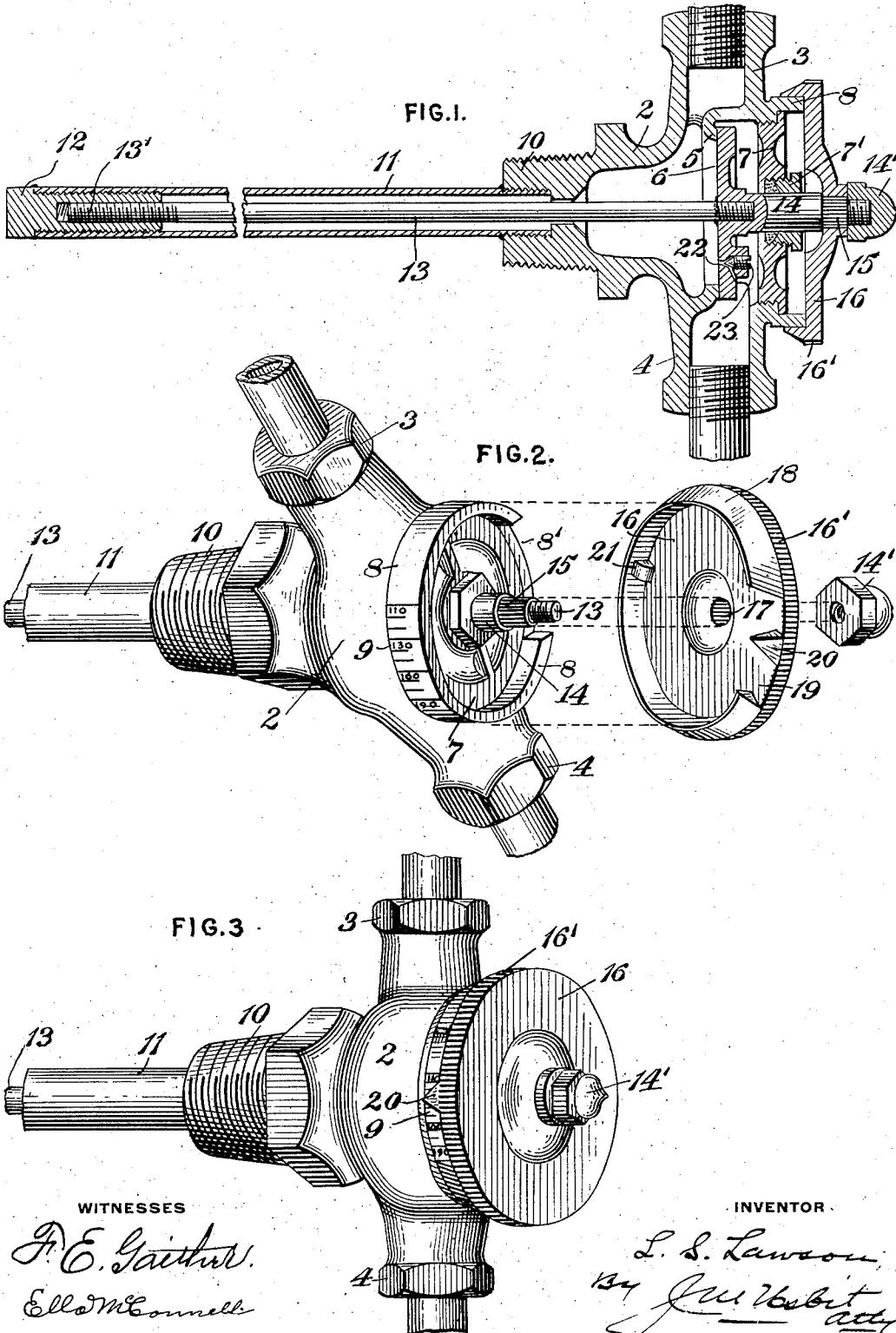


L. S. LAWSON.
THERMOSTATIC VALVE.
APPLICATION FILED NOV. 10, 1911.

1,038,159.

Patented Sept. 10, 1912.



WITNESSES

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THERMOSTATIC VALVE.

1,038,159.

Specification of Letters Patent.

Patented Sept. 10, 1912.

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To all whom it may concern:

Be it known that I, LINDLEY S. LAWSON, a resident of Homestead, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Thermostatic Valves, of which the following is a specification.

This invention has particular reference to a thermostatic valve for automatically controlling the flow of gas to a water heater, and the general objects are to provide a new and improved valve construction, and improved means for varying the throw of the valve and thereby adjusting it for different temperatures of water.

In the accompanying drawings, Figure 1 is a longitudinal section of valve mechanism constructed in accordance with the invention. Fig. 2 is a view in perspective of the valve mechanism with the cap-like temperature adjusting head separated from the valve actuating rod. Fig. 3 is a similar view with the parts fully assembled.

Referring to the drawings, 2 designates a valve body constructed with gas inlet 3 and outlet 4 which communicate with the body at opposite sides of seat 5 on which operates valve 6. Body 2 is formed with an opening facing the seat which is closed by head 7, the body having a rim-like extension 8 outwardly from the opening, at one side provided with temperature indications 9. Body 2 is formed with a tubular threaded extension 10 adapted to be secured in the wall of a stand boiler or other water container, not shown, and projecting from extension 10 into the interior of such boiler is the thermostatic tube 11, formed preferably of copper, provided at its outer end with socket 12.

Secured to and projecting from valve 6 is the iron or steel rod 13 which extends into tube 11, and at its outer end is threaded at 13' to adjustably engage socket 12. Valve 6 is constructed with the central stem 14, with which rod 13 is in alinement. The stem extends through stuffing box 7' in head 7, and is milled at 15 to receive the cap-like head 16, the central opening 17 through the latter being similarly milled, affording very accurate positioning of the head on the stem. The extremity of stem 14 is threaded to receive the head-confining nut 14'.

Flange 18 projecting from head 16 embraces the body rim 8, and is interrupted at 19 to expose the temperature indications,

with which the pointer 20 on the head is adapted to cooperate. A lug 21 on the under side of head 16 moves in slot 8' in rim 8 and limits the adjustment of the head. The periphery of head 16 is milled at 16' to provide a firm hand-hold for adjusting the same.

With tube 11 and rod 13 formed of metals having different coefficients of expansion, it will be understood that the heating and expanding of tube 11 by the water within the boiler will move rod 13 longitudinally and seat valve 6 and shut off the flow of gas to the heating means, while contraction of the tube will move outwardly and unseat the valve. And by adjusting the threaded connection of the rod by means of head 16, the valve may be caused to close when the water attains any desired temperature, the parts being so accurately connected by the described construction that the valve will close when the water attains the temperature designated by the pointer on the scale of temperature appearing on the valve body.

To prevent the heater from being entirely extinguished valve 6 may be provided with bypass 22, controlled by the adjustable plug 23, so that even when the valve is closed and the main supply cut off sufficient gas will pass to sustain a pilot light for igniting the flow when the valve opens.

I claim:—

1. The combination of a valve body having a gas inlet and a gas outlet, the body having a valve seat interposed between the inlet and outlet and with the body open outwardly from said seat and threaded internally, a threaded head fitting within and closing the open portion of the body and provided with a central opening, a valve cooperating with the seat and movable between the latter and said head and having a stem which extends through the head opening, a cap-like head secured to the projecting stem and fitting and rotatable relatively to the body, a tubular thermostatic device extending from the valve body, and a rod secured to the valve and adjustably connected to the thermostatic device.

2. The combination of a valve body having a valve seat and at one side a rim-like extension and with temperature indications on said extension, a valve a thermostatic device projecting from the valve body, a rotatable rod secured to the valve and hav-

ing threaded connection with the thermostatic device, and a cap secured to the valve and flanged to inclose the rim-like extension of the body, the flange of the cap being
5 recessed to expose said temperature indications, and the cap having a pointer for registering with one or another of the indications.

3. The combination of a valve body constructed at one side with an annular slotted
10 extension a thermostatic valve, a valve operating rod rotatable for varying the throw of the valve, a head secured to the valve adjacent the annular body extension, a lug
15 on the head movable in the slot of the annular extension for limiting the movement of the head, the body having temperature indications, and the head having a pointer for determining the temperature at which
20 the valve is set to close.

4. The combination of a valve body having a gas inlet and a gas outlet, the body

having a valve seat interposed between the inlet and outlet and with the body open outwardly from said seat, a head secured
25 within and closing the open portion of the body and provided with a central opening, a valve cooperating with the seat and movable between the latter and said head and having
30 a stem which extends through the head opening, a head secured to the projecting stem and closing the outer open portion of the valve body and rotatable relatively
thereto, a thermostatic device extending
35 from the valve body, and a rod secured to the valve and adjustably connected to the thermostatic device.

In testimony whereof I affix my signature in presence of two witnesses.

LINDLEY S. LAWSON.

Witnesses:

M. F. HILLMAN,
JOHN W. BAINBRIDGE.