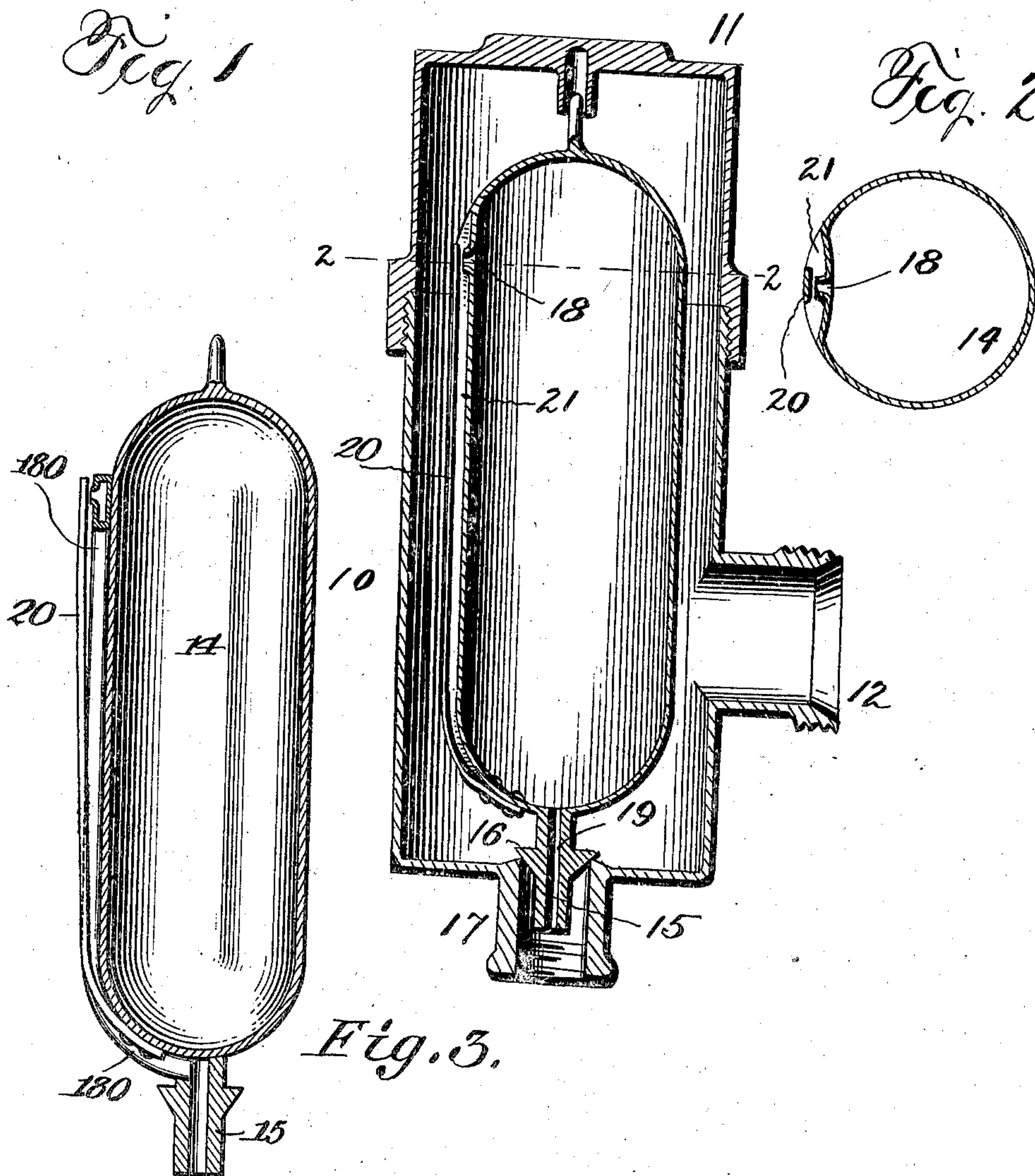


O. C. HATCH.
VALVE FOR STEAM HEATING SYSTEMS.
APPLICATION FILED NOV. 10, 1909.

951,563.

Patented Mar. 8, 1910.



WITNESSES

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UNITED STATES PATENT OFFICE.

ORVILLE CROMWELL HATCH, OF SEATTLE, WASHINGTON.

VALVE FOR STEAM-HEATING SYSTEMS.

951,563.

Specification of Letters Patent.

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Application filed November 10, 1909. Serial No. 527,338.

To all whom it may concern:

Be it known that I, ORVILLE CROMWELL HATCH, of Seattle, in the county of King and in the State of Washington, have invented a certain new and useful Improvement in Valves for Steam-Heating Systems, and do hereby declare that the following is a full, clear, and exact description thereof.

The object of my invention is to provide a valve for the radiators of steam heating systems, by which air and water of condensation may be automatically discharged, which will be sensitive and reliable in operation, so as to effectually prevent the waste of steam through the air outlet, and to this end my invention consists in the valve having the construction substantially as hereinafter specified and claimed.

In the accompanying drawings, Figure 1 is a vertical section of a valve for a vacuum steam heating system embodying my invention; Fig. 2 a horizontal section through the float on the line 2—2 of Fig. 1, and Fig. 3 a vertical section through a float of different construction from that illustrated in Figs. 1 and 2.

In the embodiment of my invention illustrated, I employ the usual chambered body or casing 10, having at its top a removable cap or head 11 to give access to the interior, the connection between the cap and casing being an ordinary screw connection. For the attachment of the device to a radiator, the casing 10 has a laterally extending tubular neck or stem 12 arranged for coupling to the radiator duct by an ordinary union. Within the casing is a float 14 in the form of a hollow cylinder or tube, which at its lower end has a downwardly extending stem 15 carrying a valve 16 which controls the water outlet 17 at the bottom of the casing 10. Near its upper end, the float 14 has an opening or passage 18 for the entrance of air into the float from the casing 10, and to enable the passage of air from the float through the discharge outlet 17, the valve-carrying stem 15 is provided with an opening 19. It must be seen that air may be taken from the top of the casing and discharged through the outlet 17. The air passage 18 near the top of the float has a valve seat for engagement by the upper end of a thermostat 20 in the form of a strip of suitable thermostatic material, which is attached to the float near the bottom, and

thence extends upward preferably in a channel or depression 21 in the side of the float, so that its upper free end is contiguous to said valve seat. When no steam is in the chamber or casing, the thermostat uncovers the air opening or inlet, and as soon as steam enters the chamber and the heat thereof affects the thermostat, the latter will move to and close the air passage, and thereby prevent the escape and waste of steam. The float, as is usually the case, will rise when a predetermined quantity of water of condensation collects in the casing 10, and lifting the valve 16 from its seat at the outlet, will permit the water of condensation to flow into the outlet and be discharged. It will be evident that if it should be desired to have the interior of the float closed, instead of using it for the passage of air to the outlet, a small pipe 180 (see Fig. 3) could be run on the outside of the float from a suitable point near the top thereof to the valve stem at the bottom, the upper end of said pipe being opened and closed by the action of the thermostat, which in such case would be attached to the float, it being a distinctive feature of my invention that the thermostat is mounted upon and carried by the float.

What I claim is—

1. In a water and air venting valve, the combination of a chamber having an inlet port and an outlet port, a float in said chamber and a float operated valve for controlling said outlet port, said float providing a thermostatically controlled air discharge passage from the float chamber to the outlet port.

2. In a water and air venting valve, the combination of a chamber having an inlet port and an outlet port, a float in said chamber, a float operated valve for controlling said outlet port, an air discharge passage arranged to discharge air from said float chamber to the outlet port, and a thermostat mounted upon and carried by the float for opening and closing the air passage.

3. In a water and air venting valve, the combination of a chamber having an inlet port and an outlet port, a float in said chamber, a float operated valve for controlling said outlet port, an air discharge passage arranged to discharge air from said float chamber to the outlet port, the inlet end of said passage being at or near the upper end

of the float, and a thermostat mounted upon and carried by the float for opening and closing said inlet.

4. In a water and air venting valve, the
5 combination of a chamber having an inlet
port and an outlet port, a float in said cham-
ber, a float operated valve for controlling
said outlet port, an air discharge passage
arranged to discharge air from said float
10 chamber to the outlet port, and a thermostat
mounted upon and carried by the float for
opening and closing the air passage, said
thermostat consisting of a strip of suitable
material attached at one end to the float.
15 5. In a water and air venting valve, the

combination of a chamber having an inlet
port and an outlet port, a float, a valve at
the bottom of the float for controlling the
outlet port, the float having at its bottom an
air outlet, and at or near its upper end an 20
air inlet leading into the float, said float be-
ing hollow, and a thermostat attached to and
carried by the float for opening and closing
said inlet.

In testimony that I claim the foregoing I 25
have hereunto set my hand.

ORVILLE CROMWELL HATCH.

Witnesses:

S. CAYO,

EUGENE A. CHILDE.