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2,109,269

FLOODLESS RADIATOR STEAM VALVE

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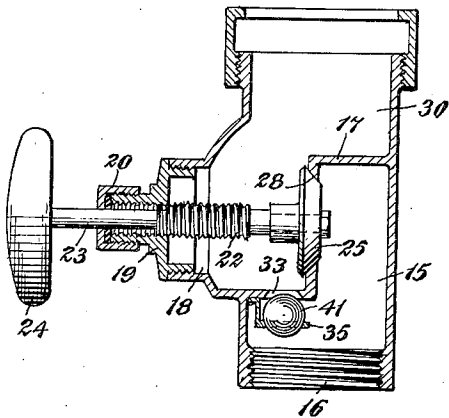


Fig. 1

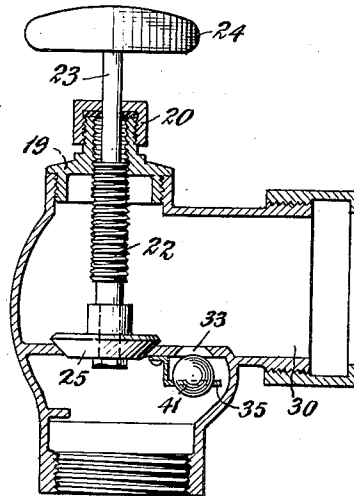


Fig. 3

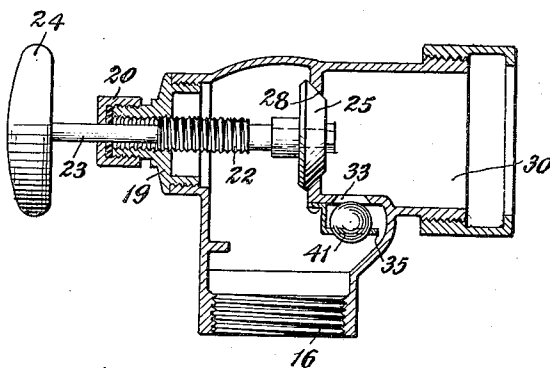


Fig. 2

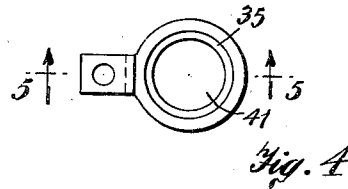


Fig. 4

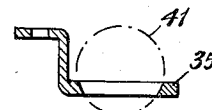


Fig. 5

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FLOODLESS RADIATOR STEAM VALVE

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Application October 17, 1936, Serial No. 106,111

1 Claim. (Cl. 277—54)

This invention relates to valves and more particularly to types adapted for use in connection with radiators as installed in buildings for heating purposes and is an improvement over my former application filed May 8, 1936, Serial No. 78,527, now Patent No. 2,087,690, granted July 30, 1937.

An object of the invention is to provide a valve for steam radiators that will prevent flooding and surging of the condensed steam when the valve is opened for the passage of steam.

A further feature is in the provision of an escape valve to control the flow of liquid through the system.

Another purpose is to produce a simple but highly effective valve that can be cheaply and economically produced.

These objects are accomplished by the novel and practical construction and combination of parts hereinafter described and shown in the annexed drawing, forming a material part of this disclosure, and in which:—

Figure 1 is a sectional view taken along the center of an embodiment of the invention.

Figure 2 is a similar view of a modification in construction.

Figure 3 is another like view showing a further modification.

Figure 4 is a plan view of the ball support.

Figure 5 is a sectional view taken on line 5—5 of Fig. 4. In general the valve consists of a unique combination of elements forming a highly efficient valve for automatic release and draining of water condensed in radiators or other heating receptacles without manually opening the plug of the valve.

The body of the valve consist of a hollow generally cylindrical shell 15 having an inlet 16 provided with threads to engage a steam supply pipe.

A transverse partition wall 17 extends partially across the body 15 and a dome 18, surmounted by crown 19 is provided with a stuffing box 20 for the reception of packing. The dome 18 is threaded to receive a valve stem 22, its smooth upper portion 23 passing through the stuffing box to a manually operated knob 24.

On the lower end of the stem 22 is a conical plug 25 to suit the valve seat 28 in a longitudinal extension of the partition wall.

Extending from the dome 18 above the partition 17 is an outlet 30 provided with means for making a union connection.

Formed through the lower element of the par-

tion wall is a conical opening 33 communicating with the outlet 30. Inside the lower portion of the valve body, under the partition 17 a glass ball 41 is supported by the rim of an opening in a hollow bracket 35 fastened on the lower side of the partition wall 17 by a cap screw, the bracket being located a short distance below the ball to support it when it is not in operation as in Fig. 2.

In Figures 2 and 3 the change is only in the shape of the body so as to enable it to be placed in a different position. Other parts are the same as in the Figure 1.

The spherical ball 41 is preferably made of glass because of its resistance to the effects of chemicals and impurities; however, any non-ferrous material may be used.

In operation when under steam pressure and the manually operated handle 24 has been moved to close the valve, the pressure coming thru the seat 33 will raise the ball from the bracket and press it against the seat 33 stopping the flow of steam into the radiator.

On reducing the pressure or shutting it off, the ball is dislodged by its own gravity and the on rush of the atmospherical pressure, running in the opposite direction to the steam, opens the seat 33 for the condensed steam to drain automatically, closing the cycle of operation repeatedly.

While certain preferred embodiments of these devices have been shown and described it will be understood that changes in the form, arrangements, proportions, sizes and details thereof may be made without departing from the scope of the invention as defined in the appended claim.

Having thus described the invention, what is claimed as new and desired to secure by Letters Patent, is:—

A radiator valve comprising a casing having an inlet and an outlet passage, an integral partition wall therebetween having a valve seat, a manually operable plug for said valve seat, an independent opening through said wall constituting an auxiliary valve seat within the area of the inlet passage, a solid spherical glass float controlling the mentioned opening, and a Z shaped bracket to support said float below and contiguous to the opening, said bracket detachably secured to said wall and accessible through the inlet passage.

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