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PATENTED MAY 8, 1906.

F. A. SIMONDS.
DRAIN VALVE FOR RADIATORS.

APPLICATION FILED MAY 6, 1904. RENEWED SEPT. 11, 1905.

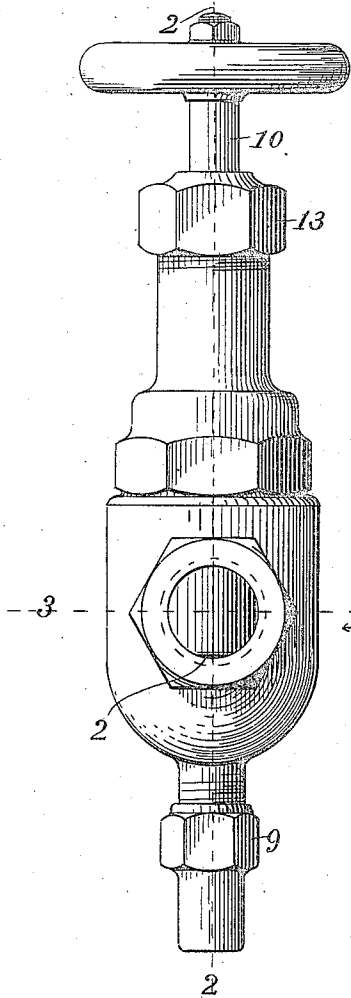


Fig. 1.

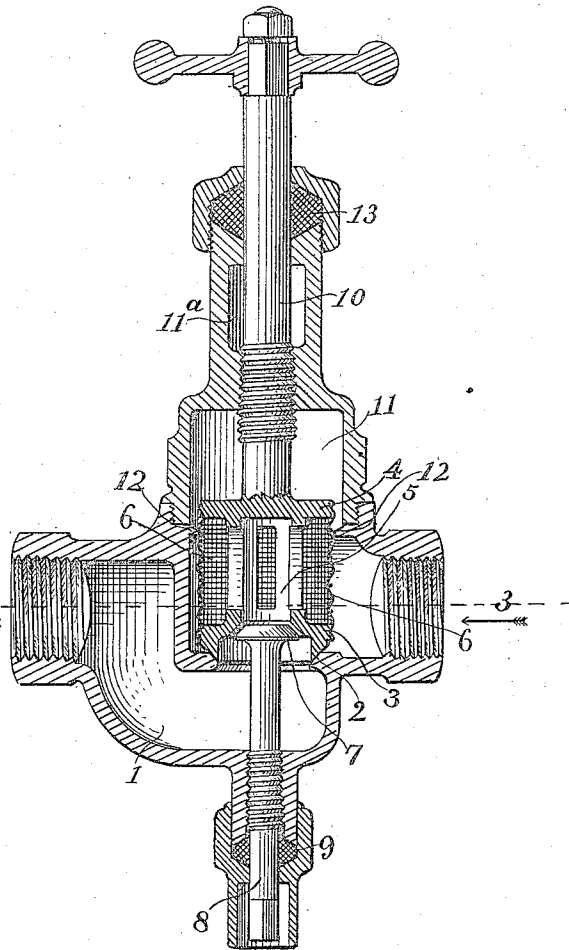


Fig. 2.

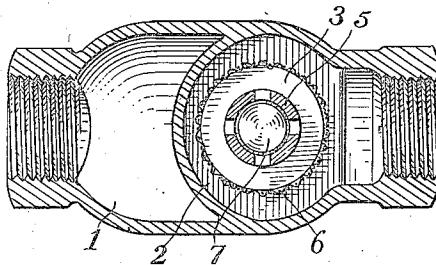


Fig. 3.

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DRAIN-VALVE FOR RADIATORS.

No. 820,146.

Specification of Letters Patent.

Patented May 8, 1906.

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To all whom it may concern:

Be it known that I, FRANK A. SIMONDS, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Drain-Valves for Radiators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in drain-valves for radiators; and its object is to provide a main valve that can be opened or closed in the usual way, as occasion requires, without disturbing the adjustment of the drainage-valve and that will simultaneously open the main valve and drainage-valve and in combination with a small adjustable drainage-valve and a strainer for the same; to provide means for clearing the strainer of obstructions; to adapt the device for use in connection with radiators used in a vacuum system of steam-heating, and to provide the device with various new and useful features, hereinafter more fully described, and particularly pointed out in the claims.

My device consists, essentially, of the combination of a valve adapted to be opened and closed in the usual way, an adjustable supplementary valve to provide a constant vent, a strainer for said valve, and in the combination and arrangement of the various features, as will hereinafter more fully appear by reference to the accompanying drawings, in which—

Figure 1 is an elevation of a device embodying my invention; Fig. 2, a vertical section of the same on the line 2 2 of Fig. 1, and Fig. 3 a horizontal section of the same on the line 3 3 of Figs. 1 and 2.

Like numerals refer to like parts in all of the figures.

1 represents the body of the valve, somewhat resembling a globe-valve, but having the valve-seat 2 in substantially the plane of the lower side of the pipe connections, whereby the valve will drain the pipe leading to the same, and a chamber 11 to receive the strainer when the main valve is raised.

3 is the main valve for closing the opening in the valve-seat. At a suitable distance above the valve is located a disk 4 of substantially the same diameter as the valve, and to

this disk is attached the stem 10, extending upward therefrom and provided with the usual screw-thread and gland 13. Extending from the disk 4 to the valve 3 and surrounding the same is a tubular screen 6, consisting of woven wire, perforated sheet metal, or other suitable material and securely attached to the disk and valve at its respective ends. The valve and disk are also further connected by a tubular member 5, having a number of vertical slots therein and open at the bottom through the central opening of the valve 3. This opening is closed by an adjustable valve 7, independently supported by the case and having a downwardly-extended stem 8, having screw-threads and a gland 9 and adjusted by a suitable key. Above the disk 4 is the chamber 11, into which the screen and disk may be raised by the stem 10, and the bottom of this chamber closely surrounds the screen, as at 12, whereby the screen is freed from any obstructions when it rises into the chamber. A chamber 11^a is provided above the screw to receive the same.

In operation the main valve is closed when using a vacuum system and the valve 7 adjusted open only enough to drain off the condensed water and maintain proper circulation in the radiator to which the valve is attached. The strainer retains anything likely to obstruct this small opening of the valve 7, and in the event that it becomes clogged thereby the main valve may be fully opened and the strainer will rise into the chamber 11 and be cleaned by the close-fitting bottom 12 of this chamber, and when the main valve is again closed the valve 7 will remain properly adjusted and will be fully opened by opening the main valve. In the event that the vacuum system is not used the main valve can be fully opened and the usual gravity drainage thus secured.

I have shown a preferred arrangement of the valves and screen; but it is obvious that the screen may be dispensed with without affecting the operation of the valves and that the valves may be differently arranged without departing from my invention.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a valve, a main valve having a central opening, means for opening and closing

said main valve, and an independently-adjustable valve to partially or wholly close the opening in the main valve when the main valve is seated and independently supported by the case.

2. The combination of a main valve having a central opening, an auxiliary valve to partially or wholly close said opening when the main valve is seated, and independently adjustable, a disk connected to the main valve, a valve-stem attached to the disk, and a tubular screen surrounding the disk and valve and attached thereto.

3. The combination of a valve-body, a valve therein and having a central opening, an auxiliary valve to partially or wholly close said opening when the main valve is seated, and independently adjustable, a disk above the main valve and connected thereto, a tubular screen surrounding the disk and valve and attached thereto, a chamber in the body to receive the screen and closely surrounding the same, and means for moving the screen into the chamber.

4. The combination of a valve-body having a seat opposite the lower side of the inlet-opening, a valve having a central opening and engaging said seat, an auxiliary valve to partially or wholly close said opening when the main valve is seated and independently adjustable, a disk above the valve and connected thereto, a screen surrounding the disk and valve and attached thereto, a stem

connected to the disk to raise and lower the disk together with the screen and valve, and a chamber above the body to receive the disk and screen.

5. In a valve, a body having inlet and exit openings and a seat opposite the lower side of the inlet-opening; a valve to engage said seat and having a central opening, a valve to partially or wholly close said central opening when the main valve is seated, oppositely-projecting stems attached to the respective valves, and arranged in axial alinement, a screw-thread and gland for each stem, and means for rotating said stems.

6. In a valve, a body having an upwardly-facing seat, a main valve to engage said seat and having a central opening and a downwardly-facing seat, an upwardly-projecting stem on the valve and extending through the top of the body, a drain-valve to engage the seat in the main valve and partially or wholly close the said opening when the main valve is seated, a downwardly-projecting stem on the drain-valve and extending through the bottom of the body, and means for independently adjusting the valves.

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

FRANK A. SIMONDS.

Witnesses:

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