Jan. 13, 1931. R. O. PFEIFFER 1,789,082

SELECTIVE VALVE FOR RADIATORS

Filed March 1, 1930

Fig. 1.

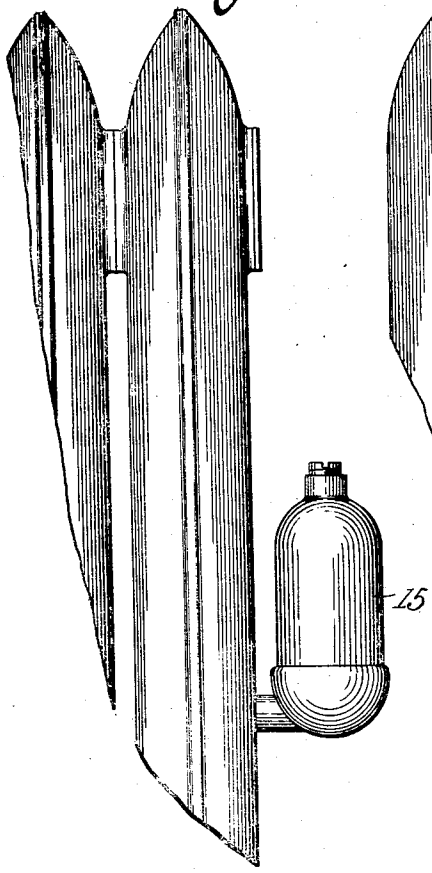


Fig. 2.

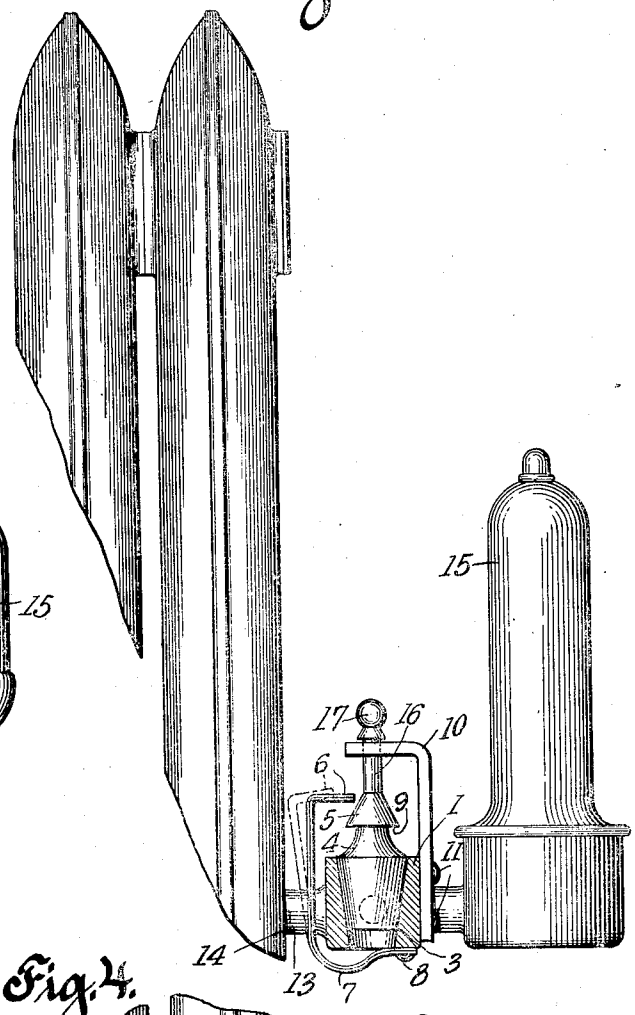


Fig. 3.

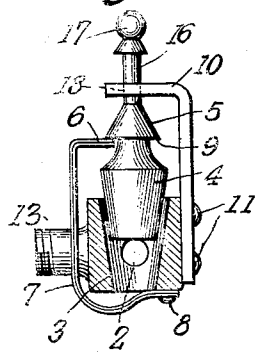
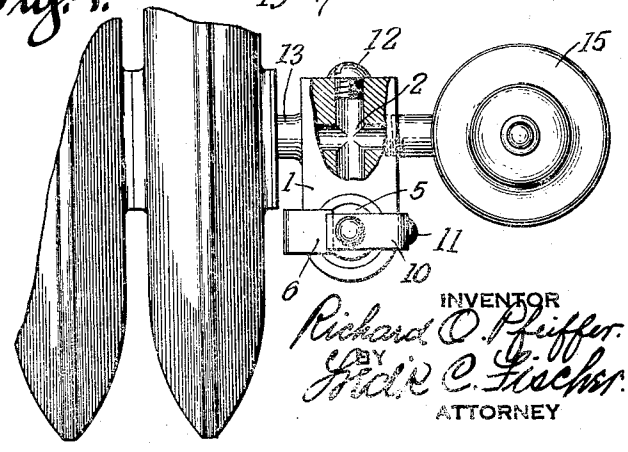


Fig. 4.



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SELECTIVE VALVE FOR RADIATORS

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My invention relates to improvements in valves such as are used on steam heat radiators, to enable the rapid discharge of cold air from the radiator to permit the filling of the radiator with steam.

While the commonly used radiator valve compensates for gradual changes in temperature, it does not, at all times, enable the rapid discharge of cold air from cold radiators, to quickly heat the radiators, and it is common practice, therefore, to remove the valve screw, or the entire valve, so that there will be no obstruction to the rapid escape of the cold air.

However, after all the cold air has escaped, steam will also escape in large quantities, resulting in scalding the hands in replacing the valve or valve screw, and if one forgets to replace the valve or valve screw, the escaping steam quite frequently damages the walls and furniture adjacent the radiator.

It is therefore an object of my invention to provide a radiator valve having thermostatically controlled means for permitting the rapid escape of the cold air from the radiator and to automatically shut off the escape of steam when steam is up.

It is to be understood that my improved valve is not to be substituted for the valve now so extensively used on radiators, but is to be employed in conjunction therewith, and it is so designed that the old valve, after it has been removed from the radiator, can be screwed into the casing of my improved valve, the casing in turn being screwed back into the radiator to take the place of the old valve.

These and other advantageous objects, which will later appear, are accomplished by the simple and practical construction and arrangement of parts hereinafter described and exhibited in the accompanying drawings, forming part hereof, and in which:

Figure 1 represents a fragmentary side elevational view of the end coils of a radiator to which the ordinary valve is secured,

Figure 2 represents a similar view of the radiator but shows my improved device secured thereto in combination with the ordinary valve,

Figure 3 represents an end elevational view of my improved device, partly in section, illustrating the thermostatically controlled valve suspended by the thermostatic element, and

Figure 4 represents a top plan view of my improved device, partly in section, secured to the radiator, the radiator being represented fragmentarily.

My improved device consists essentially of four parts, namely, a casing 1, a valve 4, a thermostatic element 7 and a valve guiding bracket 10.

In its preferred form, the casing 1 is provided with a cross-shaped air passage 2 (see Fig. 4) which communicates with a valve seat 3, the latter being preferably in the form of a tapered aperture, the lower end of the valve 4 being preferably shaped to correspond with the valve seat 3, with which it cooperates to form a pressure-tight closure.

Extending from the valve 4 is a conical head 5, the underside 9 of which is designed to receive the free end 6 of the thermostatic element or spring 7, the other end of said element being secured to the casing by any suitable means, as, for instance, by screws 8. Extending from said conical head 5 is a reduced extension 16 provided with a knob 17, the reduced extension being designed to engage with and be guided by a suitable aperture 18 in the valve guiding bracket 10, which may be of any desired or convenient shape and secured to the casing by screws 11 or the like. When the thermostatic element is cold, its free end 6 extends inwardly, in position to engage the recess 9 of the valve head 5.

When it is desired to quickly heat the cold radiator, the cold air is allowed to escape through the aperture 3 by raising the valve 4 by its knob 17, until the free end 6 of the thermostatic element 7, riding along the conical head 5 of the valve 4, snaps into engagement with the underside 9 of the head 5, thereby supporting the valve 4 clear of its seat 3. When the thermostatic element 7 expands, on being heated by the heat of the radiator and casing 1, and steam that escapes through aperture 3, it withdraws

from the underside of the valve head 5, so that the valve will automatically drop into its seat 3 and prevent the escape of steam.

To repeat the operation of the valve 4, the valve is simply raised to the position where the free end 6 of the spring 7 will engage the underside 9 of the valve 5, as outlined.

In installing my device, the ordinary radiator valve 15 is removed from the radiator and the nipple 13 of my improved device is threaded into the threaded radiator opening 14 from which the ordinary valve 15 has been removed, and thereafter valve 15 is secured to the casing 1 of my improved device so as to communicate with the air passage 2, so that the valve 15 will function in the casing 1 as it functioned when secured directly to the radiator.

By simply removing the screw 12 which is threaded into the air passage 2, on the inlet side of the valve, said passage may be readily cleaned from time to time. In the preferred form of my invention the ordinary radiator valve 15 is used in combination with the thermostatically controlled valve as set forth.

The user may, in a heating system wherein the radiators are provided with my improved device, provide for the more rapid heating of a certain selected radiator or radiators, by manually raising the thermostatically controlled valves on only the selected radiator or radiators.

The device herein disclosed has been found positive and fool-proof in operation, and, consisting of essentially few parts, economical to manufacture.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a device of the character described, a casing provided with a valve seat and with an air passage communicating with said seat, a valve, and a thermostatic element secured to said casing adapted, when cold, to be engaged with and suspend the valve clear of the air passage, and, when heated, to withdraw from the valve so that the latter will drop and close the valve seat.

2. In a device of the character described, a casing provided with a longitudinal air passage and with a vertical valve seat communicating with said air passage, a valve, and a thermostatic element secured to said casing adapted, when cold, to be engaged with the valve to suspend the valve clear of the valve seat, and when heated, to withdraw from the valve, so that the latter will drop and close the valve seat.

3. In a device of the character described, a casing provided with an air passage and with a valve seat communicating with said air passage, a valve, a thermostatic element rigidly secured at one end to said casing, the other and free end of said element being adapted to thermostatically engage with said valve to control the movement of the valve in one direction relatively to the valve seat, and a guide bracket secured to the outside of said casing in engagement with the valve to guide the movement of the valve.

4. In a device of the character described, a casing provided with an air passage, a valve, a thermostatic spring secured to said casing adapted to be engaged with said valve to control the movement of the valve in one direction relatively to the air passage, and a screw in the casing closing said air passage on the inlet side of the valve, said screw being removable to clean the air passage.

This specification signed this 13th day of February, 1930.

RICHARD O. PFEIFFER.