F. W. LEUTHESSER.

AIR VALVE FOR RADIATORS.

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1,049,243.

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Fig. 1.

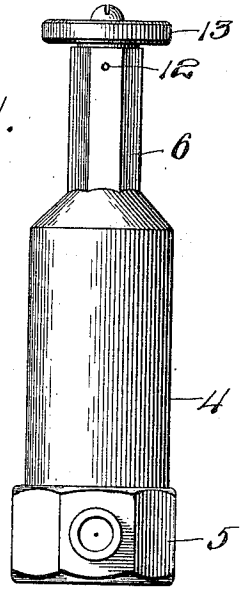


Fig. 2.

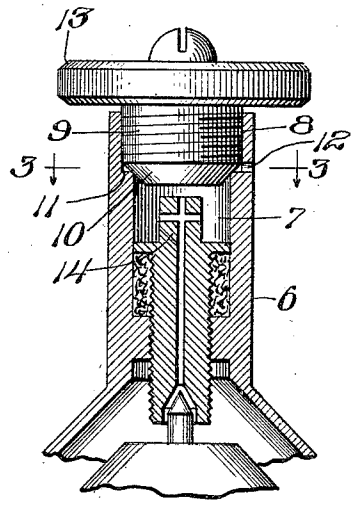
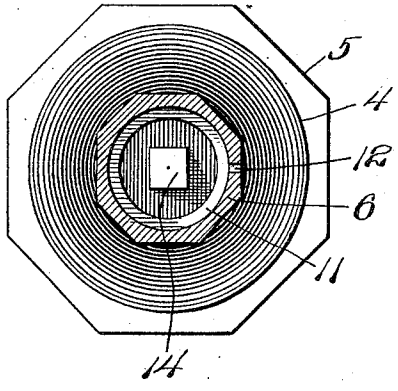


Fig. 3.



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UNITED STATES PATENT OFFICE.

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AIR-VALVE FOR RADIATORS.

1,049,243. Specification of Letters Patent. Patented Dec. 31, 1912.

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To all whom it may concern:

Be it known that I, FRED W. LEUTHESSER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Air-Valves for Radiators, of which the following is a specification.

The present invention relates to the construction and arrangement of an element or mechanism usually termed a heat controller, which is attached to the top of the air valve.

The objects of the present invention are to arrange the vent opening governed by the heat controller so that the medium escaping through said vent opening will always be directed away from the wall, eliminating the danger of the decoration of the wall being marred by the ejection of substance thereagainst.

A further object of the invention is to arrange the heat controlling mechanism so that the use of all packing is eliminated, and to utilize a heat controlling mechanism which may be of a relatively small nature, whereby its removal for the purpose of adjusting the air valve mechanism is simple and easy.

The invention further consists in the features of construction and in the combination of parts hereinafter described and claimed.

In the drawings, Figure 1 is an elevation of an air valve provided with the heat controlling mechanism of the present invention; Fig. 2, a detail, partly in section, of the upper end of an air valve equipped with the heat controlling mechanism of the present invention; and Fig. 3, a section on line 3—3 of Fig. 2, looking in the direction of the arrow, with the plug or controlling member of the heat controlling mechanism removed.

In the art of steam heating, it is a well known fact that the amount of steam entering the radiator will only be in proportion to the amount of cold air which has escaped from the radiator, steam being of such a nature that it will not displace cold air. In low pressure heating systems, a device known as a heat controlling element or mechanism is employed in connection with the air valve, to permit of the escape of cold air from the radiator. By the use of this heat controller, only as many of the coils need be heated as desired. For instance, if the radiator in a room consists of ten loops, on a cold day it would be necessary to heat the entire radiator to get the temperature desired; but in mild weather only a portion of the heat would be necessary. Therefore, by using the heat controller, the cold air can be allowed to escape until, say, three loops of the radiator have become heated, after which the escapement of air can be cut off with the result that the remaining seven loops of the radiator remain cold. Thus, only a partial heating of the radiator is effected, resulting in a saving in steam and in a proper regulating of the temperature of the room.

Referring now more particularly to the drawings, the device is employed in connection with a shell or casing 4, adapted to contain and inclose suitable air valve mechanisms. The shell comprises a base 5 and a hollow neck 6 of the usual style. The upper portion of the opening 7 in the interior of the neck 6 is cut away as indicated by the numeral 8 (Fig. 2), and into this cutaway portion extends a screw-threaded plug 9, which terminates in a beveled portion 10 resting against shoulders 11 formed by the enlarging of the upper end of the opening in the neck 6. The shoulder 11 virtually forms a valve seat for the tapered portion 10 of the plug, which tapered portion may be termed a valve member.

Located above the shoulders 11 is an opening 12 extending through the wall of the neck 6 and communicating with the outside air. Secured to the plug is a hand piece 13 of any suitable size and configuration. As will be seen from the drawings, the ordinary adjusting member 14 for the air valve mechanism lies just below the lower end of the plug 9, when this plug is advanced into position to seat against the shoulders 11. When it is desired to permit the escapement of air from the radiator, the hand wheel or member 13 is rotated to unseat the beveled end 10 from the shoulder 11. The air will then escape from the radiator through the opening 12. After sufficient of the air has escaped, the plug 9 can be again advanced to seating position, thus cutting off the escapement of air through the opening 12, with the result of effecting a partial heating of the radiator, as heretofore described. The opening 12, through which the air or air and steam coming from the radiator escapes from the valve, is formed in the neck 6. This neck, of course,

is stationary, and by arranging the valve so that the opening faces the radiator, the steam or other substance coming out of said opening will be thrown against the radiator, where it will do no damage.

In the old style of heat controllers, the opening is turned in uniformity with the turning of the hand wheel, with the result that this opening would frequently get turned toward the wall and steam or other matter ejected through said opening would be thrown against the wall, in many instances materially injuring the decoration. Moreover, in the old style of heat controllers, a relatively long screw-threaded sleeve was employed, which was fitted on the outside of the neck; and when it became necessary to remove this sleeve for the purpose of adjusting the air valve mechanisms, considerable time was necessarily expended in giving to the sleeve the required number of turns to remove it from the upper end of the radiator.

With the arrangement of mechanism of the present invention, a relatively short plug may be utilized, so that only a few turns are necessary to remove it from position. Where the adjustment of several hundred valves is necessary, this is an exceedingly important point, owing to the obvious saving in time. By configuring the end of the plug 9 to form a valve face, I am able to eliminate the use of lead washers or other packing instrumentalities, such as are necessarily employed with the old style of heating controllers.

I claim:

1. In a device of the class described, the combination of a casing adapted to inclose and contain automatic air valve mechanism, a hollow neck rigidly attached to the top of said casing, adjustable valve-seat mechanism in said neck, said neck being of a size to accommodate the tool for adjusting said valve-seat, an imperforate plug screw-threaded into the open upper end of said neck, and forming a closure for said end, a seating face for the lower end of said plug located on the interior of said neck and above said valve-seat adjusting mechanism, the wall of said neck being provided with an air vent opening extending transversely therethrough, said opening being located above said seating face, said plug constituting a valve member forming the sole means of controlling the passage of air through said vent, substantially as described.

2. In a device of the class described, the combination of a casing adapted to inclose and contain automatic air valve mechanism, a hollow neck rigidly attached to the top of said casing, adjustable valve-seat mechanism in said neck, said neck being of a size to accommodate a tool for adjusting said valve-seat, said neck being of increased diameter at its upper end, producing a shoulder within the interior of said neck above said valve-seat adjusting mechanism, a screw-threaded imperforate plug entered into the open upper end of said neck and forming a closure for said open end, the lower end of said plug seating against said shoulder and remaining at all times above said valve-seat adjusting mechanism, the wall of said neck being provided with an air vent opening extending transversely therethrough, said opening being located above said shoulder, and said plug forming the sole means for regulating the escape of air through said vent, substantially as described.

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