UNITED STATES PATENT OFFICE

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VALVE FOR RADIATORS.

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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 a certain new and useful Improvement in Valves for Radiators, of which the following is a specification.

This invention pertains to that class of air valves for radiators in which the heating medium employed is steam and which is generally termed or known as the "radiator" system of heating. The water of condensation, formed by the cooling of the radiator, will settle or remain in the valve and will interfere with the correct operation of the valve in the admission of steam and venting air, unless discharged or drawn off in order to prevent the formation of a seal.

The object of the present invention is to construct and apply to an air valve a drainage spout which will be effective and reliable in use for removing or draining from the chamber of the valve any water of condensation, and which will also prevent the passage leading from the radiator to the valve from becoming clogged or stopped by sediment or other material.

The invention consists in the features of construction and combinations of parts hereinafter described and pointed out in the claims as new.

In the drawings Figure 1 is an elevation partly in section of an air valve for radiators, showing the drainage spout inserted in position in the attaching nipple for the valve to the radiator; Fig. 2 a cross section through the attaching nipple and the drainage spout; Fig. 3 a perspective view of the drainage spout; and Fig. 4 a plan view of the drainage spout.

The air valve, in the construction shown, has a base or cup 1 inclosing a chamber 2, and having a nipple 3 on one side with a passage 4, by means of which nipple the air valve is attached to or connected with the radiator, so that the passage 4 furnishes communication between the chamber of the valve and the interior of the radiator for the passage of air and steam between the radiator and valve, as usual in the type of air valves for radiators shown.

The drainage spout 5 can be made of sheet metal or other suitable material bent into shape so as to have a depending member 6 and a horizontal member 7, with the horizontal member, when the drainage spout is in position, located within the passage 4 of the nipple, as shown in Fig. 1. The form of the drainage spout as shown, is of a U-shape in cross section. The passage 8 of the spout 60 as a whole constitutes a conductor and drainier for removing the wafer of condensation formed in the chamber of the valve.

The valve shown has on the upper side of the base or cup 1 an annular wall or flange 65 10, with an interior screw thread, into which is threaded the lower end of the outer shell or casing 11 of the valve; and the valve has an expansible member or stem 12 socketed onto a pin or stud 13 upwardly projecting from the bottom of the base or cup 1 of the valve. The valve shown is of that type of air valves employing a float 14 operating within the chamber of the shell or casing. The upper end of the outer shell or casing 11 has a neck 15 with a closing cap 16, in which neck is located a valve seat 17, with a pin valve carried by the float 14, the seat and valve being of the usual construction, and, therefore, not shown.

The drainage spout is held in position, by having the side walls of the horizontal member 7 of the spout extended to form side forks 17, each fork terminating in a projection 18 having a square shoulder, as shown in Fig. 6. Said forks or arms 17 are elastic, so that they will spring toward each other and allow the horizontal member of the spout to be inserted in the passage 4, and, when fully inserted, the side arms or forks 90 will spring outward for the shoulders of the projection 18 to engage the face of the inner wall of the base adjacent to the nipple and retain the spout in its inserted position.

It will be understood that the valve with the drainage spout in modified forms, has, in the construction shown, the base or cup 1 with chamber 2 and the outer shell or casing 11, expansible member or stem 12, and float 14, as described for the construction of valve 100 shown in Fig. 1. These parts are of the usual and well known form of construction for air valves for radiators, having an expansible member or stem and a float and operating in the usual manner of such valves, so that it is not deemed necessary to specifically describe the construction and operation of the parts of the air valve outside of the drainage spout to which this invention specifically pertains. The nipple, instead of being located and projecting out from one side of the base or cup, can be located and
project out from one side of the outer shell or casing, which is a well known form of construction for air valves for radiators; and, no matter where the nipple is located, the drainage spout is to be entered in the passage of the nipple which furnishes communication between the chamber of the valve and the radiator.

The operation of the drainage spout is as follows: The moisture from the water of condensation will accumulate on the inner face of the side walls of the drainage spout and by capillary attraction create a stream which will flow through the channel or passageway formed by the side walls of the spout, by which any accumulation of water in the chamber of the valve will be drawn off therefrom and will flow downward on the vertically depending member of the spout and enter the radiator, leaving the chamber of the valve free of water to an extent by which a free passage for air and steam is provided, without any liability of a seal being formed by the water of condensation in the chamber of the cup or the casing of the valve that would interfere with the venting of the air and the admission of steam from the radiator.

The formation of the spring fork is one which permits the valves to be completed and assembled prior to the insertion of the drainage spout which can be permanently fixed in place merely by pushing it into the nipple until the shoulders on the forks of the spring engage the inner wall of the base or cup. This obviates the necessity for upsetting the edges of the inner end of the spout, which has frequently been the practice in the prior constructions and permits the parts to be much more readily and satisfactorily assembled, and permits the valves to be packed and shipped in compact form and the drainage spouts to be thereafter inserted, which is a more satisfactory method of packing and shipping than would be the case if it were necessary to insert the drainage spouts prior to the final assembling of the parts composing the valve.

What I claim as new and desire to secure by Letters Patent is:

1. In an air valve for radiators, the combination with a laterally extending nipple for attachment of the valve to the radiator, having a passage leading through the nipple from the chamber of the valve of a drainage spout provided at its inner end with a spring fork having shoulders adapted to engage the adjacent portions of the interior of the valve to prevent the withdrawal of the drainage spout, substantially as described.

2. In an air valve for radiators, the combination with a laterally extending nipple for attachment of the valve to the radiator, having a passage leading through the nipple from the chamber of the valve of a drainage spout bent to furnish a horizontal member, and a downhanging member, the horizontal member being entered into the passage of the nipple and having at its inner end a spring fork provided with shoulders adapted to engage the adjacent portions of the valve structure to prevent the removal of the draw-off spout, substantially as described.

Witnesses:

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