July 12, 1932. G. W. BLACKMORE 1,867,303

RADIATOR ATTACHMENT

Filed March 23, 1929

Fig. 1.

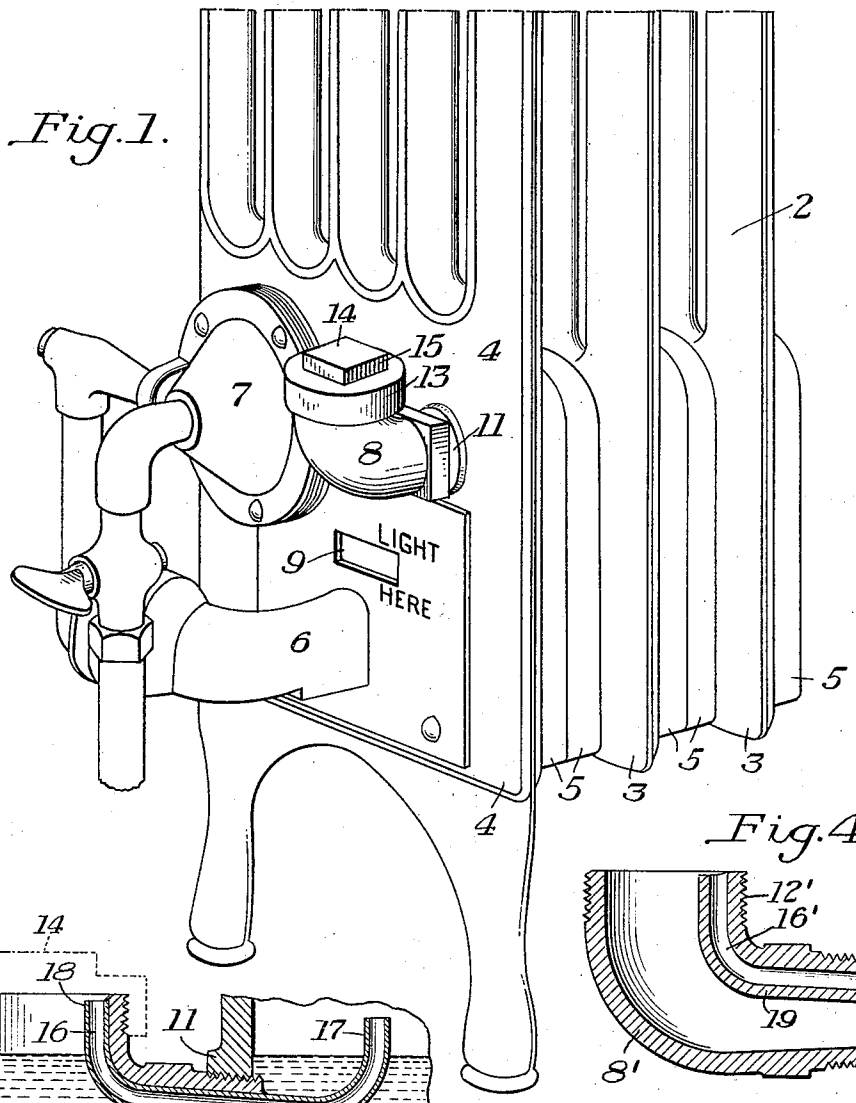


Fig. 4.

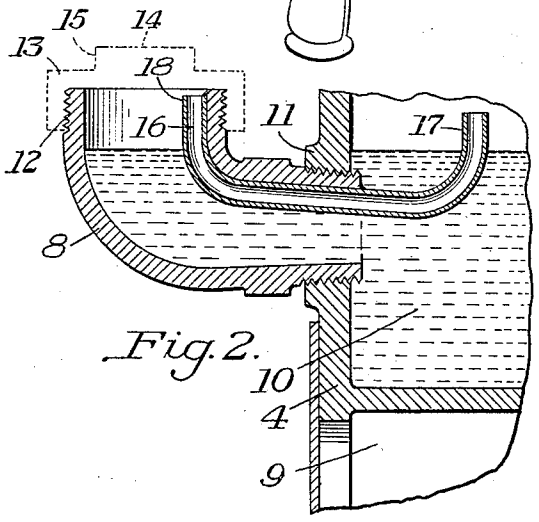
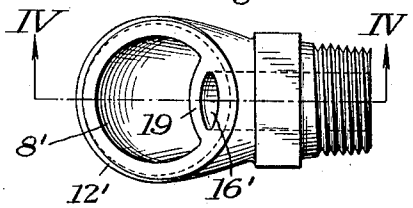


Fig. 2.

Fig. 3.



INVENTOR

George W. Blackmore,

By Byrnes, Stebbins & Parmele

His attorneys.

Patented July 12, 1932

1,867,303

UNITED STATES PATENT OFFICE

GEORGE W. BLACKMORE, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO AUTOMATIC GAS STEAM RADIATOR COMPANY, OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA

RADIATOR ATTACHMENT

Application filed March 23, 1929. Serial No. 349,397.

My invention relates to radiator attachments and more particularly to filling devices for radiators having an enclosed heating fluid.

In using radiators isolated from a central heating unit, it is customary to enclose a body of fluid, usually water, in a fluid tight radiator. A burner is inserted in the radiator for heating the fluid and converting it into low pressure vapor which circulates throughout the radiator and dissipates heat. A common form of such radiators is a gas fired radiator, although it is to be understood that the present invention is not limited to any particular style of radiator, and that it is applicable to radiators using a wide variety of fuels. Such radiators are usually supplied with a filling attachment by which fluid is supplied to the radiator. In supplying fluid, it is poured into the attachment and flows into the body of the radiator. However, as the gases confined in the radiator have had to escape through the same opening as the incoming fluid, the fluid was agitated and tended to spatter out over the adjacent radiator surfaces and objects. Where the radiator is mounted in a house, such spattering is particularly objectionable. With such an attachment, the ultimate level of the fluid in the radiator is limited substantially to the level of the upper surface of the fluid passageway in the attachment.

I provide a filling attachment for radiators in which a passageway is provided for supplying liquid to the radiator and a separate passageway is provided for permitting the escape of gases in the radiator without compelling the gases to mingle with the incoming fluid. The passageway for the escape of gases may be effective at a position in the radiator above the top of the liquid supplying passageway so that the liquid level in the radiator can be brought above the inlet opening. The two passageways can be formed in a single casting, if desired, or one of the passageways may be formed by placing a tube in a casting.

The accompanying drawing illustrates certain present preferred embodiments of the invention, in which

Figure 1 is a perspective view of a portion of a radiator embodying my invention,

Figure 2 is a sectional view of a radiator and filling attachment shown in Figure 1,

Figure 3 is a plan view of a modified form of filling attachment, and

Figure 4 is a sectional view thereof taken along the section line IV—IV of Figure 3.

Referring to Figures 1 and 2, a radiator 2 comprises a plurality of intermediate units 3 and end units 4 (only one of which is illustrated), connecting flanges 5, a burner 6, a thermostatically operated fuel regulator 7 and a filling attachment 8. The connecting flanges 5 of the units 3 and 4, together with openings 9 in the units, combine to form a combustion chamber in the radiator around the walls of which the heating liquid 10 circulates. The foregoing structural features of the radiator are well known in the art.

The filling attachment 8 is seated in a threaded boss 11 in the unit 4. The position of the boss 11 is determined with respect to the desired level of the fluid 10 in the radiator. The outer end or inlet of the filling attachment 8 is provided with threads 12 on which a cap 13 is screwed. The cap 13 is preferably provided with a head 14 having faces 15 for the reception of a wrench. The top of the filling attachment 8 is disposed above the liquid level in the radiator 2.

To prevent spattering and bubbling when liquid is poured into the filling attachment by reason of the escape of displaced gases in the radiator, a passageway 16 is formed in the filling attachment. In Figure 2 the passageway 16 is illustrated as being formed of a bent tube secured as by welding or brazing interiorly of the filling attachment. An end 17 of the tube constituting the passageway 16 is bent to overhang the threaded edge of the filling attachment 8 passing through the boss 11. The overhanging end of the tube 17 is inserted through the opening of the boss 11 by a relative tilting movement between the radiator section 4 and the body of the filling attachment 8 before the latter is threaded into the boss 11. The other end 18 of the tube preferably extends to within a short distance of the upper surface of the

attachment 8 to permit the filling of the radiator to a level near that of the top of the attachment 8. A small passageway is preferably left between the end 18 of the tube and the cap 13 when in position. Accordingly when the end 17 is positioned to extend vertically in the radiator, the gases confined above the fluid 10 may escape through the passageway 16, even though the level of the fluid 10 is materially above the opening in the boss 11. This permits the filling of the radiator to a depth greater than is possible where a plain opening is relied upon, both for the escape of the confined gases and for the entrance of fluid. After the radiator is filled to the desired level, as shown by the level of the fluid in the filling attachment 8, the cap 13 is screwed down which closes the radiator.

Referring to Figures 3 and 4, wherein parts corresponding to those shown in Figures 1 and 2 are given the same reference numerals with a prime suffix, a radiator filling attachment 8′ is provided with an opening 16′ through which confined gases can escape by casting a web 19 integral with the body of the filling attachment 8′. With this construction, the position of the fluid level in the radiator is normally determined by the position of the web 19.

While I have shown and described certain preferred embodiments of the invention, it is to be understood that it may be otherwise embodied within the spirit of the invention and without departing from the scope of the appended claims.

I claim as my invention:

1. In combination with a radiator having a water space, a vapor space above the water level and a threaded opening through a side wall of the radiator below the water level, a filling attachment threaded into said opening and having its inlet upwardly directed, said attachment having a web separating a lower passageway for conducting liquid into the radiator from an upper passageway for venting entrapped gases while the water space is being filled.

2. In combination with a radiator structure comprising heating units having a liquid reservoir formed therein, a vapor space above the liquid level and an opening through a side wall below the liquid level, an elbow seated in said opening with its free end upturned, said elbow having a web separating a lower passageway from an upper vent passageway extending along the top of the elbow.

3. In combination with a radiator having a liquid reservoir, a vapor space above the liquid level and an opening through a side wall of the radiator below the liquid level, a filling attachment seated in said opening, said filling attachment having a web separating a lower passageway for conducting liquid into the radiator from an upper vent passageway extending along the top thereof to permit the escape of entrapped gases from the radiator while liquid is flowing to the radiator through the lower passageway of the filling attachment.

In testimony whereof I have hereunto set my hand.

GEORGE W. BLACKMORE.