M. S. CLAWSON.

STEAM HEATER.

APPLICATION FILED JULY 2, 1910.

1,095,550. Patented May 5, 1914.

Fig. 1.

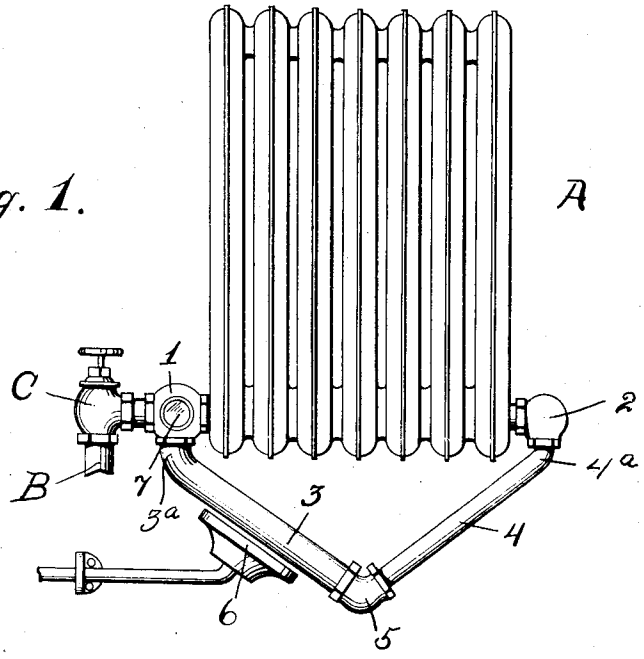
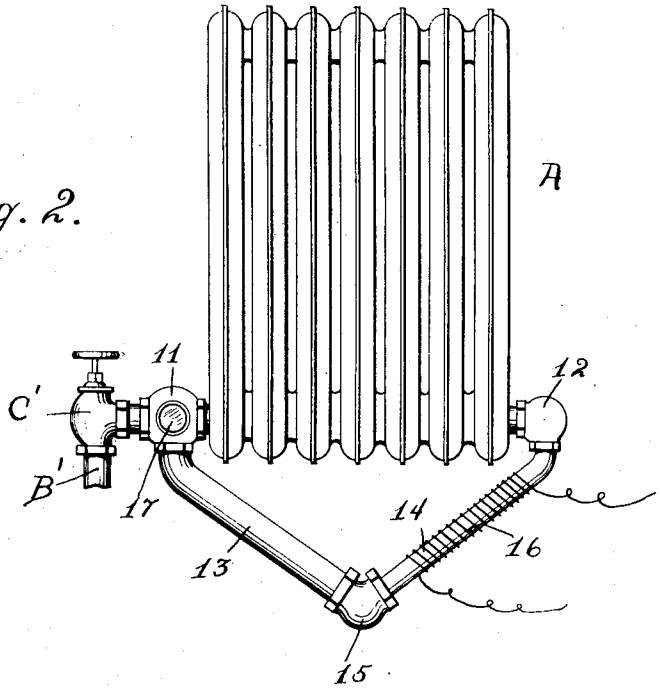


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

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STEAM-HEATER.

1,095,550. Specification of Letters Patent. Patented May 5, 1914.

Application filed July 2, 1910. Serial No. 570,114.

To all whom it may concern:

Be it known that I, MONROE S. CLAWSON, a citizen of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Steam-Heaters, of which the following is a specification.

My invention relates to steam heating systems and has for its object the provision of a radiator for steam heating systems so constructed that it may be cut out from the main system and used as an isolated or local heater.

To this end my invention consists in attaching a V-shaped pipe connection to the two ends of the radiator and between it and the service pipe, said V-shaped pipe connection acting as a reservoir to hold the water when the radiator is used as an isolated or local heating system. Means are also provided for heating the water in the V-shaped connection.

My invention will be described in detail hereinafter and illustrated in the accompanying drawing in which—

Figure 1 is a view of my improved radiator arranged to be heated by a flame burner, and Fig. 2, a similar view showing the radiator arranged to be heated by an electric coil.

Referring to the drawing, in Fig. 1 A indicates a steam radiator of the conventional type and B the service pipe having the usual cut off valve C.

My invention consists in attaching a 3-way coupling 1 between the radiator A and service pipe B and a 2-way coupling 2 at the other end of the radiator from the coupling 1, 3 and 4 indicating pipes secured to the two couplings 1 and 2 respectively and connected by elbow coupling 5, said pipes 3 and 4 and elbow coupling 5 constituting the V-shaped connection referred to above and when the radiator is first started as a part of a system the pipes 3 and 4 and the couplings secured thereto fill with water of condensation until running over, after which the condensed water flows back to the generator in the usual manner.

As shown in the drawings the pipe 3 is considerably larger in diameter than the pipe 4 and serves as a reservoir as well as a boiler for the water when the radiator is used as an isolated heater and a burner 6 such as shown in Fig. 1 is used to heat the water. Attention is also directed to the construction of the upper ends of pipes 3 and 4 which are each bent as shown at 3^a and 4^a so that they enter couplings 1 and 2 vertically, this construction preventing the hammering or snapping in the pipes 3 and 4 in the beginning of use of the radiator as a local or isolated heater.

7 indicates a sight hole closed by a transparent plate to enable the operator to determine the proper amount of water in the pipes 3 and 4 when starting to use the radiator as a local heater, the proper amount of water being at about the height of the lower edge of the sight hole.

In Fig. 2 the radiator is designated A′, the service pipe B′ and the valve C′. 11 indicates the 3-way coupling, 12 the 2-way coupling, 13 and 14 the pipes and 15 the elbow coupling connecting them. In this case the heat is generated by an electric coil 16 around pipe 14 and the circulation would necessarily be in the direction opposite to the direction of circulation shown in Fig. 1.

In operation as a member of a general heating system it will be apparent that steam will enter from the service pipe B or B′ through the coupling 1 or 11 and after circulating through the radiator A or A′ will return in the usual manner. When the radiator is to be used as a local or isolated heater the valve C or C′ is closed so that the water in the V-connection, heretofore referred to, is retained in the heater, care being taken that there is sufficient water in the V-connection to be visible through the lower edge of the sight hole 7 or 17. The water in the connection is then heated by the burner 6 or coil 16, and when it boils the steam will circulate through the radiator and when condensed will return through the other end of the V-connection.

Having thus described my invention what I claim is—

1. In a steam heating system, a radiator comprising a service pipe, a V-shaped tubular connection coupled to the two ends of said radiator and to the service pipe, said V-shaped tubular connection constituting a reservoir to hold water of condensation, and means to heat the water in said connection.

2. In a steam heating system, a radiator comprising a service pipe, a 3-way coupling connecting the service pipe and one end of said radiator, a 2-way coupling secured to the other end of the radiator, a V-shaped

tubular connection secured to said couplings, said V-shaped connection being located entirely below the radiator with its two arms extending upwardly and constituting a reservoir to hold water of condensation, and means to heat the contents of said reservoir.

3. In a steam heating system, a radiator comprising a service pipe, a 3-way coupling connecting the service pipe and one end of said radiator, a 2-way coupling secured to the other end of the radiator, a V-shaped tubular connection secured to said couplings and constituting a reservoir to hold water of condensation, means to isolate the radiator from the service pipe, and means to heat the water in the V-shaped connection.

4. In a steam heating system, a radiator comprising a service pipe, a 3-way coupling connecting the service pipe and one end of said radiator, a 2-way coupling secured to the other end of the radiator, a V-shaped tubular connection secured to said couplings and located below the radiator, means to isolate the radiator from the service pipe, a sight glass in the 3-way coupling to ascertain the amount of water in the radiator and V-shaped connection, and means to heat the water in the V-shaped connection.

5. A heater comprising a radiator, a supply pipe connected with the inlet thereof, a valve in said pipe, a coupling in said pipe between the radiator and said valve, said coupling being provided with a sight glass, an inclined pipe connected with said coupling and extending downwardly, a smaller pipe connected with the outlet of the radiator and extending in a downwardly inclined direction converging toward the first named inclined pipe and connected therewith by means of a coupling, and heating means applied to the first inclined pipe.

6. A heater comprising a radiator, a supply pipe connected with the inlet thereof, an inclined pipe connected with said supply pipe adjacent said inlet and extending downwardly, a smaller pipe connected with the outlet of the radiator and extending in a downwardly inclined direction converging toward the first named inclined pipe and connected therewith, and heating means applied to one of said inclined pipes.

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

MONROE S. CLAWSON.

Witnesses:
A. B. MURPHY,
HARRY G. HEROLD.