HOT-WATER-SERVICE SYSTEM.


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To all whom it may concern:

Be it known that I, STEWART H. MOORE, 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 Hot-Water-Service Systems, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to hot water service systems and, its object is to provide certain improvements which go to make up an efficient and generally improved system of this class.

In attaining the objects of my invention, as illustrated in the embodiment of my invention hereinafter described, I circulate the service water through pipes that are surrounded by hot water in the hot water passages of a house heating system, either a hot water system or a steam system, and in this way heat the service water by conduction through the pipes that are surrounded by the hot water of the house heating system. I also contemplate the provision of suitable devices for subsequently heating to any desired temperature the service water initially heated in the pipes surrounded by the hot water of the house heating system.

In combination with the features just mentioned I provide certain novel structural arrangements which have much to do with the successful operation of the hot water service system of my invention, all of which will be more fully hereinafter set forth.

My invention is fully set forth in the following description and is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view illustrating one embodiment of my invention; and Figs. 2 and 3 are detail views of the service water pipes that are immersed in the hot water in one of the pipes of the house heating system and illustrate the couplings whereby connections are made with the pipes leading to and from the service water tank.

Similar reference characters refer to similar parts throughout the several views.

Referring to Fig. 1, I have illustrated at 4 the boiler for a house heating system, which may be either of the hot water or steam type. The boiler 4, which may be of any suitable type, is provided with the usual fire-box, grates, pressure gage, etc. At 5 I have illustrated a pipe forming a part of the house heating system and which pipe communicates with the boiler 4 and conducts the hot water or steam, as the case may be, from the boiler to the radiators of the house heating system. At 6 I have illustrated the return pipe for the house heating system, said return pipe being connected with a stand-pipe 7, which in turn has its lower end connected with the boiler 4. If the house heating system is of the hot water type, the stand-pipe 7 will at all times contain a quantity of extremely hot water, and even if the house heating system is of the ordinary steam type, there will always be a considerable amount of extremely hot water in the stand-pipe 7. It will not be necessary for me to explain fully the details of the house heating system. The features of the house heating system that I have illustrated are sufficient to enable anyone skilled in the art to fully understand the novel features of my invention.

At 8 I have illustrated a water tank mounted upon a suitable base 9. Water tanks similar to the tank 8 are commonly provided with burners or electric heaters, but I have not thought it necessary to illustrate such a well known expedient in the present application. At 10 and 11 I have illustrated the pipes through which service water is admitted to and withdrawn from the tank 8, the said pipes being provided with suitable valves and leading to any desired points. Communicating with the tank 8, is a pipe 17 which leads through a suitable screw or pipe connection in the side of the bushing 13", which is screwed into the side of the reducing T 18. Just inside the bushing 13", this pipe connects by means of an L with the connection 16, as best illustrated in Figs. 2 and 3. There is a similar pipe connection 12 connecting the coupling 14 through an L with the service pipe 10. Two heating pipes 15, 16 are screw-threaded into the couplings 14 and 16. It will be apparent that three or four or more pipes might be substituted for the two pipes 15, as shown in the drawings, provided the couplings 14 and 16 were arranged for the reception of the larger number of pipes, corresponding with those shown at 15 in the drawings. The larger number of pipes would increase the heating surface. The couplings 14 and 16 and the pipes connecting them are all located within the stand-pipe 7, as best illustrated in Fig. 1. The L
at the upper end of the coupling 14 is connected with the pipe 12, which passes through the bushing 13 by means of a screw or other suitable connection. The couplings 14 and 16 and the pipes 16 extend vertically through the standpipe 7 and are, therefore, immersed in the hot water within the standpipe. A valve 17 and a faucet 17 are connected in the pipe 17, as best shown in Fig. 1 of the drawings. The pipe connections just described are such that the water to be heated will pass from the lower part of the tank 8 through the pipe 17, the coupling 16, the heating pipes 15, the coupling 15, and the pipe 12 back to the pipe 10. As previously stated, the stand-pipe 7 will at all times contain a quantity of extremely hot water, whereby heat will be conducted through the walls of the pipe 15 to heat the service water as it flows upwardly through these pipes. The pipes 15 are preferably made of some metal that is a good conductor of heat, such, for example, as iron or copper. By providing the arrangement just described, I am enabled to heat the service water quickly and at practically a negligible cost, inasmuch as the heat utilized to raise the temperature of the service water is not missed from the house-heating system.

While I have described my hot water service system as associated with a house heating system, it is evident that my hot water service system may be employed in connection with hot water and steam heating arrangements for buildings generally without departing from my invention or the scope of the appended claims.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. In combination, a standpipe through which hot fluid is passed after it has been circulated through the passages of a house heating system, a reducing T attached to each end of said standpipe, one reducing T being arranged to be attached to the return pipe of the house heating system and the other reducing T arranged to be connected with a boiler, a pair of parallel tubes vertically disposed in said standpipe and extending the full length thereof, couplings connecting the corresponding ends of said tubes, and a pipe attached to each of said couplings extending substantially at right angles to said tubes and passing through the adjacent reducing T whereby service water may be circulated through said tubes to be heated by hot fluid previously passed through the pipes of the house heating system.

2. In combination a standpipe through which hot fluid is passed after it has been circulated through the passages of a house heating system, a plurality of parallel tubes of small cross-section vertically disposed in said standpipe, couplings connecting the corresponding ends of said tubes, and a pipe attached to each of said couplings extending substantially at right angles to said tubes and passing through said standpipe whereby service water may be circulated through said tubes to be heated by hot fluid previously passed through the several pipes of the house heating system.

3. In combination, a standpipe through which hot fluid is passed after it has been circulated through the fluid passages of a house heating system, a tube of comparatively small cross-section and of good heat-conducting material vertically disposed in said standpipe and surrounded by the hot fluid in said standpipe, and pipes connected with the ends of said tube extending substantially at right angles to said tube and passing through said standpipe whereby service water may be circulated through said tube to be heated by conduction from the hot fluid previously passed through the several passages of the house heating system.

In witness whereof, I hereunto subscribe my name this 18th day of October, A. D. 1913.

STEWART H. MOORE.

Witnesses:
A. G. McCubbie,
ALBERT C. AHILBERG.