

No. 897,609.

PATENTED SEPT. 1, 1908.

E. N. FAIRCHILD.
HEATING SYSTEM.

APPLICATION FILED JUNE 4, 1908.

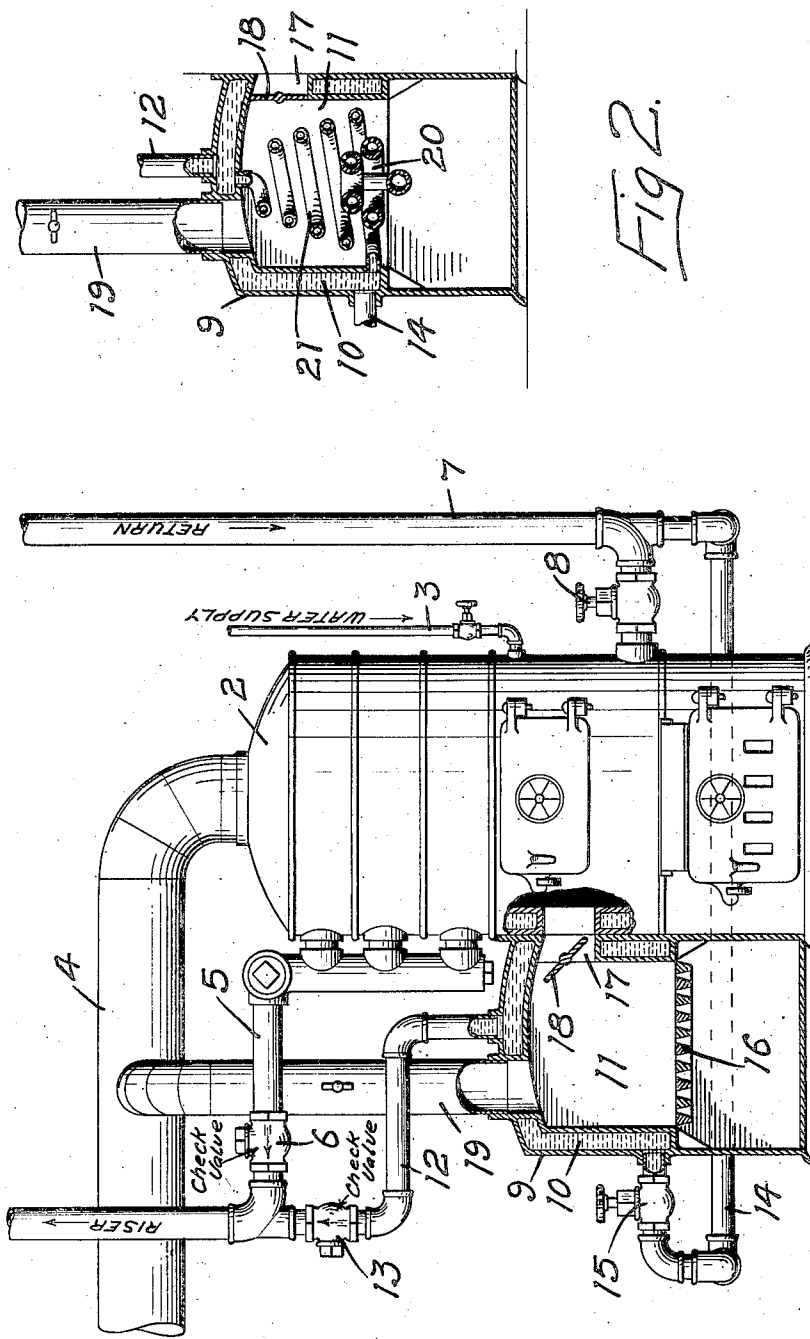


Fig 2.

Fig 1.

WITNESSES
M. Vafstrom
J. A. Crompton

INVENTOR
EGBERT N. FAIRCHILD
BY *Paul & Paul*
HIS ATTORNEYS

UNITED STATES PATENT OFFICE.

EGBERT N. FAIRCHILD, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR OF ONE-HALF TO M. A. LEHMAN, OF MINNEAPOLIS, MINNESOTA.

HEATING SYSTEM.

No. 897,609.

Specification of Letters Patent.

Patented Sept. 1, 1908.

Application filed June 4, 1908. Serial No. 436,631.

To all whom it may concern:

Be it known that I, EGBERT N. FAIRCHILD, of Minneapolis, Hennepin county, Minnesota, have invented certain new and useful
5 Improvements in Heating Systems, of which the following is a specification.

My invention relates particularly to hot water heating systems. In the operation of such a system for residence heating, considerable difficulty has been experienced in the
10 early fall and spring to provide sufficient fire to heat the water in the morning for the purpose of taking the chill off the house without overheating the house when the fire is once
15 under way and the water in circulation. A small wood fire lasting but a few moments would be sufficient to heat the water in the system and cause it to circulate through the radiators and warm the house sufficiently
20 for the day, but it is of course impracticable to build a wood fire upon the coals in the grate, and if a sufficient amount of coal is to be put on to heat the water it has been found almost impossible to check the fire when the
25 house has been warmed. Great discomfort and waste of fuel has therefore resulted from the operation of the ordinary hot water heating plant in mild weather.

The object therefore of my invention is to
30 provide an auxiliary or supplementary heating attachment in connection with the system by means of which the water can be heated without increasing the fire in the primary boiler or heater.

35 My invention consists generally in a hot water heating system and an auxiliary heater in connection therewith.

Further, the invention consists in various constructions and combinations, all as hereinafter described and particularly pointed
40 out in the claims.

In the accompanying drawings forming part of this specification, Figure 1 is a side elevation partially in section, of a hot water
45 heater with my invention applied thereto. Fig. 2 is a vertical sectional view of a modified form of auxiliary heater.

In the drawing, 2 represents the main or primary boiler or heater having a water supply pipe 3 and smoke flue 4. A riser 5 leads
50 to the radiators and is provided with a check valve 6 and a return pipe 7 has a valve 8. So far the apparatus is of ordinary construction and in general use. At one side of the
55 heater I provide an auxiliary heater 9 having

a circulating chamber 10 around the fire box 11 communicating at the top with the riser 5 through a pipe 12 having a check valve 13. The lower part of the circulating chamber 10 is connected by a pipe 14 with the return pipe 60 7 and is provided with a valve 15. By closing the valve 15 the auxiliary heater may be entirely cut off from the system. A grate 16 is provided in the fire box 11 and a passageway 17 leads into the fire box of the 65 main heater and has a valve 18 that is adapted to close the said passageway. A smoke flue 19 leads from the top of the fire box into the flue 4. The operator is thus able to direct the products of combustion into the 70 fire box of the main heater or directly from the fire box 11 through the smoke flue 19 into the flue 4.

If there is a fire in the main boiler and the operator desires a quick heat in the radiators 75 without increasing the fire in the main boiler, he will open the valve leading to the circulating chamber of the auxiliary boiler and build a fire of wood or other quick burning material on the grate 16. The capacity of the 80 circulating chamber 10 being much less than that of the main boiler the water will be heated more quickly, and circulating through the system will warm the rooms sufficiently to take off the chill, and by the time the 85 desired temperature is obtained the fire in the auxiliary boiler will have burned out and there will be no danger of over-heating the house. Neither will it be necessary to disturb the fire in the main boiler which may be 90 run as low as the outside temperature may demand. When the system is first started up in the fall before any fire is made in the main boiler it may be cut off from the system
95 by closing the valve 8 and the auxiliary boiler used alone until such time as the weather demands the additional heating capacity of the large boiler. After the main boiler is once started the auxiliary one may be cut off during the extreme cold weather and utilized on 100 days of mild temperature merely for the purpose of temporarily supplementing the heat of a low fire in the main boiler.

In place of using the grate 16 for wood or coal I may employ a gas burner 20 around 105 which a coil 21 may be placed and connected with the upper and lower portions of the circulating chamber. I have indicated the wall of the supplementary boiler arranged in close contact with that of the main boiler and 110

formed independently thereof so that the apparatus may be utilized with hot water systems already in use.

I claim as my invention:

- 5 1. The combination, with a hot water heating system comprising a main boiler or heater having a smoke flue and a water circulating chamber, a riser and return pipe connected with said chamber, of a comparatively small supplementary boiler also having a smoke flue and a circulating chamber, and pipe connections with said riser and return pipe, and said supplementary boiler being adapted to temporarily augment the heating surface of said main boiler, for the purpose specified.
- 10 2. In a hot water heating system, the combination, with the main boiler having a riser and return pipe connections and a discharge flue for the products of combustion and a circulating chamber, of a supplementary boiler
- 15
- 20

having a fire box and a circulating chamber surrounding the same and a flue leading from said fire box into the fire box of said main boiler, circulating pipes leading from the circulating chamber of said supplementary boiler to said riser and return pipes, a discharge pipe for the products of combustion leading from said fire box, and a valve arranged in the flue between the fire box of said main and supplementary boilers whereby the products of combustion in said supplementary boiler may be directed to the fire box of said main boiler or into said discharge pipe, substantially as described.

In witness whereof, I have hereunto set my hand this 28th day of May 1908.

EGBERT N. FAIRCHILD.

Witnesses:

RICHARD PAUL,
J. A. BYINGTON.