(No Model.)

E. R. AUSTIN.

STOVEPIPE WATER HEATER.

No. 515,640. Patented Feb. 27, 1894.

Fig. 2.

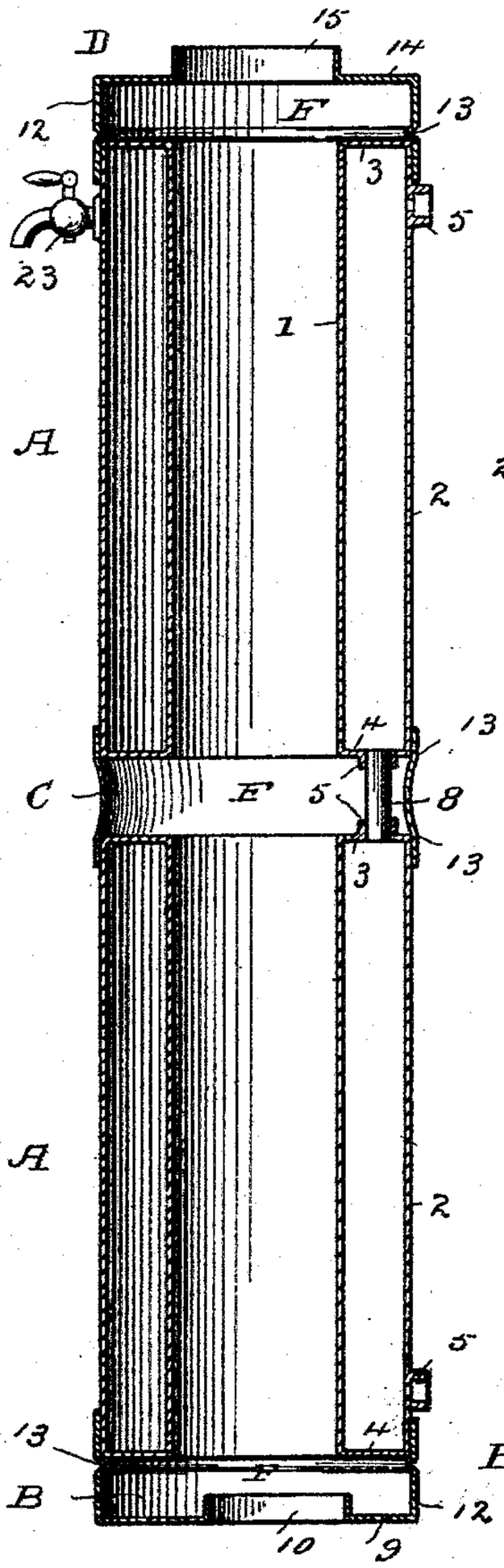


Fig. 1.

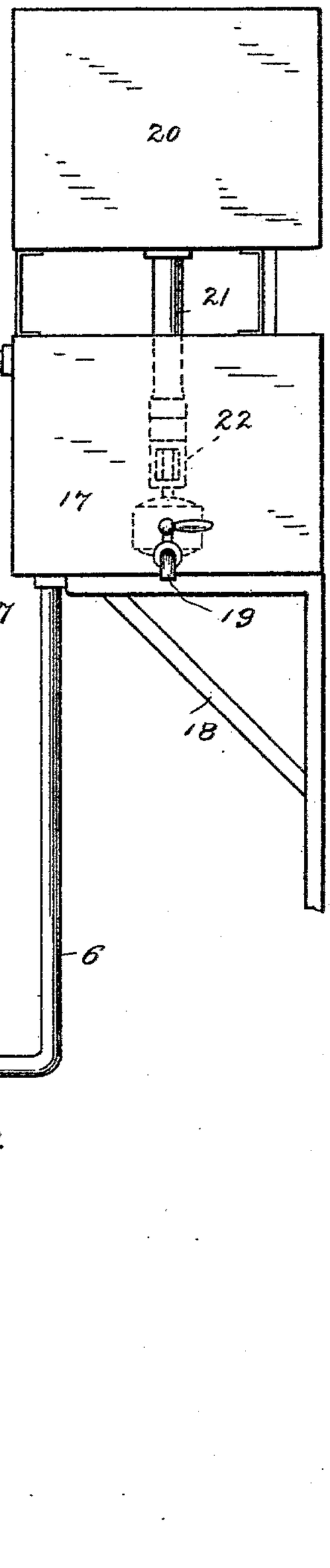
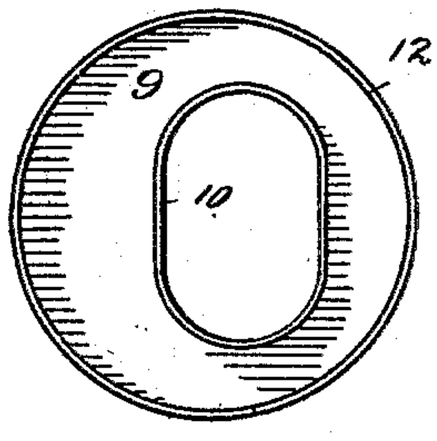


Fig. 3.



WITNESSES

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EMMET R. AUSTIN, OF NORWALK, CONNECTICUT.

STOVEPIPE WATER-HEATER.

SPECIFICATION forming part of Letters Patent No. 515,640, dated February 27, 1894.

Application filed May 22, 1893. Serial No. 475,089. (No model.)

To all whom it may concern:

Be it known that I, EMMET R. AUSTIN, a citizen of the United States, residing at Norwalk, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Stovepipe Water-Heaters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide a stove pipe water heater which shall be adapted for general use but especially adapted for houses not provided with a running water supply, and which shall be made in sections and provided with suitable pieces for connecting the sections together, for connecting the lower section to the stove, and for the connection of the upper section with the stove pipe, and suitable pipes for connecting the sections to each other, and for connecting the upper and lower portions of the heater with a suitable hot water tank, it being required that the construction be simple, durable, inexpensive and practically impossible to get out of repair.

With these ends in view I have devised the novel construction which I will now describe referring by letters and numbers to the accompanying drawings forming part of this specification in which—

Figure 1 is a view partly in elevation and partly in section illustrating a single section of the heater in place upon a stove and connected to an ordinary pipe, and also showing the connections to a hot water tank; Fig. 2, a sectional view illustrating the manner in which two sections are connected, and Fig. 3 is a plan view of the base piece which engages the ordinary pipe collar upon a stove or range.

A denotes sections of my novel heater, B the base piece, C a connecting piece, and D a top piece. The sections consist of inner and outer walls denoted respectively by 1 and 2, and top and bottom walls denoted respectively by 3 and 4, which connect the inner and outer walls leaving a passage through the section for the products of combustion. Hubs 5 are provided at the tops, bottoms or sides of the sections, wherever they may be required, for the connection of pipes, the only difference between single, top, bottom or intermediate sections being in the number and location of the hubs. If a section is designed to be used as a single section as in Fig. 1, it is provided on the outer side near the bottom with a hub for the connection of a cold water pipe 6 and on the outer side near the top with a hub for the connection of a hot water pipe 7.

Where two sections are used as in Fig. 2 the bottom section is provided on its outer side near the bottom with a hub for the connection of a cold water pipe and the top section is provided on its outer side near the top with a hub for the connection of a hot water pipe. The lower section may be provided with a hub on its upper side and the top section with a hub on its under side for the engagement of an intermediate connecting pipe 8, or if preferred, instead of providing hubs on the top and bottom respectively of the two sections as in Fig. 2, two single sections provided with hubs as in Fig. 1 may be connected by an intermediate pipe which would of course lie outside of the connecting pieces. This form is not illustrated in the drawings as it is so obvious that illustration could not make it any clearer.

Where more than two sections are used the intermediate section or sections need not have any hubs upon the outer side but may be provided with hubs on the top and bottom which would be connected to the other sections by intermediate connecting pipes lying inside of the connecting pieces as in Fig. 2. It is obvious however that any number of single sections made as in Fig. 1 may be connected by pipes outside of the connecting piece. These sections are in practice cast in a single piece. The base piece consists of a plate 9 which is adapted to rest upon the top of a stove or range indicated by E and is provided with a collar 10 adapted to receive the ordinary pipe collar 11 of the stove or range, and with an outer flange 12 provided with an inwardly extending shoulder 13. The lower section passes within the top of the flange and rests upon the shoulder as shown in the drawings. The top piece consists of a top plate 14 having an outer flange 12 provided with a shoulder 13 which rests upon the top section, and with a collar 15 adapted to receive a stove pipe 16

s shown in Fig. 2. The connecting piece consists simply of a collar having a shoulder near its lower edge which rests upon the top of the lower section and a similar collar near its upper edge upon which the intermediate or upper section rests as clearly shown in Fig. 2.

It will be understood from Figs. 1 and 2 that where my novel heater sections are used they take the place of an equal length of stove pipe no pipe passing through the heater sections but said pipe being connected to the collar 15 upon the top piece. It will furthermore be seen that pieces B, C and D which are each single castings, form in connection with the sections themselves, top, bottom and intermediate heating chambers which I have designated by F. The products of combustion after leaving the stove or range circulate in the lower heating chamber, then pass up through the lower section, then through the intermediate heating chamber, then through the upper or intermediate section, thence through another heating chamber, and finally into the stove pipe which is attached to the upper section. The amount of heating surface thus obtained is very large enabling a large portion of the waste heat to be utilized in heating water.

It will of course be apparent that my novel heating sections may be used either in connection with the running water supply or with a supply tank. 17 denotes a hot water tank to which pipes 8 and 11 are connected and which rests upon a suitable bracket 18 and is provided with a spigot 19 for drawing off hot water. When used in connection with a running supply ordinary distributing and return pipes are connected to the tank. When not used in connection with a running supply I provide a supplemental tank 20 placed higher than the hot water tank which is kept filled with cold water. A pipe 21 extends from one tank to the other the flow of water from tank 20 being controlled by a float valve 22 within tank 17 which operates automatically when the water is nearly exhausted from tank 17, said valve being of ordinary construction and indicated only by dotted lines in Fig. 1. In order to provide for heating a smaller quantity of water very hot or for heating it very quickly I provide a valve 24 in hot water pipe 11 which enables me to cut off the passage of water from the upper end of the heater to the hot water tank so that the water in the heater will heat very quickly. I also provide a spigot 23 near the upper end of the section or upper section if more than one is used, for drawing off hot water directly therefrom. Ordinarily of course valve 24 is left open. It is optional however either to draw water from the tank or directly from the heater.

The operation will be obvious. The housekeeper is simply required to keep tank 20 filled with cold water to be assured of a constant supply of hot water. The valve in tank 17 should be arranged to operate before the water in said tank is entirely exhausted. When cold water enters from tank 20 the temperature of the water in tank 17 is of course reduced. It becomes heated very quickly however so that but little if any inconvenience is caused.

Having thus described my invention, I claim—

1. A stove pipe water heater comprising the main body having inner and outer annular walls, a base piece and a top piece having flanged openings for connection with the stove and stove pipe and having also flanges to extend outside the ends of the main body, said flanges having ribs 13 on which the ends of the main body bear, substantially as described.

2. A stove pipe water heater comprising the main body part made up of sections A, A arranged with a space between them at F, the connecting piece C forming a chamber extending from side to side of the main sections, the base and cap pieces forming chambers at the lower and upper ends of the main body, the water pipes and the pipe connection between the lower section and the upper, substantially as described.

3. A stove pipe water heater, comprising the two sections A, A having inner and outer concentric walls forming an annular water space, the said sections being arranged with a space between their adjacent ends, the connection C inclosing said space and forming a heating chamber extending from side to side intermediate of the two sections and the pipe connection 8 extending through the said chamber, substantially as described.

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

[illegible] E. AUSTIN.

Witnesses:

[illegible] WOOSTER.

[illegible] REYNOLDS.