

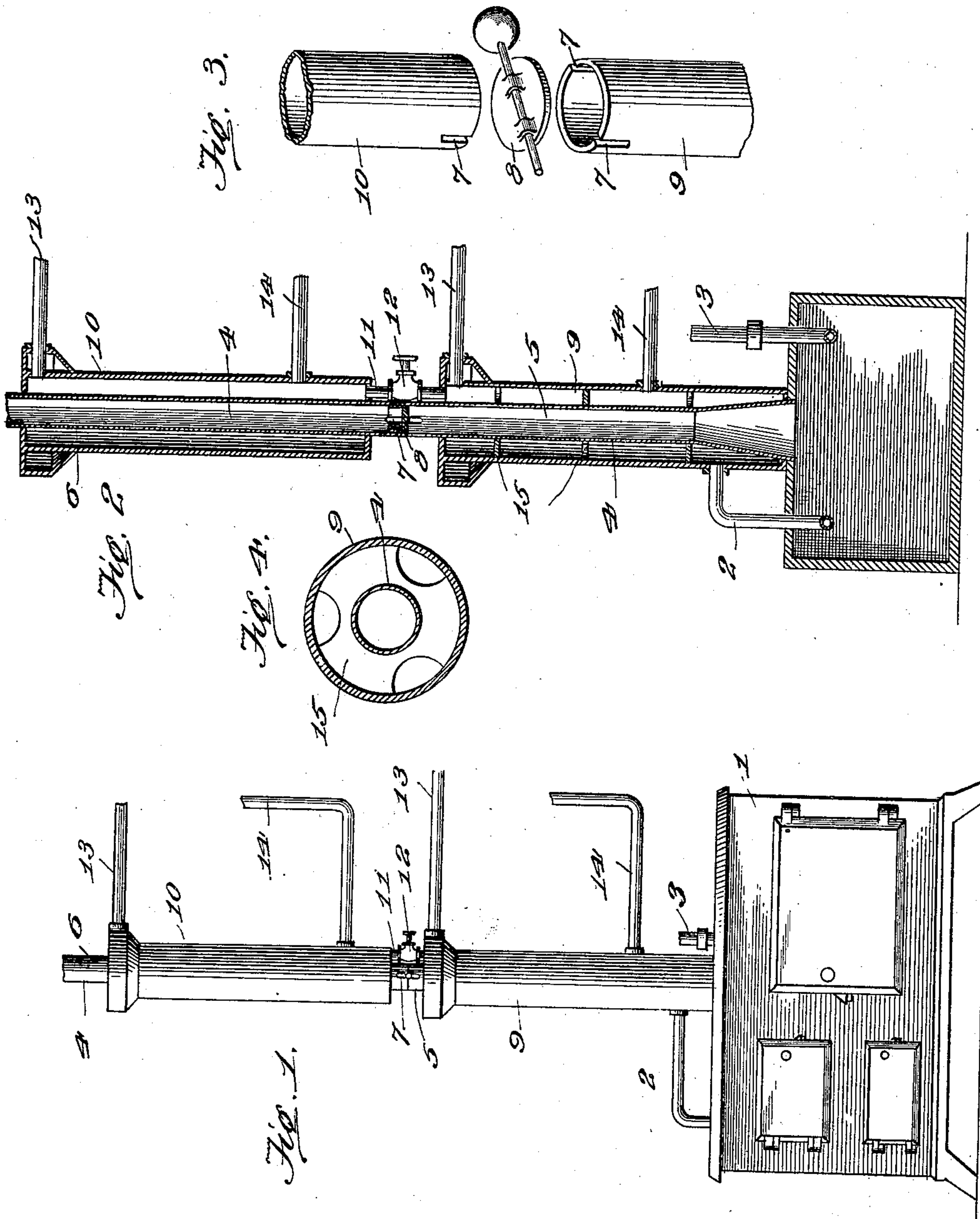
No. 704,009.

Patented July 8, 1902.

J. EBERSOLE.
HOT WATER HEATING SYSTEM.

(Application filed Mar. 27, 1902.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN EBERSOLE, OF CHAMBERSBURG, PENNSYLVANIA.

HOT-WATER HEATING SYSTEM.

SPECIFICATION forming part of Letters Patent No. 704,009, dated July 8, 1902.

Application filed March 27, 1902. Serial No. 100,315. (No model.)

To all whom it may concern:

Be it known that I, JOHN EBERSOLE, a citizen of the United States, residing at Chambersburg, in the county of Franklin and State of Pennsylvania, have invented certain new and useful Improvements in Hot-Water Heating Systems; and I do 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.

This invention has relation to improvements in hot-water heating systems of that character in which the water is heated from a range or ordinary cook-stove and supplied to radiators arranged in the rooms or apartments of a house or building.

The object of the invention is to provide a heating system of this type applicable to any ordinary cook-stove or range and designed to use all the available heat from the products of combustion and to be regulated to control the heating of the water in an efficient manner.

With this and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts which will be hereinafter more fully described, and particularly pointed out in the appended claim.

In the accompanying drawings, Figure 1 is a front elevation of the heating apparatus embodying my invention, showing the application of the same to an ordinary cook-stove or range. Fig. 2 is a vertical section through the heating apparatus. Fig. 3 is a detail view illustrating the detachable connection of the damper, and Fig. 4 is a horizontal sectional view.

Referring more particularly to the drawings, the numeral 1 represents a cook-stove or range of any ordinary construction, in the fire-box of which is arranged a heating-coil 2, to which water is supplied through the cold-water-supply pipe 3. The smoke and products of combustion from the stove or range discharge through the flue 4, which may consist of any suitable number of pipe-sections. In the present instance I have shown the flue as consisting of two sections 5 and 6, which telescope together at their meeting ends in the usual way. The said telescoping or meet-

ing ends of the flue-sections are provided with open-ended slots 7 to receive the journals of a damper 8, by means of which said damper may be lifted out upon moving the section 6 upwardly to permit of either section 5 or 6 being swabbed out whenever required without the necessity of disturbing or disarranging the other parts of the heating apparatus.

Surrounding the flue 4 are upper and lower boilers 9 and 10, which are connected at their meeting ends by a conducting-pipe 11, having a controlling-valve 12. Through this pipe 11 the water from the boiler 9 flows upwardly into the boiler 10 for further heating and distribution to the radiators.

The boiler 9 is suitably supported at its lower end upon the stove or range and is connected with the heating-coil 2, by means of which the water flowing through said coil is conducted therinto. Each boiler is also provided with a hot-water-supply pipe 13 for conducting the hot water to a radiator and a return-pipe 14, through which the cooled water is conducted back from the radiator to the boiler to be heated again. The upper ends of the two boilers may be provided with any desired connections to receive one or more hot-water-circulating pipes, according to the number of the radiators to be supplied, and, if desired, the cooled water from all the radiators may be returned to the boilers through the return-pipes 13 and 14, which may be common to all.

Arranged within the lower boiler 9 are plates 15, each of which is provided with a central opening to enable it to be fitted on the flue 5 and formed around its circumference with notches or openings to allow a certain or restricted quantity of the water to flow upward through said boiler. By this means the water will be checked or retarded in its upward flow, so that a greater proportion of the heat from the products of combustion passing through the flue 4 may be transmitted thereto by radiation from said flue.

In the operation of the device it will be understood that the cold water from the pipe 3 circulates through the coil 2 in the fire-box of the stove and is thereby heated, and thence passes into the lower end of the boiler 9. The

water then flows upward through said boiler and a part of it discharges into the pipe 13, which conducts it to the radiator or radiators to be supplied from said boiler. If the valve 5 12 be opened, a portion of the water from the boiler 9 will also ascend into the boiler 10 and rise therein and be conducted thereby to the radiator or radiators supplied from said boiler. The cooled water discharging from 10 the radiators flows through the pipes 14 back to the boilers again to be heated. By closing the valve 12 communication between the boilers 9 and 10 may be cut off and the boiler thrown out of action. By also closing the 15 damper 8 to regulate the draft the discharge of the products of combustion may be retarded, so as to enable a larger proportion of heat to be taken up by the water in the boiler 9, which operation will be facilitated by the 20 action of the plates 15, which will check the water in its upward flow, so that it may be heated quickly to a high temperature.

The invention is applicable to any of the ordinary forms of heating and cooking stoves 25 in common use, and by employing a plurality of boilers superposed upon the smoke-flue it will be seen that any desired number of boilers may be used and a greater proportion of heat units from the products of combustion 30 utilized to heat the water, so that a large number of radiators may be supplied.

From the foregoing description, taken in connection with the accompanying drawings, the construction, mode of operation, and ad- 35 vantages of the invention will be readily un-

derstood without requiring an extended explanation.

Various changes in the form, proportion, and details of construction may be made within the scope of the invention without de- 40 parting from the spirit or sacrificing any of the advantages thereof.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is— 45

In a hot-water heater, the combination with a cook-stove or range, of a heating device arranged within the fire-box of the stove, a flue composed of interfitting sections, provided at their meeting ends with open bearings, a 50 damper mounted in said bearings and adapted to be removed upon the separation of the sections of the flue, boilers arranged one above the other and between which the damper is located, the lower boiler being connected with 55 said heating device, a valved connection between the two boilers for the supply of water from one to the other, hot-water-supply pipes leading from the boilers, and return-pipes 60 for conducting the cooled water from the radiators back to the boilers, substantially as set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN EBERSOLE.

Witnesses:

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