

(No Model.)

R. MILLER.
HOT WATER HEATER.

No. 566,600.

Patented Aug. 25, 1896.

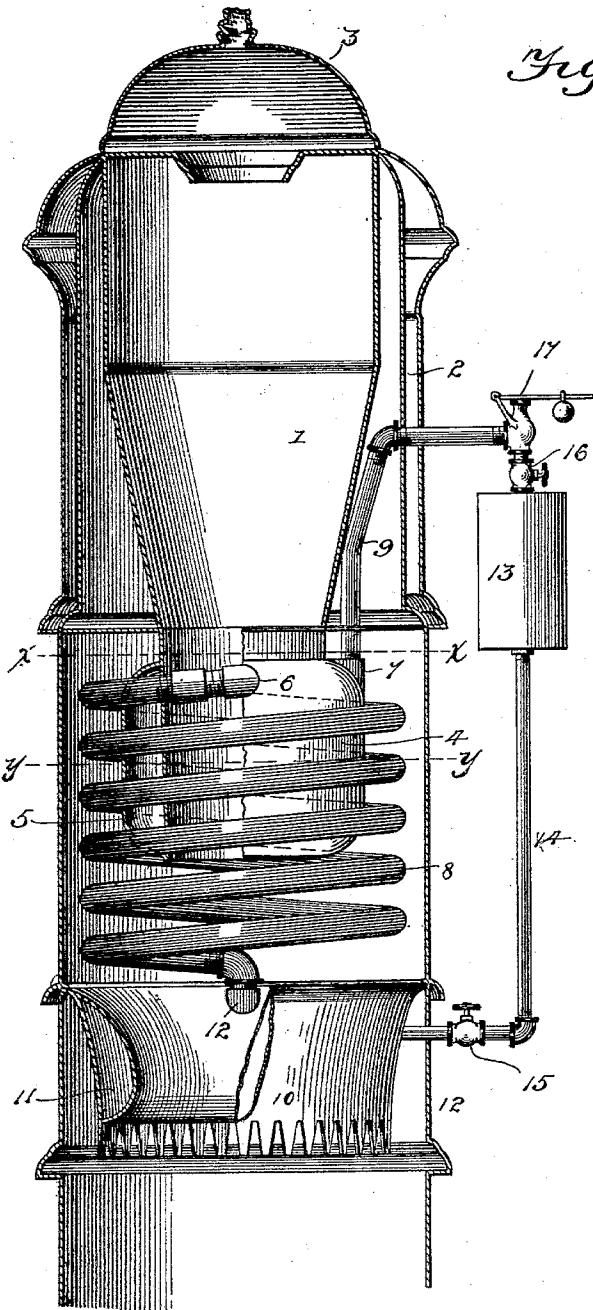


Fig. 2.

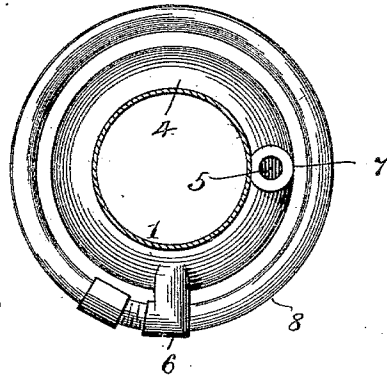


Fig. 1.

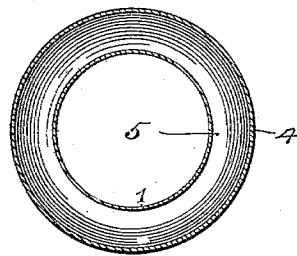


Fig. 3

Witnesses
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UNITED STATES PATENT OFFICE.

ROBERT MILLER, OF REDFIELD, SOUTH DAKOTA.

HOT-WATER HEATER.

SPECIFICATION forming part of Letters Patent No. 566,600, dated August 25, 1896.

Application filed February 11, 1896. Serial No. 578,866. (No model.)

To all whom it may concern:

Be it known that I, ROBERT MILLER, a citizen of the United States, residing at Redfield, in the county of Spink and State of South Dakota, have invented a new and useful Hot-Water Heater, of which the following is a specification.

This invention relates to heaters for warming apartments, dwellings, offices, public buildings, and other places where hot water can be economically used for heating purposes.

The object of the improvement is to combine with a stove of ordinary construction, whether base or surface burner, cook or heating stove, means for heating water which may be conveyed to a distant point for utilization or made available for heating the same room in which the stove is located.

The invention consists in combining with a stove a magazine having an annular chamber forming a water-space, a hollow fire-pot to receive a supply of water to be heated, and a connecting pipe or coil, the latter being inclosed within the walls or casing of the stove to be concealed and receive the full benefit of the heat and provide in effect a continuation of the magazine, and establishing communication between the water-spaces of the magazine and the fire-pot.

For a full understanding of the merits and advantages of the invention reference is to be had to the accompanying drawings and the following description.

The improvement is susceptible of various changes in the form, proportion, and the minor details of construction without departing from the principle or sacrificing any of the advantages thereof, and to a full disclosure of the invention an adaptation thereof is shown in the accompanying drawings, in which—

Figure 1 is a vertical central section of a magazine heating-stove having the invention applied, the lower portion being broken away. Fig. 2 is a sectional detail on the line X X of Fig. 1, parts being omitted. Fig. 3 is a horizontal section of the magazine on the line Y Y of Fig. 1.

Like parts are designated in the drawings and referred to in the subjoined description by the same reference characters.

The stove illustrated is of the common type

generally employed for heating purposes, and is shown to illustrate the application of the invention. The magazine 1 is fitted to the open end of the stove 2 in the usual manner, and is closed by the cap 3. A shell 4 encircles the lower contracted portion of the magazine and forms therewith a water-space 5, and bosses 6 and 7 are formed with the shell 4 and are threaded in the usual way for the coupling thereto of the pipes 8 and 9. By having the water-space 5 located at the lower end of the magazine it is in proximate relation to the fire-pot and prevents the burning of the lower portion of the magazine, which is the chief source of expense in repairing stoves of this character. Moreover, the heat from the fire and the waste products of combustion is utilized to the best possible advantage for maintaining the water at a proper temperature to effect the desired end.

The fire-pot 10 is hollow to provide a water-space 11, and has a threaded boss 12 for the coupling thereto of the pipe 8, which latter may be of any formation, but preferably consists of a coil which is disposed in vertical relation and incloses the water-space 5 in its upper portion, the lower portion extending from the magazine to the fire-pot and forming practically a continuation of the said magazine to prevent the spreading of the coals and the engagement of the said coals with the walls or casing of the stove. A reservoir or tank 13 is arranged adjacent to the stove and has connection with the water-space 5 of the magazine by means of the pipe 9, and with the water-space 11 of the fire-pot by means of a pipe 14, the latter having a valve 15 to cut off or regulate the flow of water to the water-space 11. The pipe 9 is supplied with a valve 16 to shut off communication between the reservoir 13 and the water-space 5 when it is required to replenish the said reservoir 13, or for any required purpose. A safety-valve 17 is provided and connected with the reservoir 13 to relieve any abnormal pressure from within in the event of the pressure of steam exceeding a point of safety.

The reservoir or tank 13, in addition to containing a supply of water to keep the water-spaces 5 and 11 and the coil 8 full, acts in the capacity of a radiator to warm the air in the

room in which it and the stove are located. For heating a distant room or apartment one or more radiators will be looped into the pipe 14 in the usual way of setting hot-water heating apparatus, so that the circulation of the water may be established through the radiators, the water-spaces 5 and 11, and the pipes 8, 9, and 14. To secure the best results the parts are disposed within the stove substantially as shown, and the connecting-pipe 8 takes the form of a coil. The pipes 9 and 14 extend through suitable openings in the side of the stove, a close fit being had to obviate the escape of coal gas and dust into the room. The inner wall of the fire-pot 10 swells or bulges to secure a maximum amount of heating-surface and to reduce the lower portion of the fire-space so as to conform to the outline of the bed of coals commonly assumed by the latter after the fire has been burning for a considerable time.

Having thus described the invention, what is claimed as new is—

1. In a hot-water heater, the combination of a magazine having a water-space at its lower end, a hollow fire-pot forming a water-space and arranged a distance below the water-space of the magazine, and a coil of pipe encircling the water-space of the magazine and having direct connection therewith at its upper end, and extending across the space formed between the magazine and fire-pot and having direct connection at its lower end with the water-space of the fire-pot, substantially as shown for the purpose described.

2. In a hot-water heater, the combination of an inclosed magazine and fire-pot disposed in vertical relation and spaced apart, the fire-

pot being hollow to provide a water-space and the magazine having a water-space at its lower end, a coil of pipe extending across the space formed between the magazine and fire-pot and having its lower end in direct communication with the water-space of the fire-pot, and having its upper portion encircling the water-space of the magazine and in direct communication with the upper portion thereof, a reservoir exterior to the heater, and independent connections between the reservoir and the water-spaces of the magazine and fire-pot, substantially as shown and for the purpose described.

3. The combination with a stove, of a magazine having a surrounding shell at its lower end forming a water-space, a hollow fire-pot having its inner wall bulging inward and inclosing a water-space, a coil of pipe encircling the water-space of the magazine and extending across the space formed between the magazine and fire-pot, and connecting the outer shell of the magazine with the inner wall of the fire-pot, and a reservoir or tank exterior to the stove and having connection, respectively, with the water-spaces of the magazine and fire-pot, and having a safety-valve and means for controlling and shutting off communication between the reservoir and the water-spaces of the magazine and fire-pot, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ROBERT MILLER.

Witnesses:

JOHN H. SIGGERS,
HAROLD H. SIMMS.