

(No Model.)

W. S. REED.
APPARATUS FOR HEATING WATER.

No. 501,846.

Patented July 18, 1893.

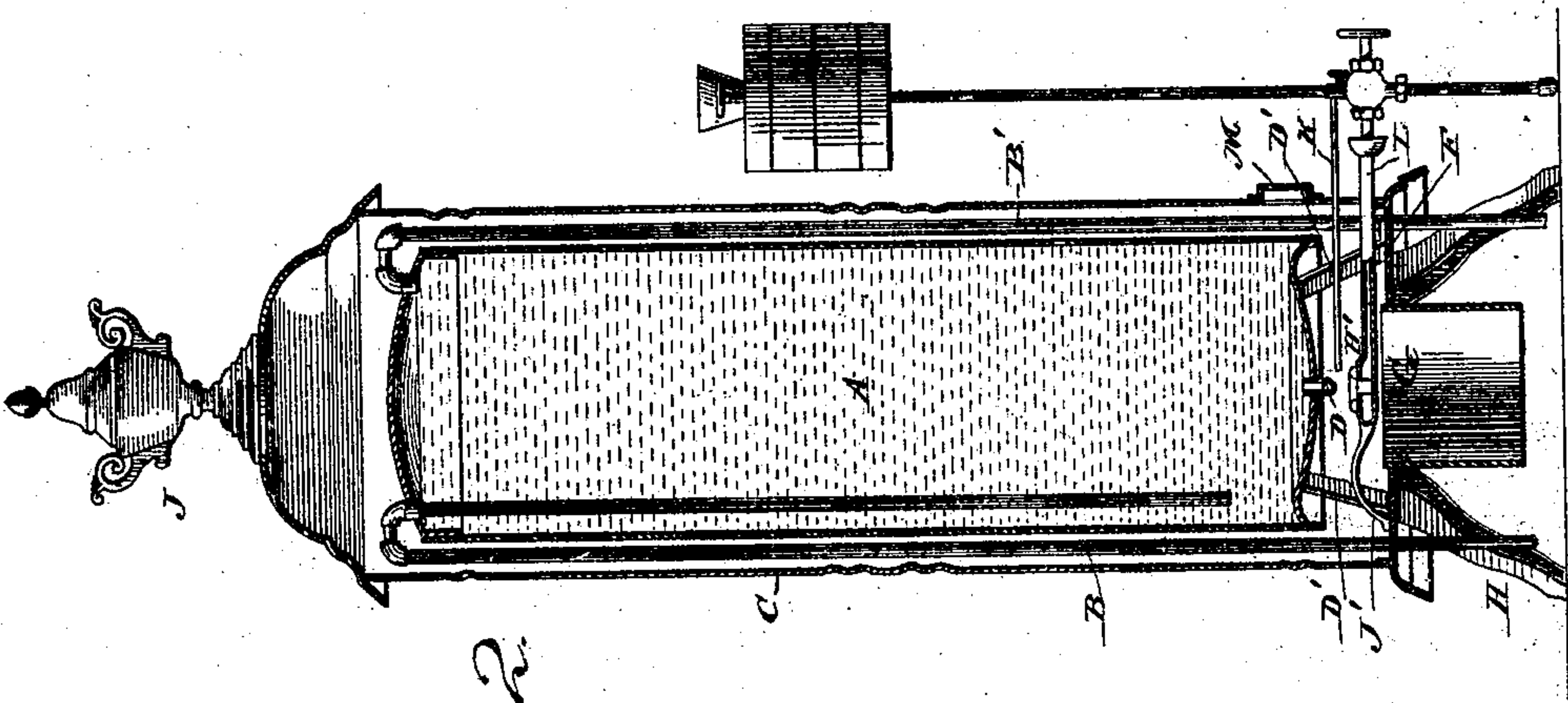


Fig. 2.

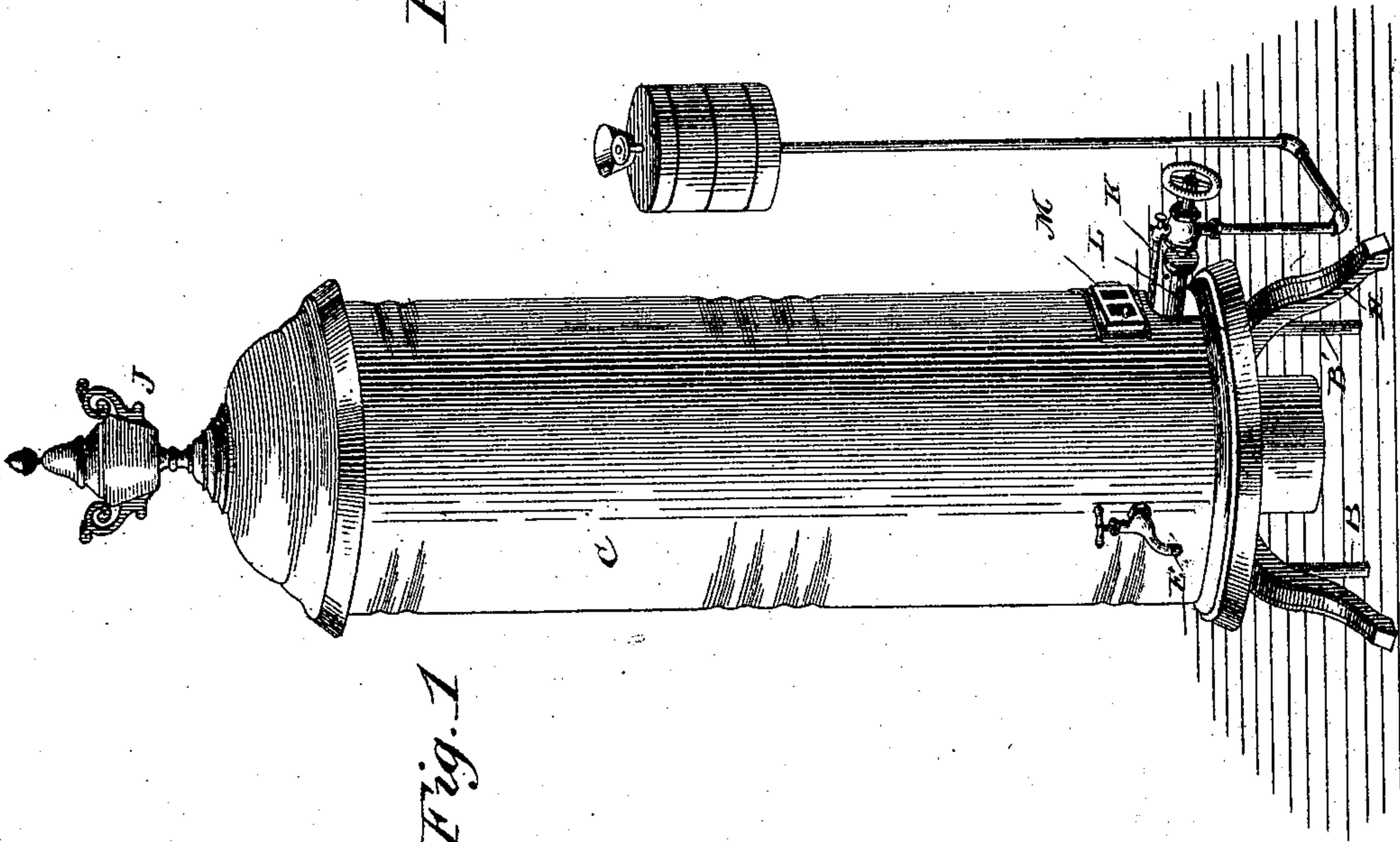


Fig. 1.

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APPARATUS FOR HEATING WATER.

SPECIFICATION forming part of Letters Patent No. 501,846, dated July 18, 1893.

Application filed May 21, 1892. Serial No. 433,855. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. REED, a citizen of the United States, residing at Marshalltown, in the county of Marshall and State of Iowa, have invented certain new and useful Improvements in Apparatus for Heating Water; 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in apparatus for heating water and consists of a boiler supported in a casing and having inlet and outlet pipes which are inclosed in said casing, the latter forming a flue for heated air, which is enabled to heat the water in the pipes both before entering and while leaving the boiler.

It further consists of the combination and arrangement of parts hereinafter fully described and claimed.

In the drawings:—Figure 1 represents a perspective view of a heater embodying my invention. Fig. 2 represents a central vertical section of the heater shown in Fig. 1.

Similar letters indicate corresponding parts in both the figures.

Referring to the drawings, A designates a boiler or tank formed of steel or other suitable material able to resist a high pressure of steam, and B and B' designate, respectively, inlet and outlet pipes, which extend upwardly alongside of the said boiler A to the upper portion thereof, the inlet pipe B entering the boiler and passing downward therein to the lower portion thereof. Surrounding the boiler and the said water pipes is a casing or jacket C composed of sheet or cast metal, forming a flue, through which hot air, for heating the contents of the pipes and boiler, is passed.

Leading from the lower portion of the boiler through the casing C is a discharge pipe D, having at its outer end a blow-off valve or cock E for the purpose of blowing off mud or other sediment from the boiler. The casing is provided with a bottom F, through which the pipes B, B' are passed, and to which they may be secured in any suitable manner, if

desired, so as to be firmly and reliably held in place within the casing. The boiler is supported on braces or supports D' which rest on the bottom F of the casing. In the said bottom F is a central opening G in which may be inserted the end of a pipe leading from some suitable source of heat supply as a stove, furnace or gasoline burner.

Connected or fastened to the lower part of the casing are feet H and the upper part of the casing has a top or ornamental urn J thereon, whereby a finished appearance is given to the apparatus. The upper part of the casing is also provided with an outlet for the escape of the heated air from the flue. The lower ends of the pipes B and B' are adapted to be connected with pipes leading respectively from a water supply and to the place of service.

H' designates a gas burner located in the chamber within the casing below the boiler and having the support J' which rests on the bottom of the casing. The said burner is supplied by the pipe L and is provided with the lighter K.

M is a small door in the lower part of the casing.

It will be seen that by having the inlet and outlet pipes inside of the casing and extending the length of the boiler, the water is heated, both before it enters and after it leaves the boiler, by the heat in the flue, thus raising its temperature without employing extra heat, thereby economizing the heat in the flue.

The heating apparatus herein described may be readily placed in any apartment where desired, being removable and easily connected with supply and discharge pipes. The cost of the apparatus is light, and owing to the simplicity of the parts it is durable and, if needing repairs, easily put in proper condition.

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

1. A water-heater, consisting of a boiler, inlet and outlet water pipes, and a casing surrounding said pipes and boiler, forming a flue, substantially as described.

2. A water-heater consisting of a boiler, inlet and outlet water pipes, the inlet pipe leading into the upper end of said boiler and ex-

tending downward to near the bottom thereof, and a casing surrounding said pipes and boilers forming a flue, and having a bottom with an opening therein, substantially as described.

5 3. A water-heater, consisting of a boiler, water inlet and outlet pipes, a casing forming a flue surrounding said boiler and pipes, the latter extending alongside said boiler, and a
10 blow-off cock for said boiler, the bottom of said casing having an opening therein, said parts being combined substantially as described.

15 4. A water-heater, consisting of a boiler, water inlet and outlet pipes, a casing with a bottom through which said pipes pass, and having an opening therein and a blow-off pipe leading from said boiler through said casing, surrounding said pipes and boilers forming a
20 flue, and said casing having an opening at its upper end, said parts being combined substantially as described.

5. A water-heater, consisting of a boiler, water inlet and outlet pipes alongside of said boiler, a casing forming a flue surrounding
25 said boiler and pipes, a blow-off cock from said boiler leading through said casing, and feet at lower end of said casing, the bottom of said casing having an opening therein, said parts being combined substantially as de- 30 scribed.

6. A water-heater consisting of a boiler, inlet and outlet pipes, a casing surrounding said pipes and boiler, a bottom for said casing, supports for said boiler resting on said
35 bottom, and a gas burner in said casing below said boiler, said parts being combined substantially as described.

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

WILLIAM S. REED.

Witnesses:

E. C. COOK,
J. H. FORNEY.