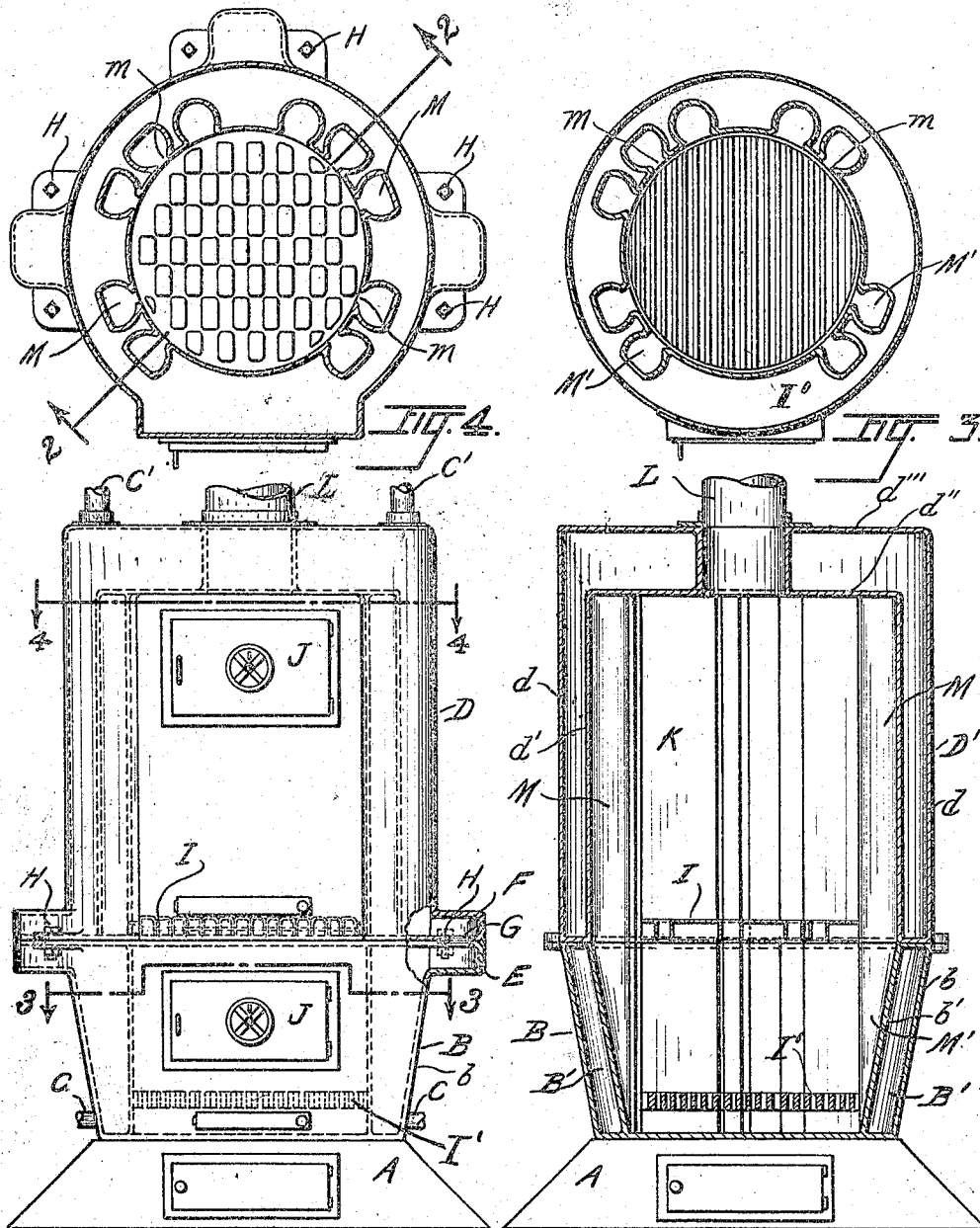


J. J. DUBE.
 COMBINED GARBAGE BURNER AND WATER HEATER.
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COMBINED GARBAGE-BURNER AND WATER-HEATER.

937,145.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN J. DUBÉ, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Combined Garbage-Burners and Water-Heaters, of which the following, when taken in connection with the drawing accompanying and forming a part hereof, is a full and complete description, sufficient to enable those skilled in the art to which it pertains to understand, make, and use the same.

This invention relates to a device to heat water and to consume garbage; said device being arranged so that the heating of the water and the burning of the garbage is effected by the use of fuel, usually coal, in the fire box of the device when the garbage is placed on a grate arranged therefor above the fire box. And the object of the invention is to provide means whereby a device of the character described consisting of few pieces, which are readily assembled, may be cast in the regular way of casting heat generators; and to obtain a device which is economical in construction, slightly in appearance, effective in operation and easily installed.

I have illustrated this invention embodied in a device which is circular in cross section but I do not thereby intend to confine myself to said sectional form.

In said drawings, Figure 1, is a front elevation of a device embodying the invention, and Fig. 2 is a vertical section on line 2 of Fig. 4, viewed in the direction indicated by the arrow. Fig. 3 is a horizontal section on line 3—3 of Fig. 1 viewed in the direction indicated by the arrows, and Fig. 4 is a horizontal section on line 4—4 of Fig. 1, viewed in the direction indicated by the arrows.

A reference letter applied to designate a given part is used to indicate such part throughout the several figures of the drawing, wherever the same appears.

A is the base of the device.

B is the shell of the fire box and comprises outer wall *b*, and inner wall *b'* arranged to obtain the space or water leg *B'*.

C, C', are water inlets.

D is the shell of the garbage burning sec-

tion or part of the device and comprises the outer walls *d*, and the inner wall *d'* and the upper horizontal walls *d''*, *d'''*.

D' is a water space or leg in shell D.

C' is the water outlet from chamber D'.

Shell B is provided with hollow ears E, E', and shell D is provided with like ears F, F'. Ears E and F, are respectively located so as to be adjacent to each other when shells B and D are assembled, with the ears F registering with ears E.

G are gaskets between ears E and F, and H are bolts. Ears E and F, as stated, are hollow with apertures in the upper and under walls thereof respectively, so as to form a water passage from the water leg B' to the water leg D'.

When the shells B and D are assembled with the gaskets interposed between ears E and F, and the nuts on bolts H, H', are firmly set up a water tight joint between said ears is obtained.

I is a hollow grate between the fire box in shell B and the garbage combustion chamber J in shell D. The hollow space in grate I is in communication with the water leg D'.

I' is the grate of the fire box in shell B.

J, J', are the fuel doors of the device.

K (Fig. 2), is the garbage combustion chamber.

L is the smoke outlet from the device.

M, M', are vertical passage ways which are respectively arranged to register and to communicate with the fire box in shell B and the combustion chamber in shell D, through the comparatively narrow vertical openings *m*, *m'*. Openings *m* extend the entire length of passage ways M' in shell D. Said passage ways M, M', extending from the fire box in shell B to near the top of the garbage combustion chamber K, and arranged to communicate with and form a series of ways which communicate with the fire box and with the combustion chamber by means of the grooves *m*, are essential features of this invention. By means thereof I obtain a plurality of passage ways from the fire box to the garbage combustion chamber through which the products of combustion in the fire box may flow upward and be delivered into the garbage combustion chamber, into and above the garbage which is being consumed in said garbage combustion

chamber, in addition to the passage ways through the hollow grate. Garbage thrown into garbage chamber K cannot be thrown into or otherwise obtain access to passage ways M because of the narrow openings *m, m*.

The products of combustion in the fire box, which by this device are delivered as described into the garbage combustion chamber together with the products of combustion in said garbage combustion chamber are delivered from the device through the smoke outlet L.

When the hollow grate I is so covered with garbage that heated products of combustion can not pass through the apertures in said grate and said products are diverted by said grate I and the garbage thereon into the vertical passage ways M, M', a greater quantity of water is heated thereby than would be heated to the same temperature by the same quantity of said products passing directly upward from the flues in the fire box through the apertures in grate I to the smoke outlet L, and the quantity of garbage thrown at any time into the garbage chamber does not lessen the effectiveness of the device as a water heater.

Ordinary water service pipes are connected to the inlet pipe C and ordinary distributing pipes are connected to the outlet pipe C'.

In addition to the functions of the passage ways M, M', and the communicating openings *m, m*, which are above set forth the inner walls *b', d'* present a greater surface to the heated products of combustion by this construction than with said passage ways not present.

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

1. As a new article of manufacture, a combined garbage burner and water heater, provided with a fire box, and a garbage burning chamber, and provided with water legs, a grate interposed between said fire box and chamber, the inner walls of said water legs provided with vertical grooves arranged to form passage ways, the portion of said passage ways in the fire box and the portion of said passage ways in the garbage burning chamber respectively provided with vertical openings from said passage ways to the fire box and to the garbage burning chamber, communicating passage ways between the water legs, and said fire box and garbage burning chamber respectively pro-

vided with apertures for the introduction of fuel and garbage thereinto.

2. As a new article of manufacture, a combined garbage burner and water heater, consisting of a plurality of parts, one of said parts having a fire box provided with a water leg and the inner wall of said water leg provided with vertical passage ways, and with openings from said passage ways to the fire box, and the other of said parts having a garbage burning chamber provided with a smoke outlet and with a water leg, the inner wall of said last named water leg provided with vertical passage ways and with openings from said passage ways to the garbage burning chamber and said passage ways in the water leg of the garbage combustion chamber arranged to register with the passage ways in the inner wall of the water leg of the fire box, communicating passage ways between the water legs, and a grate between the fire box and the garbage burning chamber, and said fire box and garbage burning chamber respectively provided with apertures for the introduction of fuel and garbage thereinto.

3. As a new article of manufacture, a combined garbage burner and water heater, consisting of a plurality of parts, one of said parts having a fire box provided with a water leg, and the inner wall of said water leg provided with vertical grooves arranged to form passage ways provided with vertical openings to the fire box and the other of said parts having a garbage burning chamber provided with a smoke outlet and with a water leg, the inner wall of said last named water leg provided with vertical passage ways and with narrow vertical openings from said passage ways to the garbage burning chamber and said passage ways in the inner wall of the water leg of the garbage combustion chamber arranged to register with the passage ways in the inner wall of the water leg of the fire box, communicating passage ways between the water legs, and a hollow grate between the fire box and the garbage burning chamber, said hollow grate provided with water passage ways communicating with one of the water legs, and said fire box and garbage chamber respectively provided with apertures for the introduction of fuel and garbage thereinto.

JOHN J. DUBÉ.

In the presence of—

CHARLES TURNER BROWN,
CORA A. ADAMS.