

No. 639,533.

Patented Dec. 19, 1899.

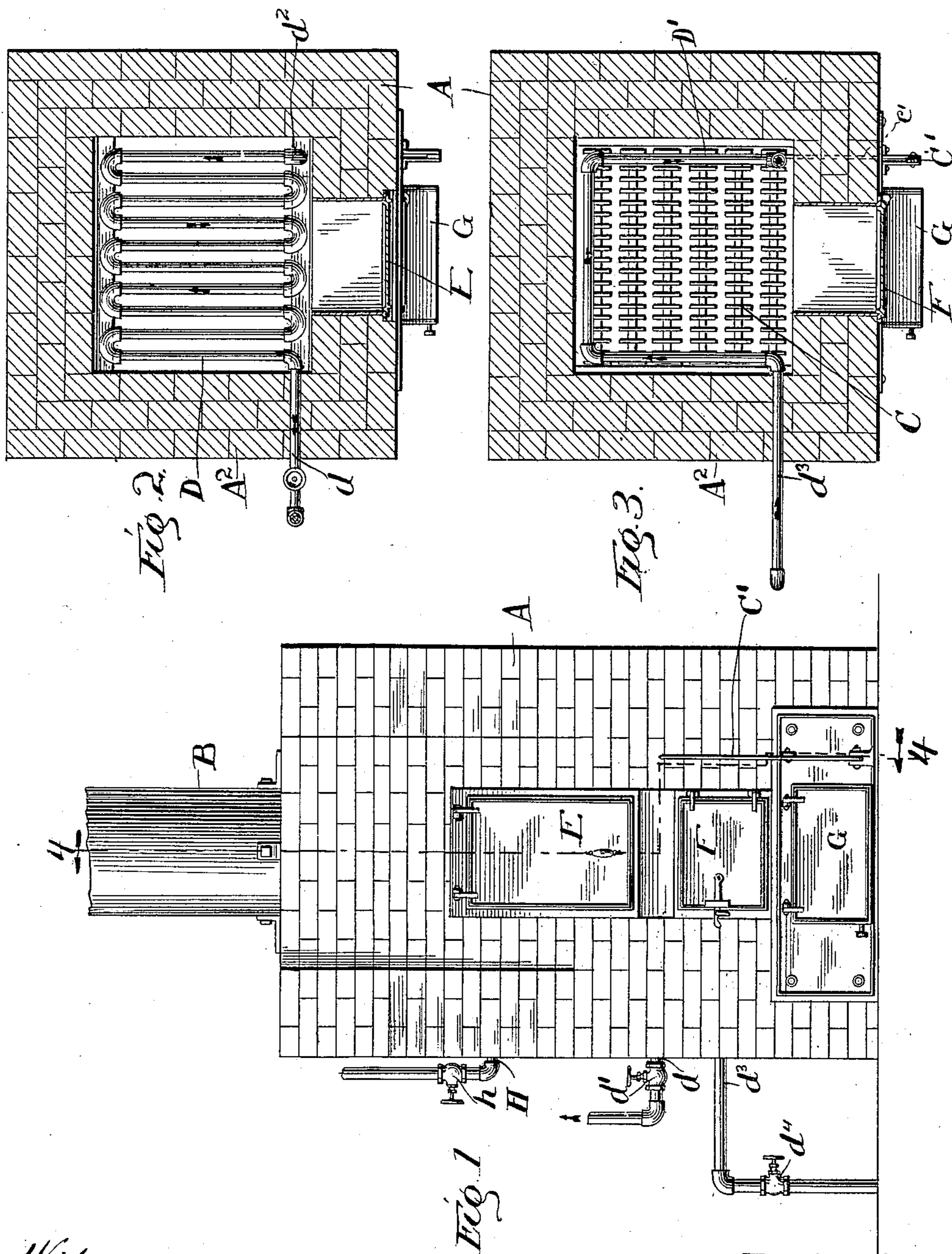
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COMBINED GARBAGE CREMATORY AND WATER HEATER.

(Application filed June 9, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses.

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Inventor:

Morgan Cragin

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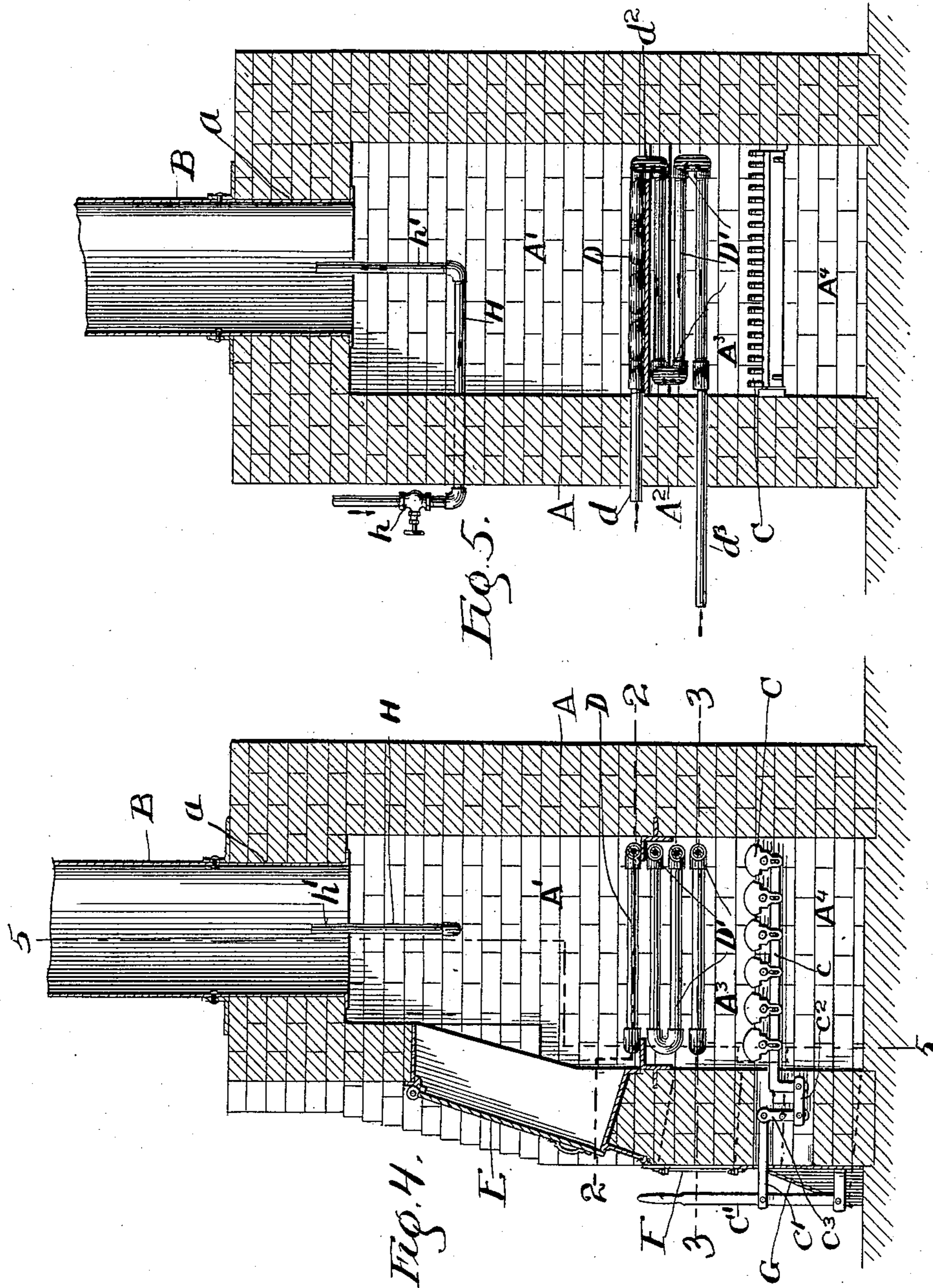
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Witnesses:
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UNITED STATES PATENT OFFICE.

MORGAN J. CRAGIN, OF CHICAGO, ILLINOIS.

COMBINED GARBAGE-CREMATORY AND WATER-HEATER.

SPECIFICATION forming part of Letters Patent No. 639,533, dated December 19, 1899.

Application filed June 9, 1899. Serial No. 719,960. (No model.)

To all whom it may concern:

Be it known that I, MORGAN J. CRAGIN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Combined Garbage-Crematory and Water-Heater, of which the following is a specification.

My invention relates to an improvement in a combined garbage-crematory and water-heater.

The object of my improvement is to provide a cheap way to dispose of garbage by burning same and using the heat generated thereby to heat water. I attain this object by a mechanism described as follows:

The crematory is constructed of common brick or other non-combustible material, fire-box lined with fire-brick or other non-combustible material and having two sets of grates, one set immediately over the other. The lower-grate surface is constructed on the principle of any ordinary rocking and dumping grate, and the upper-grate surface is made of hollow tubing, so arranged that the garbage or refuse may be thrown in upon it and all moisture removed from it. As fast as the garbage is dried out it falls on the lower grate and is consumed. A blower using either steam or air is connected to the upper part of the crematory and so constructed that it will create an artificial draft and carry the vapor up the chimney without permitting any odor to escape into the room where the crematory is located. The heating of the water is done in the tubing which forms the upper-grate surface, the ends of which may be connected to a suitable system for utilizing the hot water obtained.

The invention is clearly shown in the accompanying drawings, in which—

Figure 1 is a front elevation of my device. Fig. 2 is a horizontal section in broken line 2 2 of Fig. 4. Fig. 3 is a similar section in line 3 3 of Fig. 4. Fig. 4 is a vertical section in the broken line 4 4 of Fig. 1, and Fig. 5 is a vertical section in the broken line 5 5 of Fig. 4.

Referring to the drawings, which show my device in its preferred form, A represents the walls, which may be of brick or other non-combustible material, said walls being built

to form a preferably rectangular chamber A', having an opening *a* in its upper end, in which is secured a smoke-stack B, adapted to carry away the products of combustion and other gases created therein. The lower portion of the chamber A' forms the fire-box and is preferably lined with fire-brick or the like. The grate-bars for supporting the fuel are seen at C and are preferably of the class known as "dumping" grate-bars. They are connected to a hand-lever C' by means of bars *c c' c²* and a link *c³*, pivoted between its ends to the front wall, as clearly indicated in Fig. 4.

At a suitable distance above the grate-bars C is a second grating D, preferably consisting of a coil of tubing extending across the chamber, as shown in Fig. 2, one end *d* of which extends out through the side wall A² and is provided with a valve *d'*. The other end *d²* is connected to a coil D', which extends along two sides and rear end of the chamber A' and terminates in a pipe *d³*, which passes out through the side wall A² and is provided with a valve *d⁴*. Inasmuch as garbage contains considerable moisture, the pipe-grating D is placed as near the lower grate-bars as possible, so as to be dried by the fire underneath, without, however, interfering with the combustion. An opening is formed in the front wall immediately below the grating D, through which fuel may be thrown in upon the grate-bars C. The coil D supports the garbage to be consumed, and although the fire heats the water contained in said coil, yet the moist garbage upon the same tends to counteract the effect of the fire. For this reason the vertical coil D' is added to the horizontal coil to increase the heating-surface, and as this coil is entirely away from the moist garbage and closer to the fire the water is more effectually heated. The coil D' does not, however, extend across the front wall, containing the door-opening, but is arranged so as to extend along the two side and rear walls of the fire-box, whereby said opening is left unobstructed, so that fuel may be readily thrown in upon the grate-bars C. The pipe *d³* is the inlet to the coils D' D, and *d* is the outlet-pipe, through which the hot water escapes, the pipe *d³* being placed at the lowest points in the coils and *d* at the highest, so as to allow perfect circula-

tion of the water therein. By arranging the coils of pipe in this manner I obtain considerable heating-surface, and by separating the pipes of the horizontal coil D sufficiently the
5 garbage will fall between them and upon the fire below, when said garbage is dried out by the fire.

A door E provides communication with the chamber A', a door F with the fire-box A³, and
10 a door G with the ash-pit A⁴, suitable openings being left in the front wall for said doors.

Near the upper end of the chamber A' is a pipe H, terminating in an end h', directed upward, the other end of the pipe H extending
15 out through the wall A² and provided with a valve h. The pipe H is adapted to be connected with a suitable blower to create an artificial draft and carry the gases arising therein up through the smoke-stack, and thereby
20 prevent noxious odors and gases from entering the building.

In the use of this device the coils become hot by the action of the fire in the fire-box and the water in said pipes heated. Garbage may
25 now be thrown upon the coil D, the valve h being open to permit the gases being blown up through the smoke-stack. The products of combustion from the fire in passing through this garbage soon remove the moisture there-

from, and the dry portions fall through the
coil D upon the fire to be consumed thereby. 30

In the above I have specifically described my invention in all its details, without, however, intending to limit myself to such exact construction, as various alterations and modi- 35 fications are possible without departing materially from the invention.

What I claim as my invention, and desire to secure by Letters Patent, is—

A combined garbage-crematory and hot- 40 water heater comprising a fire-box, a garbage-chamber, grate-bars in said fire-box, openings leading into said fire-box and garbage-chamber, a horizontal coil of pipe D separating the fire-box from the garbage-chamber and adapt- 45 ed to support garbage and having an end passing out through the wall of the garbage-chamber, a second coil of pipe connected to the other end of the horizontal coil and extending into the fire-box in vertical planes along three 50 sides thereof but not across the opening in the front and having its end passing out through the wall of said fire-box.

MORGAN J. CRAGIN.

Witnesses:

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