

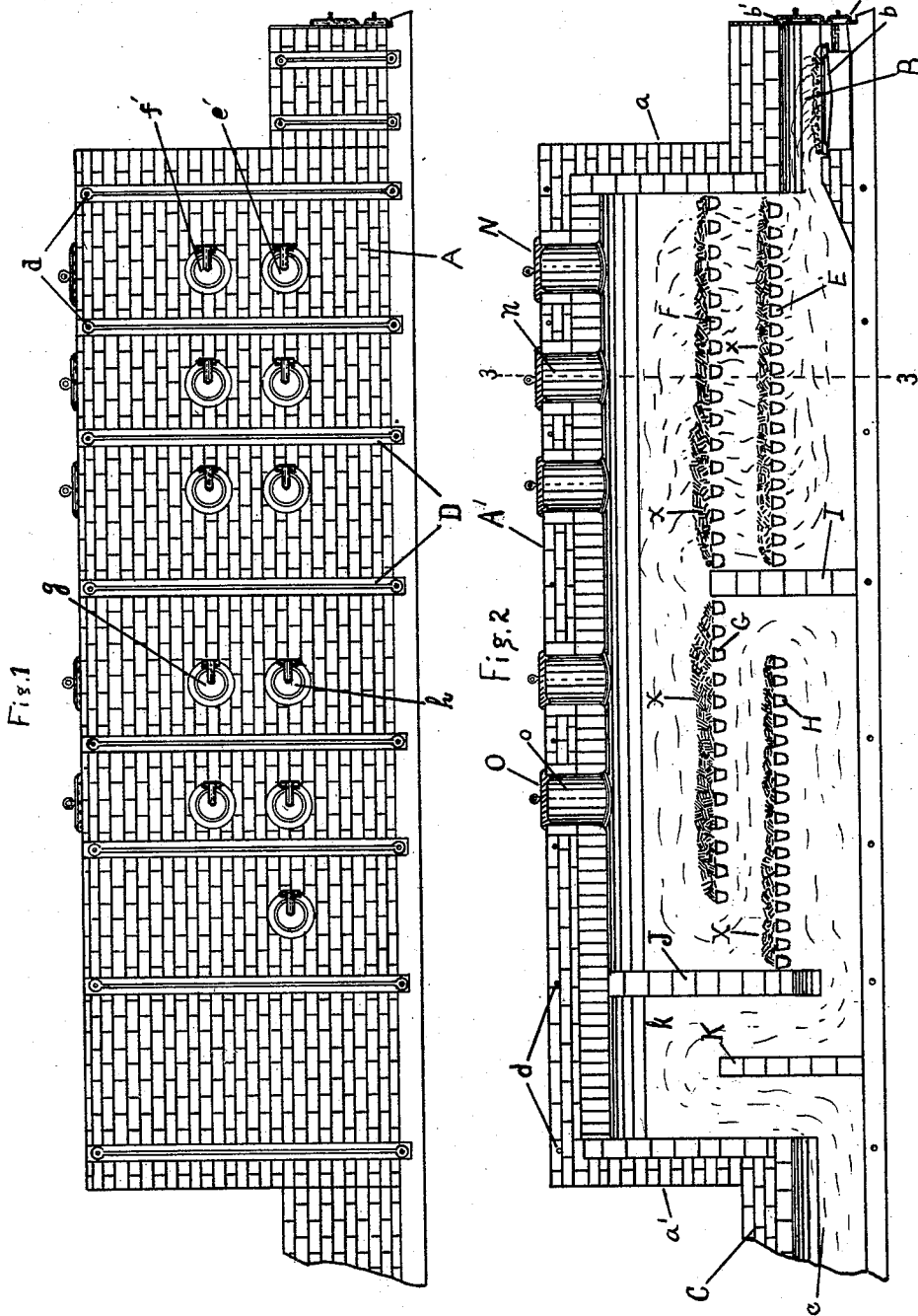
(No Model.)

2 Sheets—Sheet 1.

B. BOULGER.
GARBAGE CREMATORY.

No. 537,181.

Patented Apr. 9, 1895.



Witnesses
M^r. S. Wing
Spencer Ward

Inventor
Benjamin Boulger
By his Attorney Louis K. Ellison

(No Model.)

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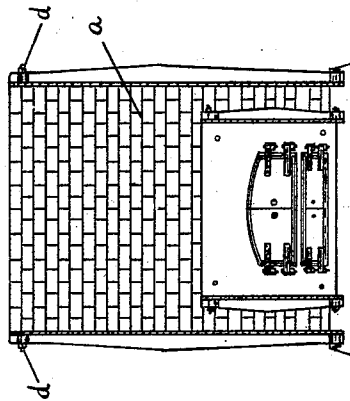


Fig 4

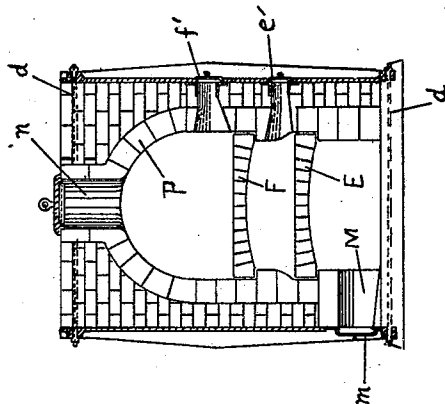


Fig 3

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UNITED STATES PATENT OFFICE.

BENJAMIN BOULGER, OF CHICAGO, ILLINOIS.

GARBAGE-CREMATORY.

SPECIFICATION forming part of Letters Patent No. 537,181, dated April 9, 1895.

Application filed December 21, 1893. Serial No. 494,307. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN BOULGER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Garbage-Crematories; 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 garbage crematories. Its object is to provide improved means for destroying garbage so that the capacity of the furnace will be increased relatively to the amount of fuel consumed.

The invention consists of the use of double grates, one being located above the other and in such other parts and arrangement of parts as are hereinafter set forth.

In the accompanying drawings, Figure 1, is a side elevation of the crematory. Fig. 2, is a central, vertical, longitudinal section of the same. Fig. 3, is a transverse vertical section on the line 3—3 of Fig. 2, and Fig. 4, is a front elevation.

The body of the crematory is built of brick and is oblong rectangular in form. One of its side walls is shown at A; its front wall at *a*, and its rear wall at *a'*. The structure is strengthened by means of vertical metal bars D, disposed along each of its sides, their ends being united by means of transverse rods D.

A fuel furnace B, is built at the front end of the crematory and connected by a flue with the interior of the latter.

An extension C, is constructed at the rearward end of the crematory to provide for a discharge flue *c*, which leads to a smoke stack, not shown.

The fuel furnace is of ordinary construction, having the grate bars *b*, the feeding door *b'*, and the ash pit door *b''*.

The interior of the crematory consists of a main chamber containing the grate bars for receiving the garbage and a combustion chamber *k*, separated from the main chamber by a wall, J, having an opening at the bottom. The main chamber is divided into two approximately equal compartments by a trans-

verse wall I, extending upwardly from the floor in the form of a bridge wall.

Two sets of grate bars E, F, the latter directly above the former, extend across the front one of the two compartments, extending across the entire space from side to side, and from the front wall *a*, to the bridge wall I so that the draft from the fuel furnace B, necessarily passes through both of these grates. A second pair of grates G, H, the former above the latter, extends across the rearward compartment from side to side. The grate G, reaches from the bridge wall I, backwardly but not entirely to the wall J. The grate H, reaches forwardly from the wall J, but not entirely to the bridge wall I. The bridge wall I, extends upwardly to the level of or above the grates F, G, so that the draft from the front compartment extends over the grate G, to its rearward end downwardly and over the grate H, to its forward end, thence downwardly and back through the opening at the base of the wall J, into the combustion chamber *k*, and thence out through the flue *c*. A bridge wall K, is thrown across the combustion chamber *k*, for the purpose of retarding the egress of the burning vapors and insuring their complete combustion before entering the stack.

Charging ports *n*, *o*, enter the main chamber of the crematory through its top wall or roof A', so that garbage dumped into them falls upon the grates F, G. These charging ports are closed by means of covers N, O. Stoking holes are shown in the wall A, at *e*, *f*, *g*, *h*, so located as to give access to the several grates. These stoking holes are closed by doors as *f'*, *e'*, which may be held to their places by any desirable means.

Garbage deposited upon the grates F, G, is quickly dried by the evaporation of the moisture it may contain, and the operator by the use of his slice bar inserted through the stoking holes works it through the upper grate and it falls upon the lower one where its incineration becomes complete and the resultant ashes fall or are worked through the grates to the ash pits below from whence they are raked through the openings M, in the side wall A, which openings are closed by means of the doors *m*.

The bars of the upper grates are laid farther apart than those of the lower grates so

that garbage deposited thereon is exposed to the greatest possible extent to the action of the flames. The upper or receiving grates may be more open than the lower without danger of permitting the garbage to pass through too freely as usually a considerable proportion of it is in comparatively large masses. The action of the heat reduces or subdivides these masses so that they will pass through the coarse grate, and the lower one must be finer in order to retain them.

It is desirable to pass the liquid portion of the garbage through the furnace as well as its solid parts. When the garbage is largely in liquid form much of it will pass through the grates unevaporated and in doing so will of course tend to quench the fire. If the construction be such that the primary fire is exposed to the action of this liquid the efficiency of the furnace is necessarily reduced as time will be required to revive the fire and raise the temperature again. In order to provide for the destruction of the matter held in solution without retarding the action of the furnace I employ the construction shown, in which the primary fire is not in the path of the liquid as it is drained from the solid portion of the garbage, and the floor of the ash pit of the garbage fire box is in the form of a basin for retaining the liquid until it is evaporated, when the vapors distilled from it necessarily pass through the burning garbage upon the grates.

The bars of the grates E, F, G, H, are of fire-brick and the interior of the crematory is lined throughout with fire-brick as indicated at P.

In practice it will be usually found that

unless the garbage is quite wet but little fire will be needed in the furnace B, after the interior of the crematory has become thoroughly heated, the burning garbage maintaining the temperature. The front compartment of the crematory, will, of course, have the greatest capacity for service. That of the rearward compartment may be increased by exercising care in charging so that the grate bars do not become clogged and a down draft through the grates is permitted.

This crematory may be operated with or without a forced draft as may be desired.

In the drawings the garbage is indicated at X.

I claim as my invention—

In a garbage crematory the combination with a fuel furnace, of a garbage furnace comprising inclosing walls, a main chamber divided into two compartments by a bridge wall, a pair of grates, one above the other, extending entirely across the first compartment, a pair of grates similarly arranged in the second compartment, the upper of said grates providing draft space at its rearward end and the lower one providing such space at its forward end, the flue from the fuel furnace entering the cremation chamber below the first set of grates and the discharging flue leaving said chamber below the second set of grates, substantially as described and for the purpose specified.

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

BENJAMIN BOULGER.

Witnesses:

LOUIS K. GILLSON,
M. H. L. WING.