(No Model.) 2 Sheets—Sheet 1.

E. C. MORSE.

CREMATING FURNACE.

No. 492,987. Patented Mar. 7, 1893.

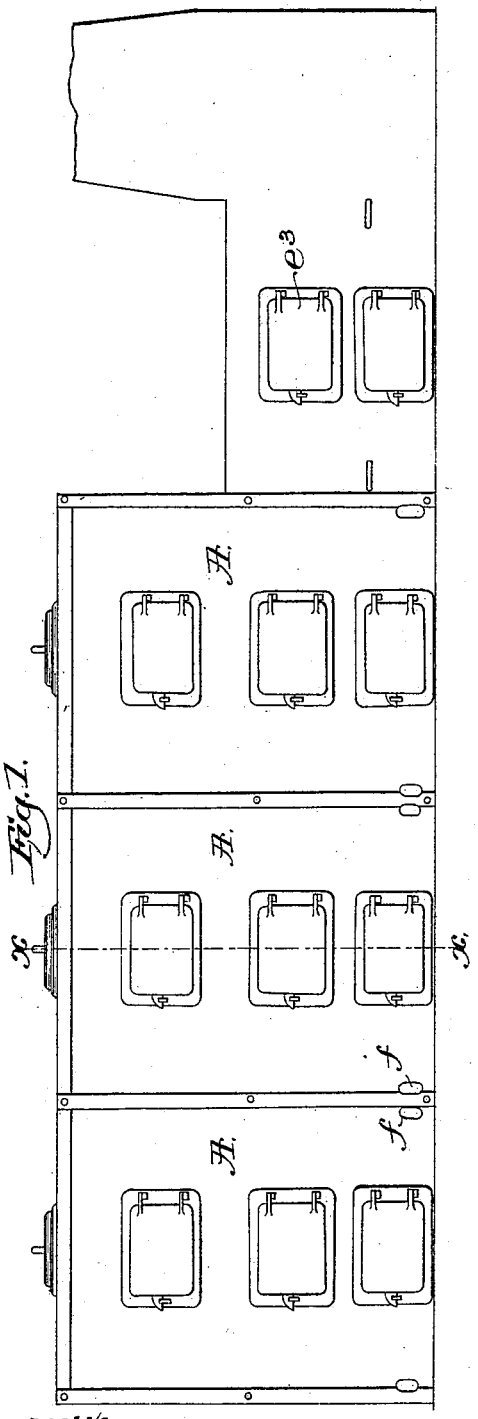

Fig. 1.

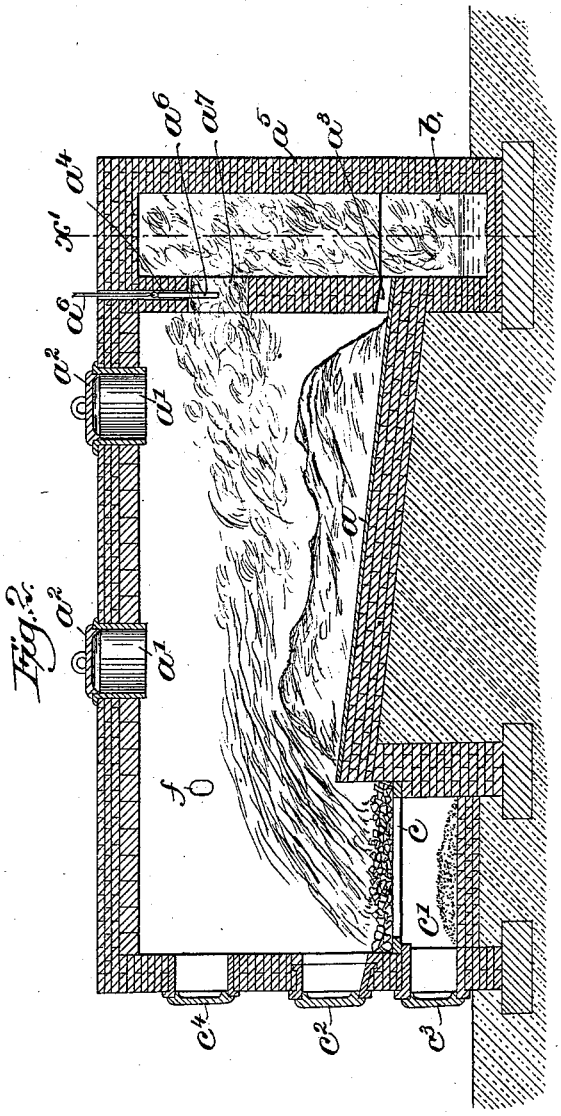

Fig. 2.

Witnesses.
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Edward C. Morse.
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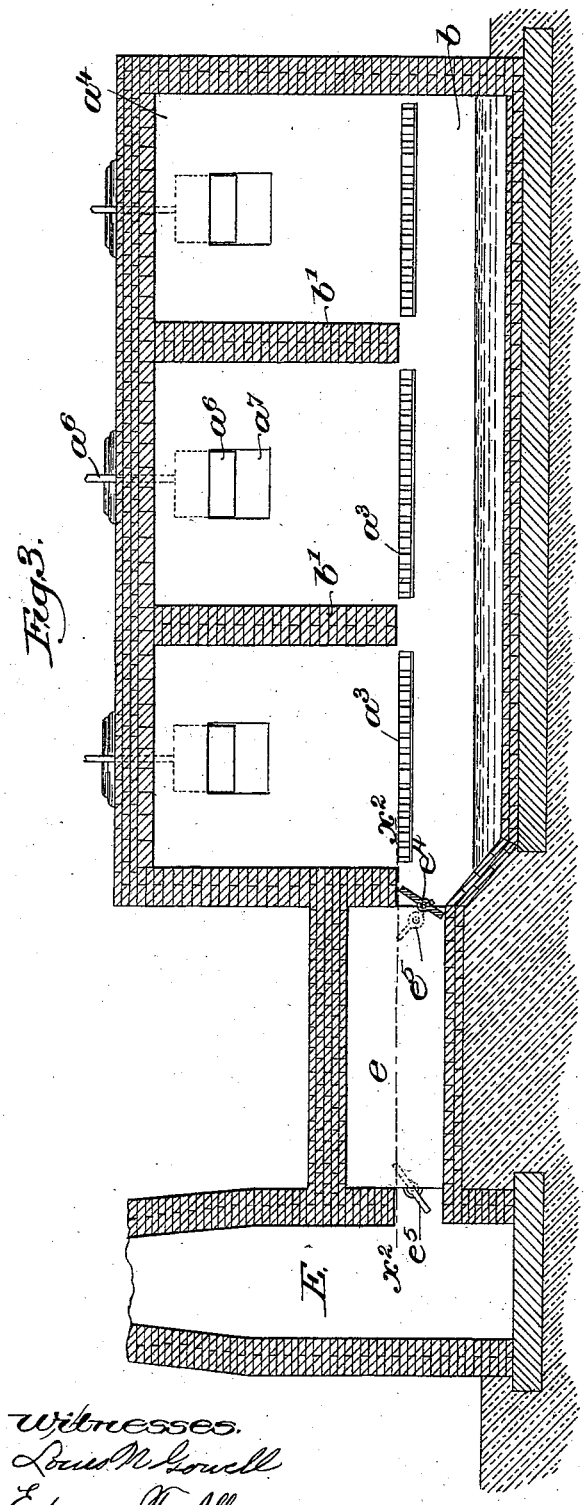

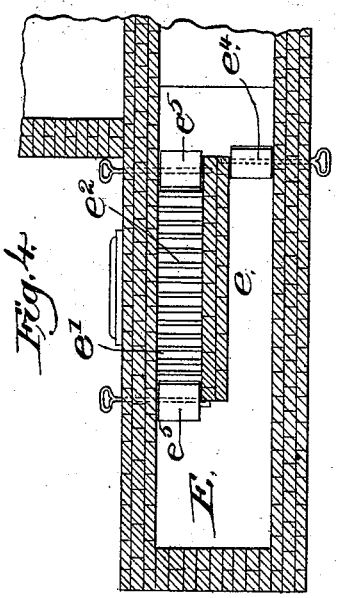

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Edward F. Allen.

Inventor:
Edward C. Morse
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UNITED STATES PATENT OFFICE.

EDWARD CLARK MORSE, OF MANCHESTER, NEW HAMPSHIRE.

CREMATING-FURNACE.

SPECIFICATION forming part of Letters Patent No. 492,987, dated March 7, 1893.

Application filed April 18, 1892. Serial No. 429,600. (No model.)

To all whom it may concern:

Be it known that I, EDWARD CLARK MORSE, of Manchester, county of Hillsborough, State of New Hampshire, have invented an Improvement in Cremating-Furnaces, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to cremating furnaces employed for the annihilation of garbage, and various kinds of animal and vegetable substances. With this object in view I provide the furnace with an inclined preferably brick or tile table on which the garbage or substance to be consumed is placed, the liquid or water held in suspension by such substance draining off down the inclined table into a suitable receptacle provided for that purpose. In the preferred construction, the fire will be carried upon a grate at one end of the inclined table, the products of combustion from the fire passing over and consuming the substance on the table, and thereafter passing through the receptacle containing the liquid drained from the substance consumed, said receptacle acting as a conduit to conduct away the products of combustion. The substance contained within the furnace on the inclined table is not only consumed, but by passing the products of combustion therefrom over the surface of the liquid drained from the table, the liquid is also evaporated. A second auxiliary fire may be provided if found necessary, to consume the products of combustion and vapors or fumes escaping from the cremating furnace to thus avoid the escape of any obnoxious odors. If the capacity of the plant demands, any number of furnaces may be concentrated into a single group or battery, the products of combustion from one furnace passing through the liquid from the next or succeeding furnace or furnaces of the battery.

Figure 1, of the drawings represents in elevation a group or battery of furnaces embodying this invention. Fig. 2, a vertical section taken through one of the individual furnaces, on the line x, Fig. 1. Fig. 3, a vertical section through the several furnaces of the group, the section being on the dotted line x'—x', Fig. 2, and Fig. 4, a horizontal sectional detail taken on the dotted line x^2—x^2, Fig. 3.

Referring to the drawings, the individual furnaces A, are each of suitable exterior shape and construction, they being preferably constructed of brick as shown. Each furnace A, is provided with a downwardly inclined preferably brick or tile table a onto which the garbage or substance is deposited through one or more openings a', in the top of the furnace, the openings being closed by suitable covers a^2, see Fig. 2. The water or liquid held in suspension or contained in the garbage or substance placed upon the inclined table a, drains off from the table through a series of perforations a^3 in the rear division wall a^4 of the furnace, and discharges into the liquid receptacle or chamber b contained between the wall a^4 and the rear wall a^5 of the furnace.

The fire by which the annihilation of the garbage is effected, is carried upon a suitable grate c, arranged in the present instance adjacent to and slightly below the highest end of the inclined table a, access to the fire upon the grate, and also to the usual ash pit c' below the grate, being had respectively through suitable doors c^2, c^3, in the wall of the furnace. A third door c^4 is also provided through which a suitable poker may be inserted to turn up the substance on the table a, to permit it to be throughly consumed. The products of combustion from the fire on the grate c' pass over and in contact with the substance deposited upon the inclined table a and consume the said substance, the combined products of combustion escaping from the furnace proper through an opening or flue a^7 in the wall a^4, thence passing down into the receptacle b containing the liquid drained from the table a, from which said products pass off to a suitable up-take or chimney. The flue a^7 is controlled by a damper a^6, moved from outside the furnace.

The drawings represent a series of furnaces A grouped together, a single common receptacle b serving to collect the liquid drained from the inclined tables of all the furnaces of the group, see Fig. 3. In such an arrangement, the deflecting walls b', which in a single furnace may form part of the side walls,

deflect the products of combustion issuing through the flues a^7 down into the receptacle b through which they pass along the surface of the liquid and out through the flue e into the chimney or up-take E, the liquid contained in the receptacle at the end of one furnace being evaporated by the heat from the products of combustion passing over it from the previous furnace or furnaces of the series or group.

To guard against any possible obnoxious odors issuing from the furnaces I have provided the flue e with a supplemental flue e' in which is placed a grate e^2 to support a fire, access to which may be had through the door e^3, Fig. 1. A damper e^4 is placed in the flue e, and dampers e^5 at opposite ends of the supplemental flue e', so that by closing the dampers e^5, and opening the damper e^4 the products of combustion will pass through the flue e direct to the chimney; but by closing the damper e^4, and opening the dampers e^5, the products of combustion from the furnace will be compelled to pass over the fire carried on the grate e^2 and be thereby consumed so that no objectionable odors will escape from the furnace chimney.

Suitable air flues f are provided which convey air to the interior of the furnaces, above the fire, to assist in the combustion.

In a furnace embodying this invention, the substance or garbage to be consumed is placed on the brick or tile plate a which is not deteriorated by the same and will last indefinitely thus obviating the frequent repairs necessary when metal is employed for this purpose. The liquid is also received by and contained in a receptacle of brick or tile which cannot rust or corrode and through which the products of combustion are passed to evaporate the collected liquid. A single fire only is necessary and access is had to it through a door or doors in the front or end of the furnace, thus permitting several furnaces to be grouped together, which would not be possible if the doors were on the side. The liquid is drained from the table a into a receptacle so situated that it cannot overflow or otherwise escape into the ash pit c', to contaminate the water and ashes necessarily carried therein.

This invention is not limited to the particular construction of furnace herein shown as the same may be varied without departing from the scope of the invention the gist of which is set forth in the appended claims.

I claim—

1. In a cremating furnace, an inclined table to receive the substance to be consumed, combined with a fire grate located adjacent to one end of said table, and a receptacle for liquid drained off by the table located at the opposite end thereof but separated therefrom by a wall perforated for the passage of said liquid, a flue in said wall for the escape of the products of combustion from the furnace proper, and deflecting walls to deflect the said products down toward the surface of the liquid in the receptacle, substantially as described.

2. In a cremating furnace, an inclined table to receive the substance to be consumed, combined with a fire grate located adjacent to one end of said table, and a receptacle for liquid drained off by the table located at the opposite end thereof but separated therefrom by a wall perforated for the passage of said liquid, a flue in said wall for the escape of the products of combustion from the furnace proper, deflecting walls to deflect the said products down toward the surface of the liquid in the receptacle, and an independent fire grate to carry a fire to consume the products of combustion after the same have passed through said receptacle, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD CLARK MORSE.

Witnesses:
G. W. GREGORY,
FRANCES M. NOBLE.