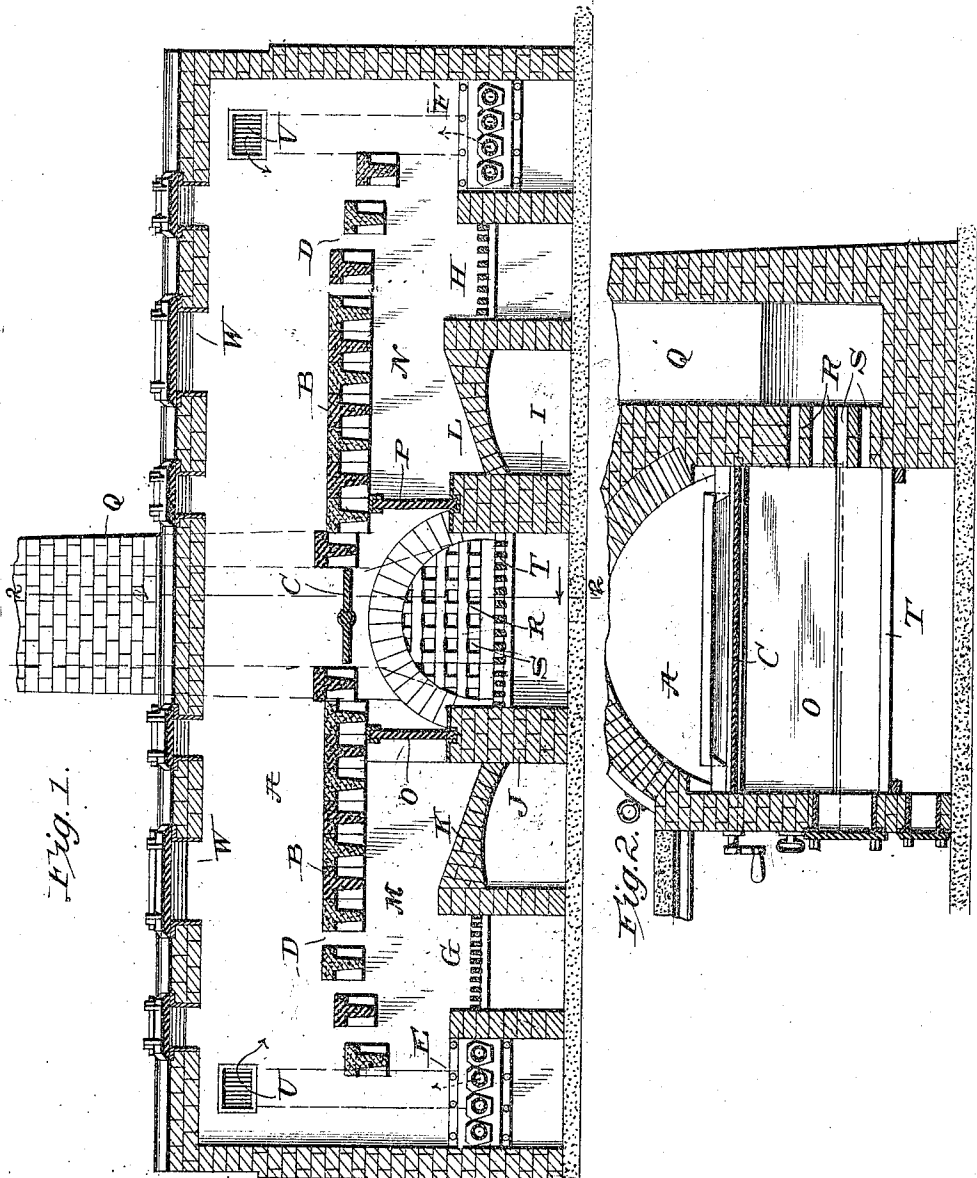


F. P. SMITH.
GARBAGE CREMATORY OR INCINERATOR.
APPLICATION FILED DEC. 2, 1908.

950,192.

Patented Feb. 22, 1910.



Witnesses
C. H. Rader
H. E. Montague

By

Fred P. Smith,
Dodge and Sons,

Inventor

Attorneys

UNITED STATES PATENT OFFICE.

FRED P. SMITH, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO EDWARD C. LEWIS, OF CHICAGO, ILLINOIS, AND JOHN H. KITCHEN, OF KANSAS CITY, MISSOURI, CO-PARTNERS.

GARBAGE CREMATORY OR INCINERATOR.

950,192.

Specification of Letters Patent. Patented Feb. 22, 1910.

Application filed December 2, 1908. Serial No. 465,595.

To all whom it may concern:

Be it known that I, FRED P. SMITH, 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 or Incinerators, of which the following is a specification.

My present invention pertains to improvements in garbage-crematories or incinerators, the construction and advantages of which will be hereinafter set forth, reference being had to the annexed drawings, wherein:

Figure 1 is a vertical longitudinal sectional view of the apparatus; and Fig. 2 a transverse vertical sectional view, taken on the line 2-2 of Fig. 1.

The main object of the invention is to construct an apparatus wherein the garbage which is placed upon the main grate or floor may be swept by the flames from one end to the other, and the flames and products of combustion caused to pass beneath at least one half of the floor on their way to the stack.

A further object of the invention is to provide a structure wherein the garbage may be divided into two charges and each portion thereof subjected to the action of a separate furnace, which furnaces discharge into a common stack or flue, whereby the wet garbage may be initially dried preparatory to its being burned and operated upon by one of the furnaces alone.

Another object of the invention is to provide fumes furnaces or fires adjacent to each of the main furnaces, whereby the fumes arising from the garbage will be destroyed before they pass to the stack.

A still further object of the invention is to provide an additional fumes fire located at the base of the stack in line with a grid or reticulated opening which, by the action of the fire, becomes hot and serves to destroy the fumes.

In the drawings A denotes the main combustion chamber, located in the upper portion of the body of the furnace, and B the transversely-extending grate or supporting floor upon which the garbage or other ma-

terial is dumped and burned. The center of the grate is provided with an opening controlled by a damper C, and the end bars of the floor or grate adjacent to the damper are raised or elevated to a slight extent above the main line of the floor, in order to prevent the material from working in upon the damper or through the opening when the damper is turned. The bars at each end of the floor are separated, forming openings D, and said bars are likewise stepped down toward furnaces E and F, which are located, respectively, at opposite ends of the structure. Adjacent to each of said furnaces and beneath the floor are fumes furnaces G and H, and between said furnaces and the fire-walls I and J are located hearths K and L. There are thus formed beneath the main floor flues or passages M and N, dampers O and P controlling the passage of the products of combustion from said flues into the lower end of the stack Q. The opening in the lower end of the stack is formed by a series of fire-bricks or the like R, so set as to make a series of openings or passages S. A grate T is located between the fire-walls I and J in line with the lower portion of the reticulated opening formed as just described. Doors will, of course, be formed in the forward or outer wall of the structure, to afford access to the various grates and furnaces.

In order to introduce heated air into the combustion chamber above the floor the grate-bars of the furnaces E and F are made hollow and discharge into ducts or flues U, V which terminate in the upper portion of the combustion chamber, as clearly indicated in Fig. 1.

Openings W will be formed in the upper portion of the structure, in order that the garbage or other material may be dumped directly onto the floor.

The operation of the apparatus is as follows: Assuming that a new charge is introduced into the structure onto the floor B, fires will be maintained in the furnaces E and F and the damper C opened, while slides C and P are closed. The flames passing from the furnaces E and F will then sweep over the garbage resting upon

each end of the floor and pass to the stack through the central opening formed in the floor. A fire will also be maintained upon the grate T, which will assist in causing a strong draft through the stack and likewise heat the bricks R so that they will aid the fire upon the grate T in destroying the fumes arising from the mass of material. Fires will also be maintained in the fumes furnaces G and H, if so desired. After the material has become sufficiently dried, the damper C will be closed and one of the slides O or P (say the slide P) will be opened. The flames from the furnace E will then pass over the entire mass supported by the floor, over the furnace F, through the flue N, and over the fumes fire H into the stack through the reticulated opening. Fresh garbage may at this time be dumped upon the right hand end of the floor, so that it will be dried. After the garbage upon the left-hand end of the floor has been burned, the operation will be reversed, the slide P being closed and the slide O opened, so that the fresh charge of garbage which was dumped upon the right-hand end of the floor and has been partially dried will then be burned to effect the drying of the new charge which is being introduced upon the left-hand end of the floor. The partially-burned garbage is worked off of the end of the grate onto the furnace E, where it is employed as fuel. Any finer particles which may pass through the openings D into the fumes furnaces G and H will be consumed therein and assist in maintaining the fires at these points.

Having thus described my invention, what I claim is:

1. In an apparatus of the character specified, the combination of a combustion chamber having a floor extending transversely of the structure and terminating short of the end walls, said floor having an opening therein at approximately the center thereof; a furnace located at each end of the floor and at a point below the same; a damper controlling the opening in the floor; a stack communicating with the space beneath the floor; and a pair of dampers controlling the passage of the products of combustion from the furnaces as they pass beneath the floor to the stack.

2. In an apparatus of the character specified, the combination of a structure provided with a combustion chamber in the upper portion thereof having a floor extending transversely of the structure, said floor having an opening formed in the central portion thereof and the ends of the floor stopping short of the end walls of the structure; a furnace located at each end of the structure in line with the openings formed between the ends of the floor and the walls

of the structure; a damper controlling the central opening in the floor; a stack opening into the lower portion of the structure; a pair of dampers controlling the passage of the products of combustion from the furnaces below the floor into the stack; and means for destroying the fumes arising from the burning of the material being treated.

3. In an apparatus of the character specified, the combination of a structure provided with a combustion chamber in the upper portion thereof having a floor extending transversely of the structure and stopping short at each end thereof, said floor being likewise provided with a centrally-disposed opening; a furnace located at each end of the structure in line with the openings formed between the ends of the floor and the walls of the structure; a stack opening into the lower portion of the structure below the floor; a damper controlling the central opening formed in the floor; a pair of slides or dampers controlling the passage of the products of combustion from the furnaces beneath the floor into the stack; and a furnace located in line with the base of the stack.

4. In an apparatus of the character specified, the combination of a structure provided with a combustion chamber in the upper portion thereof having a floor extending transversely of the structure and terminating short of the ends thereof, said floor being likewise provided with a centrally-disposed opening; a pair of furnaces located at each end of the structure in line with the openings formed between the ends of the floor and the walls of the structure; a damper controlling the central opening formed in the floor; a stack communicating through a reticulated opening with the lower portion of the structure beneath the floor; a pair of dampers controlling the passage of the products of combustion from the furnaces beneath the floor into said stack; and a furnace located in line with the lower end of the stack and between said dampers.

5. In an apparatus of the character specified, the combination of a structure provided with a combustion chamber in the upper portion thereof having a floor extending transversely of the structure and terminating short of each end thereof, said floor being likewise provided with a centrally-disposed opening; a damper controlling the centrally-disposed opening formed in the floor; a stack communicating with the lower portion of the structure beneath the floor through a reticulated opening; a furnace located at each end of the structure in line with the openings intermediate the ends of the floor and the walls of the structure and at a point below the level of the floor; a pair of dampers located below the floor and

controlling the passage of the products of combustion from the furnaces into the stack; a grate located in line with a reticulated opening between the dampers; and a fumes furnace located beneath the floor and intermediate the furnaces at the ends of the structure and the dampers.

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

FRED P. SMITH.

Witnesses:

F. H. HENNING,

E. C. LEWIS.