

(No Model.)

2 Sheets—Sheet 1.

M. L. DAVIS.

CREMATORY.

No. 359,138.

Patented Mar. 8, 1887.

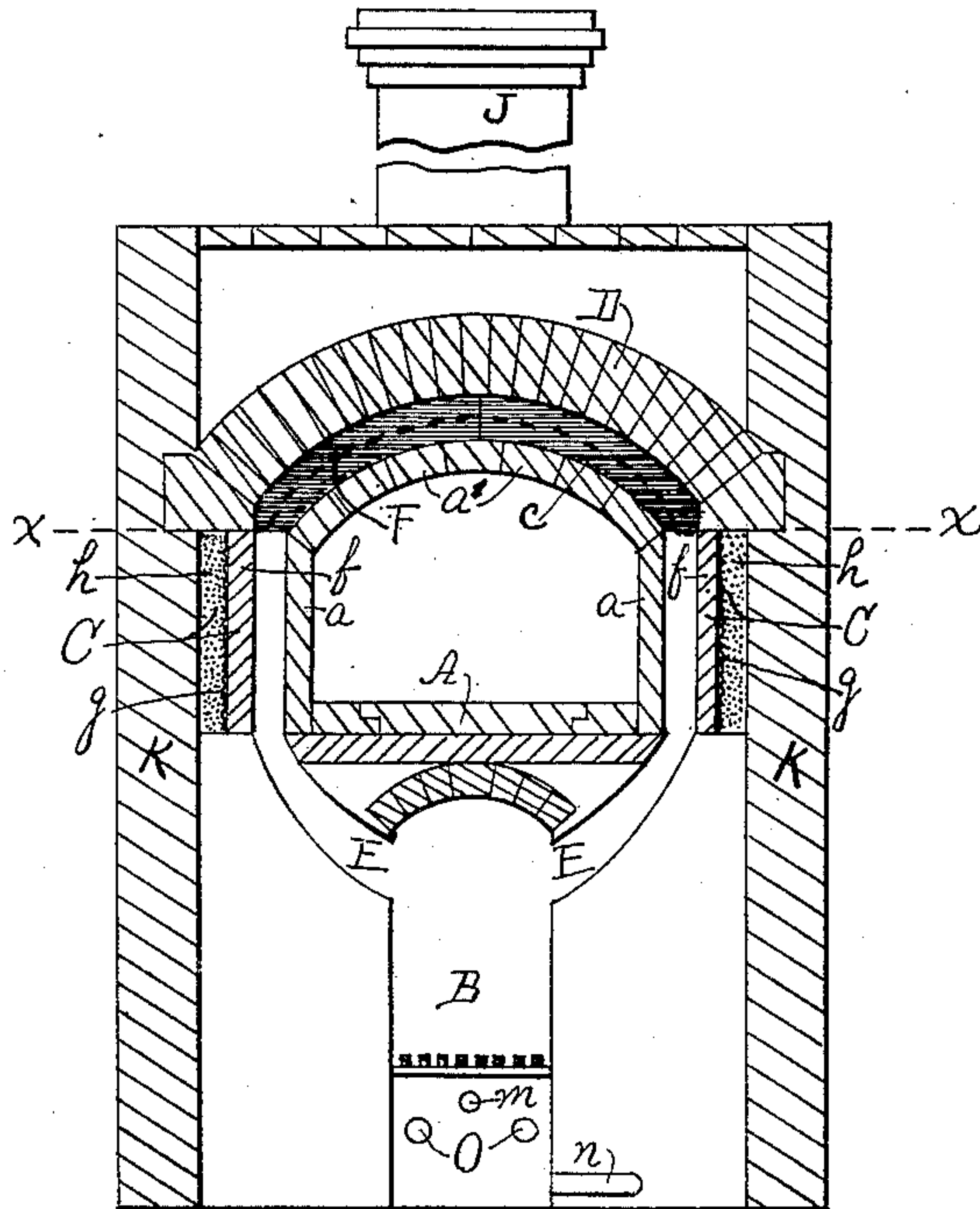


FIG. 1.

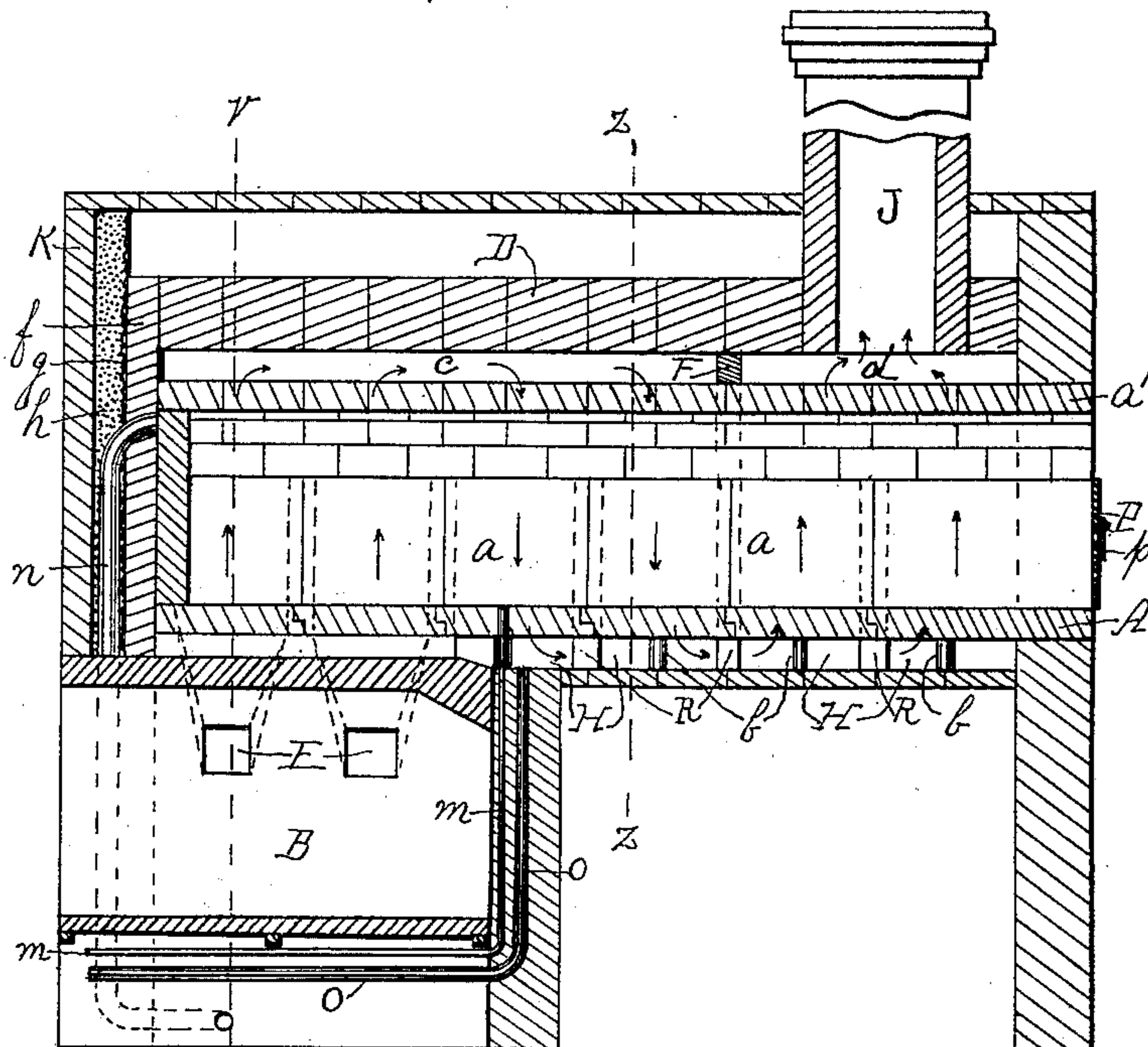


FIG. 2.

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His Atty

(No Model.)

2 Sheets—Sheet 2.

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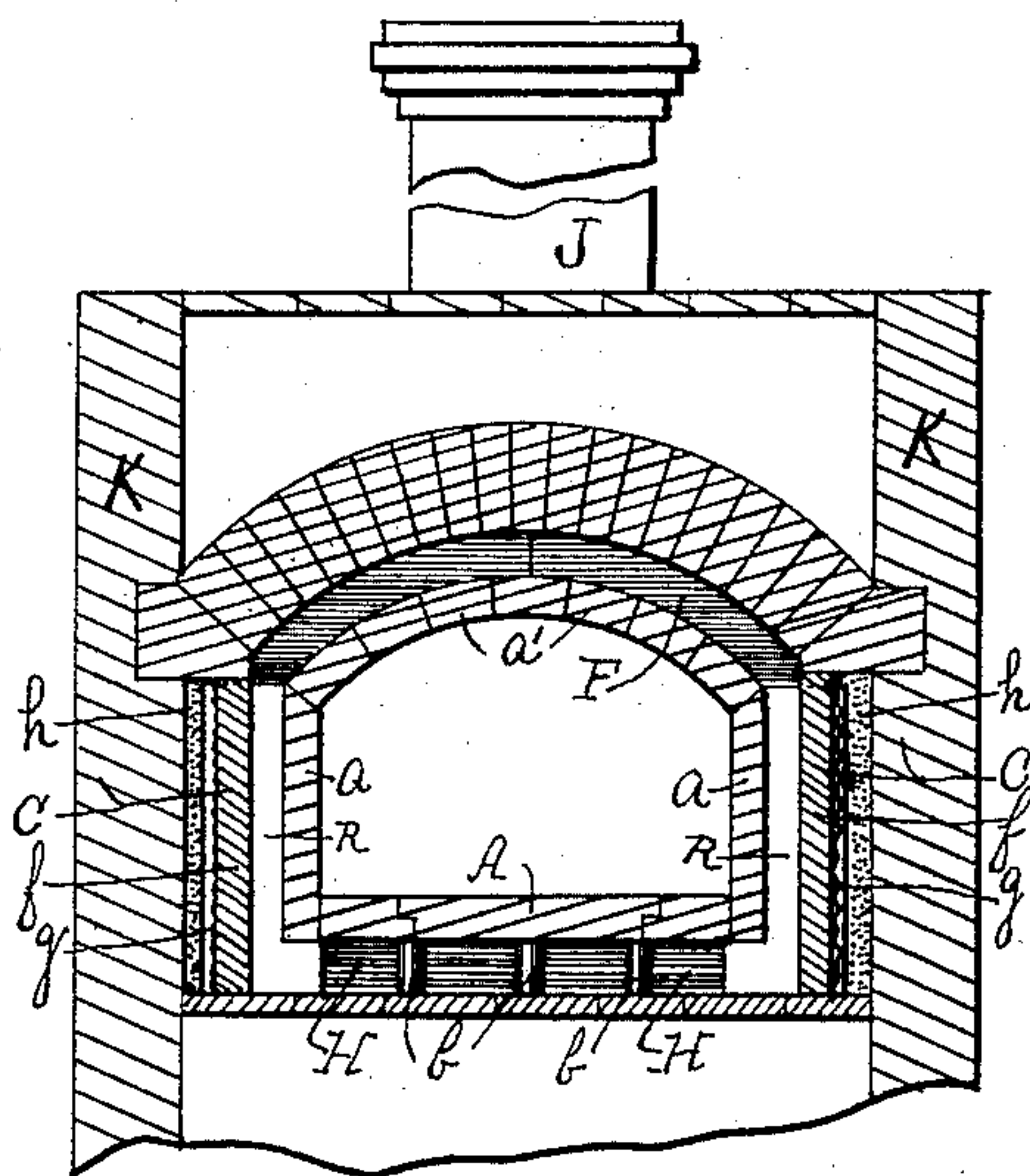


FIG. 3.

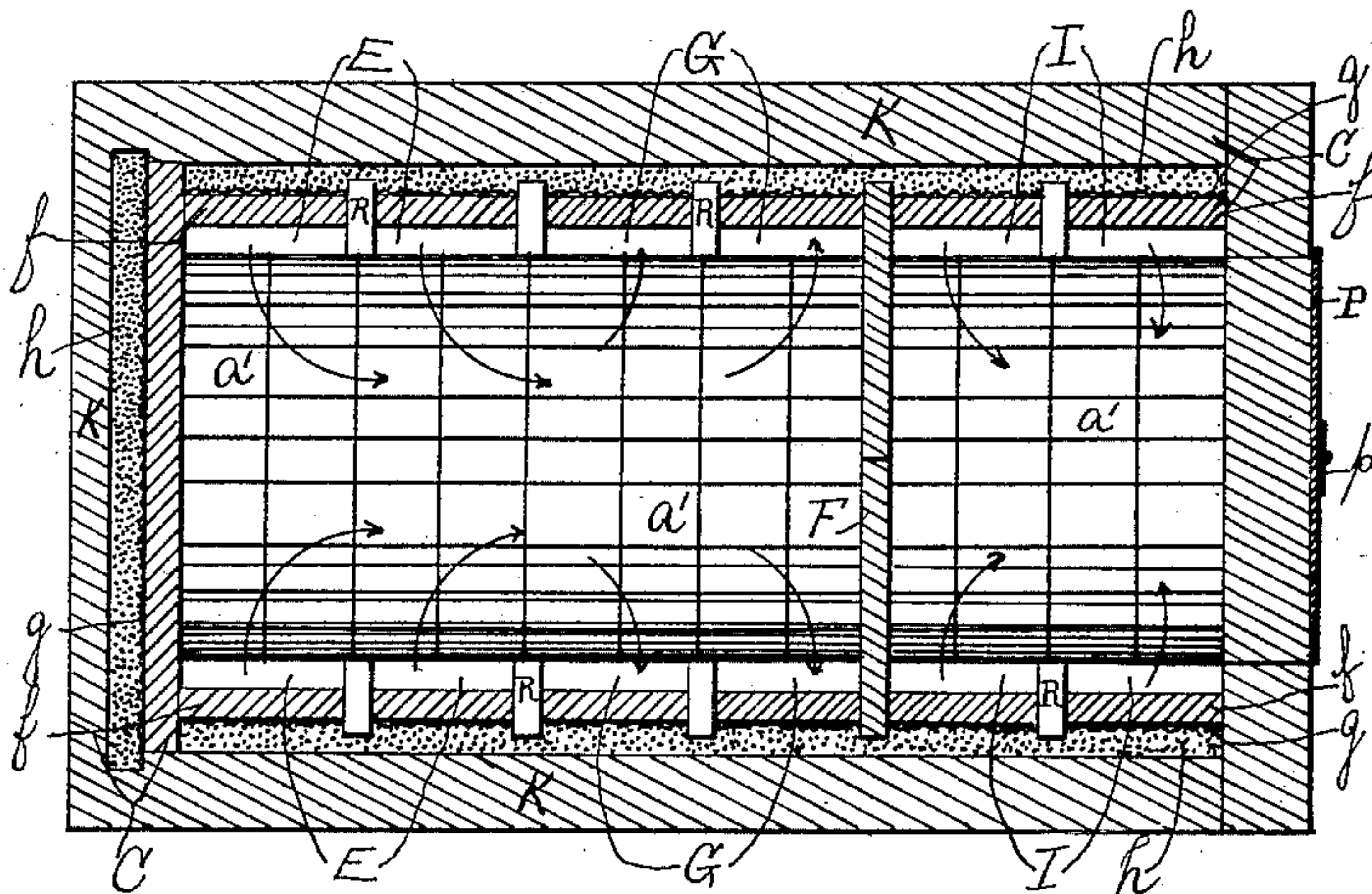


FIG. 4.

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UNITED STATES PATENT OFFICE.

MILES L. DAVIS, OF LANCASTER, PENNSYLVANIA.

CREMATORY.

SPECIFICATION forming part of Letters Patent No. 359,138, dated March 8, 1887.

Application filed February 8, 1886. Serial No. 191,128. (No model.)

To all whom it may concern:

Be it known that I, MILES L. DAVIS, a citizen of the United States, residing at Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain Improvements in Crematories, of which the following is a specification.

My invention is an improvement in devices for the incineration of human and other animal bodies or of any matter which it may be desirable to destroy; and the object of my improvement is to consume the bodies to be destroyed completely and rapidly. I attain this object by means of the retort and the heating arrangements illustrated in the accompanying drawings, in which—

Figure 1 is a transverse vertical section through the line *vv*, Fig. 2; Fig. 2, a longitudinal vertical section through the whole structure; Fig. 3, a transverse vertical section through the line *zz*, Fig. 2; and Fig. 4 a horizontal section through the line *xx*, Fig. 1.

Similar letters refer to similar parts throughout the several views.

The retort is composed of fire-brick, the bottom *A* and the arched top *a'* of brick of such size as may be desirable, and the sides of vertical sections *a*, the length of each being the height of the walls of the retort. This formation of the sides and top in sections admits of the expansion and contraction of the parts caused by the excessive variations in temperature to which the structure is subjected without the cracking of the surfaces, so liable to occur with retorts of one unbroken and jointless mass.

One end of the retort rests upon the walls of the fire-chamber *B*, the intermediate part being supported by a series of small pillars, *b*, and the other end in that of the inclosing-case. The whole retort, with the exception of the ends and that part resting over the fire-chamber, is inclosed in wide spaces separated by narrow partitions *R*, through which the products of combustion pass in a constant current, wrapping the retort in a perfect mass of flame. The heat-space about the retort is inclosed by perpendicular walls *C* on the sides and an arch, *D*, over the top. Opening from each side of the fire-chamber there are two flues, *E*, which rise to the height of the arch,

where they open into a chamber, *c*, covering the entire width of the arch of the retort. This chamber *c* is divided from the space back of it by a heading or partition, *F*, which is carried down the sides of the retort to the chamber *H*, and acts to direct the currents of heat down two flues, *G*, on each side into the chamber *H* lying under the whole of that part of the retort back of the fire-chamber. From the chamber *H* the heat-currents again rise by flues *I*, flowing into a chamber, *d*, back of the partition *F*, and similar to the chamber *c*, whence the said currents escape by the chimney *J*. The flues leading from the fire-chamber are completely divided at the bottom, while the partition between those, *G*, carrying the heat-currents downward and those, *I*, finally carrying them upward extends only from the springing-line of the arch to the chamber *H*.

The outer walls of the heat-flues are constructed to prevent any escape of heat from them in that direction. The first part of these walls consists of a layer of tiling, *f*, having a layer or backing of asbestos, *g*, on its outer face. Outside of this there is a chamber, *h*, filled with some non-combustible non-conducting material, and finally the outer wall, *K*, of the casing of the retort.

In order to perfect the combustion there are draft-pipes *O* extending just under the grate from a point inside of the opening of the pipe *L*, which extends back through the rear end of the ash-box into the chamber *H* under the retort, by which additional oxygen is supplied to said chamber. In addition to the pipes *O* there is a pipe, *m*, placed under the grate in the same manner, which extends upward in the back wall of the fire-chamber *B* and through the bottom of the retort, into which it conveys heated oxygen to aid in the more rapid and complete incineration of anything placed therein. There is also a pipe, *n*, extending down in front of the retort and fire-chamber, which connects the two and conveys the unconsumed gases generated in the retort into the fire-chamber.

As before remarked, the division of the sides and arch of the retort into sections admits of their more readily expanding and contracting without injury to the parts under the changes of temperature to which they are sub-

jected. The partitions between the heat-chambers are for the same reason extended through the tile and asbestos sides into the chamber packed with non-conducting material, which, being of some loose substance, allows the said partitions to expand when heated. I have been in the habit of making these partitions in two sections which meet in the center above or below the retort.

10 In order to introduce the body into the retort I have been in the habit of placing a door, P, at the end opposite to that under which the fire-chamber is located, and have cut therein a small opening having a swinging curtain, p, over it, to allow the interior of the retort to be examined without opening the door.

This arrangement for a crematory is exceedingly simple in construction and is durable and effective in use.

It is evident that many slight changes in the construction and relative arrangement of the several parts might be resorted to without departing from the spirit of my invention, and therefore I would have it understood that I do not confine myself to the exact construction shown and described, but consider myself at liberty to make such changes as fairly fall within the spirit and scope of my invention.

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

1. In a crematory, the combination, with a retort having a fire-chamber under one end, of heat-flues passing up both sides of the retort and connecting the said fire-chamber with a chamber, c, extending over that end of the retort, flues connecting the back end of the chamber c with a chamber, H, extending under the bottom of the retort back of the fire-chamber, flues connecting the back end of the chamber H with a chamber, d, over the retort back of the chamber c, a partition di-

viding the chambers c and d, and a chimney-flue leading from the chamber d, substantially as and for the purpose specified. 45

2. In a crematory, the combination, with a retort and fire-chamber, of heat-chambers located above and below the retort in a regular series, the first chamber being placed above that end of the retort over the fire-chamber, the last above the other end of the retort and having a chimney-flue, and a series of heat-flues passing up and down the sides of the retort and connecting the chambers above with those below in regular order, the first set of flues leading from the fire-chamber to the first heat-chamber, and the last from the chamber under the other end of the retort to the last heat-chamber, so as to carry the heat from the fire-chamber about all sides of the retort to the chimney, substantially as specified. 55

3. In a crematory, the combination, with a retort surrounded by heat flues and chambers, of the outer sides of said crematory, consisting of a tiling partition forming the outer sides of the flues and resting against one end of the retort, a layer of asbestos on the outer face of said tiling, a chamber filled with non-combustible non-conducting material, and an outer wall, substantially as specified. 65

4. In a crematory, the combination, with a retort surrounded by heat flues and chambers, of the outer sides of said flues formed of tiling, a layer of asbestos on the outer face of said tiling, a chamber filled with non-combustible non-conducting material, and the partitions between said heat flues and chambers bearing against the outer surface of the retort and extending through the tiling into the said filling-chamber, substantially as specified. 75

MILES L. DAVIS.

Witnesses:

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WM. R. GERHART.