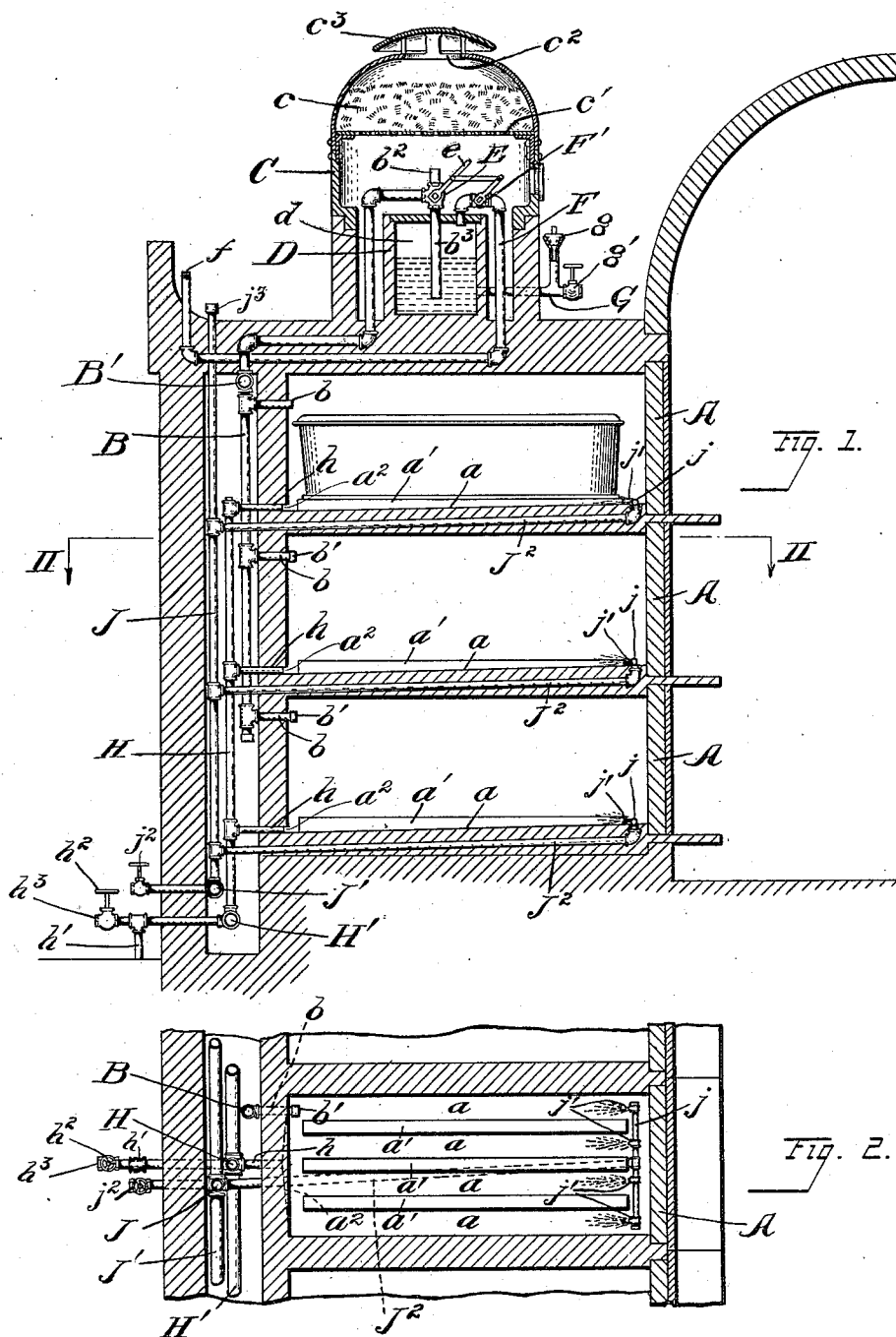


A. E. MERKEL.
 SANITARY SYSTEM FOR MAUSOLEUMS.
 APPLICATION FILED JUNE 9, 1911.

1,059,552.

Patented Apr. 22, 1913.



Witnesses
 Herman Eisele
 Winifred Waltz

Inventor:
 Arthur E. Merkel.

UNITED STATES PATENT OFFICE.

ARTHUR E. MERKEL, OF CLEVELAND, OHIO.

SANITARY SYSTEM FOR MAUSOLEUMS.

1,059,552.

Specification of Letters Patent.

Patented Apr. 22, 1913.

Application filed June 9, 1911. Serial No. 632,198.

To all whom it may concern:

Be it known that I, ARTHUR E. MERKEL, a citizen of the United States, resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented a new and useful Improvement in Sanitary Systems for Mausoleums, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

My invention relates to sanitary systems for mausoleums, its object being to provide a system which will permit the use of community or public mausoleums designed to receive a comparatively large number of bodies, without any attending disagreeable or dangerous consequences resulting from the putrefaction of such bodies, or resulting from the presence of disease germs within the receiving crypts.

A further object is to provide a system which will permit the crypts of the mausoleum to be opened at any time during the process or after the completion of putrefaction without disagreeable or dangerous consequences which are ordinarily encountered as a result of such generation of gases or liquids or by reason of the presence of such germs.

The said invention consists of means hereinafter fully described and particularly pointed out in the claims.

The annexed drawing and the following description set forth in detail certain means embodying my invention, the disclosed means, however, constituting but one of various mechanical forms in which the principle of the invention may be applied.

In said annexed drawing:—Figure 1 is a vertical transverse section of a part of a mausoleum embodying my invention. Fig. 2 is a horizontal section taken upon the plane indicated by line II—II in Fig. 1.

The general construction of the community or public mausoleum to which my invention may be applied may be that of any one of the various structures which are ordinarily employed for this purpose, and in which a plurality of receiving crypts are ordinarily provided arranged in rows and tiers, each such crypt being provided with a receiving end which is sealed by means of

a removable and replaceable closure A, Fig. 55 1, in the usual manner.

In carrying out my invention, I provide a vertical outlet pipe or duct B connected with a main horizontally disposed outlet pipe B', which, by means of branches b b; communicates with the interior of each crypt and preferably near the top thereof, as shown in the drawing. When the crypts are not in use, that is, when they contain no bodies, these branches are preferably closed by means of caps b', which caps are removed when the body is placed within the crypt.

At any suitable location in or in the vicinity of the mausoleum, I provide a receptacle C, which, in the structure illustrated, is shown on the top or roof of the building. This receptacle is provided with a chamber c' in which I place a purifying or deodorizing material, such as charcoal. The bottom of this chamber is formed by a perforated plate c', and the top thereof is provided with an opening c² which discharges into the atmosphere, this opening being preferably covered by means of a dome c³ to prevent the entrance of rain therethrough. The duct B passes upwardly into the receptacle C and discharges into the interior thereof below the plate c', as at b².

A second inclosed receptacle D, shown within the receptacle C in the illustrated embodiment of my invention, is provided with an interior chamber d, which contains a purifying fluid capable of destroying germs, such as, for instance, formaldehyde or a mixture of sulfuric and chromic acid. A pipe d³, of suitable material, is connected with the main portion of the duct B, as shown, and projects downwardly through the top of the receptacle D into the fluid. This connection is preferably made by means of a T-joint, one branch of which discharges into the receptacle C, and the other branch of which is caused to discharge into the receptacle D. A three-way valve E is provided at the joint which when turned in one direction will establish communication between the duct B and the interior of the receptacle C, cutting off communication with the interior of the receptacle D, and when turned in the other direction will establish communication between the duct B and the interior of receptacle C, cutting off communication with chamber d. This valve is

provided with a suitable handle *e*, by means of which it may be operated. When this handle is in the position shown in Fig. 1, communication is established between duct

5 B and the interior of the receptacle C.

A discharge duct F communicates with the interior of the receptacle D above the surface of the liquid, and discharges into the atmosphere at *f*. A valve F' is placed

10 in this last-named duct, which is connected with the handle *e* of valve E in such a manner that when such handle is in the position shown in the drawing, that is, when communication between receptacle C and duct

15 B is established, communication through the discharge duct F is cut off.

A suitable inlet duct is provided by means of which the chamber in the receptacle D may be charged with the liquid when desired.

20 The outer end of this duct is normally closed by means of a plug *g*. This duct may also be provided with a valve-controlled branch *g'*, by means of which the liquid may be drained from the receptacle, if desired.

25 A vertical drainage pipe H is provided which communicates by means of branches *h* *h* with the interior of each crypt, and at the bottom and centrally thereof. This duct communicates at the bottom *h'* with a seepage tank, cesspool or sewer (not shown). A valve *h*² is provided in the duct H by

30 means of which it may be connected directly with the atmosphere by a separate opening *h*³.

35 The invention as thus far described operates as follows: Assuming that one or more bodies have been placed within the crypts, and that the valve E is in the position shown in the drawing, it will be seen

40 that any gases which may be generated within the interior will by their own pressure, pass out of the branches *b* into the duct B, and will thence be discharged into the interior of receptacle C at *b*². From this point

45 the gases percolate through the chamber *c* and pass out into the atmosphere through the opening *c*², the charcoal acting as a deodorizer for this gas. As the generation of gas continues, it will be discharged from the interior of the crypt in the same manner.

50 Under certain conditions, this method of purifying these gases may be sufficient to meet the sanitary requirements. Where, however, such is not the case and it is desired to subject the gases to a more thorough deodorizing or a disinfecting process, the

55 valve E is thrown so as to disestablish communication with the interior of the receptacle C and establish communication with the interior of receptacle D. This valve when so moved will, as before stated, open the valve F'. The gases now formed will pass through the duct B, thence through the liquid in receptacle D, and upwardly

65 through and out of the discharge duct F

into the atmosphere. In passing through the liquid, any deleterious properties which these gases may contain, will be destroyed:

After generation of gases from the body has, however, ceased, the pressure within the crypt reaches a point where it is equal to that of the atmosphere, or to the pressure exerted by the liquid in the receptacle D, according to the position of valve E. A body of gas, sometimes containing germs, will, however, have been created in the crypt and having no excess pressure will, therefore, remain therein unless removed by extraneous means. The presence of this body of gas is, of course, not detrimental unless it be desired for some purpose to open the crypt, as, for instance, when it is desired to transfer the body to some other location, or where it is necessary to make a post-mortem examination. Such act of opening would, therefore, permit the escape of these gases through the receiving opening of the crypt, with attending obnoxious, undesirable, and sometimes dangerous results. To provide against this undesirable result, I permit the discharge end *f* of the duct F to project at a convenient point whereby it may be attached to an exhausting device, (not shown), of any desired character, which will exhaust the gases in the space in the receptacle D above the liquid therein, and consequently withdraw the gaseous contents of the crypt. Before beginning the exhausting operation, however, the valve *h*² is preferably opened, thereby establishing free communication of the crypt's interior with the atmosphere, and permitting the ingress of fresh air therein as fast as the gases are exhausted. This operation may be continued until the interior of the crypts are entirely free from these gases, whereupon they may be opened freely, without any undesirable results.

By connecting the valves E and F', as previously described, it will be seen that the exhausting operation cannot be effected without first shutting off communication at *b*² with the interior of chamber C, so that all exhausting action is therefore directed to the interior of the crypts and all the gases therein must pass through the liquid in the receptacle D before being discharged into the atmosphere.

If desired, valve *h*² may be made of the three-way type, so that the act of connecting pipe H directly with the atmosphere will be accompanied by a shutting-off of its communication with the cesspool, sewer or seepage tank.

It will, of course, be understood by those skilled in the art, that any other form of disinfecting or deodorizing apparatus may be substituted for that shown, it being only necessary to interpose disinfecting material in any suitable manner between the point of communication of a crypt with the atmos-

phere and the discharge-outlet of such crypt, so as to subject all gases emerging from the latter to a disinfecting or deodorizing action prior to its discharge into the atmosphere, and in that way seal the crypts against an uninterrupted or unaffected discharge of its gaseous content.

shown a lower valve-controlled branch j^2 by means of which, when the water pressure is cut off from the main pipe J' , the branches J^2 may be drained of any water which they may contain, so as to prevent the danger of bursting due to freezing in winter.

It has been found that in addition to gases of decomposition, there are also formed certain obnoxious liquids as a result of putrefaction. These liquids would, unless properly disposed of, also produce undesirable results in the event that it would be necessary or desirable to open the crypt for any reason. To effect the absolute removal of such liquids, I provide a flushing device which includes a water pipe J by means of branches J^2 which discharges into the front of the interior of each crypt, whereby water may be discharged and caused to pass from the front rearwardly and out through the discharge pipe H into the sewer or cesspool. To effect this flushing operation thoroughly, I provide a transverse discharge nozzle j provided with a plurality of discharging openings j' . The rear wall of the crypt is preferably provided with inclined grooves a , converging toward the center or point where each branch h passes through such wall, as shown by dotted lines in Fig. 2 for conducting the water to such branch h . For this purpose, the floor is also inclined from the front or receiving end of the crypt toward the rear, and upwardly projecting parallel and longitudinally arranged ribs a' are provided whose upper surfaces are preferably horizontal, for directly supporting the casket, said ribs terminating within the front and rear ends of the crypt whereby free spaces are left between such rib ends and the rear wall of the crypt, and between the rib ends and said closure. This raises the caskets above the floor so that the water may pass freely beneath same during the flushing operation.

A convenient way of making the water-connection for the flushing operation is to project the pipes J outside the building, as shown at j^3 , and connect such projecting portion with a hose which is itself connected with the main water supply. This projecting portion would ordinarily be closed by a suitable cap, as shown. In this manner, it will be seen that each crypt may be completely sealed from direct communication with the atmosphere but sufficient of the gases may at the same time escape therefrom as formed, thereby preventing the bursting of the walls of the crypt which sometimes takes place in a hermetically sealed crypt as a result of the pressure of these gases. It is also seen that all the obnoxious gases may be completely exhausted from the interior of the crypts so that the latter may be opened with impunity. Furthermore, all deleterious obnoxious liquids forming in the crypts may be completely removed by the flushing apparatus above described, without opening the crypt.

Having fully described my invention, what I claim and desire to secure by Letters Patent is:—

1. In a sanitary system for mausoleums, the combination of an inclosed receiving crypt; a receptacle provided with a chamber containing purifying material; a duct communicating with the interior of said crypt and in communication with the said chamber; an outlet-duct leading from said chamber to the atmosphere, the said material forming a seal for the end of said duct; and a duct communicating with the interior of the crypt normally closed to direct communication with the atmosphere, but capable of being placed in such direct communication therewith.

2. In a sanitary system for mausoleums, the combination of an inclosed receiving crypt; a receptacle provided with a chamber containing purifying material; a duct communicating with the interior of said crypt and in communication with said chamber; an outlet-duct leading from said chamber to the atmosphere, the said material forming a seal for the end thereof; and a duct connecting the interior of said crypt with a cess-pool or sewer, and provided with a valve-controlled outlet communicating directly with the atmosphere independently of said cess-pool or sewer.

3. In a sanitary system for mausoleums, the combination of an inclosed receiving crypt; a receptacle provided with a chamber containing a purifying material, said chamber

As will be noted from the drawing, Fig. 1, the discharge openings of the nozzle j are located so that they discharge in planes below the plane of the upper surface of said ribs. As a result of such location and the upwardly projecting feature of the ribs, the water may be discharged so as not to come into contact with the casket, and any injurious or undesirable effect which such contact might otherwise produce, is thereby avoided.

The pipe J may be connected with a main horizontally disposed water-drain pipe J' to which all of the pipes J in the mausoleum may be connected. Likewise a main horizontally disposed drain-pipe H' may be provided with which all of the drain-pipes H of the mausoleum may be connected, as will be readily understood. I have also

being in communication with the atmosphere; a second receptacle provided with a chamber containing a purifying material; a discharge pipe connected with said second-named chamber and communicating with the atmosphere; a duct communicating with the interior of said crypt and being in communication with each of said two chambers; and valve mechanism for controlling communication between said latter duct and said chambers, whereby such communication may be established with either one chamber to the exclusion of the other, said valve mechanism being also arranged to control said outlet duct.

4 In a sanitary system for mausoleums, the combination of an inclosed receiving crypt; a purifying chamber; a duct connecting the interior of the crypt with said chamber; a duct connecting the latter with the atmosphere; a purifying material sealing the end of said last-named duct; a duct connecting the bottom of the interior of said crypt with a cess-pool or sewer; and a separate duct discharging into said crypt whereby water may be introduced therein for flushing same.

5. In a sanitary system for mausoleums, the combination of an inclosed receiving crypt; a purifying chamber; a duct connecting the crypt with the atmosphere; a

purifying material sealing the end of said last named duct; a duct connecting the bottom of the interior of said crypt with a cess-pool or sewer and provided with a valve-controlled outlet communicating directly with the atmosphere; and a separate duct discharging into said crypt whereby water may be introduced therein for flushing same.

6. In a sanitary system for mausoleums, the combination of an inclosed receiving crypt provided with longitudinally, upwardly projecting ribs on the floor thereof; a duct communicating with the interior of the crypt and at the bottom thereof, for establishing communication between such interior and the exterior of the crypt; a water connection having a transverse nozzle provided with discharge openings located opposite the spaces between adjacent ribs and between the ribs and sides of the crypt; said ribs terminating within the front and rear ends of the latter, whereby free spaces are left between such ends and the rib ends; said discharge openings being located so as to discharge the water in a plane below the plane of the upper surface of said ribs.

Signed by me, this 8th day of June, 1911.

ARTHUR E. MERKEL.

Attested by—

CURT B. MUELLER,
WINIFRED WALTZ.