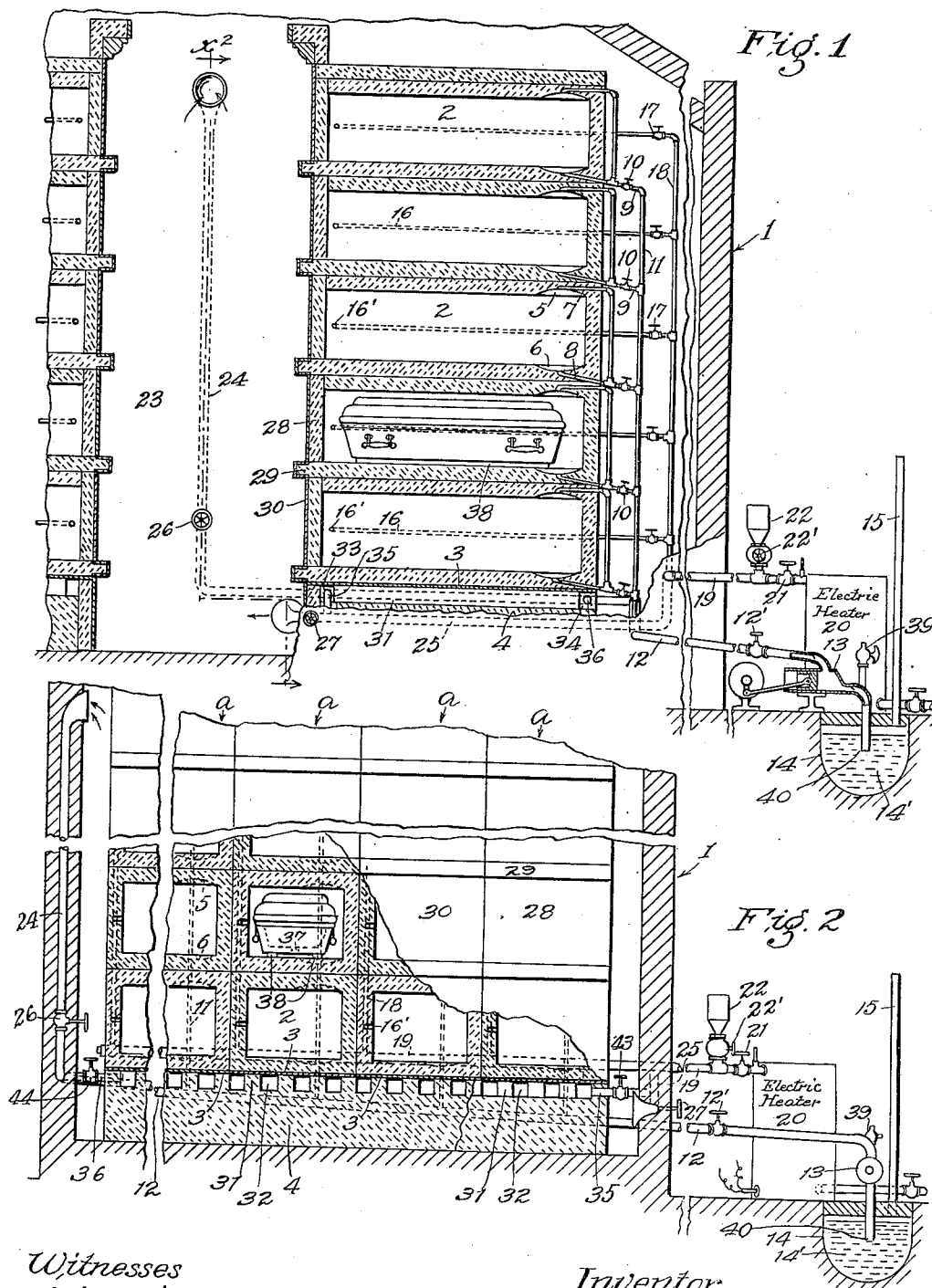


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MEANS FOR PRESERVING BODIES.
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UNITED STATES PATENT OFFICE.

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MEANS FOR PRESERVING BODIES.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM N. HOLWAY, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Means for Preserving Bodies, of which the following is a specification.

An object of this invention is to provide a mausoleum having great permanency and durability in which human remains may be readily desiccated and made innocuous, and in which they and their crypts may be preserved immemorially free from damage by seismic or other displacing disturbances.

The invention includes a mausoleum of novel construction comprising numerous crypts arranged in tiers and in series of tiers, each tier of crypts being constructed of reinforced concrete and not bonded to the other tiers or to the foundation with any bond liable to cause rupture of the tiers in case of displacing disturbances which might tend to wrench the individual tiers apart or to break the crypts.

It is an object to provide in the construction of a mausoleum containing a plurality of crypts means for thorough exhaust of all poisonous or noxious gases and the consequent removal of all liquids incident to desiccation, and to replace the same with suitable antiseptic vapors or with dry air; to convey such gases and any seepage in a positive manner to a germicide container, where the same may, by chemical action be converted into harmless and odorless solids and gases; not only to provide a rational and scientific method of ventilation of crypts, but also to provide for the ventilation of any and all parts of the mausoleum and its series of crypts should indications in any instance of imperfect desiccation manifest themselves.

This invention includes the combination with the crypts of a mausoleum, of means whereby a steady exhaust of gases may be effected from all or from any of the crypts, and particularly from those crypts into which bodies have been recently placed, and likewise to draw into and through such crypts a continuous flow of dry air at a pasteurizing temperature and for such length of time as may be found necessary to completely and perfectly desiccate the bodies placed therein.

The invention will be understood from the

following description, reference being had to the accompanying drawings.

Figure 1 is a sectional fragmental elevation of a mausoleum and its apparatus adapted for carrying out the invention and showing two tiers of crypts with a corridor between, portions being broken away to contract the view. Fig. 2 is a fragmental elevation partly in section taken on line x^2-x^2 , Fig 1, looking in the direction of the arrows and showing a row of tiers.

The air heater and gas treating apparatus is shown in a conventional manner in both views.

The mausoleum has the usual inclosing building 1 and is provided internally with a plurality of crypts 2 adapted to rest one on another and arranged in rows of tiers *a* that stand side by side. Each tier rests on a loose slip sheet 3 of iron, steel or other suitable material which is preferably polished and smooth on one or both faces, and which in turn rests upon a suitable foundation 4 of concrete or stone. Each of said tiers is molded or otherwise manufactured independently, making it possible to add to the mausoleum as desired, the first or lower crypt of each tier preferably being of reinforced concrete and the remaining or upper crypts to be molded homogeneously on top of said first or lower crypt, each tier being respectively made as a reinforced monolith.

Each crypt is provided internally with a bowl-shaped concavity 5 usually about eight inches in diameter and one and one-half inches in depth in the roof or ceiling at one side of the rear end and a like concave depression 6 in the floor directly under the cavity 5. Outlets 7 and 8 from such cavities respectively of each crypt in any stack or tier join in a pipe 9 which is provided for such tier and the pipes are manually controlled by valves 10 respectively, and connect with a vertical exhaust pipe 11 draining the whole tier of crypts. Each tier is thus drained by a like system of pipes which leads into a horizontal exhaust conduit 12, said conduit being placed at a slight angle or slant so as to drain readily, and being provided with a valve 12' and connected with the exhaust pump 13 so that when the valve 12' is open and the pump 13 operated all poisonous and noxious gases and seepage may thus be forced by pump 13 into a germicide container or tank 14 where it undergoes the action of different chemicals

such as a charge 14' of saturated solution of hydrochloric acid and mercuric chlorid (corrosive sublimate), and the gas escapes in a purified condition into the atmosphere through outlet 15.

Dry, heated or antiseptic air is supplied to the crypts separately through pipes 16 respectively, running horizontally through the side walls, each opening through a mouth 16' into its crypt at the opposite side from outlets 7 and 8 of such crypt at a point approximating the vertical center of said wall at or near the extreme front end of the inside of said crypt, thus reaching the greatest equidistant point from both of said exhaust openings, thereby insuring the most thorough circulation, since the air from mouth 16' may flow upwardly or downwardly. Each of said pipes 16 is provided with a valve 17 and is connected with a vertical pipe 18 located at the rear of each tier of crypts, said pipes being branches of the main intake pipe or conduit 19 leading from the heater 20. Said conduit 19 is provided with a valve 21 and a fresh air intake 22, said air intake having filtering means and adapted for mixing chemicals with the air as desired.

The passage or corridor 23 and other parts of the mausoleum are kept thoroughly ventilated by means of branch pipes 24 and 25 connected with the main conduits 12 and 19; said pipes opening into opposite ends of the mausoleum and being controlled as desired by valves 26 and 27.

The closures 28 as well as the projecting shelves 29 of the crypts are shown faced with a veneer 30 of marble, giving a pleasing appearance to the interior of the mausoleum. The foundation 4 is provided on its upper side with ridges 31, on top of which the metal plate 3 rests thus forming ventilating channels 32 beneath each stack of crypts. Said channels connected at their ends with cross passages 33, 34 into one of which an air pipe 35 opens and from the other of which an exhaust pipe 36 leads.

In order to obtain the best possible desiccating results, it is desirable that each casket should have a suitable opening or openings at each end in the floor thereof, as indicated at 37, in Fig. 2, and that it should rest upon two narrow strips or blocks 38 of wood or other suitable material, and that care should be taken that such openings are left absolutely free and clear.

Try cocks 39 are connected with each of the pumps so that gas may be drawn from the exhaust before passing through the germicide and deodorizing agent 14'.

After a casket has been deposited in its crypt, the closure 28 will be inserted and sealed, the valve 10, 17, 21 and 12' being open, the process of ventilation will be started by operating the pump 13 and will then

be continuously carried on for two weeks more or less, or until thorough desiccation is presumed to have occurred. Cultures will then be taken through the try cocks 39 from the atmosphere of the crypts and examined for pathogenic micro-organisms, and if any such are found the exhaust and air supply will be continued with a fumigating agent added to the inflowing air until the air drawn from the crypt is found to remain absolutely sterile free from all decomposing elements and pathogenic bacteria. The try cock is preferably located between the pump and the germicide tank 14 into which the discharge end 40 of the exhaust pump descends to below the level of the germicide charge 14' through which the final exhaust of vapors and gas pass upward to the outlet pipe 15.

The fresh air intake 22 is provided with a valve 22' which may be opened to admit fresh air or chemicals and may be closed to cause the air from the pasteurizer or heater 20 to be introduced. When a charge of such chemicals has been introduced through valve 22' said valve may be closed and valve 21 opened, whereupon the pump 13 may be operated and a tendency to a vacuum produced in the crypts whereupon hot air from heater 20 will take up the chemicals and introduce them to the crypts, the valves of which are open for that purpose.

The cross passages 33, 34 connecting the channels are connected by pipes 35, 36 having valves 43, 44 with the exhaust and intake conduits 12, 19 so that all tendency to stagnant or antiseptic conditions can be corrected by opening the valves 43, 44 and operating the pump 13.

The temperature to which the bodies may be subjected preferably ranges from 155° F. to 170° F. and the air heater 20 may be an electrical or other form of heater that will give a continuous and regulated temperature while the pump may also be run by an electric motor 45 that will run steadily for the required period so that all the processes can be conducted automatically when the installation has once been made and the proper chemical charges have been supplied.

When the closures are in place they may be sealed in any desired manner so that the crypts are closed except at the openings 7, 8, and 16'.

The concave or bowl shaped cavities 5, 6 at top and bottom of each crypt creating the highest and lowest elevation within the crypt are designed to collect the lighter and the heavier gases; and the rarefaction of the serial contents of the crypt occurring at these two points farthest remote from the point 16' at which the atmospheric pressure is admitted, causes an effective and complete removal of the noxious gases both light and heavy from the crypt with timely and

effective desiccation of the remains as a result long sought but heretofore unattained, thus doing away with horrifying thoughts of cremation or putrefaction.

5 When the remains in any crypt have been desiccated the valves 10 and 17 may be closed and remain closed indefinitely. By closing valve 10 while valve 17 is open and the pump is running, a considerable rare-
10 faction is effected in the crypt.

I claim:

1. A crypt having outlets at top and bottom and an inlet for air, and exhaust means to exhaust gas and air from such outlets.

15 2. A crypt having outlets at top and bottom and an inlet for air, exhaust means to exhaust gas and air from such outlets, and valves to control the outlets and inlet.

3. A crypt having bowl shape cavities at
20 top and bottom and an air inlet; and means to exhaust air and gas from such cavities.

4. A crypt having bowl shape cavities at top and bottom at one end of the crypt and an air inlet at the other end of the crypt;
25 and means to exhaust air and gas from such cavities.

5. A crypt having bowl shape cavities at top and bottom at one end of the crypt and an air inlet at the other end of the crypt;
30 and means to exhaust air and gas from such cavities, said inlet being at the vertical center of the crypt.

6. A crypt having air inlet and outlet and being otherwise closed; means to exhaust
35 air from the outlet; means to heat air and deliver it to the inlet, and a germicide container into which the exhaust is discharged below the surface of the germicide.

7. A burial crypt having a concave or
40 bowl shaped depression in its ceiling or roof near the rear end at one side usually about eighteen inches in diameter and one and one-half inches in depth, and a reverse like concave depression in its floor directly under
45 said concave ceiling depression, thus creating the highest and the lowest elevations within the crypt insuring the drainage of all gases lighter than air and all gases and seepage heavier than air into said upper and
50 lower depressions respectively, means to supply air to the crypt, and means to exhaust air and gas from said depressions.

8. A burial crypt having a concave or bowl shaped depression in its ceiling or roof
55 near the rear end at one side usually about eighteen inches in diameter and one and one-half inches in depth, and a reverse like concave depression in its floor directly under said concave ceiling depression, thus creat-
60 ing the highest and the lowest elevations within the crypt insuring the drainage of all gases lighter than air and all gases and

seepage heavier than air into said upper and lower depressions respectively, a horizontal branch outlet pipe or exhaust with outward
65 and downward direction from the apex of each of said depressions joining at a suitable point outside the crypt and connecting with the main outlet exhaust conduit and governed by suitable valve, such conduit and
70 valve, and exhaust means connected with the conduit.

9. A burial crypt having concavities in the ceiling and floor at one side and at the rear end of the crypt, an intake pipe run-
75 ning from the rear end through the horizontal side wall opposite the side nearest said concave depressions, said intake pipe entering said crypt at a point approximat-
80 ing the vertical center of said wall at or near the extreme front end of the inside of said crypt, thus reaching the greatest equidistant point from both of said concave depressions and exhaust openings, thereby insuring
85 thorough ventilation.

10. A community or plural mausoleum containing numerous crypts placed one upon the other and in tiers side by side in a semi-detached form of construction as follows:
the first or lower crypts of each tier being
90 of re-inforced concrete or other suitable material molded or manufactured independently and resting upon a sheet of metal preferably of iron or steel which in turn rests upon a suitable foundation of concrete
95 or stone, the remaining or upper crypts being molded homogeneously on top of said first or lower crypts, drainage and exhaust means for exhausting air and gas from below the plate, and means to supply air to such
100 drainage means.

11. In a mausoleum a tier of crypts provided with air inlet means, and air and gas outlet means for the crypts respectively, drainage means below the tier, and means
105 to supply air to and to exhaust air from said inlet and outlet means and to supply air to and exhaust air from said drainage means.

12. In a mausoleum a tier of crypts pro-
110 vided with air inlet means, and air and gas outlet means for the crypts respectively, drainage means below the tier, and valved means to supply air to and to exhaust air from said inlet and outlet means and to sup-
115 ply air to and exhaust air from said drainage means.

In testimony whereof, I have hereunto set my hand at Los Angeles, California this 3d day of July, 1913.

WILLIAM N. HOLWAY.

In presence of—

JAMES R. TOWNSEND,

L. BELLE WEAVER.