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J. CONLEY.
HUMAN CREMATORY.
APPLICATION FILED JULY 1, 1910.

Patented Apr. 4, 1911.

4 SHEETS—SHEET 1.

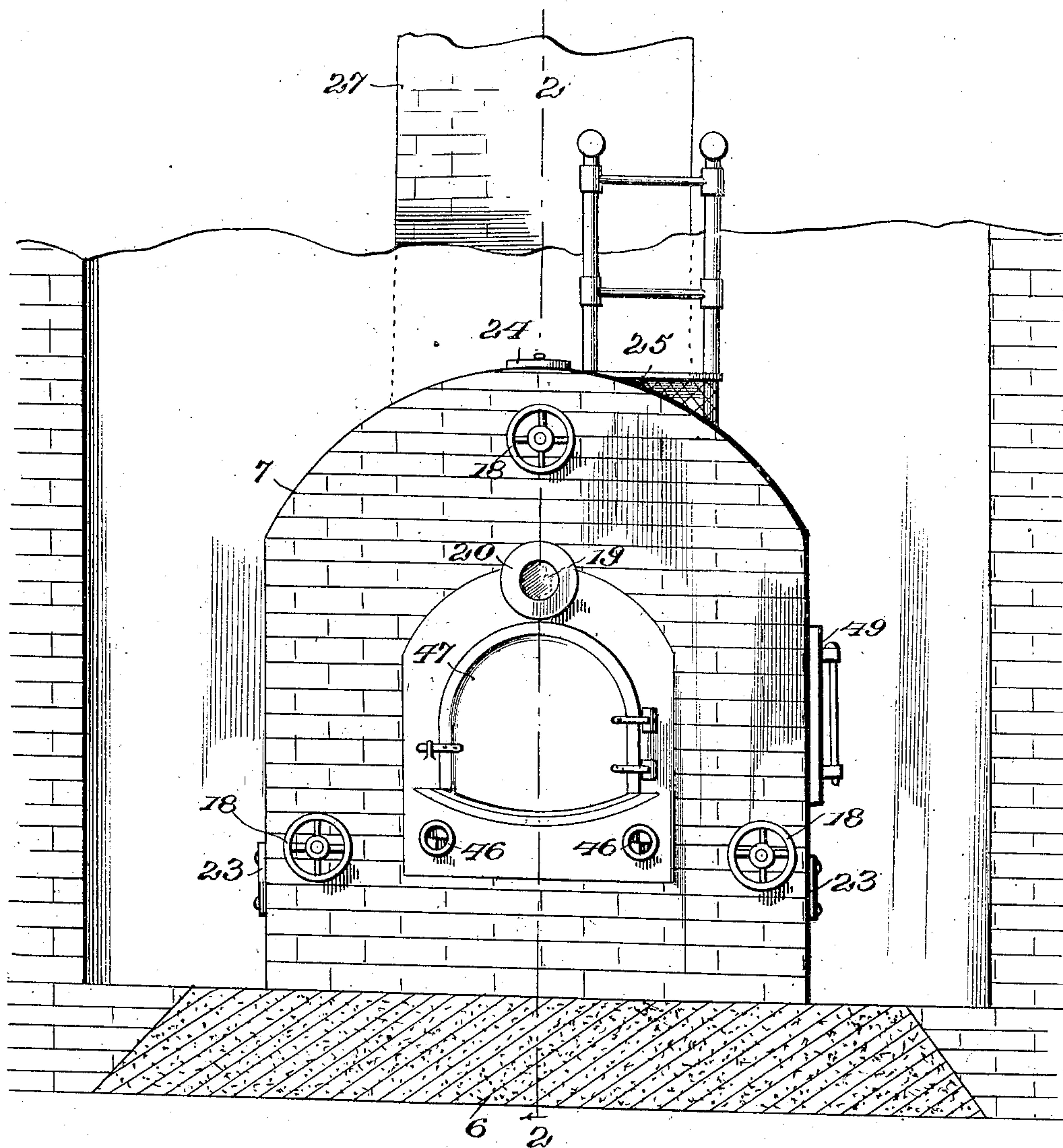


Fig. 1.

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Witnesses

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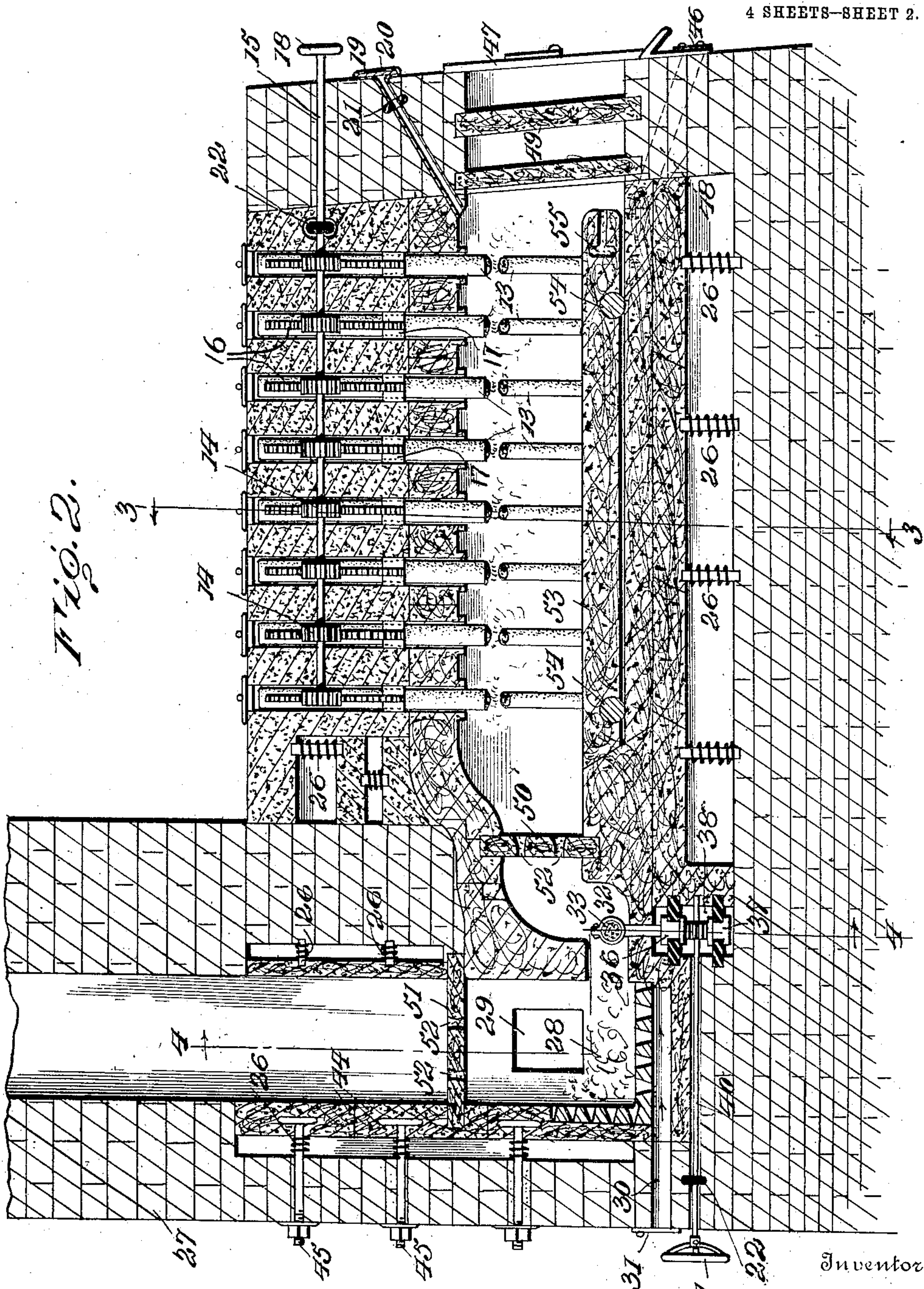
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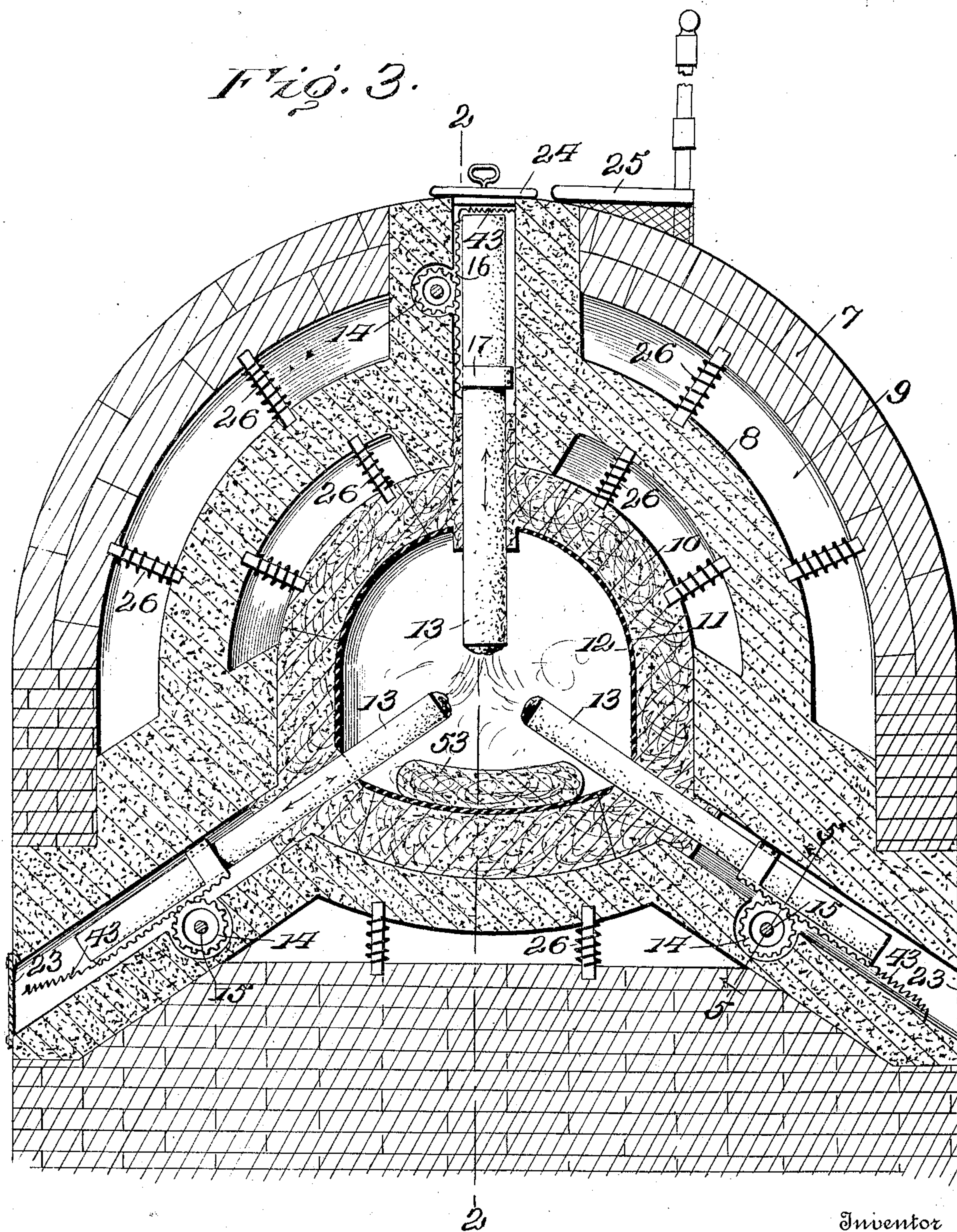


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UNITED STATES PATENT OFFICE.

JOSEPH CONLEY, OF ANADARKO, OKLAHOMA.

HUMAN CREMATORY.

988,862.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOSEPH CONLEY, a citizen of the United State, residing at Anadarko, in the county of Caddo and State of Oklahoma, have invented certain new and useful Improvements in Human Crematories, of which the following is a specification.

This invention relates to human crematories and particularly to those in which the consuming heat is furnished by the electric arc.

The invention therefore consists in the construction of the furnace whereby intense heat may be produced and conserved, in the arrangement and regulation of the arc producing devices, and in the general construction, arrangement and combination of parts whereby the purposes of the invention are carried out substantially as hereinafter described and claimed.

In the drawings which accompany this application and form a part of the specification, Figure 1 represents the crematory furnace in front elevation; Fig. 2 is a vertical longitudinal section through the furnace taken on line 2—2; Fig. 3 is a transverse vertical section taken in Fig. 2 on line 3—3; Fig. 4 is a vertical transverse section taken in the broken plane indicated in Fig. 2 by line 4—4; and Fig. 5 is a detail cross-section through one of the carbon pencil carriers and channels taken in Fig. 3 on line 5—5.

For quick incineration of the body to be cremated, intense heat is necessary; therefore the electric arc is especially adapted to the purpose. To make the heat most effective the chamber in which it is generated should be insulated as thoroughly as possible and should be so built as to endure intense heat. It is also desirable not only to consume the solid substances, but also the evolved gases. These essentials are well cared for by the invention embodied in the structure illustrated in the drawings.

The furnace is preferably erected upon a concrete base 6 and has an outer wall 7 of brick, an inner wall 8 of fire clay, with an air space 9 between it and the brick, and an innermost wall of asbestos 10, with an air space 11 between it and the fire clay. Then to give the incinerating chamber, formed by the asbestos wall, a reverberatory effect for the better utilization of the heat, a smooth, hard, surface 12 is applied to the asbestos

walls. This surface may be made of any suitable refractory material—porcelain, for example.

As will be seen in Fig. 3, the wall of fire clay is extended to the exterior of the furnace from the lower angles of the asbestos wall and also upwardly along the middle of the furnace to the upper surface thereof. Through these extensions cylindrical holes are formed in a row to receive the carbon pencils 13. The asbestos is also preferably extended into these holes, as indicated, and so forms an insulating bushing about the carbon pencils. With said holes thus located the rows of carbons 13 converge along the middle line of the incinerating chamber, Figs. 2 and 3. Means for adjusting the carbons may consist of a series of pinions 14 mounted on shafts 15 which extend transversely of each series of said holes. The pinions project through slots into the holes and engage with racks 16 which carry the carbon-holding clamps 17. The racks 16 and the meeting ends of the clamps slide in channels cut lengthwise of the cylindrical carbon holes, as more clearly shown in Fig. 5. The shafts 15 project through the front wall of the furnace and are provided with hand wheels 18 for rotating them to adjust the carbons. To determine the adjustment of the carbons and to observe the progress of incineration, a window, or peak-hole, 19, is formed in the front wall of the furnace and covered by a plate of colored mica 20. To avoid any possibility of an electric current sneaking along the tube forming the peak-hole, a joint of insulation may be inserted, as at 21. Such joints of insulation are also provided in the shafts 15 as indicated at 22. The outer ends of the lower carbon holes are covered by disks 23 and of the upper ones by lids 24. A platform 25 may be built along the top of the furnace from which to work in renewing the carbons of the upper row. The walls of the furnace will expand and contract because of heating and cooling, and to insure the return to normal position after each heating, springs are located between them as indicated at 26. These springs are held in place by pins passing through them and entering at their ends in sockets in the walls.

To insure the consumption of all gases evolved in cremating a body, a deodorizing

furnace is formed in the base of the stack 27, as at 28, to which access may be had by door 29. This deodorizing furnace may be supplied with air in the ordinary way, or by forced draft if desired, the air passage being indicated at 30. This passage is provided with a closure 31. The products of combustion from the incinerating chamber enter the deodorizing chamber through a passage 32 opening directly against the coke fire in the latter chamber. To further insure against offensive gases issuing from the stack, all gases as they traverse passage 32 are subjected to the heat of an additional electric arc. The carbons for this arc are indicated at 33. They are mounted in horizontal position, Fig. 4, in clamps 34, 35, which in turn are carried on but insulated from posts set in slides 36, 37. These slides may be mounted between ways located in the walls of the tunnel 38. On the facing sides of these slides are racks which are engaged by a pinion 39 on a rod 40. This rod projects through the rear wall of the furnace and is provided with a hand wheel 41, by the rotation of which the arc between the pencils 33 is adjusted. A joint of insulation 32 may also be inserted in this rod. The tunnel 38 may be closed at its ends by suitable doors 42.

The electric current may be supplied in accordance with any of the well-known systems and the system adopted may be installed in the usual manner. The electric conductors may be connected in any of the customary ways to the several carbons, such connection being typified at 43 for easier reading of the drawings.

The asbestos wall of the incinerating chamber is preferably made in sections so that it can be readily replaced, or so that any section deteriorating more rapidly than others, may be easily replaced. The asbestos slabs 44 lining the rear wall of the stack are separably held in place by headed rods 45 which project through the wall of the stack and are provided with nuts. Springs 26 are also located about these rods between the slabs and the brick wall to keep the slabs in place.

The air needed to sustain combustion in the incinerating chamber may be admitted through draft openings 46 below the door 47. The air thus admitted enters by upwardly inclined ducts 48, see dotted line Fig. 2. To close the doorway in a heat insulating manner, asbestos slabs 49 are mounted in the wall of the furnace to slide laterally across the doorway, leaving an air space between them. A similar slide 50 is provided at the inner end of the incinerating chamber for regulating the size of the passage into the deodorizing chamber, and another 51 is located across the stack. The damper slides 50 and 51 are preferably provided with holes 52 through them so that circulation from the

incinerating chamber through the deodorizing chamber and into the stack cannot be entirely interrupted.

The body to be burned may be inserted into the incinerating chamber on an asbestos litter, represented at 53. Rollers 54 may be located in the under side of the litter, if desired, and a socket 55 having an enlarged inner end may be formed in the outer end of the litter for the insertion of a withdrawing hook. The upwardly converging lateral rows of carbons form a shed under which the body to be cremated is located as the litter carrying it is pushed into the chamber. There is, then, a row of intense arcs just above the body for the whole length thereof, causing incineration to take place rapidly. The arcs may be formed between the lower rows of carbons solely, but preferably they are formed between the upper row in conjunction with the two lower rows, thereby adding further to the intensity of the heat. The several slides and dampers and the lengths of arcs may be adjusted in any suitable order and to any desired degree to produce the best results.

The invention claimed is:—

1. In a crematory furnace, an exterior wall of masonry, an inner wall of fire brick with air space between it and the exterior wall, an innermost wall of asbestos with air space between it and the inner wall, and a lining of refractory material for the asbestos wall.

2. In a crematory furnace, a series of electric arc pencils adjustable through the walls of the furnace and converging to within arcing distance at the center of the furnace and a removable non-combustible litter located below the center line of the furnace.

3. In a crematory furnace, an incinerating chamber having walls of asbestos lined with porcelain, in combination with a removable asbestos litter and means for maintaining electric arcs through the middle of said chamber over said litter.

4. The combination with heat insulating walls inclosing an incinerating chamber, of a litter for the body to be burned, and a series of carbon pencils entering the chamber along each of its angles, the two series converging at the center of the chamber over the litter for the purpose specified.

5. The combination with the heat insulating walls inclosing an incinerating chamber, of a litter for the body to be burned, a series of carbon pencils entering the chamber along each of the lower angles, and a third series entering through the roof of the chamber, and all three series converging to arcing distance over the litter.

6. In an electric crematory, the combination with the incinerating chamber, of a number of rows or series of electric arc pencils converging to the longitudinal medial

line of the incinerating chamber; each pencil being provided with a toothed rack, an adjusting rod for each row of pencils, and a series of pinions on each rod meshing respectively with the racks of the individual pencils and means for locating human remains under the said medial line.

7. In a crematory furnace, the combination with the incinerating chamber, of a stack into which it opens, means within the stack for producing up draft and for consuming gases from the incinerating chamber, and a pair of arc carbons adjustable to arcing distances in the passage from said chamber to the stack.

8. In a crematory furnace, the combination with the incinerating chamber, of a stack into which it opens, means within the stack for producing up draft and for consuming gases from the incinerating chamber,

a pair of arc carbons adjustable to arcing distances in the passage from said chamber to the stack, and a series of electric arc producing devices distributed throughout the length of the incinerating chamber.

9. In a crematory furnace, the combination with the incinerating chamber and stack into which it leads, of parallel asbestos slides with an air space between for closing the doorway of the incinerating chamber, another asbestos slide for closing the passage from the chamber to the stack, and a third such slide for throttling the stack.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH CONLEY.

Witnesses:

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GEO. A. TRAGUE.