No. 677,141. Patented June 25, 1901

J. E. RICE.

CLOSET AND CREMATORY FOR EXCREMENT.

(Application filed July 14, 1900.)

(No Model.)

Fig. 1

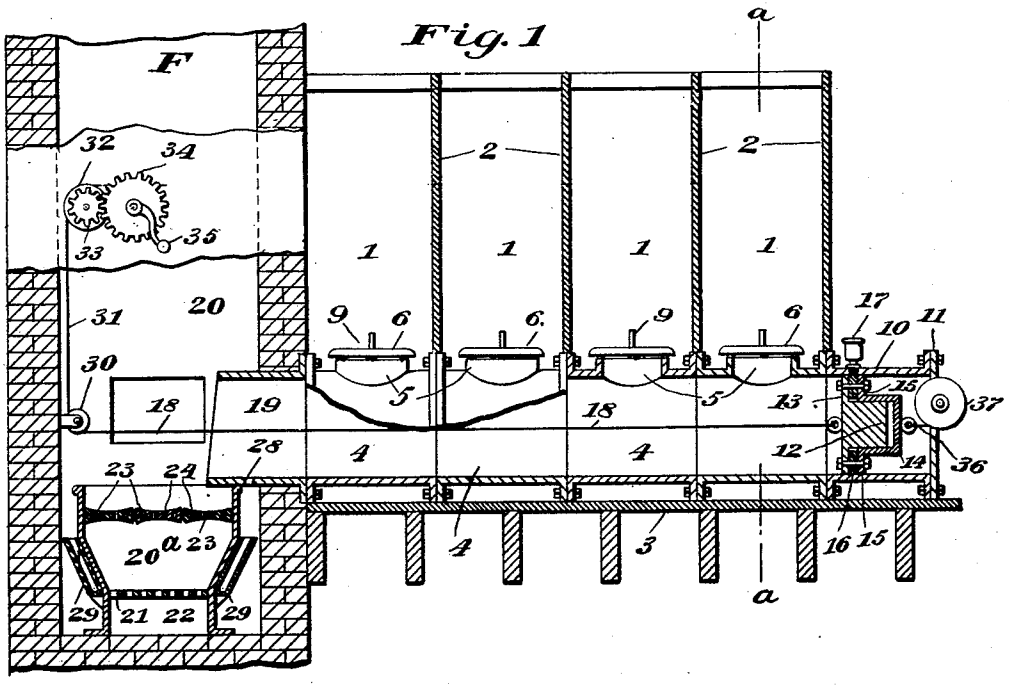


Fig. 2

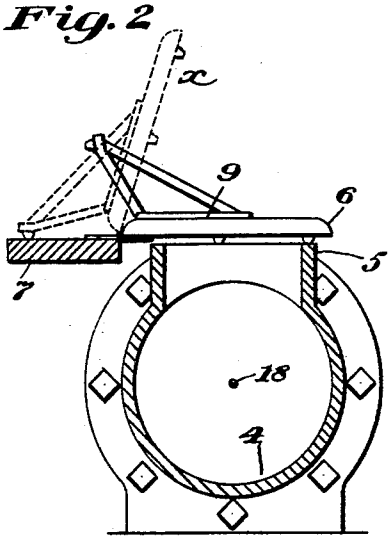
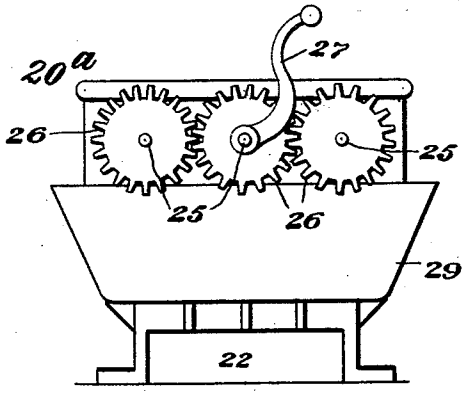


Fig. 3



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN E. RICE, OF CINCINNATI, OHIO.

CLOSET AND CREMATORY FOR EXCREMENT.

SPECIFICATION forming part of Letters Patent No. 677,141, dated June 25, 1901.

Application filed July 14, 1900. Serial No. 23,660. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. RICE, a citizen of the United States of America, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Closets and Crematories for Excrement, of which the following is a specification.

This invention relates to certain improvements in that class of closets wherein the excrement is ignited; and the object of the invention is to provide a closet of this character having improved means whereby the excrement is collected and incinerated in a thorough and improved way, so as to avoid the production of foul odors and also the dangers of contagion.

The invention consists in certain novel features of the construction, combination, and arrangement of the several parts of the improved closet, whereby certain important advantages are attained and the device is made simpler, cheaper, and otherwise better adapted and more convenient for use, all as will be hereinafter fully set forth.

The novel features of the invention will be carefully defined in the claims.

In the accompanying drawings, which serve to illustrate my invention, Figure 1 is a sectional view taken vertically and longitudinally through a closet constructed according to my invention, and Fig. 2 is an enlarged cross-section taken vertically through the closet in the plane indicated by line *a a* in Fig. 1. Fig. 3 is an enlarged detail view showing in elevation the furnace employed in connection with the improved closet.

In the views, 1 1 indicate a series of closets separated from each other by means of partitions 2 2, and 3 indicates the floor, upon which is supported a tube or pipe extended along the series of closets and formed, as herein shown, of a plurality of sections 4 4, joined end to end. There is, as shown herein, one of the sections 4 for each closet 1; but it is evident that this is not essential to my invention, since an integral or unjointed pipe might be employed. The sections 4 extend across the lower parts of the closets 1 and are provided at their upper parts with openings having upturned flanges 5 encircling them and adapted to form seats for the closets in a well-known way. Each opening is normally closed by a cover or leaf 6, hinged to a cross-piece 7 in the closet and having a bracket 9 secured to its upper surface in position to engage the cross-piece 7, as shown at *x* in Fig. 2, in a manner to prevent the cover or leaf 6 from being thrown back too far to enable it to fall by gravity to its lowered or closed position when released.

Beyond one end of the series of closets 1 1 the closet tube or pipe is provided with a plain section 10 of equal diameter with the sections 4 and having its end closed by a cover 11, removably secured to it and affording access to the end of the tube or pipe when desired, and in said section 10 is normally held a piston formed of a body portion 12 of less diameter than the bore of the section and provided at its forward end or that end adjacent to the series of closets with an annular flange 13. On the opposite end of the reduced body portion 12 is also arranged to slide a cap 14, having a flange 15 adjacent to the flange 13 of the body portion, and between the flanges 13 and 15 is held a packing-ring 16, of felt or other suitable material. The flanges 13 and 15 are held together by screws or bolts admitting of being tightened to press the packing-ring 16 snugly against the wall of the closet tube or pipe in which the piston is adapted to play. To lubricate the piston, a cup 17 is provided on the section 10 of the closet-pipe, so that glycerin, oil, or other lubricant may be injected into the tube or pipe to facilitate the movement of the piston. The liquid injected by the cup 17 may also, if desired, be a deodorant or antiseptic.

To the forward end of the piston is connected a wire rope, chain, or the like, as shown at 18, said connection extending in the axis of the tube or pipe and being passed out at the front end thereof, which end is also provided with a plain section 19, which extends through the wall of a combustion-chamber 20, herein shown as arranged adjacent to the series of closets 1 1, although it may be separated therefrom, if desired. The combustion-chamber 20 has its upper part formed into a flue F, herein shown as of brickwork, although a metal stack may as well be substi-

tuted, and said flue is of a height to produce a draft sufficient for the complete incineration of the excrementitious matters from the closets, and to facilitate the ventilation of the closets the air consumed in the incinerating process is drawn through the tube from the closets themselves, permitting the combustion-chamber to be tightly closed to prevent the escape of foul or noxious gases therefrom. In the lower part of the combustion-chamber 20 and below the closet-tube 19 is arranged a furnace 20^a of peculiar construction and adapted for use in incinerating the excrementitious matters from the closets, being provided with a fire-box having a grate 21 at its lower part and beneath said grate an ash-pit 22. At the upper part of the fire-box is arranged a plurality of metal plates or leaves 23, forming a support or table to receive and hold the solid or semisolid excrementitious matters discharged from the open end of the closet-tube. These leaves or plates have concave upper and lower surfaces to receive the said matters and are adapted to be set, as shown in Fig. 1, with their edges adjacent to form a substantially continuous partition or platform across the top of the fire-box, and to avoid interference with combustion said plates or leaves are formed with openings 24 extending through them, as shown in Fig. 1, for the passage of the products of combustion from the furnace. The leaves or plates 23 are capable of being tilted, so as to stand vertically in order to discharge their contents into the fire-box, and then advanced to complete a half-revolution, thus presenting any matter clinging to their now lower faces to the direct heat of the fire-box for full consumption, said plates or leaves being held on shafts 25, which extend through the front wall of the fire-box, as shown in Fig. 3, and are provided with intermeshing gears 26. There are three shafts 25, the central one being provided with a crank-handle, by means of which it may be turned, and the gears 26 being of equal diameter it will be readily seen that the movements of the plates or leaves 23 will be synchronized to cause them to simultaneously deposit the dried matter held on them in the fire-box.

To lead off the urine from the closets 1 1, the section 19 of the closet tube or pipe is provided with an opening 28 in its bottom, arranged over and adapted to discharge the urine flowing through said tube or pipe into a receptacle 29, encircling the lower part of the fire-box, being supported on cleats in such a way as to receive heat therefrom to effect the evaporation of the liquid of the urine.

The cable or connection 18 is extended in the combustion-chamber under a sheave 30, being carried up, as shown at 31, and connected to a drum 32, on which it is adapted to be wound. A gear 33 on the drum 32 meshes with a gear 34 on a crank-shaft having a handle 35, by means of which the cable may be conveniently wound on the drum 32, causing the piston to move along the closet tube or pipe to free the same from solid or semisolid excrementitious matters.

In operation when it is desired to clean the closet tube or pipe from the matters collected therein a fire is first kindled in the furnace 20^a, so as to heat the perforated plates or leaves 23, which are arranged horizontally, as shown in Fig. 1. The crank-handle 35 is then turned, so as to wind up the cable 18 on the drum 32, whereby the piston is moved along in the closet tube or pipe and the excrementitious matters are forced out of the open end of said tube or pipe and are dropped upon the plates 23, where they are quickly dried by the heat from the fire-box. After the matters upon plates 23 are sufficiently dried, the crank-handle 27 is turned, so as to deposit the dried matters held on them in the fire-box, where they are completely burned. The urine from the closet tube or pipe may flow at all times into the vessel 29, where it is collected and contained until evaporated by the heat of the fire-box.

To return the piston to its normal position, I provide a spring-actuated drum 37, held on the cap 11 of the closet tube or pipe and arranged to receive a connection 36, adapted to be wound upon it and secured to the piston in a way to retract the same in the closet-tube from the tension of the spring when the crank-handle 35 is released.

The improved closet constructed as above described is of an extremely simple and inexpensive nature and is especially well adapted for use, since it permits of thoroughly and quickly cleaning the closet pipe or tube by merely turning the crank-handle 35, and the excrementitious matters being completely burned or ignited in a tight furnace are consumed without giving off any foul or noxious odors or gases.

It will also be obvious from the above description that the improved closet is capable of considerable modification without material departure from the principles and spirit of the invention, and for this reason I do not wish to be understood as limiting myself to the precise form and arrangement of the several parts herein set forth.

Having thus described my invention, I claim—

1. In an apparatus of the character described, the combination of a series of closets having a closet-tube extended along it and adapted to receive excrementitious matters, a piston movable in said tube and a furnace having a fire-box provided with means to receive the solid matters discharged from said tube and having a receptacle encircling the fire-box and adapted to contain urine, and means to lead the urine from said tube into the receptacle, substantially as set forth.

2. In an apparatus of the character described, the combination of a series of closets

having a closet-tube extended along it and adapted to receive excrementitious matters, a piston movable in the tube and a furnace comprising a fire-box, a series of perforated plates over the fire-box and adapted to receive matters discharged from said tube, rotatable shafts on which said plates are held, intermeshing gears on the shafts, and means to turn one of said shafts, substantially as set forth.

3. In an apparatus of the character described, the combination of a series of closets having a closet-tube extended along it and adapted to receive excrementitious matters, a piston movable in the tube and a furnace comprising a fire-box, a series of perforated plates having opposite concave surfaces and arranged over the fire-box and adapted to receive matters discharged from said tube, rotatable shafts on which said plates are held, intermeshing gears on the shafts, and means to turn one of the shafts, substantially as set forth.

4. In an apparatus of the character described, the combination of a series of closets, a closet-tube extended along said series and adapted to receive excrementitious matters therefrom, a piston in the tube and provided with operating means and a device for supplying liquid to the bore of the tube, said device being arranged to discharge such liquid in the path of the piston along said closet-tube, substantially as set forth.

5. The combination of a furnace, a receptacle for liquid matter surrounding the same, a closet-tube terminating over the furnace and adapted to discharge solid matter thereto, the said tube being provided with a perforation for the passage of liquid alined with the receptacle surrounding the furnace, and means for discharging liquid and solid matter from the closet-tube, substantially as set forth.

6. The combination of a furnace open at its upper part for the reception of matters to be ignited, a series of closets, a closet-tube extended horizontally below and adapted for receiving excrementitious matters from said series of closets and having an open end arranged over the furnace for the delivery of such matters thereto, a piston arranged in said tube and fitting the inner walls thereof and means for moving the piston along the tube for discharging the contained matters from said tube into the furnace, substantially as set forth.

Signed by me at Milton, Pennsylvania, this 5th day of July, A. D. 1900.

JOHN E. RICE.

Witnesses:
EDWIN PAUL,
GENERAL T. BAKER.