A. L. SCHELLHAMMER.

INCINERATOR FOR GARBAGE, EXCREMENT, &c.

APPLICATION FILED AUG. 27, 1910.

1,106,732.

Patented Aug. 11, 1914.

2 SHEETS—SHEET 1.

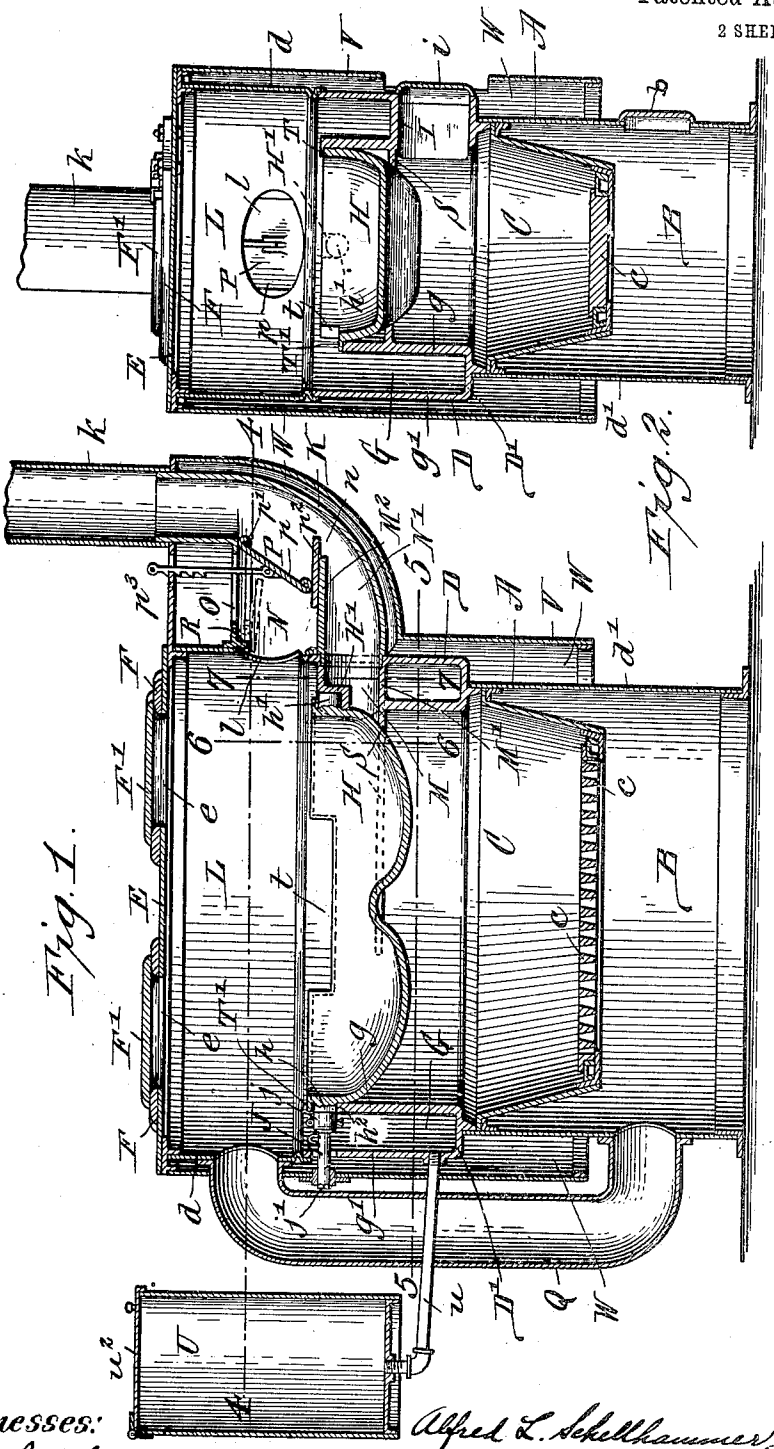


Fig. 1.

Fig. 2.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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2 SHEETS—SHEET 2.

Fig. 3.

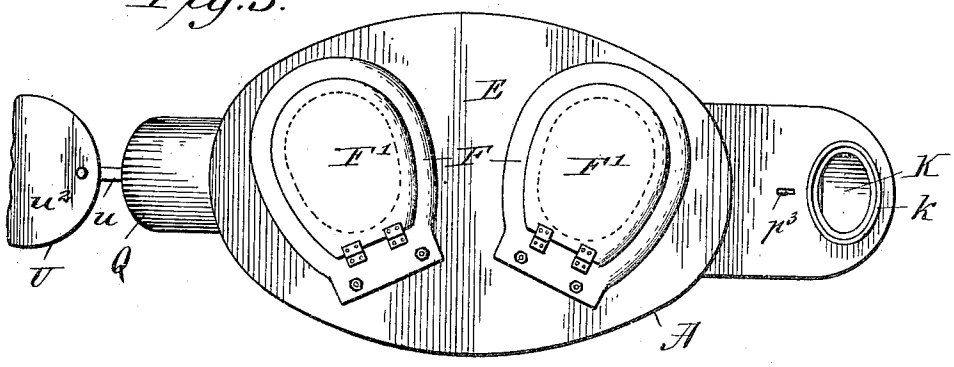


Fig. 4.

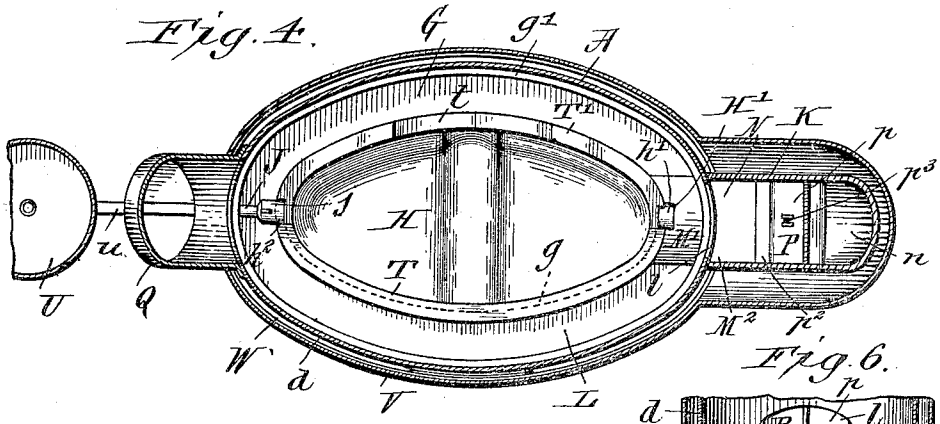


Fig. 6.

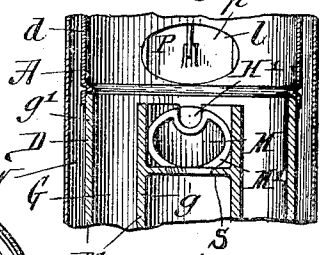


Fig. 5.

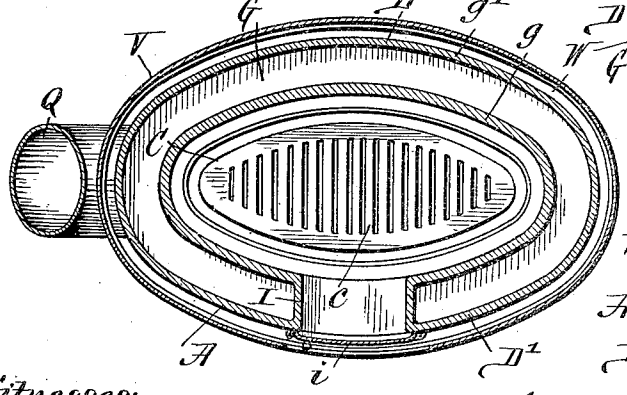
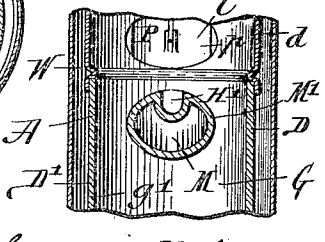


Fig. 7.



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UNITED STATES PATENT OFFICE.

ALFRED L. SCHELLHAMMER, OF WARREN, PENNSYLVANIA.

INCINERATOR FOR GARBAGE, EXCREMENT, &c.

1,106,732. Specification of Letters Patent. Patented Aug. 11, 1914.

Application filed August 27, 1910. Serial No. 579,286.

To all whom it may concern:

Be it known that I, ALFRED L. SCHELLHAMMER, a citizen of the United States, residing at Warren, in the county of Warren and State of Pennsylvania, have invented certain new and useful Improvements in Incinerators for Garbage, Excrement, &c.; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to incinerators for garbage, excrement, and hospital and other waste.

The objects of my present invention are: first, to provide for the quick and effective evaporation and consumption of urine or other liquids and the desiccation and burning of solid excrement or other deposits in an odorless manner; second, to provide means for disposing of urine or other liquids separate from solid excrement or other solid matter; third, the provision of a urine or liquid receptacle so related to the receptacle for solid matter that any liquid, especially urine, which is from necessity or otherwise deposited in the receptacle for solid matter, may overflow into the urine or liquid receptable; fourth, to so construct the receptacle for solid matter that foaming, heated or boiling liquids therein will enter the urine or liquid receptacle before reaching the highest point of the receptacle for solid matter; fifth, the provision of an incinerator possessing the qualities mentioned and other advantageous qualities, which is not only simple and inexpensive, but which can be constructed for permanent use or made in portable form to meet all requirements.

With the above and other objects in view, the invention consists in the relative operative arrangement of devices or parts and in the construction, arrangement and combination of elements to be hereinafter described and particularly pointed out in the subjoined claims.

In the drawings, consisting of two sheets,—Figures 1 and 2 are central vertical sections of the complete incinerator taken at right angles, respectively. Fig. 3 is a plan view of the same. Fig. 4 is a horizontal section taken on line 4—4, Fig. 1. Fig. 5 is a horizontal section taken on line 5—5, Fig. 1. Fig. 6 is a vertical section taken on line 6—6, Fig. 1, the kettle being removed. Fig. 7 is a vertical section taken on line 7—7, Fig. 1.

Referring now to the drawings in detail, like letters of reference refer to like parts in the several figures.

It is essential that the incinerator be made gas-tight to prevent the escape of odors and the gases of combustion and it may therefore be made of any suitable material meeting this requirement. I have, however, shown the casing, designated A, made of sheet and cast metal and provided at its lower end with an ash-pit B, the casing at this point being equipped with a door *b* for the convenient removal of ashes.

Supported within the lower portion of the casing, but above the ash-pit, is a fire-pot C provided with grate-bars *c* of any approved form, access to which may be had in any suitable manner.

In preferred form I construct the intermediate portion of the casing of cast metal, as at D, and above and below the cast metal, sheet metal is preferably used, as at *d*, d^1, respectively. While this is now thought to be most desirable, it is not necessary that such construction be adhered to.

The cast metal intermediate portion of the casing is part of an endless trough D^1 supported by, and if desired secured to the upper end of the sheet metal lower portion d^1 of the casing; the upper sheet metal portion *d* of the casing surmounting the cast metal trough-like intermediate portion. The casing is preferably of oval formation, but this is only a matter of choice or convenience, as will presently appear. The casing is provided with a removable top E, having in this instance two holes *e*, so that two persons can be accommodated at the same time, and for this reason, the casing is made of oval formation, as the oval shape occupies less floor space while permitting the use of two holes in the top. For a single seat top, a cylindrical casing is more suitable, and when more than two seats are desired, the casing is elongated accordingly. As the top is preferably made of iron, I secure thereto wooden fiber, or other closet seats F, more suitable for contact with the skin of a person than iron, and hinged to these seats are

covers F^1 which prevent the escape of odors or gases from the casing through the holes *e* and those of the seats registering therewith.

The cast metal endless trough D^1 forms an endless urine or liquid receptacle G which surrounds a kettle or receptacle H pivotally mounted in the inner wall of the urine or liquid receptacle and situated directly over the fire-pot C and beneath the openings *e* in the top E; said kettle or receptacle H being adapted to receive the solid matter.

Owing to the endless trough D^1 being utilized as a urine or liquid receptacle, the incinerator is greatly simplified in construction; and as said receptacle and the kettle are in the same horizontal plane with the fire-pot beneath, the receptacle and kettle are subjected to substantially the same degree of heat. By means of this arrangement, a very compact incinerator is produced with maximum capacity for fluid matter. Connecting the inner and outer walls *g*, g^1, respectively, of said receptacle is a flue I forming an opening for supplying the fire-pot with fuel, the opening being closed by a door *i*. The opening is preferably formed in one of the long curved walls of the casing so as to more easily admit the fuel.

The kettle or receptacle has trunnions *h*, h^1, at diametrically opposite points which are journaled in the inner wall *g* of the urine or liquid receptacle; the trunnion *h* extending through a notch h^2 in said wall and having a square extremity and the trunnion h^1 being journaled in a pocket H^1 formed on the urine or liquid receptacle. This arrangement permits of easily removing the kettle or receptacle H from the casing after having removed the top E therefrom. By providing the kettle or receptacle H with trunnions, as specified, it can be easily turned to dump the contents onto the fire in the fire-pot beneath, but it is necessary that one of said trunnions be extended directly, or by means of a coöperating part, through the casing so that a wrench or crank can be applied thereto. In this instance I have shown a rod J which has a pocket *j* at one end into which the square extremity of the trunnion *h* fits and at its other end is itself made square, as at j^1, so that the desired implement may be applied for manipulating the kettle or receptacle H.

At one side and at the upper end of the casing is a combined draft and smoke-box K, from which rises a smoke-pipe *k* adapted to provide the necessary draft. Since the outer wall of the urine or liquid receptacle forms the intermediate portion of the casing A and said receptacle surrounds the kettle or receptacle H, it follows that there is a space L between said kettle or receptacle and the top E of the casing, and this space is in communication with the combined draft and smoke box through an opening *l* in the upper portion of the casing. The said box is also in communication with the space below the kettle or receptacle through a passage M created by a tube M^1 connecting the inner wall *g* with the outer wall g^1 of the urine or liquid receptacle and in a plane between said passage and the opening *l* a horizontal wall M^2 is provided in the combined draft and smoke-box, which wall divides the said box into two parts or chambers N, N^1; said parts being connected by a passage *n*.

In the upper wall of the combined draft and smoke-box is an air-inlet O adapted at certain times in the operation of the apparatus to be closed by a damper P located in the upper chamber N. Said damper comprises a closure-plate *p* hinged to the underside of the upper wall of the said box as at p^1, and a deflector-plate p^2 hinged to the free end of said closure-plate, the point of its connection to said closure-plate being nearer one end than the other so that it will hang unbalanced from said closure-plate when the latter assumes a position between those shown in dotted lines and in full lines, Fig. 1. The damper is manipulated by a rod p^3 pivoted or otherwise secured to the closure plate *p*, and it extends from side wall to side wall of the combined draft and smoke box so as to completely shut off direct communication between the space N above the kettle or receptacle H and the smoke pipe, but when the damper is closed for this purpose, indirect communication is had through a draft flue Q, which connects the space N with the ash-pit B, through the fire-pot C and tube M^1 in the urine or liquid receptacle, and finally through the draft and smoke-box to the smoke stack.

When raising the damper P to a certain point, the inner end of the deflector-plate p^2 comes in contact with a lip R on the upper wall to which the damper is hinged, and slightly opens the damper, at the same time restricting the passage between the closure plate and the air-inlet O, and as the closure plate is raised farther, said passage is restricted in proportion to the extent the deflector-plate is raised, and when the air-inlet O is closed by the closure-plate, the deflector-plate has reached the limit of its opening movement, as clearly shown in dotted lines, Fig. 1.

Extending inward from the inner wall *g* of the urine or liquid receptacle is a baffle-plate S which partly surrounds the kettle or receptacle H. This plate is preferably in line with the flue M^1 in the urine or liquid receptacle and terminates on opposite sides of said kettle to provide an opening or passage at a point opposite said flue. The hot ascending gases coming in contact with the

baffle-plate and the parts of the kettle surrounded by said plate are compelled to travel to the left in Fig. 1, under said plate and thence to the right above said plate, through the flue M^1 and into the combined draft and smoke-box K, and from the latter out the smoke-pipe.

At one side of the longitudinal center of the urine or liquid receptacle, the inner wall *g* thereof has an inwardly-directed flange T, against the underside of which the corresponding portion of the upper edge of the kettle or receptacle H bears, and at the opposite side of said center, the upper edge of said kettle or receptacle has an outstanding flange T^1 which bears against the upper corresponding edge portion of the urine or liquid receptacle. This arrangement permits the free dumping of said pot or receptacle while preventing the escape of the hot gases into the space L above said pot or receptacle.

As hereinbefore remarked, urine and other liquids may of necessity be deposited in the kettle or receptacle H and when boiled, especially urine, will flow over the edge of the same. As this is preferably to be avoided, I have cut-away or notched a portion of the inner wall of the urine receptacle and correspondingly notched the kettle or receptacle H, as at *t*, and as the outstanding flange T^1 is continued around the notched portion of said kettle or receptacle, the liquids may overflow into the urine or liquid receptacle before it is found necessary to incinerate the matter in the apparatus, and if the liquid in the kettle or receptacle does not overflow before incineration or when incineration is commenced, it will overflow at the notched portion of the kettle or receptacle into the urine or liquid receptacle when boiling. The urine or liquid receptacle G as well as the kettle or receptacle H, is subjected to the heat of the ascending gases from the fire-pot and complete incineration of liquid and solid matter thus assured.

Instead of entirely consuming the matter in the pot or receptacle H, it can, when thoroughly dried, be dumped into the fire-pot and used as fuel.

Arranged outside of the incinerator casing is a urinal or liquid receiving vessel U into which the urine or other liquid is initially deposited and from it conducted through a pipe *u* to the urine or liquid receptacle G. The pipe *u* is connected to the bottom of said urinal or liquid receiving vessel so as to entirely drain the same. The upper end of the urinal or liquid receiving vessel U may terminate in any desired horizontal plane most convenient for the purpose for which it may be used and it has its upper end closed by a lid or cover u^2.

Surrounding the incinerator jacket is a jacket V separated from said casing by an intervening air-space W, said jacket extending from the top of the incinerator to within a short distance from the bottom. The air-space W is open at the bottom and closed at the top and at certain times is in communication with the combined draft and smoke-box through the air inlet O therein. The air enters said air-space at the bottom and rises to the top, it being heated by contact with the incinerator casing. When the damper P is in the position shown in Fig. 1, the heated air enters the combined draft and smoke box through the air-inlet O, passing over the top of the pot or receptacle H and the urine or liquid receptacle G, carrying with it the odors and gases from both, which pass with the air through the draft tube Q into the ash-pit B and from the latter into the fire to be there consumed, the products of combustion being carried out the smoke-pipe, as previously described.

When the damper is opened, as shown in dotted lines, the odors and gases from the material in the incinerator are carried out directly through the smoke-pipe without passing through the fire.

Certain features of the incinerator herein illustrated and described are shown and claimed in my co-pending application filed July 25, 1910, Serial No. 573,627, these features being the jacket V separated from the casing by an intervening air-space, the combined draft and smoke box K surrounded by said air-space and being at certain times in communication therewith, the damper P controlling such communication, and the draft flue Q which connects the space N above the kettle H with the ash-pit B. Also the broad idea of the fire chamber (which the firepot C forms part of) serving to form part of the wall of the liquid receptacle G.

Having thus described my invention, what I claim is,—

1. An incinerator comprising a casing having a fire-pot, a kettle within said casing in operative relation to said fire-pot, a liquid receptacle in the horizontal plane of said kettle and also in operative relation to said fire-pot, said liquid receptacle being arranged to receive the overflow from said kettle, and a liquid-receiving vessel connected with said liquid receptacle.

2. An incinerator comprising a casing, a kettle within said casing, a liquid receptacle in the horizontal plane of said kettle arranged to receive the overflow from said kettle, and means to subject said kettle and receptacle to heat.

3. An incinerator comprising a casing, a kettle within said casing, a liquid receptacle surrounding said kettle and adapted to receive the overflow from said kettle, and means to subject said kettle and receptacle to heat.

4. An incinerator comprising a casing having a fire-pot, a kettle within said casing

above said fire-pot and having an outstanding flange at its upper edge on one side of its center, and a liquid receptacle surrounding said kettle and having the flange of said kettle bearing against its upper edge and itself having an inwardly-directed flange on the opposite side of its center bearing against the corresponding upper edge portion of said kettle, said liquid receptacle being adapted to receive the overflow from said kettle and said kettle being pivotally mounted in said liquid receptacle.

5. An incinerator comprising a casing having a fire-pot, a kettle within said casing in operative relation to said fire-pot, and a liquid receptacle surrounding said kettle within said casing and in operative relation to said fire-pot and also in operative relation to said kettle to receive the liquid overflow therefrom.

6. An incinerator comprising a casing having a fire-pot, a kettle in operative relation to said fire-pot, a liquid receptacle surrounding said kettle and related thereto to receive the liquid overflow therefrom, and a liquid receiving vessel connected with said liquid receptacle.

7. An incinerator comprising a casing having a fire-pot, an endless liquid receptacle in operative relation to said fire-pot, and a kettle in operative relation to said fire-pot journaled to turn in the wall of said liquid receptacle and arranged that it may overflow into said receptacle.

8. An incinerator comprising a casing having a combined draft and smoke-box and a fire-pot, a trough-like liquid receptacle in operative relation to said fire-pot having a tube therethrough connecting said fire-pot with said combined draft and smoke-box, and a kettle pivoted to turn and also in operative relation to said fire-pot.

9. An incinerator comprising a casing having a fire-pot, an endless trough-like liquid receptacle in operative relation to said fire-pot and having its inner wall notched at its upper edge, and a kettle surrounded by said liquid receptacle having its wall notched to correspond to the notch of said liquid receptacle, said kettle having an outstanding flange at its notched portion to overlie the notched portion of said liquid receptacle.

10. An incinerator having an endless trough-like liquid receptacle whose inner wall is notched at one point and provided with a pocket at a diametrically opposite point, a kettle surrounded by said receptacle and arranged to overflow into the latter, said kettle having trunnions at diametrically opposite points entering said notch and pocket, and a fire-pot in operative relation to said receptacle and kettle.

11. An incinerator having an endless trough-like liquid receptacle provided with a tube connecting its inner and outer walls and with an inwardly extending baffle-plate, a smoke-box, a fire-pot connected with said smoke-box through said tube, and a kettle surrounded by said liquid receptacle and partly surrounded by said baffle-plate.

In testimony whereof I have affixed my signature in the presence of two subscribing witnesses.

ALFRED L. SCHELLHAMMER.

Witnesses:
D. M. HOWARD,
PAUL WERNER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."

Correction in Letters Patent No. 1,106,732.

It is hereby certified that Letters Patent No. 1,106,732, granted August 11, 1914, upon the application of Alfred L. Schellhammer, of Warren, Pennsylvania, for an improvement in "Incinerators for Garbage, Excrement, &c.," were erroneously issued to the inventor, said Schellhammer, whereas said Letters Patent should have been issued to *United States Incinerator Company, of Buffalo, New York, a corporation of New York*, as assignee of the entire interest in said invention, as shown by the record of assignments in this office; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 1st day of September, A. D., 1914.

[SEAL.]

R. F. WHITEHEAD,

Acting Commissioner of Patents.