(No Model.) 2 Sheets—Sheet 1.

A. G. STAPEL.

VAULT HEATER.

No. 463,926. Patented Nov. 24, 1891.

Fig. 1.

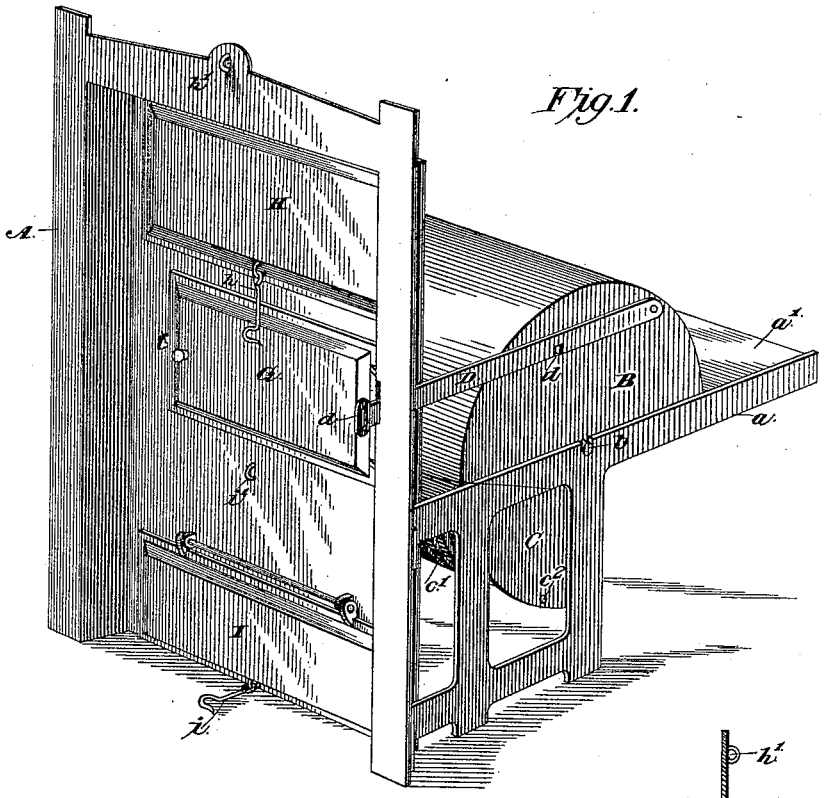
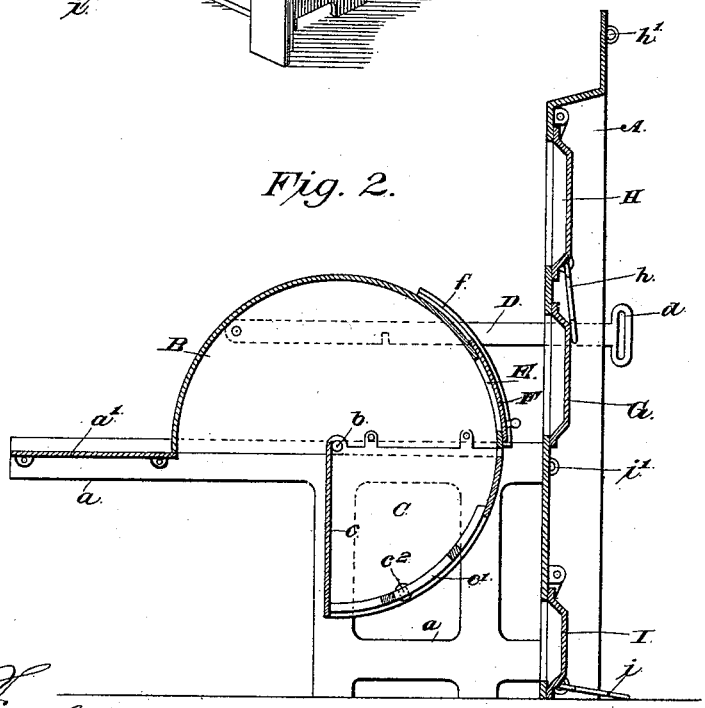


Fig. 2.



Witnesses

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

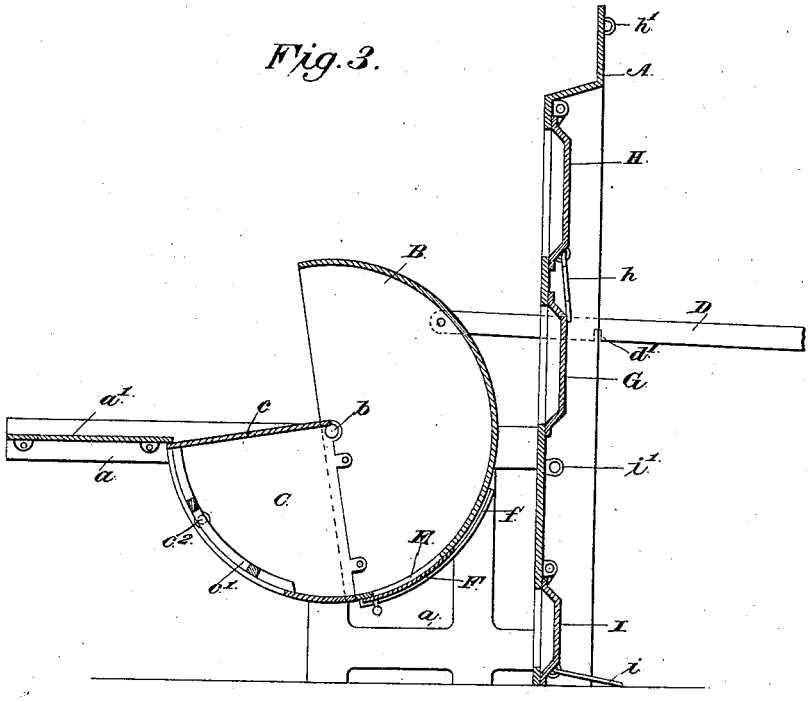
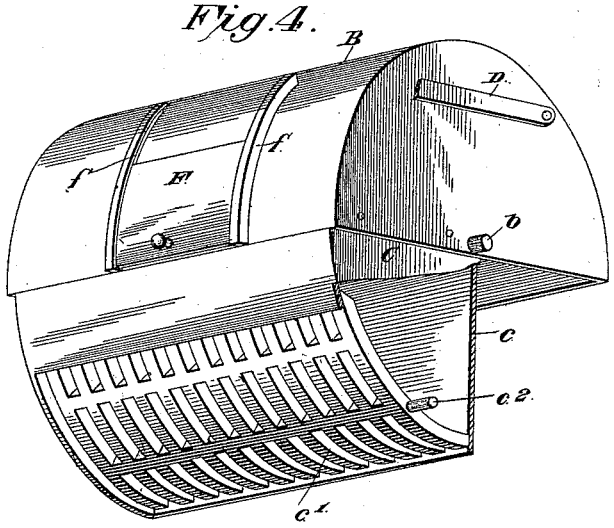


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

ADOLF G. STAPEL, OF WALHALLA, SOUTH CAROLINA.

VAULT-HEATER.

SPECIFICATION forming part of Letters Patent No. 463,926, dated November 24, 1891.

Application filed August 25, 1891. Serial No. 403,710. (No model.)

To all whom it may concern:

Be it known that I, ADOLF G. STAPEL, a citizen of the United States, residing at Walhalla, in the county of Oconee and State of South Carolina, have invented a new and useful Vault-Heater, of which the following is a specification.

This invention relates to vault-heaters, and is designed to be used in connection with any of the existing dry-closet systems and to be located at one end of the vault, where excrements are dropping on a platform; and it has for its object to provide a vault-heater in which the fire and the direction of the currents of heat therefrom are under perfect control for either passing the heat directly over and upon the excrements or beneath the same, and thus to provide a heater which has for its main object the drying out of the excrements in a very short space of time, and thus rendering them capable of being readily consumed, and also by its construction to provide means whereby the accumulations of matter may be readily and easily scraped into the fire of the heater, where they will burn green or dry, as desired; and with these objects in view the invention consists in a revolving grate and hood located in a direct line with the ordinary brick platforms of the dry-closet systems and so arranged as to direct the courses of heat in the manner above set forth, and which is provided with special details of construction and operation hereinafter more fully described, illustrated in the accompanying drawings, and specifically pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a perspective view of a vault-heating apparatus constructed in accordance with my invention. Fig. 2 is a longitudinal sectional view of the same, the grate and hood being in position to direct the heat beneath the excrement-floor. Fig. 3 is a similar view, the position of the hood and grate being reversed to direct the flame over the floor. Fig. 4 is a detail in perspective of the revolving hood and grate, one end thereof being removed to illustrate the interior construction thereof.

Referring to the accompanying drawings, A designates the front or face plate of the vault furnace or heater, and is constructed of suitable material and is located and supported in the ordinary manner at one end of the ordinary dry-closet vault. Suitably bolted or otherwise secured to the inner face or back of said face-plate and extending inwardly are the side parallel frame-pieces *a*, between the outer ends of which is secured the transverse plate or platform *a'*, bolted or otherwise secured to said side pieces and is designed to be on a level with the brick platform in the closet-vault when the heater is set in position at the end thereof. A semicircular hood B is journaled upon the pivots *b* in the side frame-pieces *a* intermediately between the inner end of said transverse plate or platform and the back of the front or face plate A. Integrally formed with said hood or supplementally secured thereto and revolving therewith is the sector C, forming the basket-grate or fire-box, within which the fire is placed, as will be presently described. The said sector or basket-grate forms, with the semicircular hood of which it forms a continuation, three-quarters of a complete circle and is provided with a wall or plate *c*, inclosing the free side thereof, by means of which the fire is inclosed within the grate, and which also serves as a platform when the position of the hood and grate is reversed, by means of which the excrements can be scraped thereover and into the fire within the heater. A rod D projects through the front face-plate A and terminates in an operating-handle *d*, while its inner end pivotally connects with one side, forming the semicircular hood, and by means of which connection by operating the rod the whole device may be turned at will in one position, as shown in Fig. 2 of the drawings, where the free end of the hood snugly abuts against the inner end of said transverse plate or platform, and the wall or plate *c* of the basket-grate being in a vertical position the heat coming from the fire within the same is deflected by the curved hood in a downward direction and beneath the platform, by means of which the excrements are dried from beneath the vault. The other position (shown in Fig. 3 of the drawings) is obtained by withdrawing the operating-rod D and securing the same in this position by means of the notch *d'* therein engaging the slot or hole in the front plate, through which it works, and in which position the said wall or plate inclosing the grate is

on a level with both the platform of the vault and that of the heater, and thus the hood, or, at least, the opening therein, is in a direct line to throw the heat across and over the top of the matter upon the vault-floor or platform, while at the same time the device is in a position which allows the matter to be scraped within the heater and consumed by the fire therein. The said sector or fire-box C is provided with a dumping pan or grate c' of the ordinary construction, and which is eccentrically journaled upon the pivots c^2 near one end thereof and in the sides of said fire-box or sector adjacent to the inclosing wall or plate, while the opposite ends of the grate or ends of the grate-bars forming the same extend around and follow the curve of the hood and fire-box and take behind the end of the top of the hood, and thus is prevented from dumping, and is always securely and firmly held in its normal position, forming a continuation of the periphery of the hood, inasmuch as being eccentrically pivoted within the fire-box its own weight normally closes the same, and when the engaging end of the grate is pushed in to allow the ashes or accumulations to be dumped from the opposite end adjacent to the point of pivot when released the grate will readily fall back, as can be easily seen.

The inner side or top of the hood facing the front plate A is provided with an opening E, which is designed for the reception of the fuel to kindle the fire within the grate, and is closed and unclosed, when desired, by means of the curved sliding cover F, that is adapted to work and slide within the opposite guides or cleats f, located on either side of said opening and secured upon the top of said hood. When it is desired to place the fire within the grate, the said slide is thrown back to uncover the opening in the hood, and access is had to the interior of the heater through the swinging door G, hinged to the front face-plate A and inclosing the opening formed therein.

Above the door G in the front face-plate is horizontally hinged the air-door H, which incloses an opening in said front plate, and which may be thrown open and held in its open position by means of the hook h, secured to the free edge thereof, engaging the eye h', secured in the facing of the heater above said door, and besides allowing a free circulation of air, when it is desired, over the brick platform upon which excrement falls it also provides means whereby the green or dry matter may be scraped with a suitable article into the revolving heater located back of said face-plate. A similar door I, similarly hinged and provided with a hook i, adapted to engage the supporting-eye i', is located beneath the central fire-door G referred to, and is designed to inclose the opening through which the dumping-grate may be operated and the ashes and accumulation may be removed.

The construction and operation of my improved vault-heater is now thought to be apparent without further description.

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

1. In a vault-heater, a frame, a revolving grate and hood journaled in said frame, and means for operating said revolving hood and grate, substantially as set forth.

2. In a vault-heater, a frame, a hood journaled in said frame, a basket-grate secured to one end of said hood and forming a continuation thereof, and means for operating said hood and grate, substantially as set forth.

3. In a vault-heater, a front plate, side frame-pieces secured to the inner face thereof, a transverse plate or platform secured between the outer ends of said side pieces, a revolving grate and hood journaled in said side pieces between said platform and front plate, and means for revolving said hood and grate, substantially as set forth.

4. In a vault-heater, a front plate, side frame-pieces secured to the inner face thereof, a transverse platform secured between said side pieces, a semicircular hood journaled in said side pieces, a sector fire-box secured to or projecting from one end of said hood and provided with an inclosing wall or plate and a dumping-grate in the bottom thereof, and an operating-rod pivoted to one side of said hood and projecting through said front plate, substantially as set forth.

5. In a vault-heater, a frame, a transverse plate or platform, a semicircular hood journaled in said frame and provided with an opening located at one end in the top thereof, guides or side cleats secured to the top of the hood on either side of said opening and a curved sliding cover working within said cleats, a sector fire-box secured to or projecting from one end of said hood and provided with an inclosing wall or plate and a grate eccentrically pivoted within the bottom of the same, and an operating-rod pivoted to one side of said hood and projecting through the frame, substantially as set forth.

6. In a vault-heater, a front plate provided with inclosed fuel, ash, and air openings, side frame-pieces secured to the inner face thereof, a transverse platform secured between the outer ends of said side pieces, a semicircular hood journaled in said side pieces, a sector fire-box and grate secured to or projecting from one end of said hood and forming a continuation of said hood, a sliding cover inclosing a fuel-opening in said hood, and an operating-rod pivoted to one side of said hood and projecting through said front plate, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

ADOLF G. STAPEL.

Witnesses:
J. C. MICKLER,
HENRY G. REED.