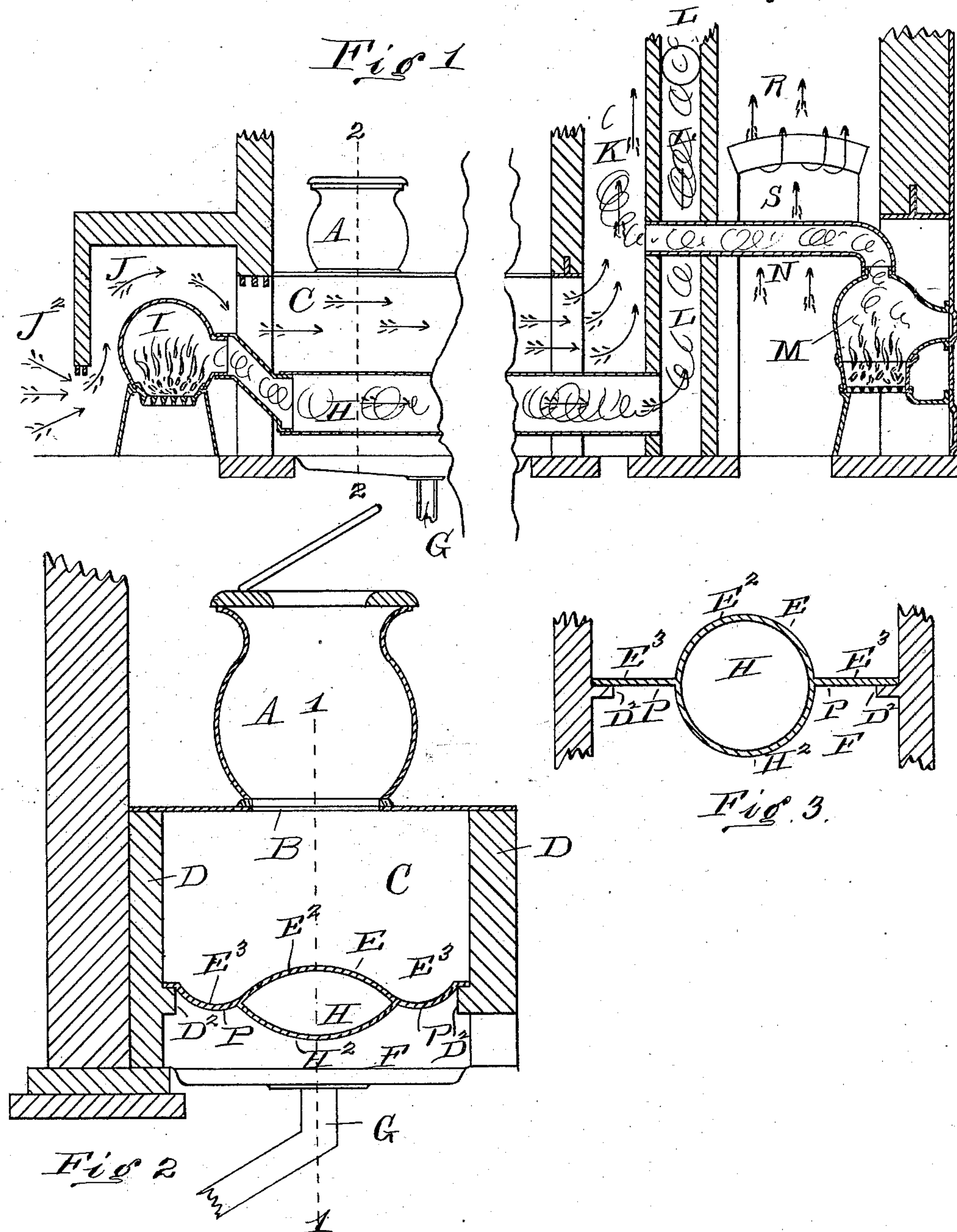


(No Model.)

C. H. BENNETT.  
FECAL CLOSET.

No. 559,432

Patented May 5, 1896.



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# UNITED STATES PATENT OFFICE.

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## FECAL CLOSET.

SPECIFICATION forming part of Letters Patent No. 559,432, dated May 5, 1896.

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*To all whom it may concern:*

Be it known that I, CHARLES H. BENNETT, a citizen of the United States, and a resident of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Fecal Closets, of which the following is a specification.

My invention relates to that class of closets in which the urine and moisture in the feces are in part drained off and in part evaporated, and wherein this moisture of evaporation, together with the gases and odors from the feces, is carried off by a current of heated air.

One of the principal features of my invention consists in a novel construction whereby the smoke and incandescent products of combustion and hot air mingled therewith are used in the drying of the said fecal deposits and urine, without permitting the presence of said smoke, heated products of combustion, and air therewith in the fecal-receiving chamber directly connected with the stool.

Other features of my invention and the various advantages resulting from the use of all of the features of invention, conjointly or otherwise, will be apparent from the following description and claims.

In the accompanying drawings, making a part of this invention, and in which corresponding letters of reference indicate similar parts, Figure 1 is a vertical central section of an apparatus illustrating my invention. This section is taken in the plane of the dotted line 1 1 of Fig. 2. Fig. 2 is a vertical transverse enlarged section of the same, taken in the plane of the dotted line 2 2 of Fig. 1. Fig. 3 is a transverse vertical section of a modified form of a part of the apparatus, to wit: the smoke-conduit and its immediate connections.

A indicates a stool duly supported on a floor, as B. Beneath the stool is a chamber C, and the opening B<sup>2</sup> through the stool connects with this chamber. This chamber has side walls D D. The floor of this chamber is one of my construction, and consists of an iron plate E in cross-section, (see Fig. 2,) convexly curved upward in the center and convexly curved downward at either side of the center. Thus the plate E has the convex upward part E<sup>2</sup> and the concave lower por-

tions or gutters E<sup>3</sup> E<sup>3</sup>. The gutters E<sup>3</sup> E<sup>3</sup> have perforations P of any desired number. This plate is suitably supported, as, for instance, its edges respectively resting in ledges D<sup>2</sup> of each side wall D. The ridge E<sup>2</sup> and gutters E<sup>3</sup> E<sup>3</sup> extend longitudinally through the chamber.

Beneath the plate E is a chamber F, and the side walls D D extend down to form this chamber. At the bottom of the latter chamber is a drain pipe or conduit G, into which the urine and water draining from the chamber G enter and are duly conveyed away.

Directly beneath the central portion E<sup>2</sup> of the floor E, I locate a smoke-conduit H. I there utilize the floor E as the upper portion or roof of the conduit, and add thereto a lower portion H<sup>2</sup>, curved in a direction opposite to that in which the part E<sup>2</sup> of the floor is curved. I construct this of metal, and for purposes of economic utility I cast this part H<sup>2</sup> in one piece with the plate E. Thus the transmission of heat from the smoke and heated products of combustion and hot air therewith passing through the conduit H to the chamber C above and chamber F below is direct and rapid. In case any substance lies upon the portion E<sup>2</sup> the transmission of heat thereto from the smoke, &c., of conduit H is in like manner direct and rapid.

A suitable furnace, as I, is suitably located, preferably at one end of the chambers C and F, and the smoke-exit of said furnace is connected to the conduit H in the direction of the arrows therein. A current of hot air passes over and around the exterior of this furnace and passes through chamber C, the direction of this current being indicated by the arrows in chamber J and in chamber C. Chamber J is the chamber containing the furnace I. The air to be heated in chamber J enters the latter through an opening, as J<sup>2</sup>, being supplied from an outside source of pure air. This hot air after passing through chamber C enters a suitable exit and ultimately passes out a hot-air flue, chimney, or funnel K. On the other hand, the smoke, &c., in conduit H passes through the latter and ultimately enters a smoke-stack L.

The apparatus operates as follows: The fecal matter and urine from the person using the stool fall through the stool and opening



and upon the arched portion  $E^2$  of the floor. The urine and some of the moisture of the feces run down onto the portions  $E^3$  of the floor and pass through the perforations P into the chamber F, and thence pass off through the drain G. From a fire kept burning in the furnace I, the smoke, hot air, and other heated products of combustion pass through the conduit H. The heat therefrom bakes and dries the fecal matter resting on the plate  $E^2$   $E^3$   $E^3$ . At the same time hot air heated by the furnace I comes into the chamber C and passes over and in contact with the fecal matter and urine and dries the same. This air also carries with it all impure odors and gases arising in chamber C from the feces and urine and takes them up the flue or funnel K. The under side  $H^2$  of the conduit H and the heated portions  $E^3$   $E^3$  of the floor impart heat to the air in the chamber with obvious advantage.

The dried feces are to be removed at suitable intervals.

The aforementioned apparatus and mode of operating it greatly conduces to the avoidance and prevention of disease in the persons using the stools, and prevents any contagion arising from the evacuation of the bowels of a person having disease, or from the contact of contagious gases with the body of the person using the stool. The dried fecal matter can also be utilized in many well-known ways, unnecessary here to mention.

Heretofore it has been customary in apparatus of this kind either to send the hot air and smoke through the chamber F under a flat floor made of porous brick instead of a curved floor, and through a metal conduit as I do. The disadvantage of a flat floor is obvious, and the material—viz., porous brick—does not communicate heat as well nor as advantageously as I have done.

Another mode of drying the fecal and urinal deposits has been by sending the smoke and products of combustion through the chamber C. A marked disadvantage of this mode consists in the fact that the sooty and other color elements contained in the smoke, &c., often mark the body of the user of the stool in a disagreeable and disgusting manner. My invention obviates this serious objection and at the same time utilizes the heat of the smoke, hot air therewith, and other products of combustion in an exceedingly useful and economical manner.

Other advantages of my invention not herein specified will be apparent to one skilled in this art upon an examination of my apparatus.

The apparatus already described can be applied in connection with a series of stools A, located over the chamber C and floor E, lengthened or otherwise enlarged to accommodate the added stools. Such series of stools is of advantage in schools and many other classes of public buildings.

At the right-hand portion of Fig. 1 is an apparatus which, as it forms no part of my in-

vention, needs only a brief description. A furnace M heats the air in chamber R, which rises and passes out of a suitable exit. (Not shown.) This upward draft draws the foul air through an opening, as S, from any adjoining apartment occupied by persons and carries it up and out of the building. Meanwhile the smoke, &c., from the furnace M passes out of the pipe N into the flue K, and thence up the latter, thereby assisting the upward draft and the movement of the hot-air current passing through the chamber C.

A slightly-modified construction of the floor and conduit H is shown in Fig. 3, where the conduit H is cylindrical and the portions of the floor at each side of the raised portion  $E^2$  is flat, but perforated.

What I claim as new and of my invention, and desire to secure by Letters Patent, is—

1. In a fecal-drying apparatus, a chamber receiving the fecal deposits and urine, and a metallic floor E having the centrally-arched portion  $E^2$ , and the lower side portions  $E^3$  and a flue H through the arched portion  $E^2$ ,  $H^2$ , the part  $E^2$  forming the upper portion of the flue, and the portion or plate  $H^2$  forming the under side of the flue, and cast in one piece with the plate E, substantially as and for the purposes specified.

2. In a fecal-drying apparatus, a chamber receiving the fecal deposits and urine, and a metallic floor E having the centrally-arched portion  $E^2$ , and the lower side portions  $E^3$  and a flue H through the arched portion  $E^2$ ,  $H^2$ , the portion  $E^2$  forming the upper portion of the flue, and the portion or plate  $H^2$  forming the under side of the flue and cast in one piece with the plate E, and the stool A located in vertical line above and over the raised portion  $E^2$  of the floor, substantially as and for the purposes specified.

3. In a fecal-drying apparatus, a chamber receiving the fecal deposits and urine, and a metallic floor E having the centrally-arched portion  $E^2$ , and the lower side portions  $E^3$ , curved downward and perforated at their lowest point of deflection, and a flue H through the arched portion  $E^2$ ,  $H^2$ , the part  $E^2$  forming the upper portion of the flue, and the portion or plate  $H^2$  forming the under side of the flue, and cast in one piece with the plate E, substantially as and for the purposes specified.

4. In a fecal-drying apparatus, the stool, chamber C, below, floor E having arched portion  $E^2$  directly beneath the stool, and smoke-conduit H through the upper arched portion  $E^2$ ,  $H^2$ , the part  $E^2$  being the upper wall or roof thereof, and plate  $H^2$  constituting the bottom of the smoke-flue, a hot-air furnace whose products of combustion pass through the conduit H, while the hot air of said furnace passes through the chamber C, substantially as and for the purposes specified.

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Attest:

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