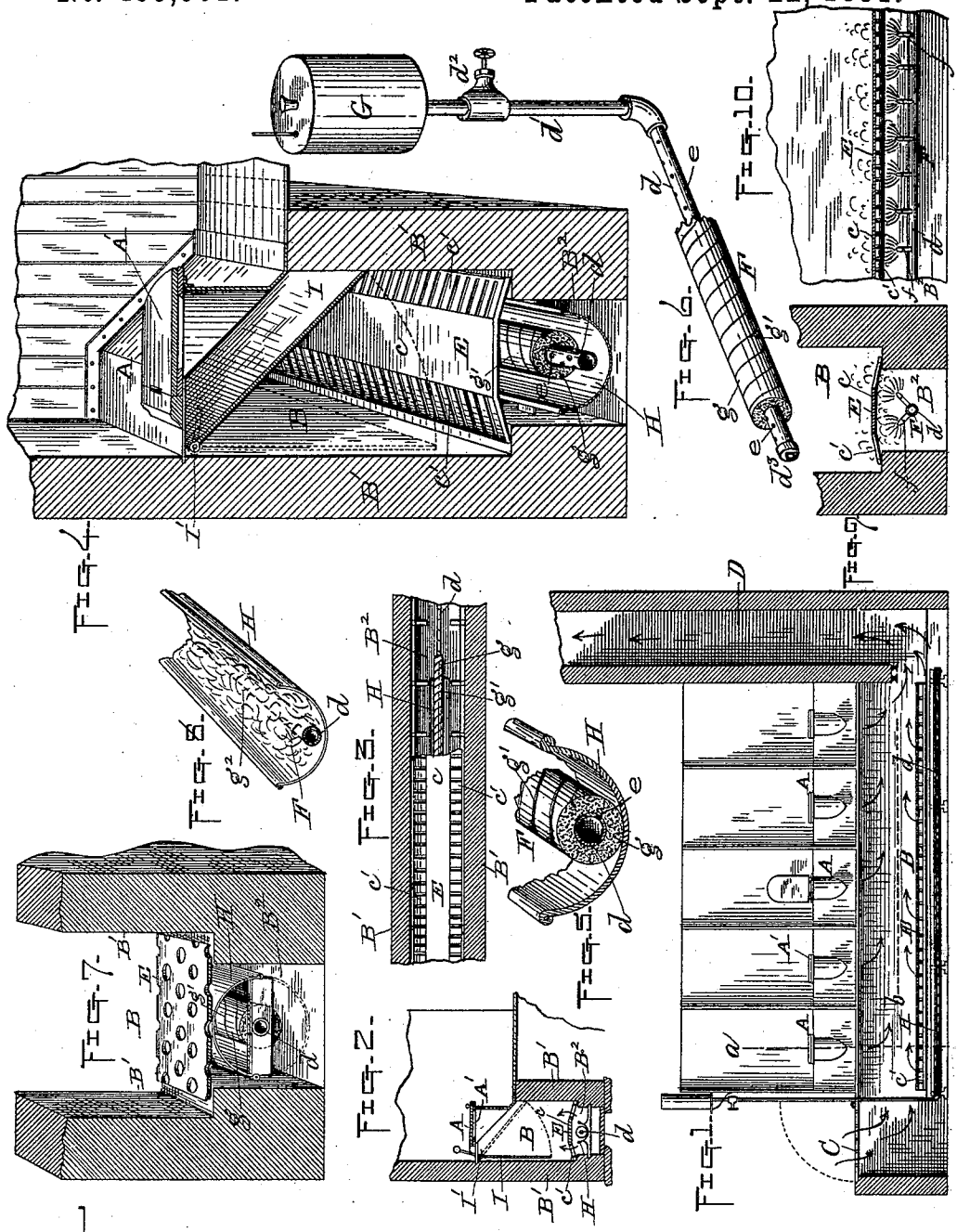
(No Model.)

F. P. SMITH.

DRY CLOSET.

No. 459,901. Patented Sept. 22, 1891.



Witnesses.

Walter B. Nourse.

C. Forrest Wilson.

Inventor.

Fred P. Smith.

By A. A. Barker, Atty

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

UNITED STATES PATENT OFFICE.

FRED P. SMITH, OF WATERFORD, NEW YORK, ASSIGNOR OF ONE-HALF TO OLIVER S. KENDALL, OF WORCESTER, MASSACHUSETTS.

DRY CLOSET.

SPECIFICATION forming part of Letters Patent No. 459,901, dated September 22, 1891.

Application filed June 26, 1890. Serial No. 356,883. (No model.)

To all whom it may concern:

Be it known that I, FRED P. SMITH, of Waterford, in the county of Saratoga and State of New York, have invented certain new and useful Improvements in Dry Closets; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 represents a vertical longitudinal section showing a series of dry closets arranged side by side, as well as the vault and ventilating shaft or chimney thereof, with my invention applied thereto. Fig. 2 is a vertical transverse section taken at the point indicated by line *a* in Fig 1. Fig. 3 is a horizontal section taken at the point indicated by line *b* in said Fig. 1. Fig. 4 is a similar view to Fig. 2, except that it is shown upon an enlarged scale and in perspective to more fully illustrate my improvements. All the following figures are also upon an enlarged scale. Fig. 5 is a sectional perspective view of part of the adjustable hood or trough and perforated covered pipe hereinafter described. Fig. 6 is a detached perspective view of the perforated pipe, its supply-tank and connections, and part of the covering of said perforated pipe; and Figs. 7, 8, 9, and 10 represent various modifications in the construction, which will be hereinafter described.

My invention relates to closets or privies in which the fecal excrement is deposited in a vault, and more particularly to that class in which all excrementitious matter may be disposed of by artificial evaporation and cremation.

It consists of placing within said vault, constructed of any suitable incombustible material, a horizontal perforated plate or grate partition, upon which is received the fecal matter, and under said horizontal partition an oil or gas pipe having suitable openings or perforations for discharging the oil or gas to produce, when ignited, a continuous flame under the whole length of the horizontal partition, which flame may be brought in contact either directly with said excrementitious matter through the openings in the perforated plate or grating or with the under side of said partition on which the deposits are received, as will be hereinafter more fully set forth.

To enable others to better understand the nature, purpose, and advantages of my invention, I will now proceed to describe it more in detail.

In the drawings the parts marked A represent a series of closets arranged side by side, as previously stated. B is the vault under said closets, C a grated opening for admitting fresh air thereto, and D the ventilating flue or chimney for discharging the foul or vitiated air and products of combustion therefrom, all of which are similar to other closets of this class, and consequently no claim is made thereto.

As my invention relates only to the mode of burning or cremating the excrementitious matter, the description will be confined principally thereto. The main or essential feature consists in the use of liquid or gaseous fuels and the appliances for burning them, the burner thereof being extended under the whole length of the horizontal plate which receives the deposits and in close proximity thereto.

Following is a detailed description of said burning appliances: A horizontal partition E is arranged and supported in the vault B between the walls B′ B′ at the usual distance below the closet-seats A′, leaving a chamber or sub-vault B^2 below the same. Said horizontal partition may be of any suitable material and made solid or perforated, as desired. A metal plate is preferably used, in which the space *c* along the middle is made solid to protect the burner F from soiling, and slotted, as well as inclined downward from said center at each side thereof, as shown at *c′ c′*, to allow the flame from said burner to pass through freely and come in contact with the excrement deposited on the central portion of the plate. I do not limit myself thereto, however, as a flat perforated plate, such as shown in Fig. 7, or any other form may be used to effect substantially the same result. Said burner F is arranged under and close to said partition E and consists of a pipe *d*, which may be adapted to burn oil by providing the same with a series of small discharge-openings *e* along its whole

length, or for burning gas by providing it with a series of discharge-nozzles *f*, similar to those used for illuminating purposes. Oil is preferably used as fuel in said pipe *d* to produce the desired combustion, the pipe in such case being connected by a pipe *d'* with a suitable oil-supply tank G, placed at some convenient point above the burning appliances. The supply from said tank may be regulated by means of a shut-off cock d^2. (See Fig. 6.) A covering of asbestus or other suitable material *g* may be placed over the perforated pipe *d* to serve as a wicking, the same being secured thereon by winding a wire *g'* around it or by any other suitable means. Said covering not being essential to my invention, I reserve the right to use the same or not, as desired. The pipe *d* is preferably provided with a cap d^3, which may be removed to clean the interior thereof, and covering *g* may also be slipped off endwise by the removal of said cap to clean out the discharge-openings of the pipe when required.

The burner F may be protected from soiling by means of a suitable hood or inverted trough H, having bearings at the ends and arranged to turn on the pipe *d*, as is indicated in Fig. 7. When the closets are in use, said hood occupies a position over pipe *d*, as shown by full lines in said Fig. 7; but in the operation of burning it is swung under said pipe, as indicated by dotted lines and full lines in the other figures, thus permitting the flame to come directly in contact with the horizontal partition or through the openings in said partition with the deposits thereon, as previously stated. Any suitable means may be employed for turning the hood H, as aforesaid, and for holding it in its adjusted position. Although said hood is designed mainly to protect the burner F from soiling, it may be utilized in connection with pipe *d* for burning the excrement by arranging said pipe in the bottom thereof and placing loose asbestus, mineral wool, or other suitable material g^2 over the pipe, as shown in Fig. 8, to serve as a wicking and spread the flame produced by the burning oil discharged from the pipe, or used alone with the loose material g^2 by simply pouring oil into the trough and igniting the same to produce the combustion desired.

The products of combustion, it will be understood, are drawn up the ventilating flue or chimney D, as in other dry closets of this class, and during the burning process the closet-seats and other wood-work above the burning appliances are protected by a fire-proof door I, hinged at I', which may be swung across the vault, as shown in Fig. 4, to make a close tight fire-proof combustion-chamber underneath.

It will also be understood that prior to burning all or nearly all moisture is removed from the excrement by evaporation; but being in a similar manner to other dry closets requires no description.

By means of my invention it is obvious that not only is the cost of fuel, as well as the trouble and expense of keeping the burning appliances always in condition for use, very small, but by the use of liquid or gaseous fuels a high combustion may be quickly obtained, and the process of burning thereby correspondingly facilitated, thus rendering said process expeditious and comparatively free from smoke and offensive odors, and when completed the combustion may be quickly and wholly stopped, consequently preventing any unnecessary loss of fuel.

I am aware that it is not broadly new to carry heat along under and in close proximity to the horizontal partition on which the excrement is deposited to dry the same, a smoke-funnel from a stove or furnace having been employed for this purpose. I therefore limit my invention to the use of liquid and gaseous fuel.

I am also aware that a horizontal partition adapted to receive the excrementitious deposits in a dry closet, a perforated supply-pipe to conduct liquid fuel to a combustion-clamber, and a felt tube for filtration purposes have been used prior to my invention in other apparatuses and devices, and I therefore make no claim independently thereto, but confine my invention to the specific construction and arrangement herein set forth and claimed.

Having described said invention, what I claim as new, and desire to secure by Letters Patent, is—

1. An improved dry-closet system comprising the closets A, having the hinged covers A', a vault B under the same between the walls B', and the ventilating-flue D, connected with said vault, the fire-proof hinged door I, arranged to close the upper part of the vault from the lower portion thereof to produce a fire-proof combustion-chamber under the same, the horizontal partition E, arranged in said combustion-chamber longitudinally under the closet-seats, and the horizontal longitudinal pipe-burner F, arranged just under said horizontal partition and having means for supplying the liquid or gaseous fuel thereto, so as to produce when ignited a flame under the whole length of the partition of equal intensity at all points, substantially as and for the purpose set forth.

2. In a dry-closet system, the burner F, arranged longitudinally under and in close proximity to the horizontal partition E, on which the excrementitious deposits are received, and having means for producing a flame under the whole length of the partition in direct contact therewith and said deposits, and a rotatable hood H, arranged to come over the burner between the same and said partition when the closets are in use and to be swung down under the burner during the burning process, substantially as and for the purpose set forth.

3. The combination, in a dry-closet system, of the horizontal partition E, arranged longi-

tudinally and at a proper distance below the series of closet-seats to receive the excrementitious deposits, and the combined trough or hood H, arranged longitudinally close under said horizontal partition E, said trough or hood being adapted to be turned and also to hold a suitable wicking and oil, whereby a flame may be applied directly against the partition E and the deposits thereon throughout the length thereof, substantially as and for the purpose set forth.

FRED P. SMITH.

Witnesses:
A. A. BARKER,
C. F. WESSON,