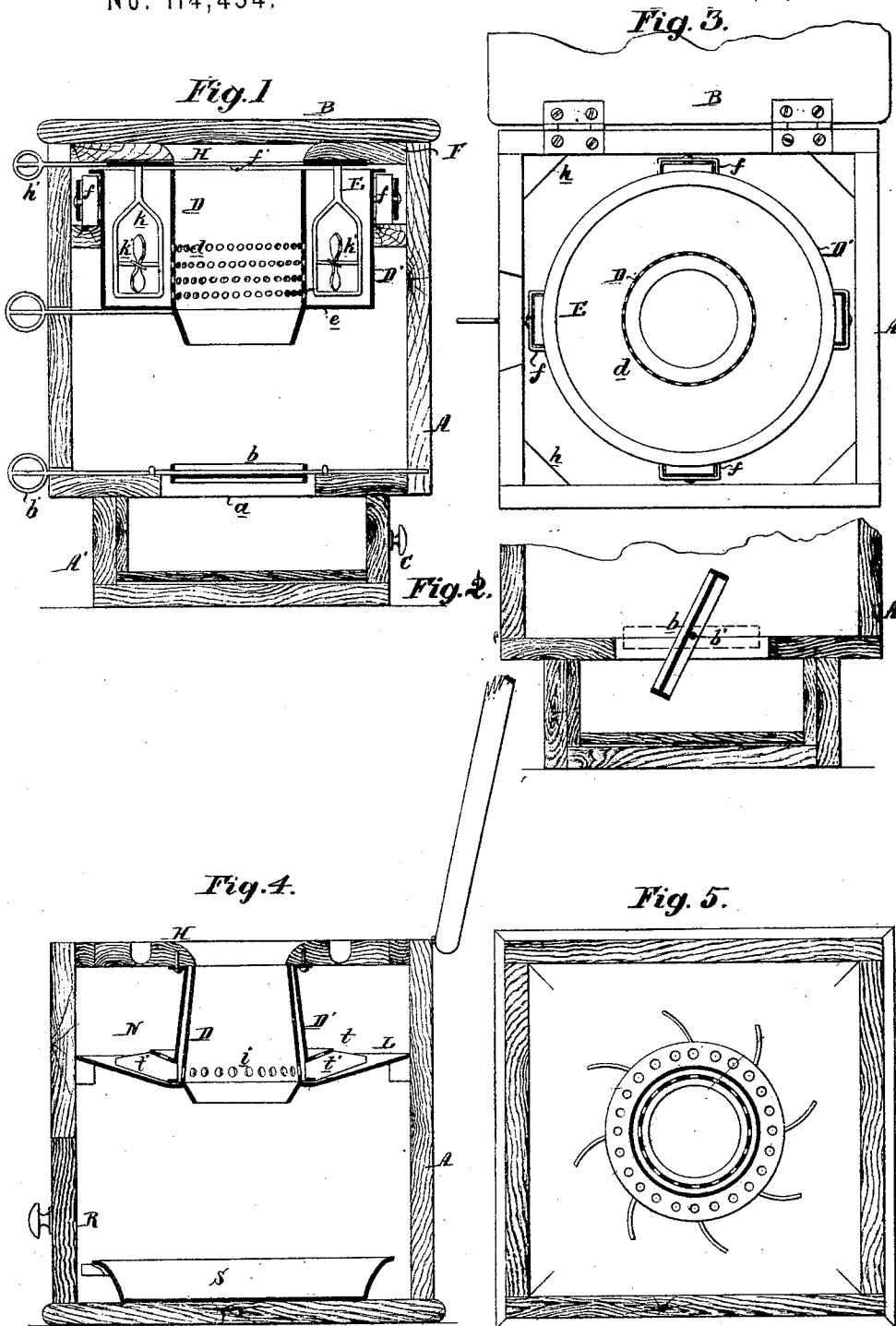


WILLIAM H. GROVE.

Improvement in Dry-Earth Closets.

No. 114,434.

Patented May 2, 1871.



Witnesses { *Geo. B. Harding.*
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United States Patent Office.

WILLIAM HENRY GROVE, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 114,434, dated May 2, 1871.

IMPROVEMENT IN DRY-EARTH CLOSETS.

The Schedule referred to in these Letters Patent and making part of the same.

I, WILLIAM HENRY GROVE, of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented an Improved Dry-Earth Closet, of which the following is a specification.

Nature and Object of the Invention.

My invention consists of an earth-closet, constructed in the manner too fully explained hereafter to need preliminary explanation, with the view of effectually deodorizing the soil by entirely inclosing it with dry earth, and insuring cleanliness and complete freedom of the closet from noxious exhalations.

Description of the Accompanying Drawing.

Figure 1 is a vertical section of my improved earth-closet;

Figure 2, a vertical section of the lower portion of the closet;

Figure 3, a plan view with the seat removed;

Figure 4, a transverse vertical section illustrating a modification of my invention; and

Figure 5, a sectional plan view of the same on the line 1 2, fig. 4.

General Description.

A represents a wooden box, to which is hinged a lid, B, and in the bottom of which is an opening, *a*, and beneath this opening is a smaller supplementary box, A', furnished with a sliding drawer, C, or other suitable detachable receptacle.

In the interior of the box A is a casing, D, of sheet-iron or other suitable material, open at both ends, and having its sides perforated with small holes *d*, and contracted at the bottom, as shown in the drawing.

This casing D is surrounded by a larger casing, D', and is connected to the former by a plate, *e*, which forms the bottom of the annular space E between the casings.

To pins projecting from the sides of the casing D', at the upper end of the same, are hung rollers *f*, which rest on a horizontal partition in the box A, and which maintain the casings in their proper vertical position.

Directly beneath the casing D, and hung within the opening *a*, is a valve or trap, *b*, which can be operated by rod *b'*.

Above the casings D and D', and resting on projections *h h*, fig. 3, in the corners of the box A, is a removable seat, F, in which is a suitable opening, *f'*, directly above the casing D.

To the under side of the seat and surrounding the opening *f* is attached an annular plate, H, in such a manner that it can be vibrated laterally by means of a rod, *k*.

Forked arms *k*, secured to the ring H, extend downward into the annular space E, and the forks carry revolving knives or agitators *k*.

In preparing the closet for use the lid B is raised and thrown back, the seat F with the ring H removed, and the annular space E filled to about half its capacity with dry powdered earth, or dry earth mixed with any other deodorizing substance, after which the lid may be closed.

A vibrating motion is imparted, by means of the rod *k*, to the ring H, which, through the medium of the arms *k* and knives *k'*, agitate the powdered earth contained in the space E, and distribute the same in limited quantities through the openings *e* in the casing D onto the trap *b* beneath.

The same result may be attained more rapidly by shaking the casings D and D' by means of the rod *l*.

The closet is now ready for receiving the soil, and after the latter has been deposited on the trap *b*, dry earth is again forced through the openings *d* until the soil is covered with same. The trap is then, by means of the rod *b'*, tilted as seen in fig. 2, and the soil and dry earth thereby deposited in the drawer or any other suitable receptacle. The soil is thus thoroughly inclosed with the dry earth, which completely deodorizes it, and the adhesion of any soil to the valve or trap is prevented.

Figs. 4 and 5 represent a modification of my invention. In this case the casing D is stationary, being supported and held in its proper place by an inclined partition, L, extending from the cylinder to the side of the box A, and resting on lugs or projections in the corner of the same.

The casing D is perforated at its lower end with a series of holes, *i*.

Surrounding this casing is a second casing, D', which is firmly secured at its upper end to the movable seat H, the latter being so arranged that a horizontal vibrating motion may be imparted to it, the said casing D' having at its lower end a perforated flange, *t*, to which are secured any suitable number of vanes, knives, or brushes *v*.

A pan, S, or other suitable receptacle, is placed within the box A beneath the casing D, which may be removed from the box, when desired, through a doorway, R, in the side of the box.

The space N above the partition L between the casing D and the sides of the box A is filled with fine dry earth.

After the closet has been used the seat H is vibrated and with it the casing D', and the vanes or brushes *v* agitate and force through the openings *i* the dry earth contained in the space N onto the deposit beneath.

The perforations in the flange *t* and the inclined bottom to the space N tend to keep a supply of dry earth directly in front of the vanes.

I do not wish to confine myself to the arrangement of knives or vanes, or the means by which dry earth contained in a space surrounding the casing D may

be caused to fall and cover the soil beneath, as various appliances may be employed to effect the same object. The closet may be portable, as shown, or may be permanently arranged within or form part of a privy.

Claims.

1. An earth-closet, having beneath the seat a vertical casing perforated at the sides, and surrounded by an earth-chamber in which vanes or agitators may be caused to move, substantially as described.

2. The rotating trap *b* arranged below the said casing, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

W. H. GROVE.

Witnesses:

WM. A. STEEL,
JNO. B. HARDING.