# I. S. & H. R. RUSSELL.

## Earth-Closets.

No. 137,099. Patented March 25, 1873.

Fig. 2.

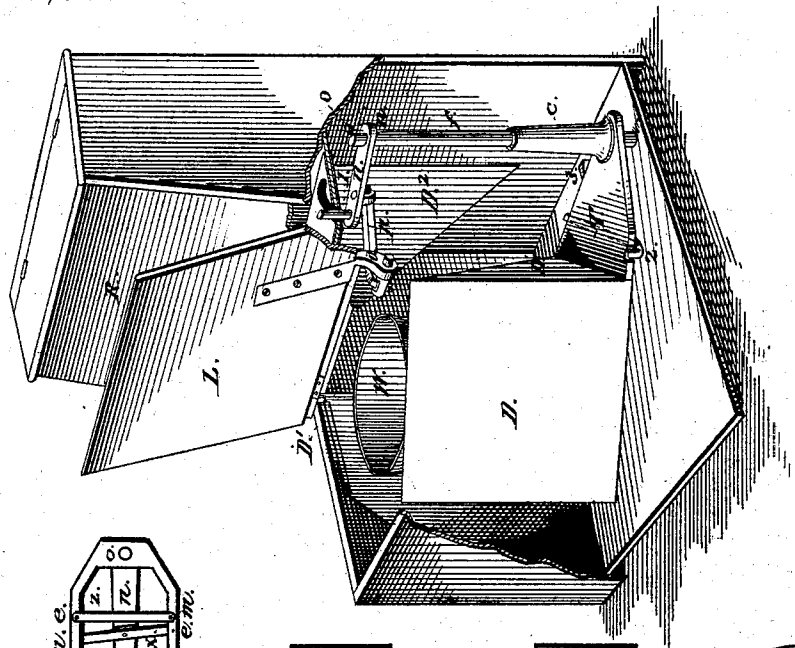



Fig. 3.

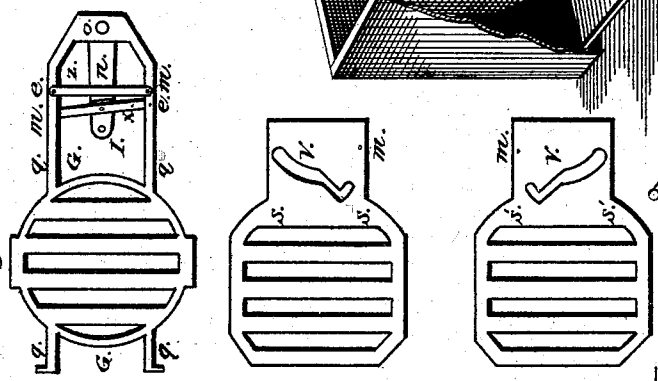









Fig. 4.

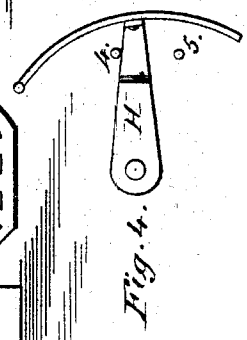
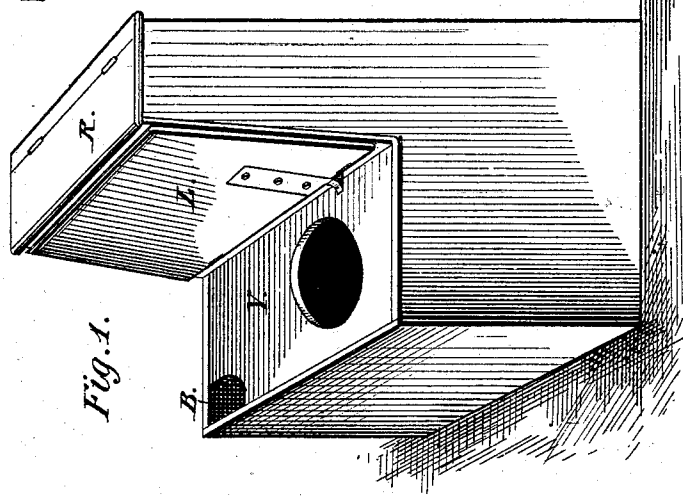



Fig. 1.

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# UNITED STATES PATENT OFFICE.

ISAAC S. RUSSELL, OF NEW MARKET, MARYLAND, AND HENRY R. RUSSELL, OF WOODBURY, NEW JERSEY.

## IMPROVEMENT IN EARTH-CLOSETS.

Specification forming part of Letters Patent No. **137,099**, dated March 25, 1873.

*To all whom it may concern:*

Be it known that we, ISAAC S. RUSSELL, of New Market, county of Frederick, State of Maryland, and HENRY R. RUSSELL, of Woodbury, county of Gloucester, State of New Jersey, have invented an Improved Earth-Closet, of which the following is a specification:

It is the object of our invention to make an earth-closet that shall be so far automatic that, when the seat-lid is raised and lowered, a definite quantity of dry earth or other deodorizer (called in these specifications, earth) shall be distributed over the bottom of the receptacle without dusting the seat or seat-lid, and that, too, entirely by means of interior mechanism.

Our invention applies to that form of the earth-closet in which the earth-reservoir is above and behind the seat; and the following is as full, clear, and exact a description of it as we can give, reference being had to the accompanying drawing, in which—

Figure 1 represents a front view for the purpose of representing the position of the seat-opening; Fig. 2, an oblique front view, a portion being removed to exhibit the construction and arrangement within; and Fig. 3, the discharger for dispensing the definite quantity of earth. Fig. 4 represents a bottom view of arm or clutch H, catch 2, and the stops 4 and 5.

In Fig. 2 the vertical shaft *f*, supported in sockets above and below, has, near its upper end, a horizontal arm, *n n*, carrying a vertical finger, I, and is connected with the arm *a* on the seat-lid by means of the connecting-rod *p* and universal joints. Near the lower end of said shaft is attached the table T by means of the collar C, which may be loose, allowing the shaft to turn in it; but this motion may be limited by the fixed clutch or arm H or its equivalent. The table T supports and carries the receptacle W and the door D $D^1$.

Fig. 3 shows the discharger G G, consisting of grate or dispenser and two slides in the bottom of reservoir and toward the side opposite the shaft *f*. The dispenser is in the form of a grate, circular or any desired shape, of metal or any suitable material, the bars and spaces of which should be of equal width—an inch, more or less—and of such depth that it will hold enough earth for one discharge. *q q q q* are projections for fastening it to the framework, and at *o* is the socket for the upper end of shaft *f*. The slides, which may be of sheet metal, should have openings in them to correspond with those in the dispenser; and they also have slots or cams so shaped that the desired movement may be given to them—that is to say, a portion of each slot is the arc of a circle of the same radius as that traversed by the finger I, in order that the slide may not be moved by the motion of the finger. Another portion diverges from this in order that the finger pressing against the side of it may give the required movement to each slide at the proper time in turn; and at the extremity of this divergent portion of each slot are enlargements or curves entirely relieving the finger I from any pressure against the side of the slots, and hence there is no strain on the seat-lid tending to prevent it from remaining open or closed, as desired. The slide *s s* is placed above the dispenser, and the one *s′ s′* below it. In this figure is shown also the horizontal arm *n* and the position of the vertical finger I. When the slides are put in place, the finger I enters the slots *v* and *v*. *x* and *x* are small bars pivoted at one end to *q* and *q* at *e* and *e*, while the other end is pivoted to the slides at *m* and *m*, to serve as guides, with little friction. The finger I may have a roller upon it to lessen its friction in slots *v* and *v*.

The discharger being put in position, as is shown by the part not broken away in Fig. 2, the operation is as follows: When the seat-lid is raised, the arm *a* brings the arm *n* forward, turning the shaft *f* and the table T carrying the receptacle W to position under the seat-opening in Fig. 1. At the same time, the finger I plays in the slots *v* and *v* of the slides. As it moves through the oblique portion of the lower one it closes it, but does not move the upper one, this portion of its slot having the same curve as that traversed by the finger I. Passing on through the curved portion of the lower one, it does not move it for like reason; but coming to or into the oblique portion of the slot in the upper one, it opens that and allows the dispenser to fill. When the lid is

lowered, the reverse of this takes place—the arm *n* being driven backward, turning the shaft *f* and carrying the table T and receptacle W till the latter is directly under the discharger, and closing the door D $D^1$ tightly against $D^2$ and $D^3$; the finger I on its return closing the upper slide and opening the lower one, allowing the contents of the discharger to fall into the receptacle. At each raising and lowering of the seat-lid the same operation will be repeated. The fixed clutch or arm H, Fig. 4, impinges against stops on the collar C, which limits the relative movement of the shaft *f* and table T, so that when the lid is raised to its full height the clutch or arm H is against one of the stops. At this moment the catch 2, the fulcrum of which is attached to the arm or clutch H, engages with the edge of the table T, and insures the movement of the table T when the lid is lowered. When the table has moved so that the receptacle is directly under the dispenser, the wedge or incline 3 raises the end of the catch 2, disengaging its hold on the edge of the table T, and allowing the shaft *f* with the arm *n* and finger I to complete their movement, and at the same time move the lower slide, dropping the earth into the receptacle. This operation of loose collar C, clutch or arm H, and catch 2, allows the closing of the dust-door D and putting the receptacle in proper place before the dust or earth begins to fall. The seat *y*, Fig. 1, may be taken out at pleasure and the receptacle removed conveniently.

B is a box for paper.

What we claim as our invention is—

1. The vertical shaft *f* and loosely-hung table T, in combination with seat-lid, as described.

2. A discharger, consisting of the grate G and two independently and alternately moving slides provided with slots, as described, in combination with the vertical shaft, arm *n*, and finger I, as and for the purposes set forth.

3. A loosely-hung horizontal table attached to a vertical shaft, in combination with the arm or clutch H, catch 2, wedge 3, and stops 4 and 5, so that the shaft may have a limited motion relative to the table, as described, and for the purposes set forth.

4. In combination with the seat-lid, shaft *f*, and arm *n*, the swinging table provided with a dust-door and receptacle, W, as and for the purposes set forth.

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Witnesses:
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