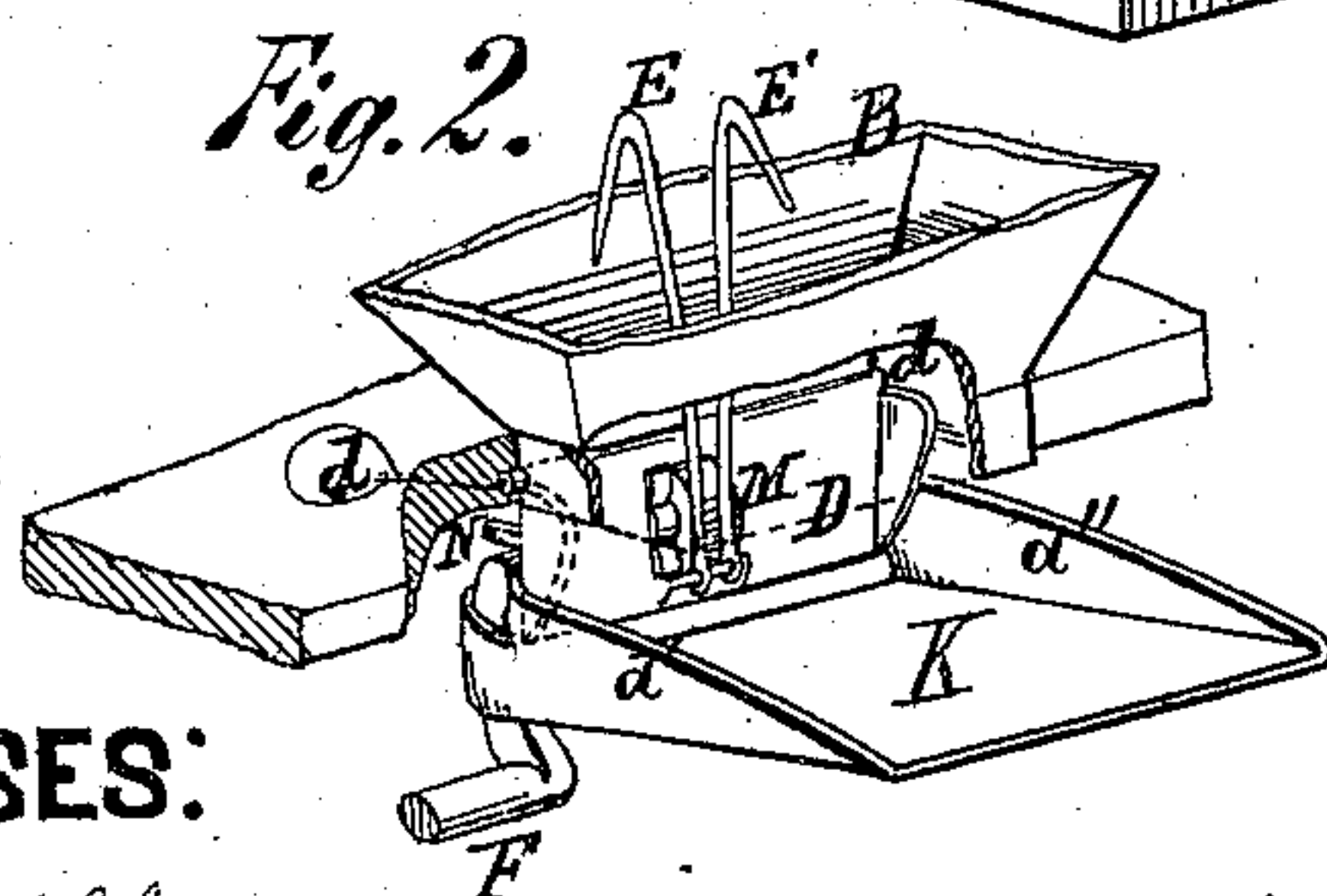
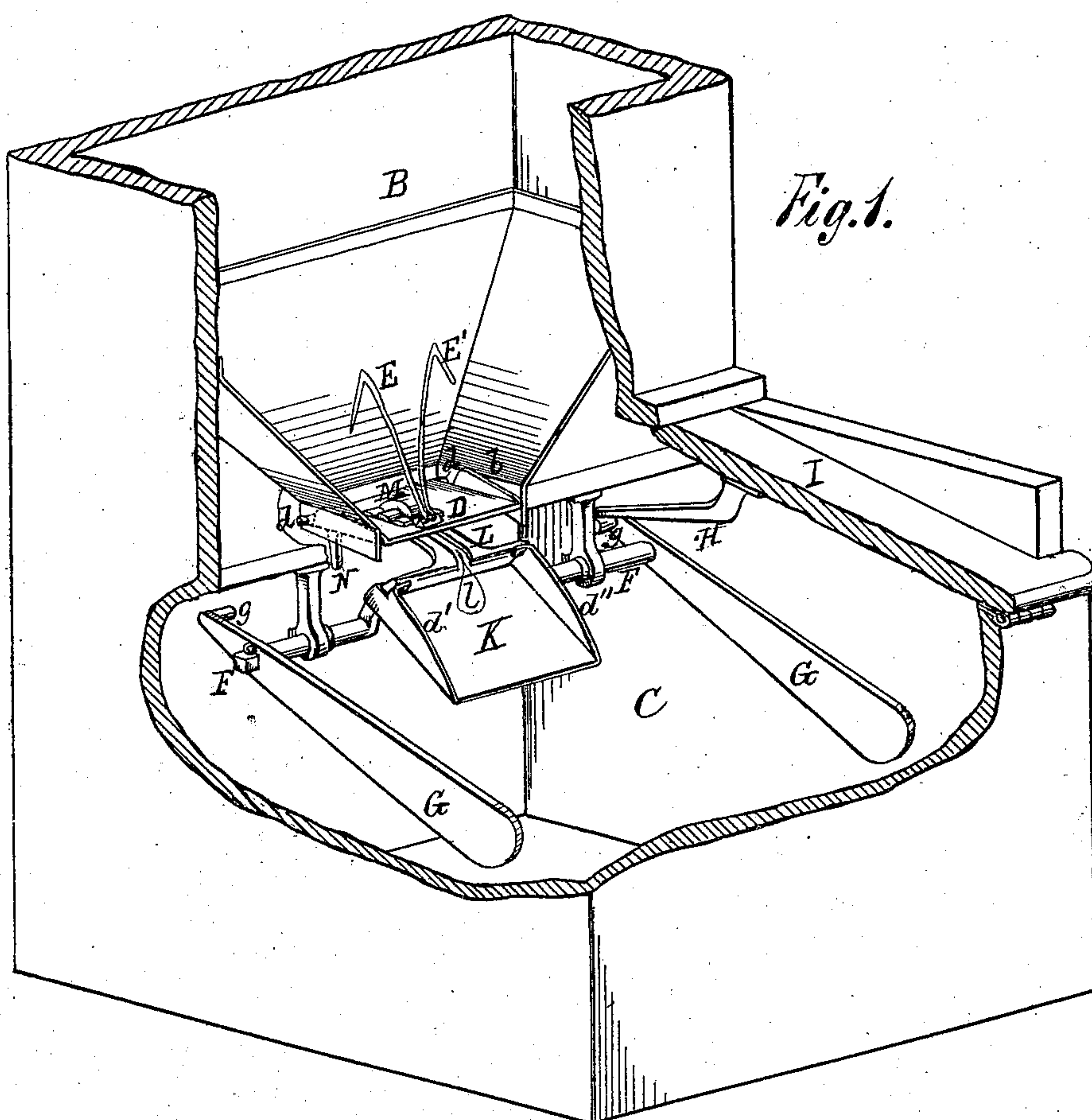


J. G. SMITH.

Earth-Closet.

No. 133,899.

Patented Dec. 10, 1872.



WITNESSES:

Walter Allen
W. H. Pearce

INVENTOR:

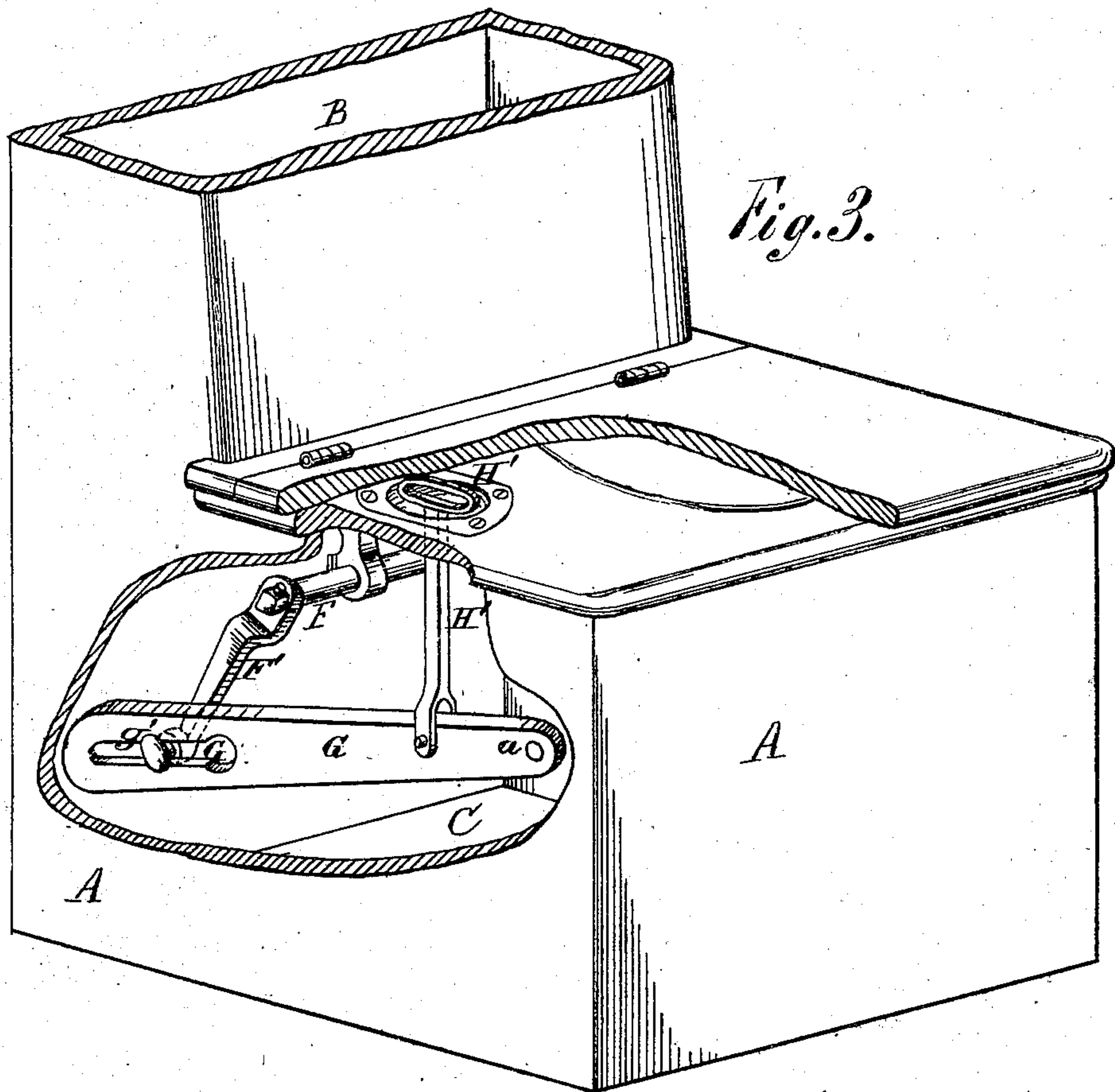
John G. Smith
By Knight Bros Attys

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By Knight, Brown & Atty.

UNITED STATES PATENT OFFICE.

JOHN G. SMITH, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF HIS RIGHT
TO CHAS. H. CAMPFIELD, JR., OF SAME PLACE.

IMPROVEMENT IN EARTH-CLOSETS.

Specification forming part of Letters Patent No. 133,899, dated December 10, 1872.

To all whom it may concern:

Be it known that I, JOHN G. SMITH, of the city and county of St. Louis and State of Missouri, have invented a certain Improvement in Earth-Closets, of which the following is a specification:

This improvement relates to the means for removal of a quantity of earth from the reservoir and its deposit in the receiver; and consists in the devices for operating the valve at the mouth of the reservoir or hopper and the tilting-pan by which the earth is cast or dropped into the receiver. The seat-board is hinged at the front edge, and arms extending from its rear rest on the rear ends of levers, whose front ends are weighted so as to sustain the rear end of the seat-board in its upper position when not depressed by a person sitting thereon. These levers are attached to a rock-shaft, to which is also attached a tilting-pan, by which the earth is carried forward and dropped into the receiver. From the rear of the tilting-pan extends an arm, which, as the pan tilts forward, acts on an anti-friction roller to close the valve at the bottom of the reservoir. Extending downward from the valve is a horn, which is struck by the tilting-pan as it is thrown back to insure the opening of the valve. Attached to the valve are two agitators, which stir the earth in the reservoir to insure its flow through the mouth when the valve is opened.

Figure 1 shows my improvement in perspective with the seat-board in its upper position and the valve closed. Fig. 2 shows the valve open and the tilting-pan raised. Fig. 3 shows a modification, in which the valve and pan are operated by a lifting-bar instead of by the weight of the person.

A is the casing, containing an upper chamber or reservoir, B, for the pulverized earth, and a lower chamber, C, which contains the pail or receiver. The lower part of the reservoir is hopper-formed and ends in a mouth, *b*, where is a valve, D, to close the mouth. The valve is hinged to the mouth at *d*. *E* *E'* are two hooked rods or agitators, which are hinged to the valve D, and extend upward into the earth to keep it stirred by the rise and fall of the valve and to draw the earth downward to the mouth. *d'* *d''* are wings or flanges at the ends of the valve. The edges of these wings

are so inclined to the sides of the mouth *b* that as the valve D closes the said edges force outward any hard body that would otherwise prevent the valve from closing. F is a rock-shaft, having at each end a weighted lever, G, attached to the said shaft, which forms the fulcrum of the said levers. At the lighter end of each lever is a pin, *g*, upon which rests an arm, H, extending from the rear edge of the seat-board I, so that the weighted levers, through said arms, sustain the rear edge of the seat-board. K is a shovel or pan, which is attached to the rock-shaft F, and which is tilted by the oscillation of the said shaft so as to occupy a position beneath the mouth of the reservoir when the seat is depressed and a position in front of this when the seat is in its raised position. In the former position the pan is charged with a quantity of earth, and prevents the exit of more earth from the reservoir, and in reaching the latter position the pan is tilted over so as to discharge its contents upon the ordure. L is an arm, extending backward from the tilting-pan, and *l* is a groove or channel in the arm to receive an anti-friction roller, M, in the bottom of the valve. As the pan is thrown forward by the descent of the weighted ends of the levers G, the arm L raises the valve, by pressure on the under side of the anti-friction roller M, and closes the mouth of the reservoir. N is a horn extending downward from the valve to receive the impact of the tilting-pan as it is thrown backward by the depression of the seat, to insure the opening of the valve.

The operation is as follows: Supposing the parts in position shown in Fig. 1. On the seat being occupied it descends at the rear part, and the arms H force down the shorter ends of the levers G, raising the heavier ends; this throws the tilting-pan K upward and backward into the position shown in Fig. 2. In assuming this position the back of the tilting-pan impinges against the horn N and forces the valve open, if it has not already fallen open by its own weight. As the valve opens a quantity of the pulverized earth descends into the pan K, which extends forward a sufficient distance to arrest the flow. When the seat is relieved from the weight of the person it rises, and the arm L, by pressure beneath the anti-friction

roller M, closes the mouth *b*. As the pan K is tilted it moves bodily forward so as to bring it into position to discharge the earth directly upon the deposit, upon which it falls without any unnecessary evolution of dust.

In the modification shown in Fig. 2 the apparatus is worked by a lifting device instead of by the weight of the person. In this H' is a draw-bar or rod, which is connected to the weighted lever G, and the lever has a slot, G', which receives a pin, *g'*, on a crank-arm, F', extending from the rock-shaft F. In this modification the weighted lever is fulcrumed to the case at *a*.

The operation of the tilting-pan K, valve D, and other parts is similar to that shown in Figs. 1 and 2; and the levers G also perform the same office, as can be clearly seen in the drawing.

Claims.

1. The valve D, when provided with an an-

ti-friction roller, M, and horn N, in combination with the arm L of the tilter, substantially as and for the purpose set forth.

2. In combination with the valve D, constructed as described, the hooked agitators E E', substantially as and for the purposes set forth.

3. The tilting-pan K provided with an arm, L, and combined with a valve, D, to automatically close the mouth of the reservoir by the forward tilting of the pan, as and for the purpose set forth.

4. In combination with the pan K and valve D, constructed and arranged as described, the weighted levers G, arranged and operating substantially as and for the purpose set forth.

Witness my hand.

JOHN G. SMITH.

Witnesses:

SAML. KNIGHT,
ROBERT BURNS.