

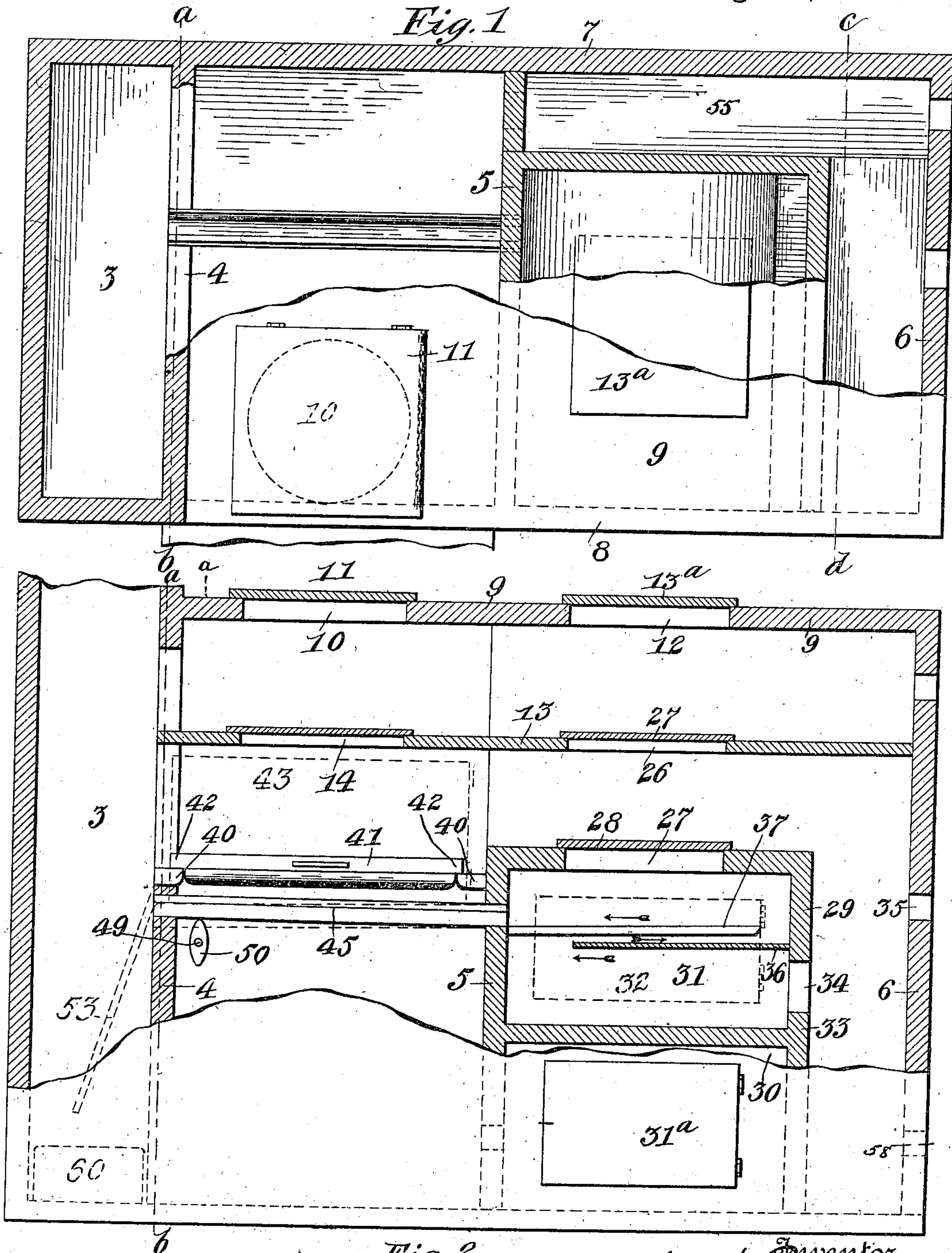
(No Model.)

3 Sheets—Sheet 1.

J. S. RUSH.
DRY CLOSET.

No. 481,155.

Patented Aug. 16, 1892.



Witnesses
A. J. O'Brien
W. E. Aughton

Fig. 2.

by

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(No Model.)

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Fig. 4.

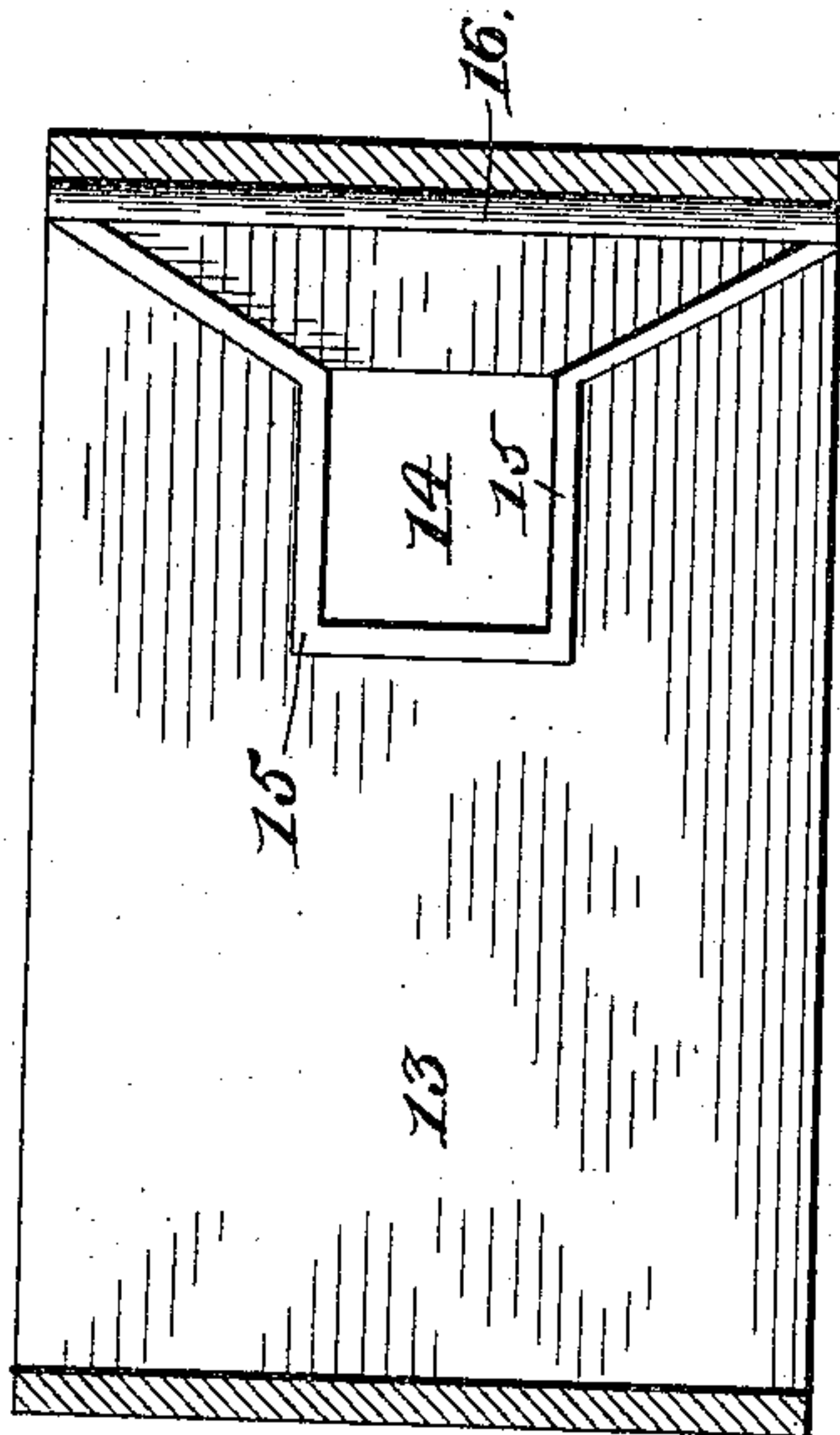


Fig. 7.

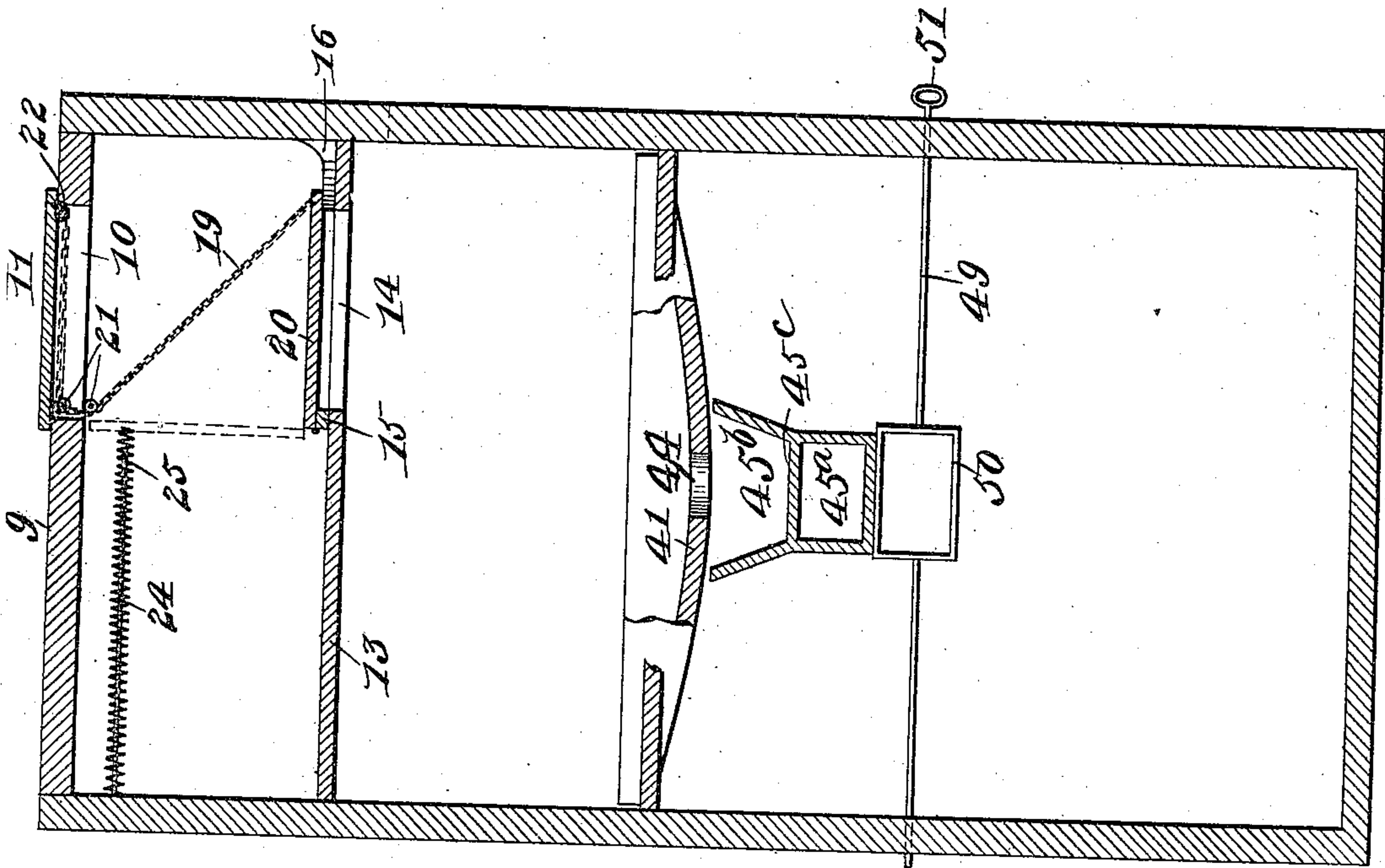
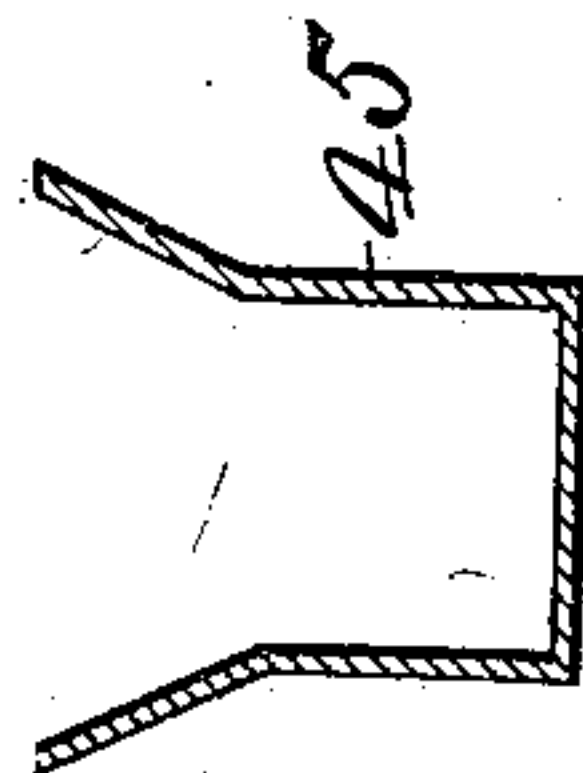


Fig. 3.

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(No Model.)

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Fig. 5.

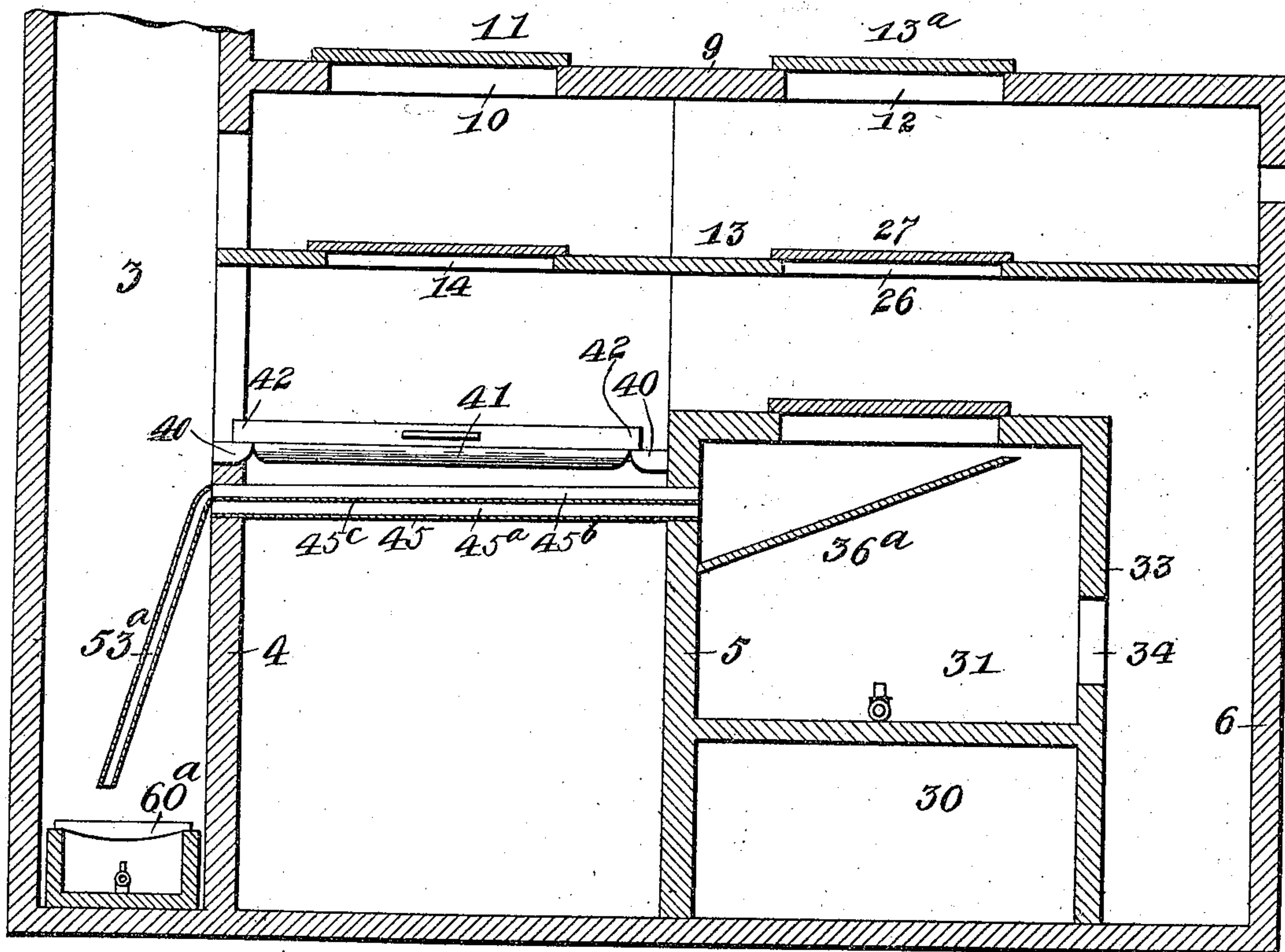
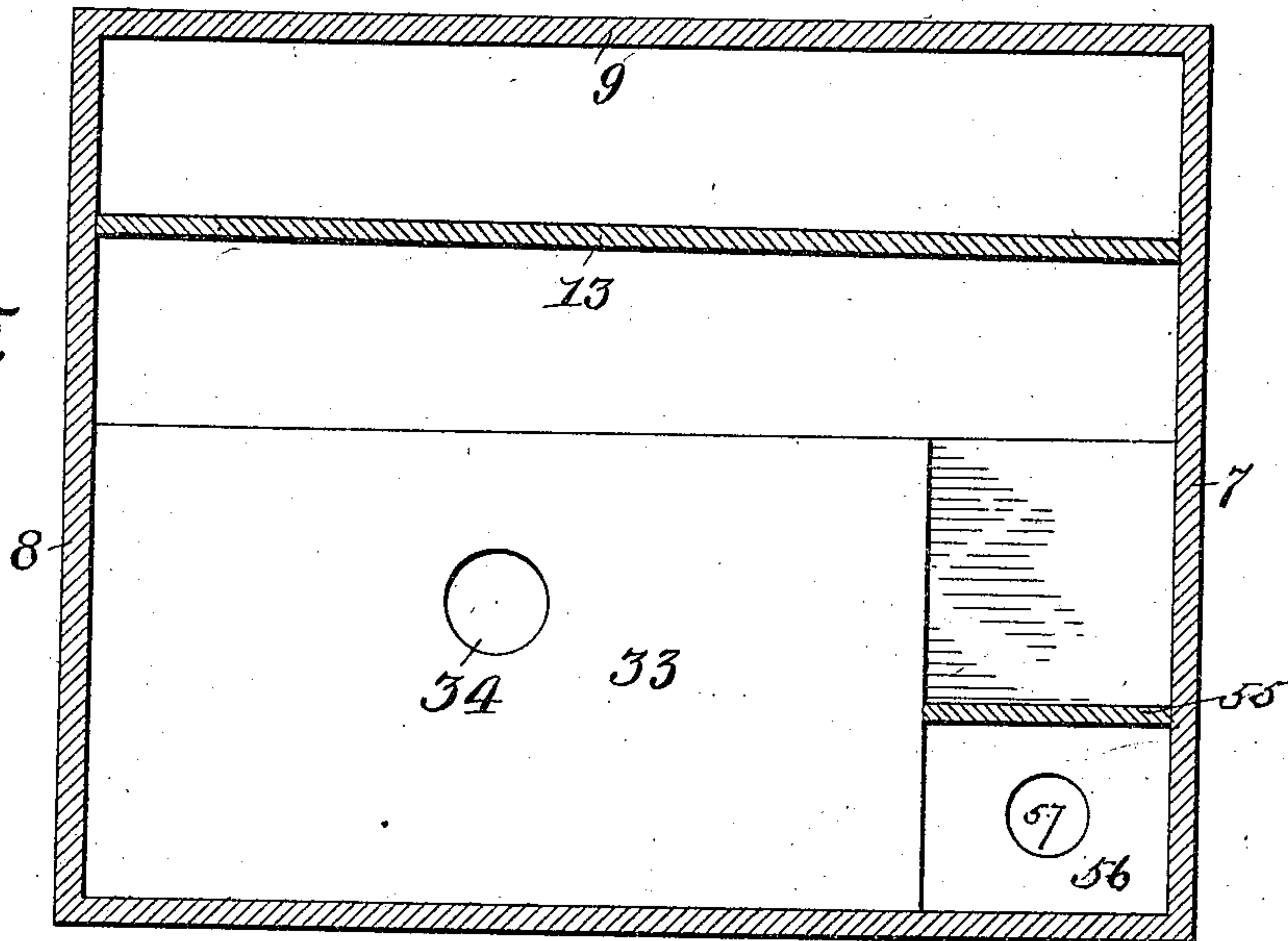


Fig. 6.

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UNITED STATES PATENT OFFICE.

JOHN S. RUSH, OF DENVER, COLORADO.

DRY CLOSET.

SPECIFICATION forming part of Letters Patent No. 481,155, dated August 16, 1892.

Application filed December 13, 1890. Serial No. 374,642. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. RUSH, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Dry Closets; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in dry closets in which the liquors are separated from the solid residue and carried to evaporating-pans, whence the vapors therefrom are taken up in a suitable flue by the ascending products of combustion, while the residue is removed from time to time; and it consists in the construction, arrangement, and combination of the parts of which it is composed, as will be hereinafter more fully described and claimed.

Referring to the accompanying drawings, in which corresponding parts are designated by corresponding numerals, Figure 1 is a plan view of a closet constructed in accordance with my invention, portions of the several plates thereof being broken away. Fig. 2 is an elevation thereof, parts of the front wall being broken away. Fig. 3 is a transverse section on line *ab* of Figs. 1 and 2. Fig. 4 is a detail of the plate forming the bottom of the upper compartment. Fig. 5 is a transverse section on line *cd* of Fig. 1. Fig. 6 is a longitudinal section of a closet in which a modified form of the evaporator is used. Fig. 7 shows a modified form of smoke and urine trough.

The closet consists of a vault structure upon which may be erected a suitable form of superstructure, (not shown,) the vault structure having at one end thereof a flue or stack 3, which is separated from the lower portion of the vault by means of the transverse wall 4, while a second transverse wall 5 of a little greater height is constructed within the vault between the said wall 4 and the opposite end wall 6 of the vault, which

end wall arises to the same height as the front and rear walls 7 and 8, on which walls 6, 7, and 8 rests the plate 9, forming the top covering of the vault, that portion of the said plate between the stack and the transverse wall 5 being provided with seat-apertures 10, provided with the rearwardly-hinged covers 11. In the annexed drawings I have shown but one of the said seat-openings; but it is evident that any desired number of such seat-openings may be formed in the plate. In the opposite end of the plate 9 between the wall 5 and the end wall 6 an aperture 12 is formed, it being covered by a lid 13, the said aperture giving access to the evaporating-pan.

Below the plates 9 and above the top of the walls 4 and 5 a second plate 13 is built into the wall, extending from end to end and side to side thereof, the said plate 13 sloping slightly from front to rear, and hereinafter I will designate the vault space inclosed by the plates 9 and 13 "the upper compartment." An aperture 14 is formed in the plate 13 beneath the seat-aperture 10 in the plate 9, the aperture having its upper end surrounded by a beading 15, which flares toward the front, a curved plate 16 being inserted between the flared ends of the beading, while a cover 20 is adapted to turn down over the said aperture 14, it being hinged at its rear end to the plate 13 in the rear of the said aperture. The lower end of a cord 19 is secured to the forward end of the cover 20 and passes rearwardly upward and around pulleys 21, set in the top plate 9 in the rear of the seat-aperture 10, whence the said end is led forward on one side of the opening to near the front thereof, where it passes under a pulley 22, secured to the plate 9, and has its upper end secured to the forward portion of the lid 11. It will thus be seen on raising the lid 11 that the lid 20 will be also raised. A rod 24 projects from the rear wall of the vault and serves to carry a helical spring 25, the forward end of which projects a sufficient distance toward the front of the vault to bear upon the lid 20 when the latter is raised, the said spring tending to throw the said lid 20 down and thus to close the upper lid 11, which will be done immediately upon the pressure

of the body being removed from the lid 11. An aperture 26 is found in the plate 13 beneath the aperture 12 in the plate 9, the said aperture 26 being provided with a lid 27 and being immediately above the aperture 27 (provided with the lid 28) in the top of the furnace 29.

As will be seen from Figs. 1, 2, and 5 of the drawings, the furnace 29 is composed of any suitable material and is built within the vault it being in the forward portion of the latter and between the transverse partition-wall 5 and the end wall 6, against the former of which it is built. This furnace has an ash-pit 30 in its base, to which access is had through the door 31^a in the front vault-wall 8, and a combustion-chamber 31, to which access is had by a door 32, (shown in dotted lines in Fig. 2,) also set in the front vault wall, the end wall 33 of the furnace being apertured at 34 for the admission of air directly to the combustion-chamber from the end of the vault below the plate 13, to which the air is admitted by the aperture 35 in the end wall 6. A deflector 36 projects inwardly from the end wall 33 of the furnace above the opening 34 to near the opposite wall thereof, while an evaporating-pan 37 projects from the said opposite wall of the furnace to near the said wall 33, the said pan being slightly above the plate 36, and it will thus be seen that the products of combustion to reach the smoke-trough (to be hereinafter described) will be compelled to pass beneath and over the said pan 37, thus evaporating the contents thereof. Oppositely disposed ledges 40 are placed upon the transverse wall 5 and the end wall 4 at about the level of the top of the furnace, upon which ledges a trough or pan 41, provided with engaging lips 42 upon its ends, is adapted to slide, the front wall of the vault being provided with a door 43, through which the pan may be withdrawn when it is desired to remove the solid residue. From the above-described location of the pan it will be seen that it is beneath the seat aperture or apertures 10, and that it is adapted to receive the deposits therefrom after they have passed through the aperture or apertures 14. The center of the trough or pan 41, which is at its lowest point, is perforated, as at 44, to permit the passage of liquids, the perforations being in line and over the combined smoke and urine trough 45. This trough 46, into which the liquids fall, extends from the furnace to the flue 3, it entering the former above the evaporating-pan 37, to which it is adapted to conduct the liquids when given the proper inclination. In the drawings two forms of troughs are shown, the one shown in Fig. 3 having two separate conduits, the lower covered one 45^a for the smoke and the upper uncovered one 45^b for the urine, the two being separated by the partition 45^c, while in Fig. 7 a form is shown in which the two conduits are united in one, the trough 41 being formed

without the partition. As in some cases it may be desired to change the point of evaporation from the furnace to the base of the stack or flue, at which latter point any desired form of evaporator 60^a may be placed, the end of the trough 45 contiguous to the flue rests upon the transverse bar 49, which extends from the front to the rear wall of the vault and has at its central portion an enlargement 50, formed by two parallel cranks, the end of the said bar being provided with a handle 51. It will thus be seen that when the trough 45 rests upon the flat side of the enlargement the urine will flow into the evaporator in the base of flue, (for which a spout 53 may be fitted to the trough,) while if it rests upon one of the cranks of the enlargement, as shown in Fig. 2, the urine will flow into the evaporating-pan in the furnace.

In order to furnish that portion of the vault which is below the pan 41 and between the walls 4 and 5 with air, a plate 55 is placed within the vault near the bottom thereof and between the rear wall of the furnace and the vault, thus forming a passage 56, connecting at its opposite ends with the apertures 57 and 58, in the base of the transverse wall 5 and the end wall 6, respectively.

In Fig. 6 a form is shown in which the sole evaporator 60^a is located in the base of the flue, the urine-trough being given the proper inclination for the flow of urine to take place in that direction only, and a spout 53^a is placed upon the lower end of the trough to convey the urine into the said evaporator. In this figure the furnace is shown without the evaporating-pan, a deflector 36^a being used, however, and, as will be noticed, both the evaporator 60^a and furnace are shown to be heated with gas.

The operation of the invention may be summarized as follows: The lid or cover 11 having been raised, raises with it the under lid 20, and matter may then drop through the two apertures 10 and 14 in the two plates 9 and 13 into the pan 41, through the perforations in which the liquor drains in the urine-trough, and thus to the evaporating-pan in the former or the base of the stack, as the case may be, the direction of the flow in the construction shown in Figs. 1 to 5 being dependent upon the position of the bar 49, as has already been described, the position of the said bar being readily changed by means of the handle 57 to suit the choice of the operator. In any case the urine is in its passage through the trough more or less evaporated, thus reducing to a minimum the amount of work to be done by the evaporating-pans, while at the same time the solids left in the pan 41 are dried by the heat arising from the trough, and are thus when the pan is removed from the vault to be emptied in a state in which they can be the most readily handled. It will also be seen that the constant draft up the flue or stack will keep the air in all

parts of the vault perfectly pure, as each part of the latter has constant communication therewith.

Having thus described my invention, what I claim is—

1. In a dry closet, the combination, with walls forming a vault, of an apertured cover therefor, a perforated removable pan contained in the said vault below the aperture in the said cover, a furnace contained in one end of the said vault and a stack connected with the other, a combined smoke and urine trough located below the said perforations in the pan and having its opposite ends above the base of the stack and furnace, respectively, and means whereby the elevation of one of the ends of the trough may be changed, substantially as described.

2. In a dry closet, the combination, with a stack, of a furnace connected therewith, a urine-trough having its opposite ends located

above the base of the said stack and above the furnace, and means whereby either of the said ends may be caused to be the higher, as may be desired.

3. In a dry closet, the combination, with a removable perforated pan, of a combined smoke and urine trough located below the perforations in the said pan, a stack and a furnace contiguous to the opposite ends of the said trough, evaporating-pans located in the said stack and furnace below the ends of the trough, and a rod having an enlargement thereon below the said trough and adapted to alter the inclination thereof, as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN S. RUSH.

Witnesses:

WM. MCCONNELL,
FRED. W. FELDWISCH.