

(No Model.)

3 Sheets—Sheet 1.

D. S. SCHUREMAN.
WATER CLOSET.

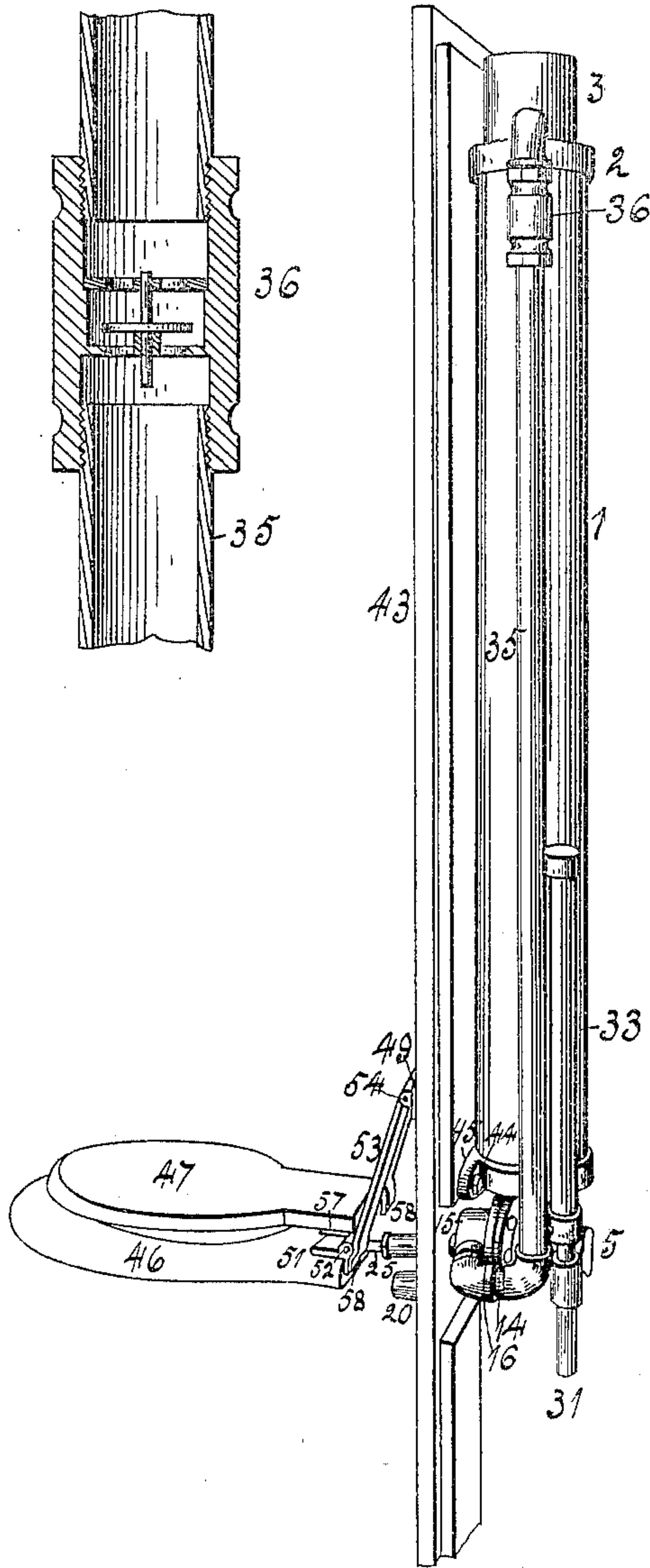
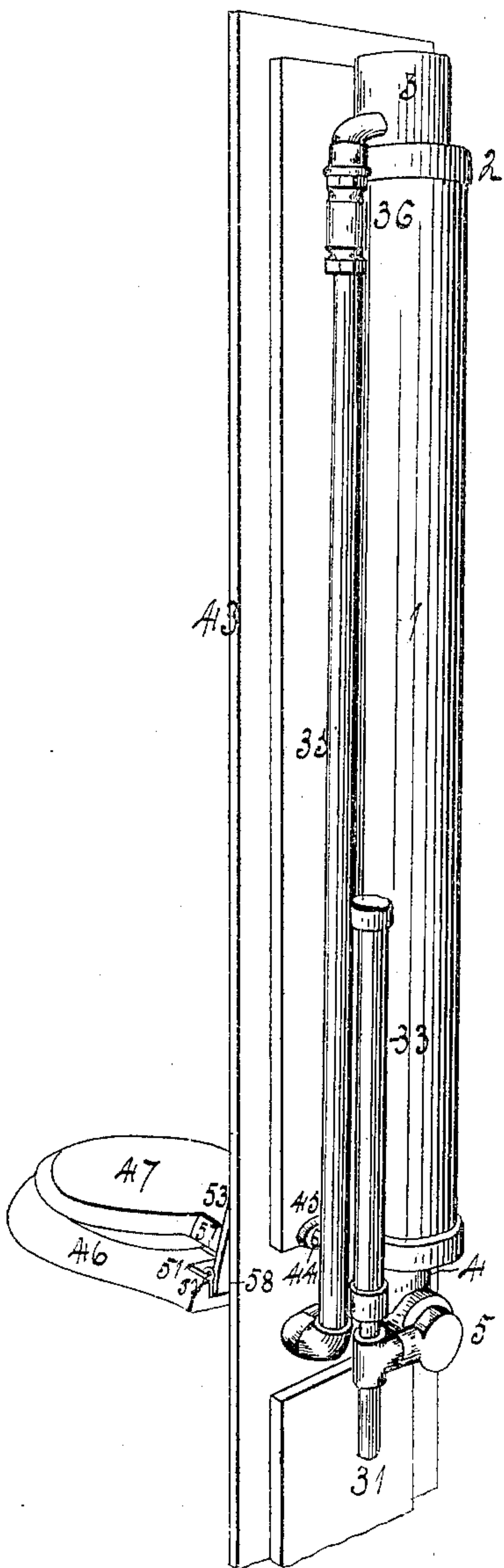
No. 604,548.

Patented May 24, 1898.

Fig. 1.

Fig. 3.

Fig. 2.



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Fig. 4.

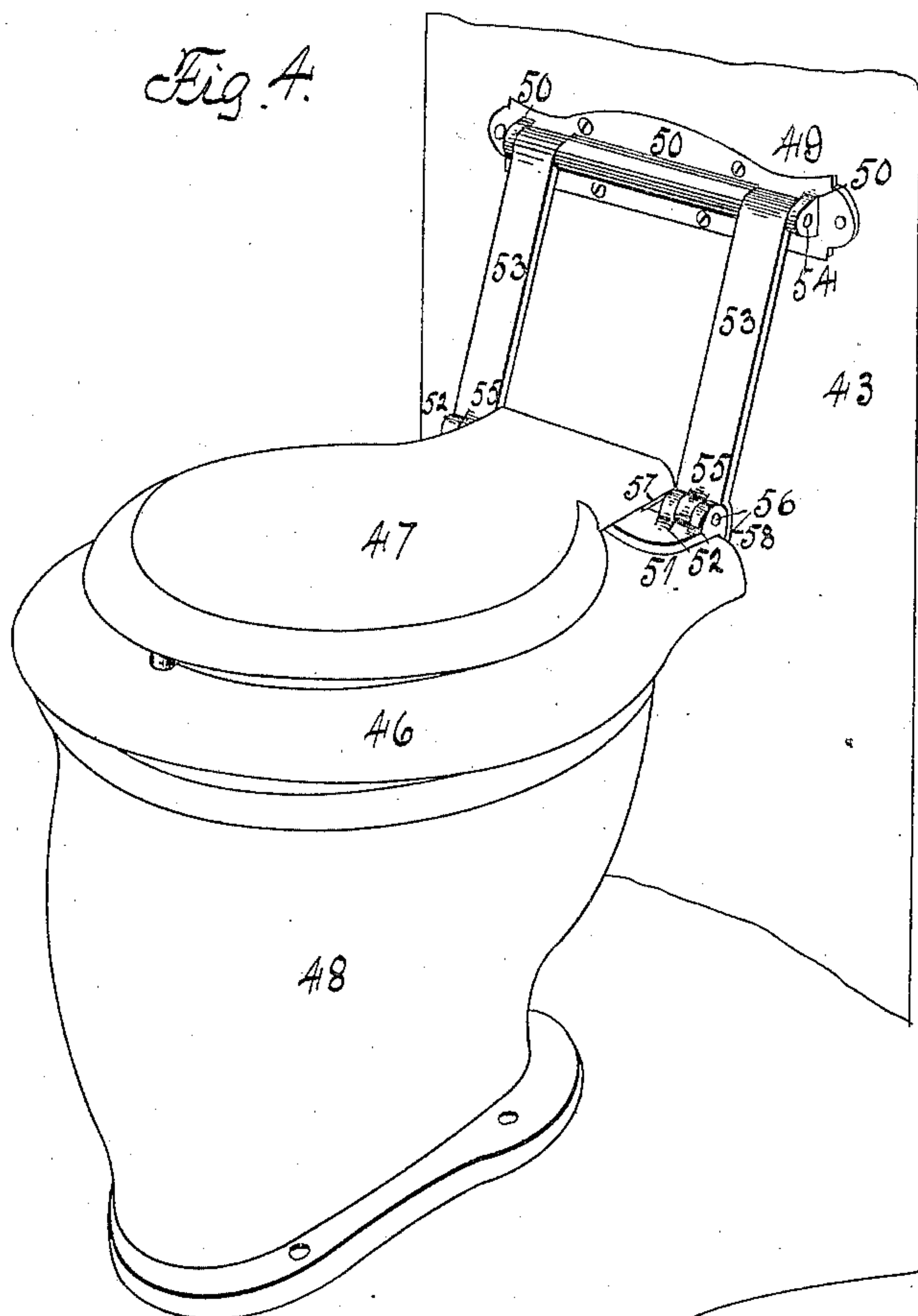
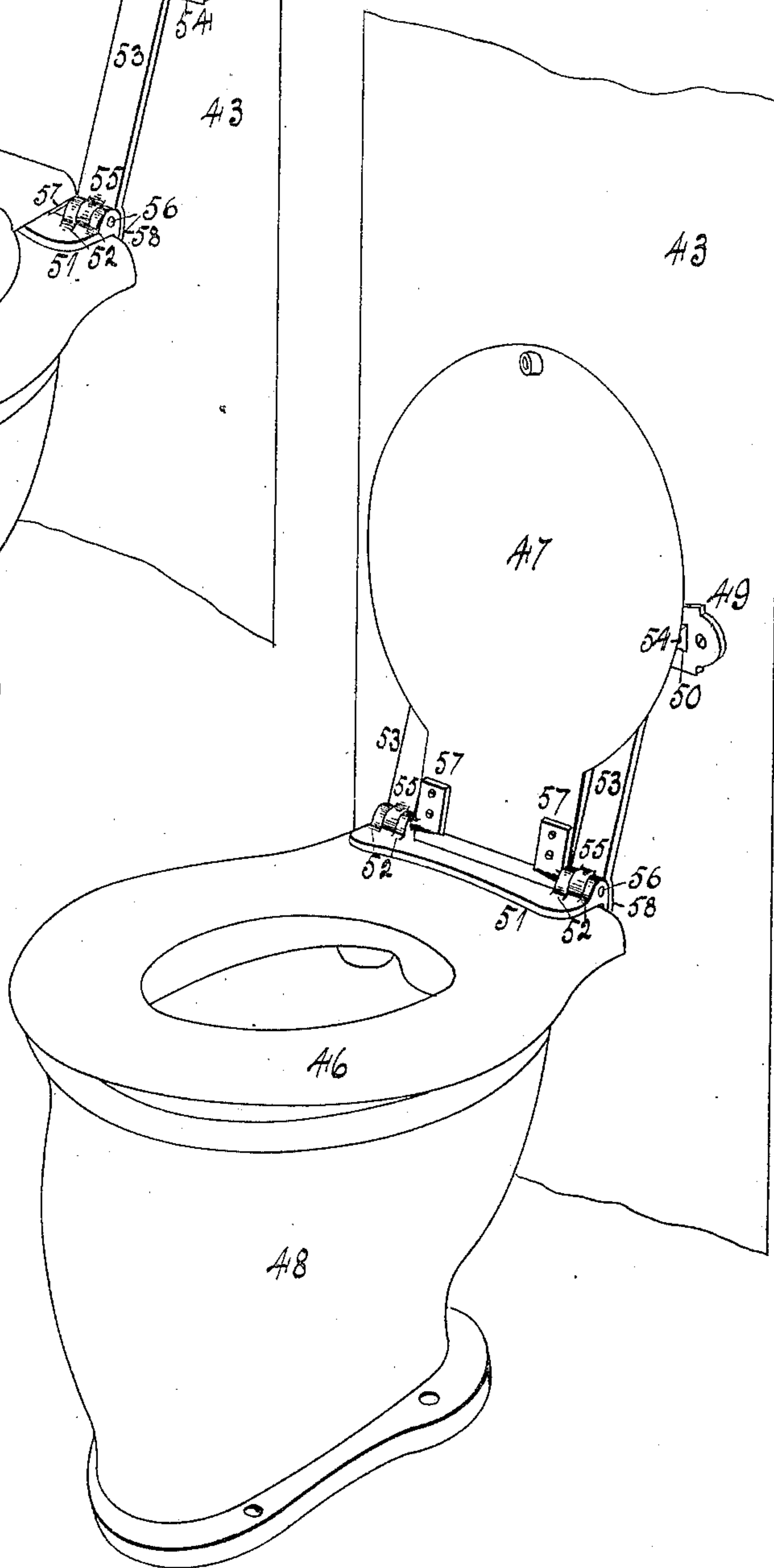


Fig. 5.



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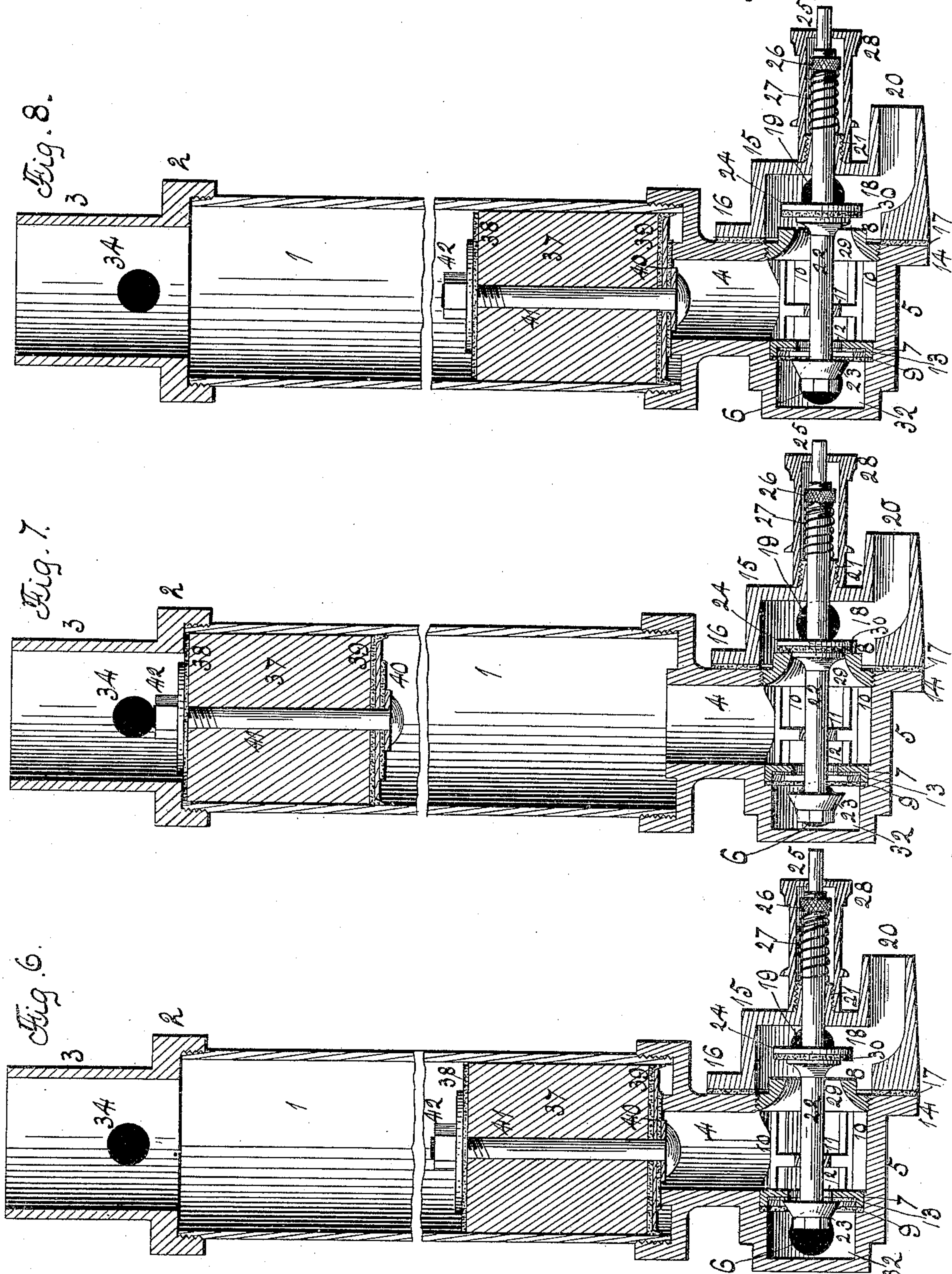
(No Model.)

D. S. SCHUREMAN.
WATER CLOSET.

3 Sheets—Sheet 3.

No. 604,548.

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UNITED STATES PATENT OFFICE.

DAVID S. SCHUREMAN, OF ROCKFORD, ILLINOIS.

WATER-CLOSET.

SPECIFICATION forming part of Letters Patent No. 604,548, dated May 24, 1898.

Application filed January 16, 1897. Serial No. 619,437. (No model.)

To all whom it may concern:

Be it known that I, DAVID S. SCHUREMAN, a citizen of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Water-Closets, of which the following is a specification.

The object of this invention is to construct a seat-action water-closet tank wherein the tank can be secreted in the wall or partition of the building and be noiseless in its operation. It is a vertical tube in which a movable weight supported on the water gives even and regular pressure to the water while being discharged into the bowl and a valve arrangement whereby pressure on the free end of the seat conveys said pressure to the valve-stem by abutting the rear end of seat against the valve-stem and thereby controlling the action of the water, also a seat for the bowl supported independently of the bowl.

In the accompanying drawings, Figures, 1 and 2 are perspective views of my improvements. Fig. 3 is a vertical view of the check-valve. Figs. 4 and 5 are perspective views of the bowl, seat, cover, and hinge connection. Figs. 6, 7, and 8 are vertical sections through the tube and valve connections.

A tube 1 is located in a vertical position, and at its upper end is a screw-threaded cap 2, having an extension 3, its upper end being open. To the lower end of the tube is screw-threaded a casting consisting of a vertical cylindrical tubular portion 4 and a horizontal tubular portion 5, having an inlet-opening 6. A valve-seat is located within the horizontal tubular portion and consists of two heads 7 and 8, the former being of less diameter than the latter, and seated in an annular recess within which is located a ring 9, of packing material. The head 8 has its periphery screw-threaded, and the outer end of the horizontal portion is screw-threaded, receiving the head. These heads are connected by bars 10, and the bars support a transverse valve-support 11. The head 7 has a central opening 12, and its outer face supports a packing-ring 13. The outer face of the head 8 is fitted to form a valve-seat, and the outer face of the open end of the tubular portion 5 has a flange 14. A cap 15 has a flange 16, and a ring 17, of packing material, is placed between the face of the flanges, which are held together by screws. This cap has an annular space 18

and an opening 19 formed therein. At the bottom thereof is formed a water-discharge 20. A screw-threaded extension 21 projects from the end of the cap and has a central opening.

The valve is automatic and closes with the pressure from the mains, and the arrangement consists of a valve-stem 22, held supported by the support 11 and the extension 21.

To the end of the stem is secured a valve 23, and midway of its length is secured a valve 24. The extreme outer end of the valve-stem has a reduced portion 25, and the larger end is screw-threaded, upon which is turned a nut 26. A spiral spring 27 for carrying the weight of the seat surrounds the stem between the end of the extension 21 and nut 26. A cap 28 has an opening in its end, through which the reduced portion of the valve-stem projects, its open end having a screw-threaded connection with the extension 21.

The valve 23 is adapted to close the hole 12 in the head 7 and the valve 24 to close the opening 29 in the head 8, having its inner face provided with a packing-ring 30. A pipe 31 has a connection with chamber 32 through the opening 6 and a pipe 33, the upper end of the pipe being closed, forming an air-chamber. The upward extension 3 of the cap 2 has an opening 34, which is connected with the opening 19 in the cap 15 by a pipe 35, supporting a check-valve 36 near its upper end. Within the tube is located a weight 37, having a packing-ring 38 placed upon its upper end. A cup-packing 39 and a disk-packing 40 are held in contact with the weight by a bolt 41, passing through the parts, receiving a nut 42 on its projecting ends. When their parts are in their normal position, they appear as shown at Fig. 6, water being admitted into the chamber 32, holding valve 23 against its seat by the pressure of the water in the mains, thereby preventing the water entering the tube. By moving the valve-stem into the position shown by Fig. 7 the valve 23 will be opened and the valve 24 closed by the pressure of the rear end of the seat. This allows the water to pass through the opening 12 in the head 7 into the tube, and the pressure of the water from the mains will force the weight 37 up until the packing 38 comes in contact with the cap 2, thereby preventing the ingress of any more water while valve 24 is closed by the seat bearing against it.

Upon returning the valves to their normal positions by releasing the seat from the end of the valve-stem the inlet of the water will be cut off by the pressure from the mains acting on the back of valve 23, and the weight 37 will force the water out of the tube in an even regular flow without noise through the opening 29 in the head 8, through the discharge-opening 20, into the bowl of the closet. The opening 20 being of less section than the other passages between the weight and opening 20, the weight in descending gives sufficient force to the water to back it up in pipe 35, through the opening 19, causing the check-valve to close after a small portion of the water has passed it. This water goes over into the tube on top of the weight and remains there until the next operation. When the weight ascends during the next operation, this water that was on top of the weight goes over in the pipe and down in the bowl, thereby dampening it and preventing excrement adhering to the bowl.

The water that ascends the pipe 35 as far as the check-valve remains there until the weight is down. Then it flows into the bowl gradually, replacing the loss in the trap caused by siphonage by the soil falling down the soil-pipe, resetting the siphon. A sufficient flow of water can be had for rinsing the bowl after slops have been dumped in it by depressing the seat only part way, thereby obtaining a flow of water without raising the weight, and thus obviating the use of a full tank of water. This is illustrated in Fig. 8.

The tube and connections are fastened to the back of a plank, if wood wainscoting is used, or marble, if marble is used, or to a perforated cast-iron slab, if tiling is used, as actual demonstration shows that it is perfectly safe to plaster or tile over it, as a register-face placed on the wall around cap 15 large enough to take out flange 16 will admit to all its working parts. To set properly, it is fastened to the plank 43, &c., by screws 44, passing through the lugs 45, which extend out on the plank 43 from the casting connected to the lower end of the tube.

To the face of the plank or wall 43 is secured the seat 46 and cover 47 for a bowl 48. These parts are connected by a hinge consisting of a plate 49, secured to the plank or face of the wall 43, said plate having ears 50, and a plate 51, secured to the rear end of seat, having vertically-extending ears 52. Two arms 53 have a pivotal connection with the ears 50 on plate 49 by a rod 54, extending through the arms and ears 50 and 53; and the aforesaid arms have a pivotal connection with the ears 52 on plate 51 by pins 55, which have plates 57 on the inner ends, which screw to under side of lid 47, thus forming a pivotal connection between the seat, cover, and arms. The arms 53 are provided with extensions 58, which engage with angle extensions on plate 51 at rear end of seat, thereby form-

ing a stiff joint to prevent the free end of seat from dropping when the rear end rests against the valve-stem. This combined seat and cover are located above the bowl 48 and one-half inch above it at the rear end, in the manner as set forth, in order that when weight is applied to the free end of seat it will not come in contact with the bowl, but wholly supported by its hinge connection to the face of the wall 43 and the rear end seat resting against the valve-stem. This closes valve 24 and gives a solid support for the seat, as plate 51 has an angle projecting over the rear end of seat to engage the valve-stem. This weight on the free end of seat makes the seat strike inward with an arc having rod 54 for its pivotal point, and the stroke being only three-eighths of an inch there is no friction. This same stroke opens valve 23 against the main pressure, but the movement of closing valve 24 and opening valve 23 is so gradual that it permits water direct from the mains to rush through before 24 is closed, and thereby forming a forewash to prevent excrement adhering to the bowl. This action and the return of the water from over the weight gives two intermediate washes that are very essential to cleanliness of the bowl and have been much sought after. Releasing the pressure from the free end of the seat the spring raises the seat and the pressure from the mains cuts off the water by valve 23 and flushes the bowl by valve 24 opening simultaneously, thereby leaving the tube empty until the next operation. The cover 47 is free to be raised independently of the seat or with the seat-pins 55, forming the pivot, or the whole can be raised entirely from a close proximity of the bowl up against the wall by using rod 54 as the pivot. This is a feature much sought after, as repairs do not necessitate the removal of the seat, or an accident to the bowl does not require the purchase of a new seat or any work upon it.

I claim as my invention—

1. In a water-closet, the combination of a tube having an open contracted upper end, a movable weight located within the tube, a discharge-chamber a valve arrangement for admitting water into the tube below the weight and allowing water to escape into the discharge-chamber and a stand-pipe connection between the upper end of the tube and discharge-chamber, said pipe supporting a check-valve.

2. In a water-closet, the combination of a suitable support, a valve arrangement, a bracket secured to the support, a seat, a bracket secured to the seat, links pivotally connecting the two brackets, and a cover pivotally connected to the seat, the seat resting against the valve arrangement.

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