No. 886,470. PATENTED MAY 5, 1908.

J. O. BREE.

FLUSHING TANK AND CLOSET.

APPLICATION FILED AUG. 6, 1907.

2 SHEETS—SHEET 1.

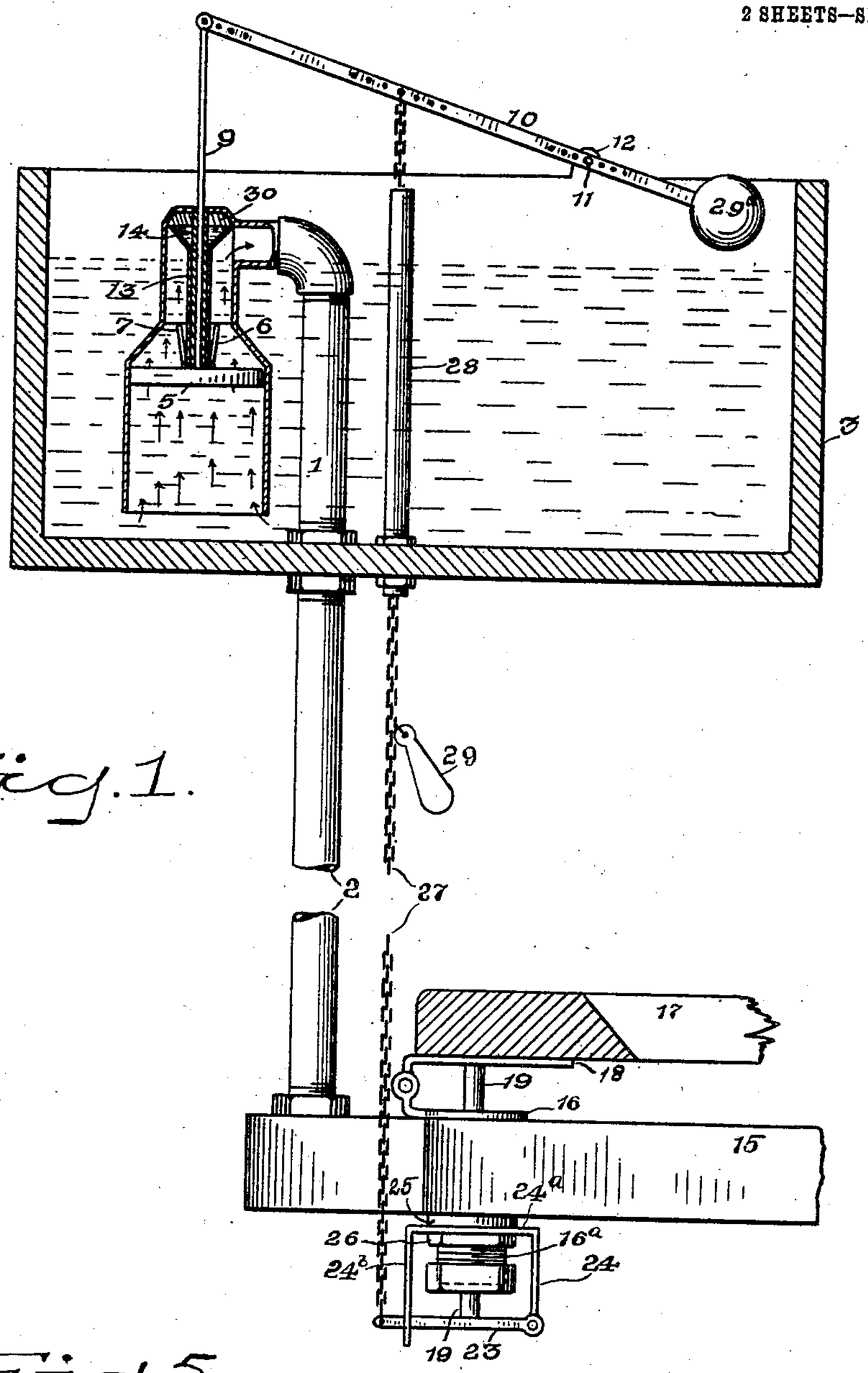
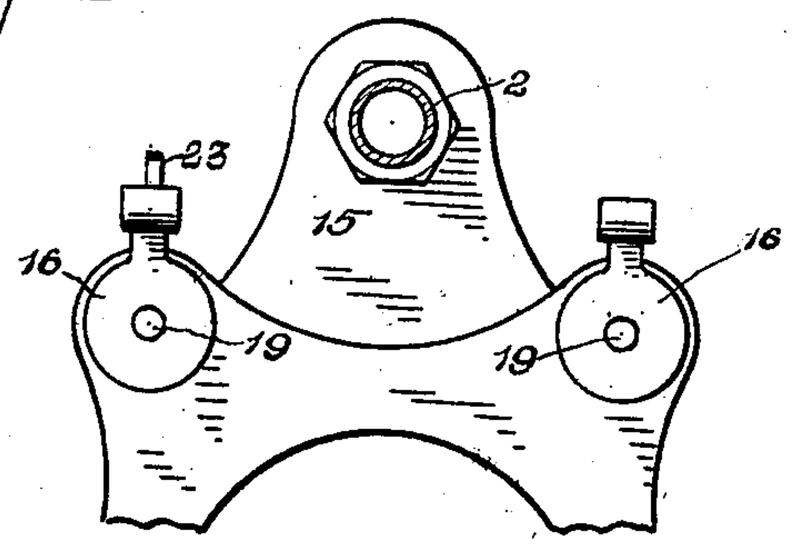


Fig. 1.

Fig. 5.



WITNESSES

H. A. Lamb

G. M. Finn

INVENTOR

Joseph O. Bree.

BY Geo. L. Phillips.

his ATTORNEY

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2 SHEETS—SHEET 2.

Fig. 2.

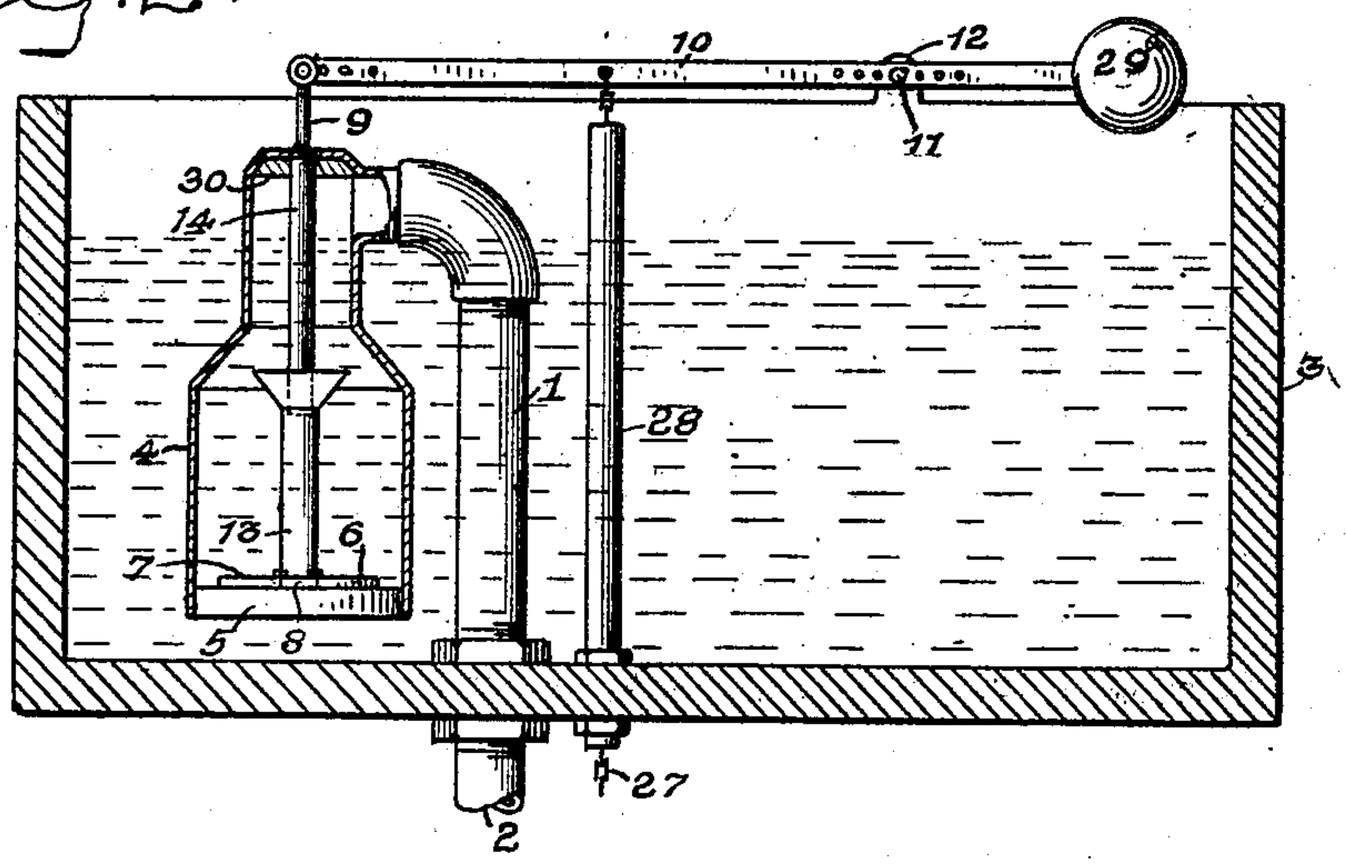


Fig. 3.

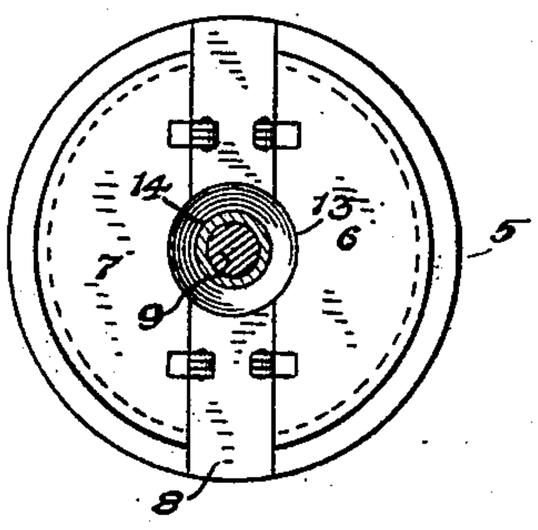


Fig. 4.

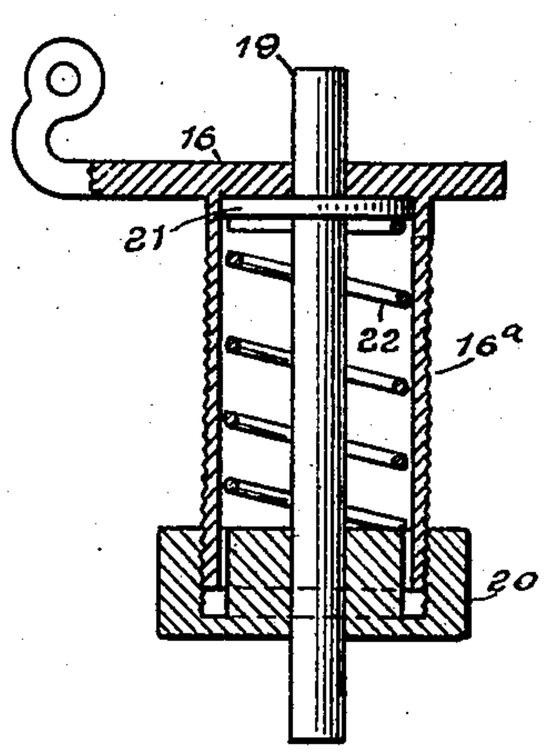
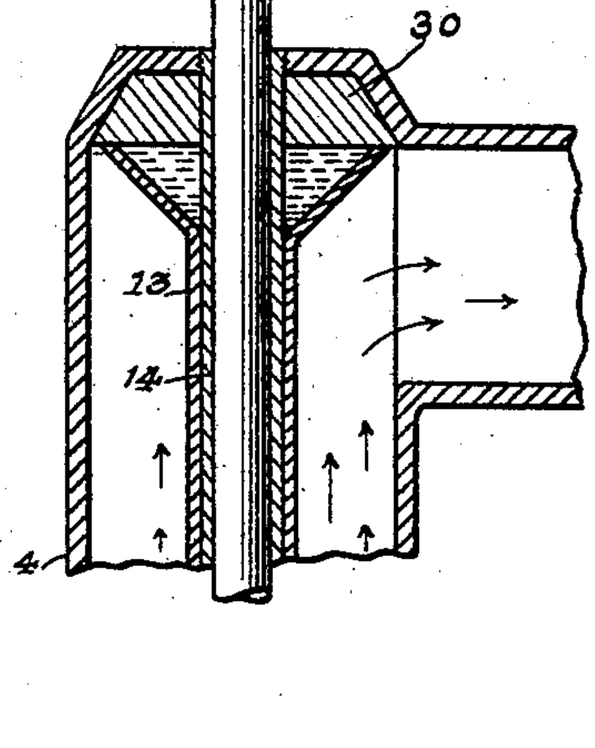


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOSEPH O. BREE, OF PORT CHESTER, NEW YORK.

FLUSHING-TANK AND CLOSET.

No. 886,470. Specification of Letters Patent. Patented May 5, 1908.

Application filed August 6, 1907. Serial No. 387,294.

To all whom it may concern:

Be it known that I, JOSEPH O. BREE, a citizen of the United States, and a resident of Port Chester, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Flushing-Tanks and Closets, of which the following is a specification.

My invention relates to certain improvements in flushing tanks for water closets, and it consists in certain details of construction to be more fully set forth in the following specification.

To enable others to understand my invention, reference is had to the accompanying drawings, in which:

Figure 1 represents a sectional view of the tank, broken sectional view of a part of the goose-neck, and broken view of the flush-pipe and flush-chain, broken view of the upper part of the closet-bowl, and broken view partly in section of the wooden seat; Fig. 2 is a sectional view of the tank, broken sectional view of a part of the goose-neck, broken view of the flush-pipe and flush-chain; Fig. 3 is a detail upper plan view of the valve, sectional view of the valve-rod and water sealing tube; Fig. 4 is a detail broken sectional view of the seat hinge spring case, sectional view of the spring, sectional view of the spring adjusting nut and full view of the plunger; Fig. 5 is a broken upper plan view of the water closet and sectional view of the flush pipe; Fig. 6 is an enlarged broken sectional view of the upper part of the goose-neck, broken view of the valve-rod, broken sectional view of the water sealing tube, broken sectional view of the guide-pipe therefor and sectional view of the packing at the upper end of the goose-neck.

The goose-neck comprises the pipe 1 which is an extension of the flush-pipe 2 projecting without the tank 3. The bell-shaped part 4 of the goose-neck is of larger internal area than the part 1, and within this bell-shaped part is operatively mounted the valve 5 having (see also Fig. 3) the clappers 6 and 7 hinged to the cross-piece 8. 9 is the valve-rod whose lower end is secured to this cross-piece while its upper end is pivoted to the lever 10 journaled on the rod 11, which rod is mounted in ears projecting from the upper edge of the tank, one of said ears 12 being shown at Figs. 1 and 2.

13 is a tube whose lower end is secured to the cross-piece 8 and whose upper end is bell-shaped for the purpose presently to be more fully described. 14 is another tube secured by one end to the upper end of the goose-neck while the lower end projects within the tube 13 to serve as a guide therefor, both of said tubes surrounding the valve-rod.

15 (Figs. 1 and 5) is the upper rear overhanging portion of a closet-bowl, and 16 (see also Fig. 4) are hinge-plates having the case or barrel 16ª integral therewith, which case is exteriorly threaded and is inserted in holes (not shown) provided in the closet-bowl. The seat 17 is provided with hinge-plates, one of which, 18, is shown at Fig. 1, adapted to be pivoted to the hinge-plates of the closet-bowl. As the hinge constructions of the closet and seat are alike, the same reference numeral will answer for both.

19 is a plunger operatively mounted in the hinge-plate 16 and the spring adjusting nut 20, and 21 is a flange integral with this rod and adapted to rest on the spring 22 within the case 16ª.

The hinge-plates of the seat rest on the upper end of the plungers while the lower end of one of said plungers rests on the lever 23, which lever is pivotally supported to the lower end of the leg 24 of an angular bracket whose horizontal portion 24ª is secured between the packing washer 25 and the nut 26, while the other leg 24ᵇ of said bracket has an opening (not shown) to receive the lever 23 and to serve as a guide therefor. To the free end of lever 23 is attached the flush-chain 27 passing up through the tube 28 within the tank and is connected to the operating lever 10.

Normally, all the moving parts connected with the tank and closet-bowl are in the position shown at Fig. 1, except the clappers 6 and 7, which clappers are, of course, closed. When, therefore, pressure is applied to the closet-seat, or a pull exerted on the flush-chain by means of the handle 29, the lever 23 is actuated to depress the tank-lever 10 to depress or carry the valve 5 down to the mouth of the goose-neck. As the interior of the goose-neck is normally filled with water up to the point shown, the instant said valve starts on its downward movement, the clappers 5 and 6 will open to lessen the resistance of the valve against the water, and when the valve has reached the mouth of the goose-neck (Fig. 2) and the downward pressure on the tank-lever 10 is released, the weight 29ª thereon will lift the valve, with its

clappers closed and carry the body of water above said valve over into the small flush-pipe portion of the goose-neck. As fast as the valve rises, the water will flow into the open mouth of the goose-neck, and when the valve has reached its highest point, as shown at Fig. 1, the clappers being relieved from the weight of water above the valve by reason of the greater bulk of said water having been carried or lifted over into the flush-pipe, said clappers will open by reason of the greater pressure of water from below and thus siphon all the water from the tank or to a previously determined point therein.

To seal the upper part of the goose-neck against the escape of water and the admission of air which would otherwise break the siphon, the packing 30, seen more clearly at Fig. 6, is placed in this upper part so that, when the valve has reached its highest point, the bell mouth, which is always full of water, will be brought firmly against the packing 30 and thus effectually seal this upper portion of the goose-neck. The tube 14 being secured to the upper end of the goose-neck with its lower end always within the tube 13, serves both as a guide for the valve-rod and said tube 13, so that this arrangement of the tubes, combined with the packing 30, forms a perfect air and water seal which could not be effected with any ordinary stuffing-box commonly used in connection with valve-rods for similar purposes. The means for refilling the tank not being shown as any well known means can be employed for this purpose.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In combination, a tank, a flush-pipe projecting therefrom, a goose-neck mounted on said pipe and within the tank and having a bell-shaped portion of larger area than the flush-pipe, a clapper-valve within said larger portion, a bell mouth sealing tube connected to the valve, a guide-tube connected to the upper part of the goose-neck and projecting within the bell mouth tube, a valve-rod connected to the valve, a weighted fulcrumed lever pivotally connected to the upper end of said rod, and a packing at the upper end of the goose-neck against which the bell mouth tube is brought during the siphoning of the tank, for the purpose set forth.

2. The combination with an open-ended goose-neck, of a flushing tank and a clapper-valve, valve-rod and its operating lever, of an open ended bell mouth sealing tube secured to the valve, a guide-tube secured to the goose-neck and projecting within the sealing-tube, a packing against which the sealing-tube is brought when the valve is at its highest point, both of said tubes embracing the valve-rod, for the purpose set forth.

3. The combination with a flush tank and a closet-bowl, of a weighted lever fulcrumed to the tank, a goose-neck having a clapper-valve with its rod pivotally connected to said lever, means carried by the valve for sealing the upper end of the goose-neck against the entrance of air thereto and the escape of water therefrom, hinge-plates having a case or barrel portion integral therewith adapted to be inserted in the closet-bowl, a seat having hinge-plates pivoted to the hinge-plates of the bowl, a spring actuated plunger within said barrels, means for adjusting said springs, one end of said plunger engaging with the seat, a pivoted flush chain lever adapted to be engaged by one of said plungers, a bracket secured to one of the said barrels to serve as a pivotal point for the flush-chain lever and as a guide for the same, for the purpose set forth.

Signed at Bridgeport in the county of Fairfield and State of Connecticut.

JOSEPH O. BREE.

Witnesses:

GEO. D. PHILLIPS,

JOHN B. CLAPP.