

(No Model.)

L. & J. BRANDT.

WATER CLOSET.

No. 315,467.

Patented Apr. 14, 1885.

Fig. 2.

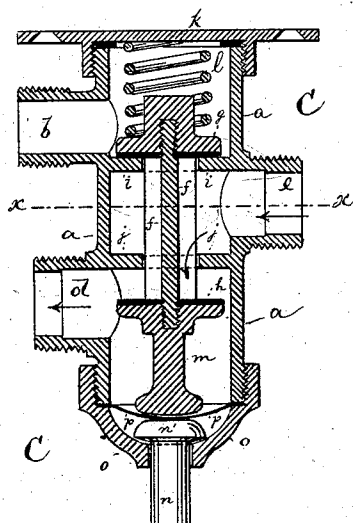


Fig. 3.

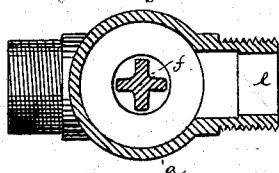


Fig. 4.

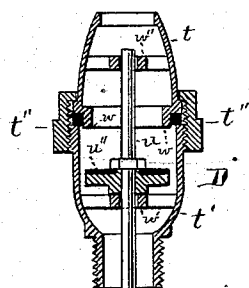
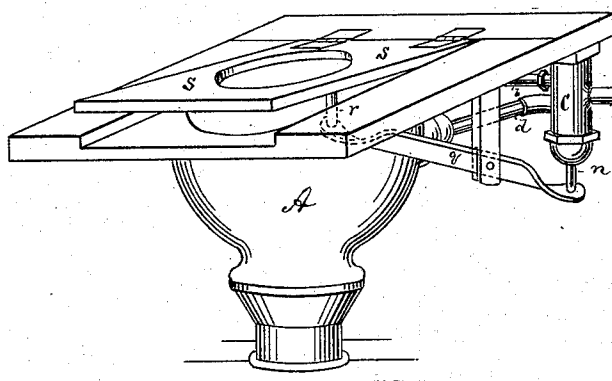
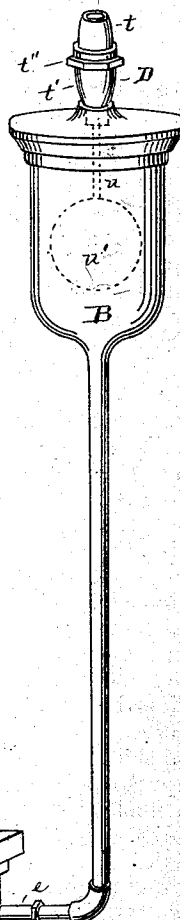


Fig. 1.



WITNESSES:

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LOUIS BRANDT AND JOHN BRANDT, OF NEW YORK, N. Y.

WATER-CLOSET.

SPECIFICATION forming part of Letters Patent No. 315,467, dated April 14, 1885.

Application filed March 7, 1884. (No model.)

To all whom it may concern:

Be it known that we, LOUIS BRANDT and JOHN BRANDT, both of the city of New York, in the county and State of New York, have invented a new and useful Improvement in Water-Closets, of which the following specification is a full, clear, and exact description.

This invention relates to novel means whereby the flushing-tank of a water-closet is automatically filled when the seat is depressed, and whereby the water is discharged into the bowl as soon as the seat is released.

The invention consists in the various elements of improvement pointed out in the description and claim.

In the accompanying drawings, Figure 1 is a perspective view of our improved water-closet. Fig. 2 is a vertical central section through the supply and discharge valve; Fig. 3, a cross-section on the line *x x*, Fig. 2, and Fig. 4 a vertical central section through the valve on top of the flushing-tank. Fig. 1 is drawn on a smaller scale than the remaining figures.

The letter A represents the bowl of a water-closet. B is the flushing-tank, C the supply and discharge valve, and D the valve on top of the flushing-tank. The valve C is a double valve, as hereinafter more fully pointed out, and consists, essentially, of a cylindrical casing, *a*, that communicates with three pipes, *b d e*. The pipe *b* is the inlet-branch, and connects it with the water-supply. *d* is the discharge-branch, and connects it to the bowl A, and *e* is the pipe that connects with the elevated flushing-tank B. It will be seen that the pipes *b d* enter casing *a* near its upper and lower end, respectively, while the pipe *e* enters it between the other pipes. Within casing *a* plays a vertical valve-rod, *f*, made, preferably, cross-shaped in horizontal section, Fig. 3, to form four vertical channels.

To the upper end of stem *f* is secured the valve-disk *g*, having a washer at its lower side, and to the lower end of stem *f* is secured valve-disk, *h*, having a washer at its upper side. The seat *i* for valve-disk *g* is placed below inlet *b*, and the seat *j* for valve-disk *h* above outlet *d*. A screw-cap, *k*, closes top of casing *a*, and serves to attach it to the water-closet frame. A spiral spring, *l*, is interposed between cap *k* and valve-disk *g*. To the lower side of valve-

disk *h* is secured a projection, *m*, having rounded head, and against this head bears the rounded head *n'* of a pin, *n*, that passes through screw-cap *o*, which is screwed into the bottom of casing *a*. Within this screw-cap *o* is placed an elastic diaphragm, *p*, that is interposed between the pins *m n*, and prevents water from flowing out of bottom of casing *a* in any position of the pins. The pin *n* rests upon one end of a lever, *q*, the other end of which is placed beneath a pin, *r*, attached to bottom of seat *s*. When the seat is not occupied, the parts are in the position shown in Figs. 1 and 2—that is to say, the supply-pipe is closed and the discharge-pipe opened. As soon, however, as the seat is depressed the lever *q* oscillates, and the pin *n* will push up valve-rod *f*, thereby closing discharge-pipe and opening the supply. Water will now rush into flushing-tank B until checked by valve D, in manner hereinafter specified, and will stand in the tank as long as the seat is occupied. When the seat is released, the valve C reassumes the position shown in Fig. 2, as the spring *l* will force down the valve-rod as soon as pressure on pin *n* ceases. Water from the service-tank B will now flow into and wash bowl A until the tank is exhausted.

The construction of valve D is as follows: The casing of valve D consists of upper half, *t*, and lower half, *t'*, coupled to one another by an encircling-nut, *t''*. A valve-rod, *u*, having float *w'* attached to its lower end, is free to move up and down. This valve-rod *u* is provided with valve-disk *u''*, that closes against a seat, *w*, (formed on lower edge of section *t*), when the valve-rod is raised. Within the lower section, *t'*, is a rest, *w'*, for valve-disk when the valve-rod is lowered. Thus, the amount of vertical motion of float *w'* is limited to the play of the valve-disk *u''* between its seat *w* and rest *w'*. When the valve-disk bears against its seat *w*, the valve is entirely closed, and no air or water can escape. When, however, the valve sets on rest *w'*, the admission of air is not prevented, the object of rest *w'* being merely to prevent farther downward motion of valve-rod.

w'' is a cross-guide for valve-rod *u* in upper valve-casing, *t*.

The operation of the entire device is as fol-

lows: When the water is admitted into flushing-tank B by the depression of seat *s*, in manner hereinbefore described, the water will continue to flow into the flushing-tank until it has raised the float *u'* to such a height that the valve-disk *u''* is pressed against its seat *w*. Then the inflow will cease, though the seat remains compressed as the tank is closed. As soon, however, as the seat *s* is released the water will be free to flow out of the discharge-pipe *d*, and the float will fall until the valve-disk *u''* sets upon its rest *w'*; but as this does not close valve D the air-pressure continues, and the water will be discharged into the bowl until the flushing-tank is empty.

We are aware that three-way valves have been used in connection with closet-seats, and we do not claim such an arrangement broadly;

but by placing the valve at the rear of the seat and connecting it with the front of the hinged seat by a lever the full force of the weight on the seat may be utilized, and the valve still be in the most convenient position.

We claim as our invention—

The combination, in the flushing-tank valve D, of the following elements: upper casing, *t*, having valve-seat *w* at its lower edge, lower casing, *t'*, encircling nut *t''*, rod *u*, float *u'*, disk *u''*, rest *w'*, and cross-guide *w''*, substantially as specified.

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Witnesses:

F. v. BRIESEN,
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