(No Model.)

J. W. GROWS.

FLOAT TRAP FOR WASH BASINS, &c.

No. 372,312. Patented Nov. 1, 1887.

Fig. 1

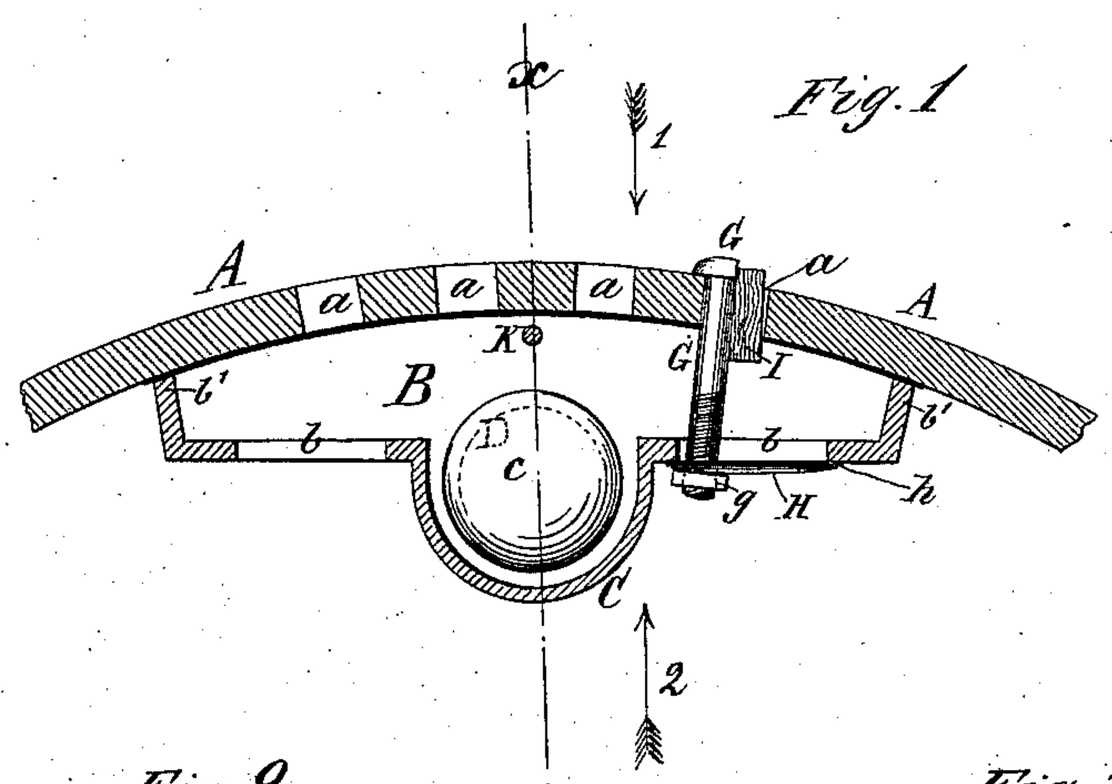


Fig. 2

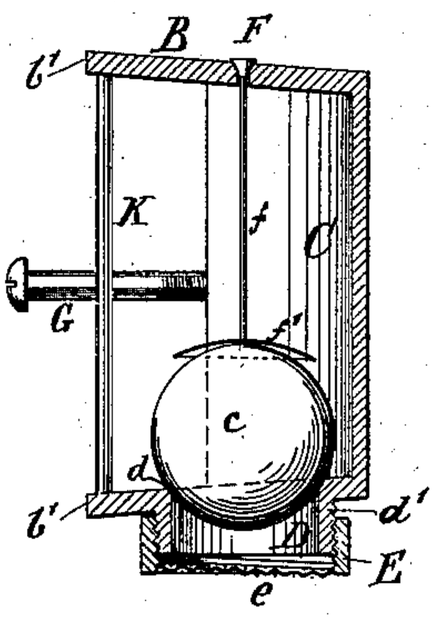


Fig. 3

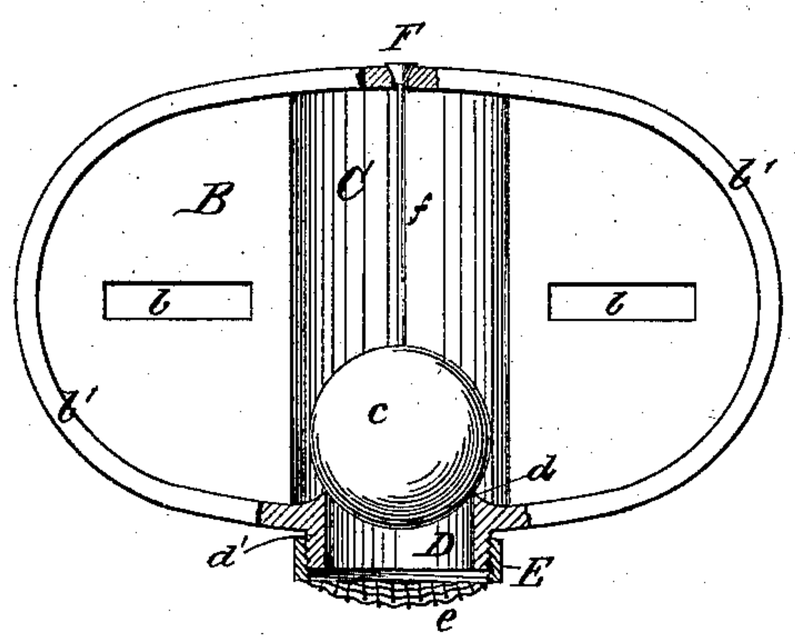


Fig. 4

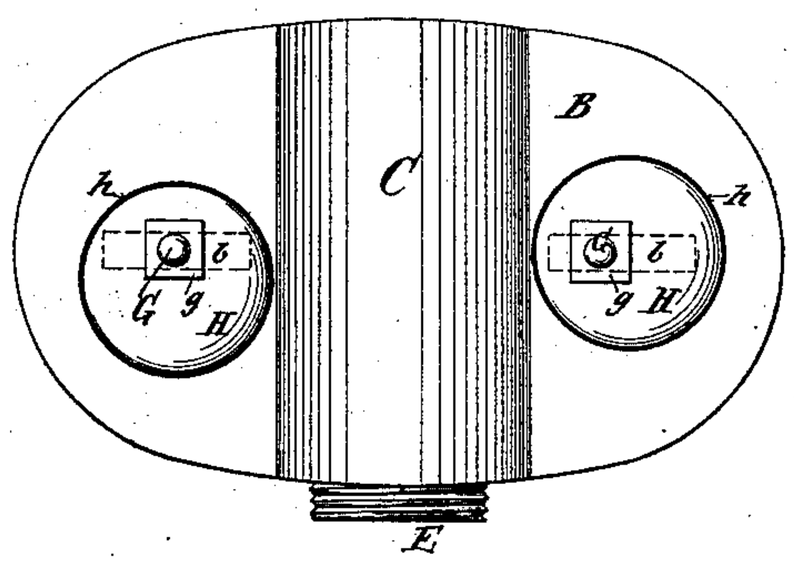
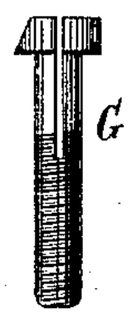


Fig. 5



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UNITED STATES PATENT OFFICE.

JOHN W. GROWS, OF NEW YORK, N. Y.

FLOAT-TRAP FOR WASH-BASINS, &c.

SPECIFICATION forming part of Letters Patent No. 372,312, dated November 1, 1887.

Application filed March 22, 1886. Serial No. 196,115. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. GROWS, a citizen of the United States, and a resident of New York, in the county and State of New York, have invented new and useful Improvements in Float-Traps for Wash-Basins, &c., of which the following is a specification.

My invention relates to improvements in float-traps to prevent gases from the waste-pipe entering the air of a room through the overflow-holes in a wash-basin.

The object of the invention is to provide additional improvements to the invention for the same purpose, patented to me December 21, 1880, No. 235,629.

The improvements consist in the combination, with a float-valve, of a small air-valve operated simultaneously therewith, so as to balance the air-pressure and thereby make the float-valve operate easier; also, in the combination, with the float-valve and casing, of a guide-wire to always keep the float in proper position to resume its seat; also, an improved device for fastening the valve casing to the wash bowl by the combination of a slotted casing and a washer with a fastening-screw attached eccentrically thereto; and, also, in the combination, with the inlet-opening and the valve-casing, of a wire screen to prevent dirt from arising and clogging the valve-seat, all of which will be fully described, and specifically pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 represents a horizontal section through the valve-casing and a portion of the wash-bowl to which it is attached. Fig. 2 is a vertical section taken on the line *x x* of Fig. 1. Fig. 3 is a face view of the valve and valve-casing, seen in direction of arrow 1 of Fig. 1. Fig. 4 is a similar view seen in the direction of arrow 2 of Fig. 1. Fig. 5 is a modification of the fastening-screw.

A designates a portion of the wash-basin, and *a* the holes through the same, through which the overflow runs down to the sewer-pipe by way of the water seal or trap below.

B is the cap or valve-casing, whose flange *b'*, fitting the curvature of the wash-basin, is provided with packing to keep it air-tight to its place.

C is the vertical groove, U-shaped or semi-circular in cross-section, in which the float-valve *c* moves until at rest upon the seat *d* at the inner end of the inlet-opening D, as in my previous patent above referred to. The valve-seat *d* may be hollow, conical, or spherical, as shown in Fig. 2, to receive a conical or spherical float-valve; or the upper edge of the valve-seat may be sharp or flat, as in Fig. 3, adapting it to suit a flat valve as well as a globular one. The inlet is provided with a nipple, *d'*, threaded on the outside to receive a cap, E, threaded correspondingly on the inside to fit the said nipple, and the said cap is provided with a flat or concave screen, *e*, whose object is to prevent dirt from entering and clogging the valve-seat.

My experience has shown that when the water flows through the holes *a* down into the waste-pipe the air in the said pipe, which is confined between the holes *a* and the upper surface of the water in the trap below, becomes compressed by the downflowing water, and, rising to the surface, acts upon the float-valve *c*, so as to press the same down upon its seat with sufficient force to counterbalance the little head of water which may be in the wash-basin above the outlet D. To overcome this difficulty I have provided a small air-valve, F, to be opened by the rising of the float *c*, so as to let out a portion of the compressed air and equalize the air-pressure outside and inside of the casing B. This little valve F has a seat in the upper surface of the casing B, as shown in Figs. 2 and 3, and a fine wire or rod, *f*, depends from the valve, and its lower end is either fastened to the valve *c*, as in Fig. 3, or it is provided with a concavo-convex plate, *f'*, which rests on the valve *c*. It is evident that in either case the rising of the valve *c* will lift the air-valve F with the effect desired.

In order to always keep the valve *c* in position within the cavity C, whether or not attached to a wash-basin, I have provided the vertical guide K, secured to the upper and lower end of the casing, in position as shown in Figs. 1 and 2, the distance between said wire and the nearest adjacent edges of the cavity C being smaller than the diameter of the valve *c*, thus preventing the latter from getting out of place.

The device for securing the casing B to the

wash-basin I have improved and cheapened in the following manner, it having been found necessary to make the location of the fastening-screws adjustable, so as to correspond with the location of one or more of the holes *a*, by means of which the casing B is secured to the wash-bowl. For this purpose I provide the inner or front wall of the casing at either side of the cavity C with a horizontal slot, *b*, of sufficient length to enable the fastening-screw G, when inserted through one of the holes *a*, to project with its outer end through some portion of the said slot, and through a hole arranged eccentrically in the washer H, said washer being provided inside with a packing, *h*, so as to cover the slot air-tight, and being large enough, whether the screw is passed through the center or an end of the slot, (for instance, as shown in Fig. 4,) to cover the ends of the slot completely.

The construction of the fastening-screw itself I have cheapened by dispensing with the flanged and tapped shank, and the screw threaded in the same, as shown in my previous patent, and simply using a common bolt, the head of which I file off at one side, so that it may easily be entered through one of the holes *a* to engage (with the part of the screw-head not thus cut away) the outside of the wash-bowl, and retain such position by inserting at the opposite or cut-away side a small wooden wedge, I, as shown in Fig. 4. One screw, G, being thus attached in each of two opposite suitably-located holes, *a*, the casing B is simply placed upon them, so that the screws project through the slots *b*. The washers H are then applied, and all fastened in place tightly by the ordinary nut, *g*, on the ends of the screws G.

In Fig. 5 is shown a manner of constructing the screw or bolt G so as to obviate the use of the wedge I, and consists in making an axial slit longitudinally through a part of the screw, so that the integral parts at both sides of the slit will act as springs, and when closed together will lessen the diameter of the screw-head. The latter is then cut off inclined or wedge-shaped on one side, so that it may be fastened to the basin by forcing and thereby compressing it through one of the holes *a*, when passed through which it will expand on the outside of the wash-bowl and be held in substantially the same manner as the other screw, G.

Having thus described my invention, what I claim as new in connection with the overflow of wash-basins, and desire to secure by Letters Patent, is—

1. The combination, with the float-valve *c*, of an air-valve, F, and the rod *f*, supporting the said air-valve upon the said float-valve, for the purpose hereinbefore set forth.

2. The combination, with the float-valve *c*, of the air-valve F, provided with the depending rod *f* and the plate *f'* at the lower end of the said rod, substantially as specified.

3. The combination of a wash-basin, A, having overflow-holes *a*, and with the casing B, provided with slots *b*, and the bolt or screw G, having its head cut away at one side flush with the shank and securable by the wedge I, and a washer, H, covering said slot and having holes through it to receive the threaded end of the bolt G, and the nut *g*, tightened against the said washer, substantially as and for the purpose set forth.

4. In combination with the casing B, having slot *b*, and the basin A, having holes *a*, the washer H, provided with packing *h*, and the bolt G, inserted with its inner end through one of the said holes *a* and with its outer end through the said washer H, the latter being provided eccentrically with a hole to receive the outer end of the said bolt, substantially as and for the purpose set forth.

5. In combination with the casing B, having inlet D, with seat *d*, to receive the valve *c* and a projecting nipple, *d'*, the cap E, provided with wire screen *e*, and adapted to be secured to the said nipple, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 18th day of March, 1886.

JOHN W. GROWS.

Witnesses:
A. W. ALMQVIST,
A. M. DANIELSON.