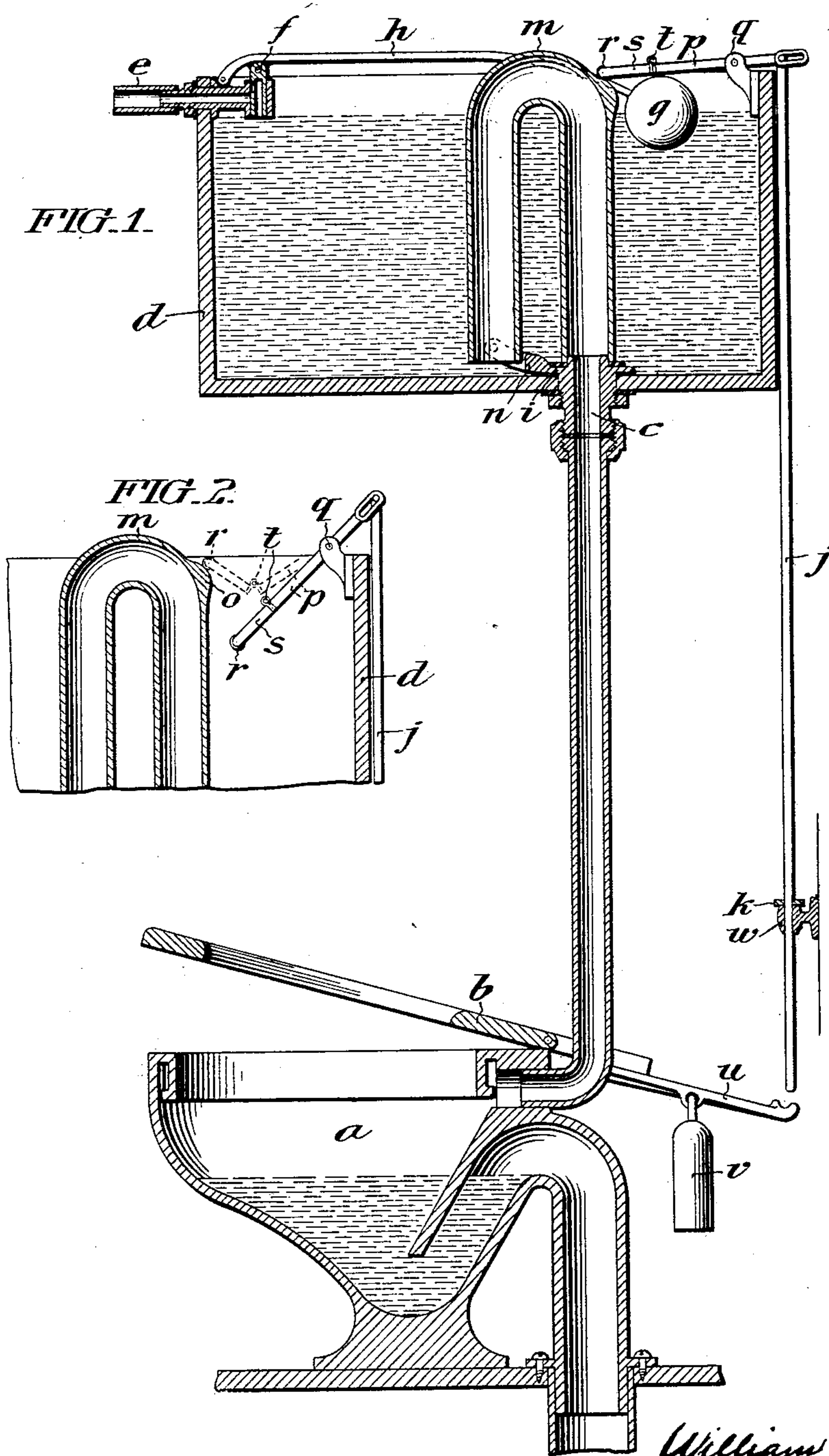


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W. U. GRIFFITHS.
FLUSHING APPARATUS FOR WATER CLOSETS.
APPLICATION FILED FEB. 20, 1903.

NO MODEL.



WITNESSES:

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WILLIAM U. GRIFFITHS, OF PHILADELPHIA, PENNSYLVANIA.

FLUSHING APPARATUS FOR WATER-CLOSETS.

SPECIFICATION forming part of Letters Patent No. 745,724, dated December 1, 1903.

Application filed February 20, 1903. Serial No. 144,211. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM U. GRIFFITHS, a citizen of the United States, residing in the city and county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Flushing Apparatus for Water-Closets, of which the following is a specification.

My invention relates to the particular type of flushing apparatus in which in connection with a flushing tank and the outlet pipe leading from said tank to the structure to be flushed is employed a siphon mounted within said tank.

It is the object of my invention to arrange the siphon in such manner and to provide it with operating devices of such character as to produce a very useful and efficient apparatus.

In the accompanying drawings I illustrate a good form of embodiment of my invention. Many variations in construction and arrangement may, however, be employed, without departing from the spirit of my invention.

In the accompanying drawings, Figure 1 is a view in central, vertical, sectional, elevation of a flush tank containing a siphon, a closet, the pipe through which water passes from the pipe to the closet and the associated working parts of the apparatus, the parts being shown in the position they occupy when the closet is not in use.

Figure 2 is a view of the siphon and adjacent parts, showing the position of the siphon operating lever during the time the motion transmitting rod remains elevated while the weight of the person rests upon the closet seat.

Similar letters of reference indicate corresponding parts.

The closet *a* is of any ordinary and preferred character having a hinged seat *b* connected in any preferred manner through the pipe *c* with the tank *d*.

The supply pipe *e* of the tank is equipped with any suitable valve *f* operated by a float *g* mounted on a suitable arm such as *h*.

The parts of the apparatus so far described are not novel with me.

The upper end of the pipe *c* or a connection thereof extends through the bottom of the tank *d* and is suitably packed to prevent the escape of liquid.

The upwardly extending rod at the mouth

or port of said pipe is encircled by a flange *i* which rests upon the floor of the tank.

A suitable packing ring encircles said rod and rests on said flange.

m is a movable siphon structure hingedly connected through a lug *n* or otherwise to the upper end of the pipe *c*.

Obviously the hinged connection between the siphon and a fixed portion of the tank may be located at any point which the form and arrangement of tank and siphon employed may render desirable.

The lower end of the longer leg of the siphon rests upon the siphon in its normal closed position as in the drawing upon the packing ring upon the upper face of the flange *i*.

The pipe *c*, as will be understood, constitutes in effect a continuation of the longer leg of the siphon.

o is a cam mounted upon that face of the longer leg of the siphon which is farthest from the hinged connection of the siphon with the pipe *c*.

p is a lever conveniently pivoted upon the bracket *q* at the edge of the tank. The said lever consists of the rigid portion which is hinged or pivoted to the bracket *q* and also the extension *s* pivoted to the first mentioned portion at *t*, the said extension being provided with a roller *r* which is adapted to cooperate with the cam *o* to occasion movement of the siphon structure about its pivot.

w is an extension of the seat *b* provided, if necessary, with a weight *v*.

j is a motion transmitting rod pivotally connected to the outer end of the lever *p* and normally depending in the position shown. Said motion transmitting rod conveniently extends through a suitable guide *w* and may be provided with a stay pin or enlargement *k* which by encounter with said guide limits the descent of said rod.

The operation of the apparatus will be readily understood.

The weight *v* normally maintains the hinged seat *b* in the elevated position shown. When the weight of an occupant rests upon said seat its consequent depression will, of course, occasion the elevation of the extension *u* which extension in rising encounters the end of the motion transmitting rod *j* and occasions its elevation. The elevation of the rod *j* occa-

sions the tilting movement of the lever *p* in which movement, of course, the outer end of the lever rises and during the upward movement of the outer end said lever the inner end thereof moves downward over the cam *o* as clearly indicated in dotted lines in Figure 2.

When the outer end of said lever has reached the extreme limit of its upward movement as shown in Figure 2, the inner end thereof will occupy the position shown in full lines in said figure.

In the descent of the inner end of the said lever the roller *r* passes over the cam *o* but does not occasion the tilting of the siphon upon its hinge by reason of the pivoted connection of the extension *s* with the main portion of the lever *p*.

During the time the weight of the occupant rests upon the seat *b* the rod *j* is maintained elevated the lever *p* tilted and the roller *r* at a point below the cam *o*, as clearly shown in Figure 2.

Upon the subsequent removal of the weight of the occupant from the seat *b* said seat automatically rises to its normal position being that shown in the drawing, whereupon the weight of the arm *j* depresses the outer and elevates the inner end of the lever *p*, causing the roller *r* to ride upward over the face of the cam *o* until it reaches the normal position shown in Figure 1 of the drawings, and in moving to this position it is obvious that the roller *r* acting against the cam *o* will occasion a tilting movement of the siphon structure about its hinge.

During the period that the siphon is tilted about its hinge the mass of water in the tank has access to the mouth of the pipe *c* and a considerable quantity descends into said pipe with the result that so soon as the movable siphon returns to normal position a siphoning action is established through the siphon and pipe which continues until the water level in the tank descends to the open end of the shorter leg of the siphon.

As will be understood, my invention in its preferred embodiment, provides an apparatus in which a siphon is hingedly mounted within a tank and when in use is caused to be automatically tilted for the establishment of a siphoning action only when the weight of an occupant is removed from the seat *b*.

As the roller *r* ascends across the face of the cam *o* it forces the siphon outwardly and upwardly upon an arc concentric with its hinged pivot, and said roller as soon as it has passed over the cam will permit the siphon to return by gravity to its normal position, as is well understood.

My invention may be applied in many different forms or embodiments without de-

parture from the spirit thereof. The subject-matter disclosed in this application but not claimed, is claimed in my co-pending application, filed February 17, 1902, serial number 94,438.

Having thus described my invention, I claim—

1. A flush tank provided with an outlet pipe the mouth of which is within said tank, a siphon hingedly disposed within said tank and with one of its legs normally in communication with said pipe, a cam secured upon said siphon, a lever pivotally mounted on said tank, the inner free end of said lever contacting with and adapted to be moved from one side to the other of said cam, the said lever consisting of two separate elements hinged together so as to permit of relative movements of the said elements when the lever is moved in one direction over the said cam, and the said lever when moved in the opposite direction over the said cam occasioning a tilting movement of the siphon.

2. A flush tank provided with an outlet pipe the mouth of which is within said tank, a siphon hingedly disposed within said tank and with one of its legs in communication with said outlet pipe, a cam secured on said siphon, a tilting lever mounted on said tank and having an extension hingedly connected to its inner end, the other end of said extension being adapted to move over the said cam from one side to the other thereof, the movement in one direction only occasioning movement of the siphon about its hinge.

3. A flush tank provided with an outlet pipe the mouth of which is within said tank, a siphon hingedly disposed within said tank and with one of its legs normally in communication with said outlet, a cam secured on said siphon, a tilting lever mounted on said tank and having an extension hingedly connected to its inner end, the free end of said extension engaging the said cam and adapted to pass over the same from one side to the other thereof, a bar depending from the outer end of said lever and adapted to occasion movement of the same about its pivot, the said extension being adapted to move relatively to the said tilting lever when the latter is moved in one direction only, so that movement of the lever in the opposite direction occasions a tilting movement of the said siphon.

In testimony that I claim the foregoing as my invention I have hereunto signed my name this 17th day of February, A. D. 1902.

WILLIAM U. GRIFFITHS.

In presence of—

THOS. K. LANCASTER,
CYRUS N. ANDERSON.