C. A. WULF.

CLOSET FLUSHER.

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1,083,974.

Patented Jan. 13, 1914.

Fig. 1.

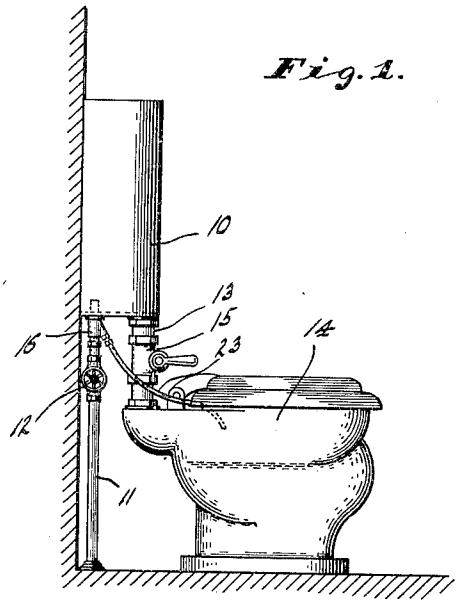
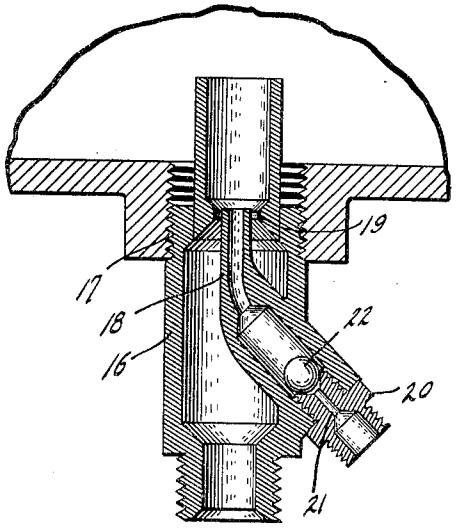


Fig. 2.



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UNITED STATES PATENT OFFICE.

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CLOSET-FLUSHER.

1,083,974. Specification of Letters Patent. Patented Jan. 13, 1914.

Application filed November 22, 1912. Serial No. 732,829.

To all whom it may concern:

Be it known that I, CHARLES A. WULF, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Closet-Flusher, of which the following is a specification.

In the commercial use of closet flushing devices of the type shown in my prior Patent No. 983,968, wherein the storage tank is air tight, it has been found that, in the course of time, the tank becomes "water-logged"; *i. e.*, the initial supply of air within the tank, which is compressed by the admission of a water supply, becomes absorbed to such an extent that there is not sufficient elasticity in the remaining air to produce a proper flushing action in the bowl. This difficulty in operation can be readily taken care of by occasionally cutting off the water supply and thoroughly draining the tank, but such manipulation is objectionable and, in many houses, is forgotten.

The object of my present invention is to provide means by which the supply of air within the storage tank may be automatically maintained.

The accompanying drawings illustrate my invention.

Figure 1 is a side elevation of my improved apparatus; Fig. 2 a sectional detail of the air inspirator.

In the drawings, 10 indicates a closed flushing tank supplied at its bottom with water through a water supply pipe 11 in which a valve 12 is conveniently, but not necessarily, placed. The tank 10 is provided with an outlet pipe 13 of comparatively large size which leads to the bowl 14 through a suitable valve structure 15 such as the type shown in my above mentioned patent.

Thus far the structure is substantially that shown in my previous patent. Arranged in the line of pipe 11 between the water supply and the tank 10 is my improved air inspirator 16, the main body of which is provided with a thread 17 by means of which it may be attached to tank 10. Arranged within the body 16 is an upwardly directed air nozzle 18 which is closely surrounded, just below its upper end, by an annular water passage 19. The nozzle 18 opens through the side of body 16 and threaded into its inlet end is a valve seat 20 having an air passage 31 leading inwardly therethrough. Arranged within the main body of the air nozzle 18 is a ball valve 22 adapted to normally seat upon seat 20 at the inner end of the passage 21.

In operation, inward flow of water through pipe 11 and the inspirator to tank 10, will, in a well known manner, draw in air through the nozzle 18, the valve 22 yielding inwardly slightly during the first part of the inward flow of the water. As soon as the pressure within tank 10 is increased to some extent, valve 22 will be held against its seat so as to prevent any further inflow of air and also so as to prevent any outflow of water. In order, however, to insure against damage by leakage of water backwardly through the air passage 21, I provide a small drainage pipe 23 which may be attached to the outer end of seat 20 and lead, as shown in Fig. 1, into the bowl 14.

By the above means I have found it possible to absolutely prevent all "water logging" of flushing apparatus of the type mentioned.

If the apparatus is allowed to stand without use for a long time, the air in tank 10 will become absorbed and the tank will become "water logged" and then normal condition may be easily restored by holding the valve 15 open a little longer than usual so that a fresh supply of air will be drawn in by the free flow of water into the tank.

It is important that the air in the air valve be an upwardly presented one and that the delivery end of the air tube be so arranged that, so soon as flow stops, the air valve will be water sealed. If such an arrangement is not made it is practically impossible to maintain an air tight closure because it is impossible to keep the valve and its seat perfectly associated. In my present construction however the air valve is always submerged and the water insures a maintenance of the air tight joint.

I claim as my invention:

1. The combination with a tight flushing tank, a water supply pipe leading into said tanks below the water level therein, and an air inspirator arranged in the water supply pipe below the water level in the tank said air inspirator having an inwardly opening valve arranged in its air passage and a drainage pipe leading from the outer end of said air passage.

2. The combination with a tight flushing tank, a water supply pipe leading into said

tank below the water level therein, and an air inspirator arranged in the water supply pipe, said air inspirator having an inwardly opening valve arranged in its air passage below the water level in the tank.

In witness whereof, I have hereunto set my hand and seal at Indianapolis, Indiana, this 12th day of November, A. D. one thousand nine hundred and twelve.

CHARLES A. WULF. [L. S.]

Witnesses:
ARTHUR M. HOOD,
FRANK A. FAHLE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."