May 29, 1928. 1,671,361

W. FRANKENBERGER

FLUSH TANK

Original Filed March 19, 1925

FIG 1

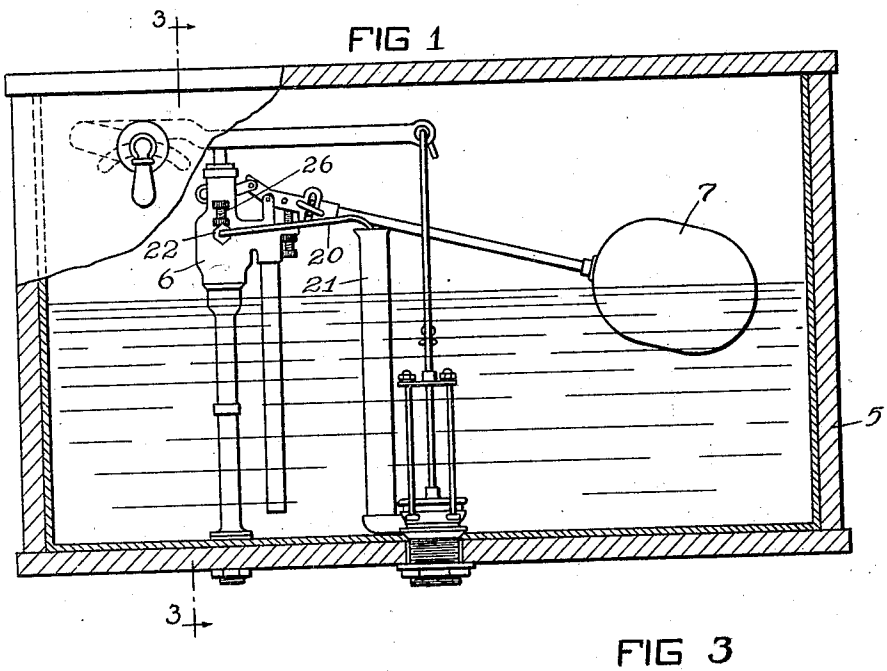


FIG 2

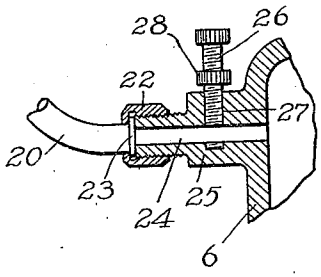
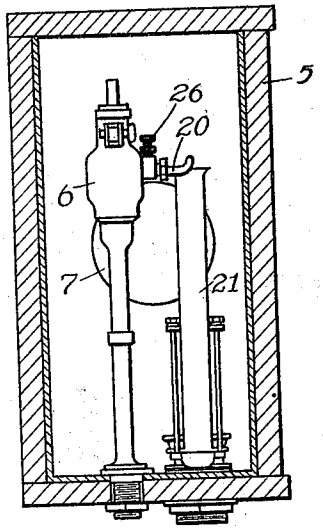


FIG 3



INVENTOR

William Frankenberger

By Greer and McAllister

His attorneys

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UNITED STATES PATENT OFFICE.

WILLIAM FRANKENBERGER, OF LOUISVILLE, KENTUCKY, ASSIGNOR TO STANDARD SANITARY MANUFACTURING COMPANY, A CORPORATION OF NEW JERSEY.

FLUSH TANK.

Original application filed March 19, 1925, Serial No. 16,644. Divided and this application filed June 30, 1927. Serial No. 202,720.

This invention relates to flush tanks and is a division of my copending application, Serial No. 16,644, filed March 19, 1925.

Flush tanks are normally provided with a refill tube for carrying water directly from a float control valve to the associated bowl so as to seal the trap thereof after flushing. Such refill tubes constitute a source of noise which is occasioned by the friction of the water passing therethrough under varying pressures. In addition, these tubes as ordinarily constructed constitute a source of waste in that a surplus of water is supplied to the bowl and accordingly wasted.

An object of this invention is to provide a flush tank of such construction and arrangement that the amount of water passing through the afterfill or refill tube can be accurately controlled so as to eliminate the friction noises and prevent waste.

This and other objects which will be obvious to those skilled in this particular art are accomplished by means of the invention illustrated in the accompanying drawings in which Figure 1 is a transverse sectional view through a flush tank provided with one form of this invention. Fig. 2 is a view of a part of the control valve chamber illustrating the manner of connecting the refill tube thereto and Fig. 3 is a transverse section on the line 3—3 of Fig. 1 with certain of the operating elements removed.

The particular embodiment of this invention which has been chosen for the purposes of illustration is shown in conjunction with an ordinary flush tank 5 having a water supply control valve, within the valve chamber 6, adapted to be automatically operated by the usual float 7 and associated mechanism. A refill tube 20 extends from the valve chamber 6 into the usual overflow tube 21. Hitherto these refill tubes were provided with threaded ends which were attached to the valve chamber by being threaded into a suitable opening formed therein. The formation of threads upon the refill tube, which is of comparatively small gauge materially weakened it at that point with the result that in assembling the structure a large loss was sustained through breakage of the refill tubes at their point of connection with the valve chamber. In order to form a more rugged construction and at the same time provide a device which is more easily and rapidly assembled, I provide a swivel nut 22 which is held on the end of the refill tube by a flange 23 preferably formed on the end of the tube. The valve chamber is provided with a bore 24 extending through the wall thereof and through a lug 25 formed on the outside of the valve chamber wall and provided with threads for engagement with the swivel or coupling nut 22 by means of which the refill tube is connected to the valve chamber. Such a construction provides a rugged structure and enables the refill tube to be rigidly connected to the valve housing in any adjusted position without being subjected to any detrimental strain.

The present invention also contemplates the reduction of noise caused by the friction of water passing through the refill by controlling the flow therethrough, and it also contemplates the prevention of a surplus of water flowing through the refill tube with the resulting waste. As illustrated, this is accomplished by means of a set screw 26 threaded in a bore 27 communicating with the opening 24 leading from the valve chamber to the refill tube. A lock nut 28 is provided for locking the water controlling screw in set position. By properly positioning the regulating screw 26 the amount of water flowing through the refill tube can be accurately controlled so that no surplus will pass through to the bowl. In addition, the rate of flow through the tube can be so accurately controlled as to eliminate the friction noises which have hitherto also been present.

What I claim as new and desire to secure by Letters Patent is:

A flush tank having in combination a supply control valve, a threaded lug on the housing of said valve, a passage through said lug to the chamber of said valve, a shouldered refill tube, a coupling nut engaging said shoulder and threaded to said lug for connecting said refill tube to said passage and a set screw in said lug for regulating the flow through said refill tube.

In testimony whereof, I have hereunto set my hand this 24th day of June, 1927.

WILLIAM FRANKENBERGER.