May 13, 1958 L. S. COFFELT 2,834,027

COMBINED VALVE SEAT AND GUIDE FIXTURE FOR FLUSH TANKS

Filed Jan. 23, 1957

Fig. 1.

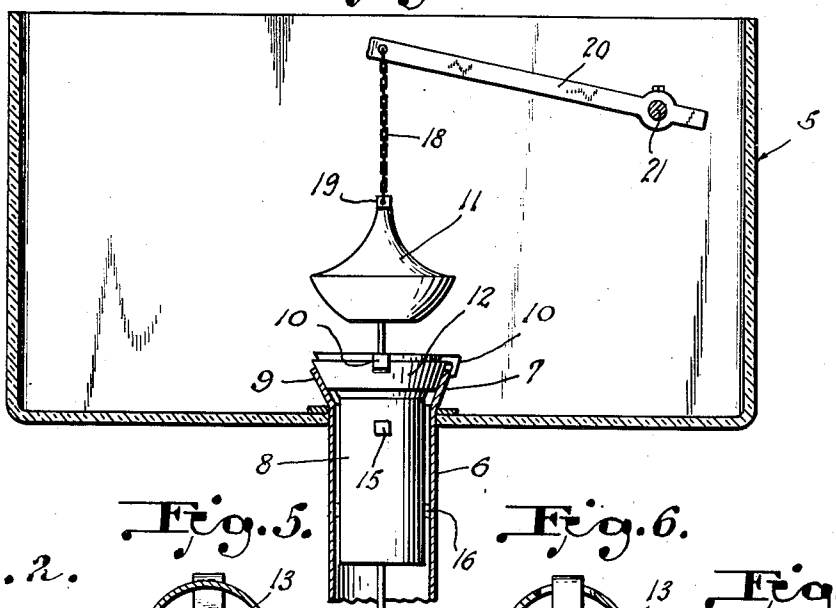


Fig. 5.

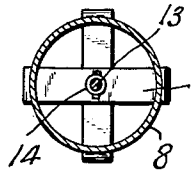


Fig. 6.

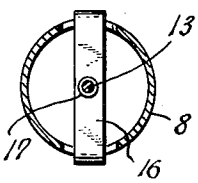


Fig. 2.

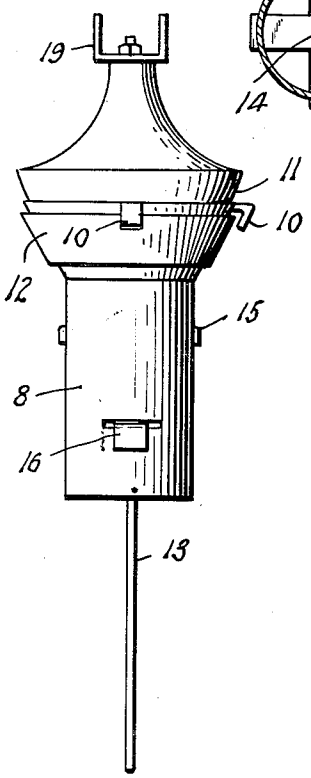


Fig. 3.

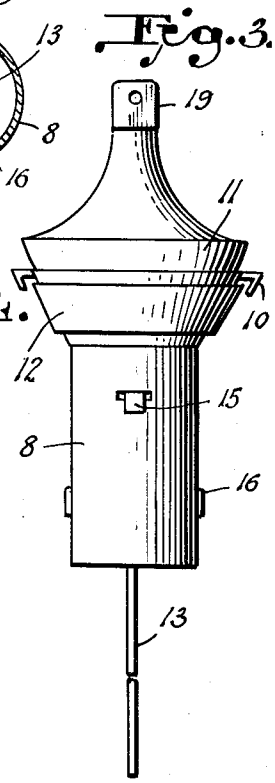
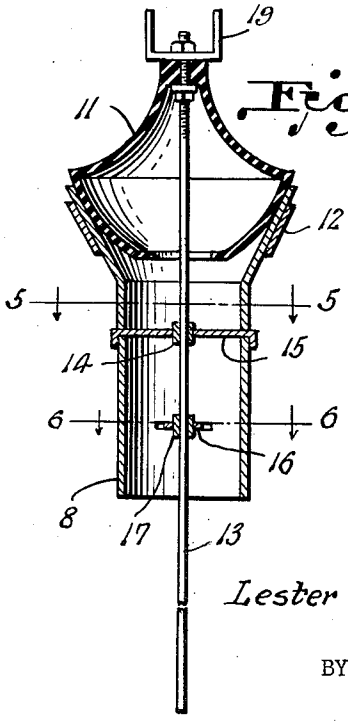


Fig. 4.



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COMBINED VALVE SEAT AND GUIDE FIXTURE FOR FLUSH TANKS

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Application January 23, 1957, Serial No. 635,833

1 Claim. (Cl. 4—56)

This invention relates to an attachment for positioning on the valve seat of a flush tank, whereby the usual valve rod guide arm or bracket which frequently results in the binding of the valve rod defeating the purpose of the valve, is eliminated.

An important object of the invention is to provide a repair section for flush tank valves, including a valve seat which may be readily and easily installed in the usual outlet pipe and valve seat of a flush tank without the necessity of using tools, and by persons unfamiliar with mechanics.

Another object of the invention is to provide an attachment wherein the valve will automatically align itself with the valve seat insuring true seating of the valve at all times.

Still another object of the invention is to provide an attachment which may be readily secured in position by bending the tabs formed as an integral part thereof, over the conventional valve seat.

Other and further objects and advantages of the invention will be hereinafter described and the novel features thereof defined in the appended claim.

Referring to the drawing:

Fig. 1 is a sectional view through a flush tank and valve seat showing the attachment forming the subject matter of the present invention, as mounted therein.

Fig. 2 is an elevational view of the device.

Fig. 3 is an elevational view illustrating the opposite side of the valve and attachment.

Fig. 4 is a longitudinal sectional view through the attachment.

Fig. 5 is a sectional view taken on line 5—5 of Fig. 4.

Fig. 6 is a sectional view taken on line 6—6 of Fig. 4.

Referring to the drawing in detail, the conventional flush tank is indicated generally by the reference character 5 and includes an outlet pipe 6, the upper end of which is flared as at 7 providing a valve seat.

The attachment forming the subject matter of the present invention includes a tubular member 8 that is of a size to fit within the outlet pipe 6 and extend a substantial distance therein, the upper end of said tubular member 8 being flared providing a valve seat for the conventional float valve of a flush tank.

Formed integral with upper edge of the valve seat 9 are laterally extended ears 10 that are bent over the upper edge of the valve seat 9, as better shown by Fig. 1 of the drawing, in in such a way that the ears will grip the valve seat 9 and hold the attachment against upward movement due to suction, when the valve, which in the present showing is indicated by the reference character 11, is elevated when releasing water from the flush tank into the outlet pipe.

In order that a close fit will be provided between the flared end portion 7 of the outlet pipe 6, and the flared end or valve seat of the attachment, the gasket 12 is provided and mounted on the flared end of the tubular member 8 between the flared end of the outlet pipe 6 and flared end of the tubular member 8.

The valve 11 is provided with a guide rod 13 which operates through the bushing 14 held within the cross arm 15, which cross arm has its ends extended through

openings in the tubular member 8 securing the cross arm in place. Directly below the cross arm 15, and disposed at right angles with respect thereto, is a cross arm 16 which is also provided with a bushing 17 through which the rod 13 extends, the cross arms and bushings being so arranged that they will be in perfect alignment with each other to insure a true and vertical movement of the guide rod 13 with the operation of the valve.

A chain indicated by the reference character 18 connects with the yoke 19 to which the upper end of the rod 13 is secured, the yoke 19 being positioned on the upper end of the valve 11.

The chain 18 is connected to the free end of the arm 20 that is secured to the control rod 21 which is provided with a handle not shown, for effecting rotation of said control rod 21 to unseat the valve and allow the water to discharge from the tank 5, through the outlet pipe 6 to flush the toilet, forming a part of the flush tank assembly.

From the foregoing it will be seen that due to the construction shown and described, I have provided an attachment which may be readily and easily positioned within the valve seat at the upper end of the usual outlet pipe of a flush tank, means being provided for securing the attachment in place against movement under the action of the valve operating on the valve seat of the attachment.

With this structure, guide arms are provided but in this case the guide arms are stationary and are retained in true alignment with each other at all times to insure the perfect sliding movement of the guide rod 13 through the bushings of the cross arms.

It will also be seen that when the usual valve of a flush tank becomes worn so that the same will wobble within its guides, the usual guide arms of flush tanks which are attached to the overflow pipes of the flush tanks, may be removed and replaced by an attachment as shown and described, and this application may be made without the necessity of making alterations in the structure in any way, and without the use of tools of any kind.

Having thus described the invention, what is claimed is:

The combination with the discharge pipe and valve seat of a flush tank, of a valve seat attachment comprising a tubular member adapted to fit within the discharge pipe a substantial distance, the upper end of said tubular member being outwardly flared providing a supplemental valve seat adapted to fit within the valve seat of the flush tank, laterally extended ears formed integral with the flared end of said tubular member, said ears extending downwardly over the upper edge of the flush tank valve seat securing the attachment within the flush tank discharge pipe, a float valve operating in said tubular member, a rod forming a part of said valve and depending therefrom, cross arms fitted within said tubular member, said cross arms being spaced apart vertically of said tubular member, and extending at substantially right angles to each other, said tubular member having vertically spaced diametrically opposed pairs of openings, into which the ends of said cross arms extend, said cross arms having vertically aligned bushings through which the depending rod of the valve extends, guiding the rod in its movements, and means for effecting vertical movement of said valve.

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