May 3, 1949. H. E. PLEASANT 2,469,000

VALVE ACTUATING LEVER

Filed July 22, 1946

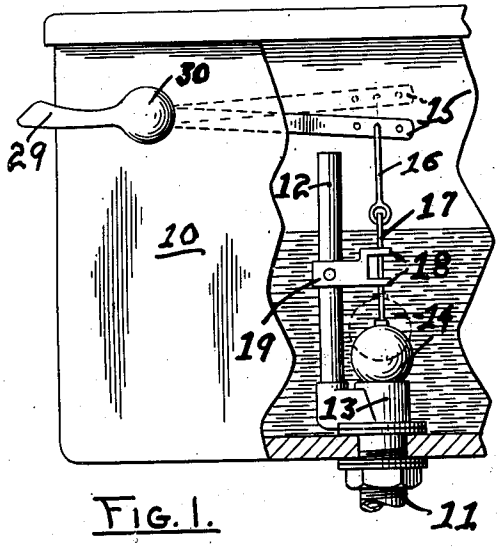


FIG. 1.

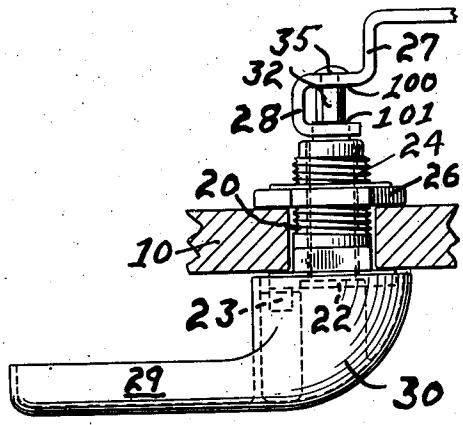


FIG. 2.

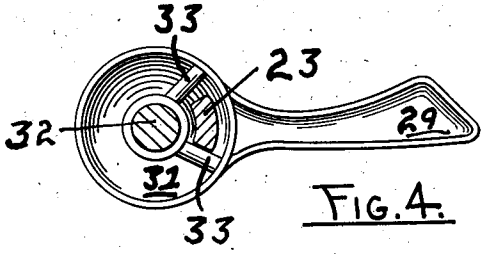


FIG. 4.

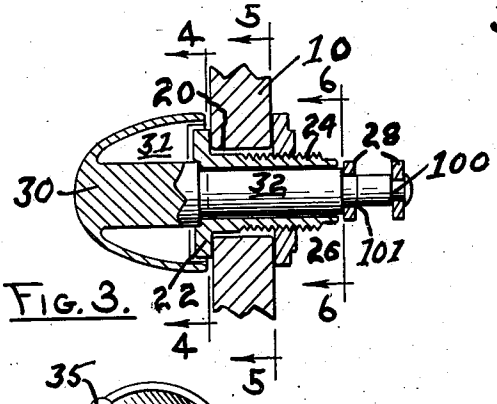


FIG. 3.

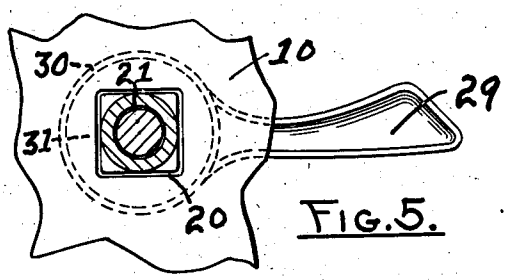


FIG. 5.

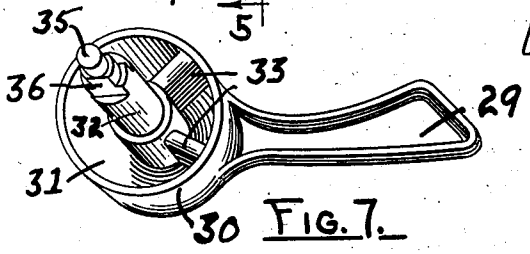


FIG. 7.

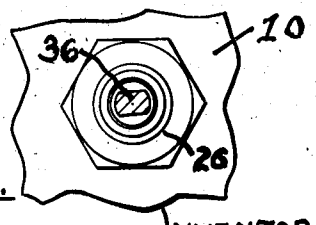


FIG. 6.

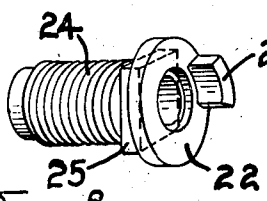


FIG. 8.

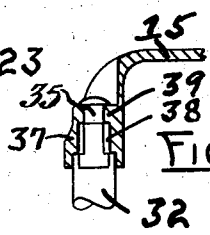


FIG. 9.

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VALVE-ACTUATING LEVER

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Application July 22, 1946, Serial No. 685,309

1 Claim. (Cl. 4—67)

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The present invention relates to valve actuating levers and more particularly to a device which is a modification of and an improvement upon the lever assembly illustrated, described and claimed in the Pleasant et al. Patent No. 2,313,840, issued March 16, 1943, and assigned to my assignee.

The primary objects of the instant invention are to provide a device of the general character above indicated which is pre-assembled and ready for use; to provide such a device which is composed of relatively few parts; to provide such a device which is simple yet rugged and sturdy in construction; to provide such a device which is compact and highly efficient in use; to provide such a device which may be readily and conveniently fixed to the wall of a flushing tank; and, to provide such a device which is reasonably economical in manufacture.

An illustrative embodiment of the invention is shown in the accompanying drawing, wherein:

Figure 1 is a fragmentary front elevational view of a flushing tank, partly broken away and showing a conventional ball valve device operatively connected with its actuating lever assembly;

Figure 2 is an enlarged top plan view of the handle for actuating the device, the flushing tank being shown in section;

Figure 3 is an enlarged sectional view through the assembly looking toward the left in Figure 1;

Figure 4 is a sectional view on line 4—4 of Figure 3;

Figure 5 is a sectional view on line 5—5 of Figure 3;

Figure 6 is a sectional view on line 6—6 of Figure 3;

Figure 7 is a perspective view of the handle per se;

Figure 8 is a perspective view of the fixture of the device; and

Figure 9 is a fragmentary view showing the manner in which the shank of a modified form of the handle is secured to the actuating lever of the device.

Referring then to the drawing and firstly to Figures 1–8 wherein like parts of the assembly shown are designated by the same numerals in the several views, a flushing tank 10 of well known character having an outlet port 11, is provided with an overflow pipe 12 connected with the outlet port below the valve seat 13, all as best shown in Figure 1.

A ball valve 14 disposed upon its seat 13 as shown in full lines in Figure 1 is elevated there-

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from to its position shown in dotted lines in the same view when the tank is flushed by means of the actuating lever 15 through a pair of articulated links 16, 17, the upper of which is pivotally connected to one end of the actuating lever 15 and the lower of which is rigidly secured to the ball valve 14, which lower link 17 is vertically slidably embraced within aligned vertical apertures in the fingers 18 of the bifurcated bracket 19 secured to the overflow pipe 12 in a lateral disposition relative thereto.

The front wall of the flushing tank 10 is provided with an opening 20 therethrough, preferably squared or otherwise non-circular in character, and a tubular fixture 21 projected through the opening 20 of the tank, and having a head 22 provided with an eccentrically disposed arcuate lug 23 on and projecting laterally from its radial face, has a threaded shank 24 and an intermediate squared or otherwise non-circular portion 25 embraced within the squared or otherwise non-circular opening 20 of the tank.

A nut 26 threaded on the shank 24 of the fixture 21 is preferably employed to secure the fixture in its assembled relation within the wall of the flushing tank 10.

The actuating lever 15 has a laterally turned portion 27 having a U-shaped head 28 whose opposite legs are here shown as provided with registering apertures 100, 101 as best shown in Figures 2, 3.

A handle 29 is provided with a laterally turned hollow head 30 of substantially hemispherical shape having a chambered recess 31 therein and a spindle 32 projecting centrally therefrom which chambered recess is provided with a pair of spaced radially disposed webs 33 extending from the spindle to the concentric inner wall of the chambered recess. The spaced webs 33 define an arcuate space in the hollow head within which space the arcuate lug 23 is disposed and operates.

The outer end of the spindle is here shown as provided with a tip 35 circular in cross section adapted for reception within the aperture 100 and an non-circular cross sectional portion 36 adapted to be received within the embracing aperture 101 of the same configuration.

Referring now to Figure 9, the actuating lever 15 has a laterally turned tubular portion 37 here shown as provided with a bore having a flattened portion 38 adapted to seat the non-circular portion 36 of the spindle 32 and an inner portion 39 adapted to seat the circular tip 35 of the spindle.

In assembling the device on a flushing tank as

shown in Figure 1, the spindle 32 of the handle 29 is projected through the tubular fixture 21 with the lug 23 thereof disposed within the spaced, radiallly disposed webs 32 of the chambered recess 31 of the handle 29, as shown in Figure 4.

The end of the spindle 32 projects into the tank 10 beyond the tubular fixture 21, the outer end thereof being fixedly seated within apertures 101, 100 or the bores 38, 39 of the actuating lever 15.

Since the handle 29 and actuating lever 15 cannot be axially separated after they have been fixedly secured, it will be seen that tilting of the handle 29 from the position of the actuating lever shown in full lines in Figure 1 to its position shown in dotted lines in the same view and lifting the ball valve 14 from its seat 13 resulting in the flushing of the tank 10, is limited in its tilting movement by the lug 23 of the fixture 21, within the webs 33 of the chambered recess 31 of the handle 29.

It will thus be seen that the valve actuating lever assembly herein shown and described is a modification of and an improvement upon the lever assembly illustrated, described and claimed in Pleasant et al. Patent No. 2,313,840, is preassembled and ready for use, is composed of relatively few parts, is simple yet rugged and sturdy in construction, is compact and highly efficient in use, may be readily and conveniently fixed to the wall of a flushing tank, and is reasonably economical in manufacture.

While several specific embodiments of the invention have been herein shown and described, it will be understood that certain details of the construction shown may be altered or omitted

without departing from the spirit of the invention as the same is defined by the following claim.

I claim:

A device of the class described, a one-piece tubular fixture adapted to be fixedly secured in an opening in the wall of a toilet tank, said fixture including a flanged head and a radial face, the radial face having an integral eccentrically disposed laterally projecting arcuate lug thereon, a handle having an enlarged interiorly chambered head of substantially hemispherical shape and including a free peripheral edge which extends about and over the flanged head of the fixture, a centrally projecting spindle integral with the head and extending beyond the peripheral edge thereof, spaced radially disposed webs of substantially the depth of the chambered head therein integral with and extending from the spindle radially outwardly to and integral with spaced portions of the inner wall of the head thus forming an arcuate space in the head and within which space the lug is disposed for limiting the rotative movement of the handle relative to the fixture, a valve actuating lever secured to the extended end of the spindle, and a flush valve attached adjacent the other end of the lever.

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REFERENCES CITED

The following references are of record in the file of this patent:

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Number	Name	Date
2,358,471	Owens	Sept. 19, 1944