March 16, 1943. H. E. PLEASANT ET AL 2,313,840

VALVE ACTUATING LEVER

Filed Feb. 26, 1942

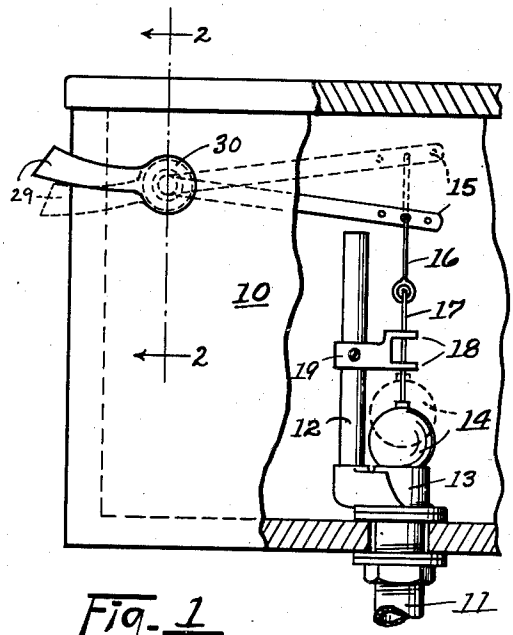


Fig. 1

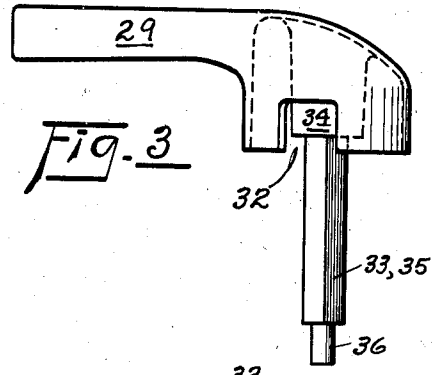


Fig. 3

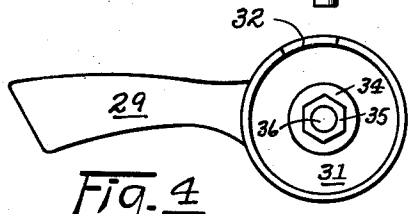


Fig. 4

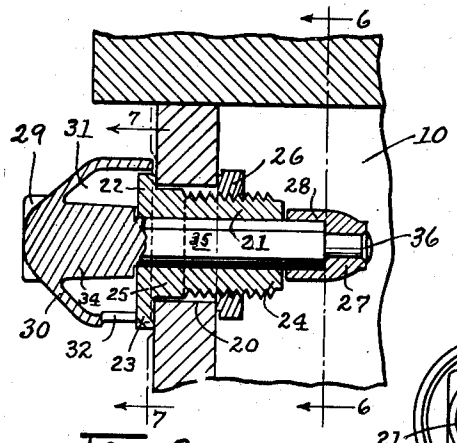


Fig. 2

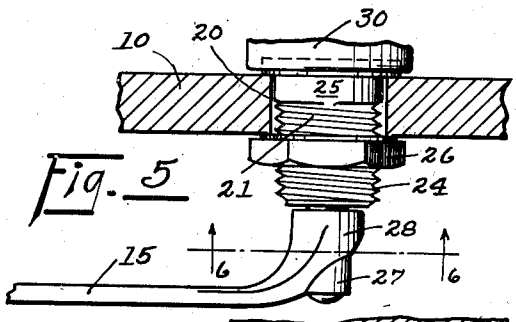


Fig. 5

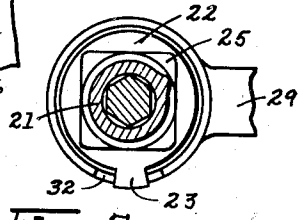


Fig. 7

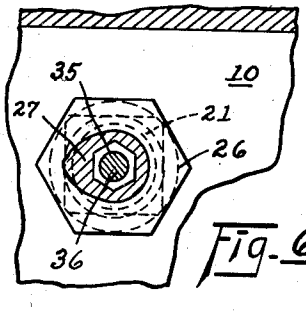


Fig. 6

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VALVE ACTUATING LEVER

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3 Claims. (Cl. 4—67)

The present invention relates to valve actuating levers and more particularly to a device differing from the valve actuating lever assemblies illustrated and described in our co-pending application for patent, Serial No. 419,930, filed November 21, 1941 now Patent No. 2,295,686, issued Sept. 15, 1942.

The primary objects of the instant invention are to provide an assembly of the general character above indicated which has relatively few parts; to provide such an assembly which is simple yet sturdy in construction; to provide such an assembly which is compact and efficient in use; to provide such an assembly which may be readily and conveniently affixed to the wall of a flushing tank; and, to provide such an assembly which may be economically manufactured.

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 sectional view thereof on line 2—2 of Figure 1;

Figure 3 is an enlarged top plan view of the handle for actuating the device;

Figure 4 is a rear elevational view of said handle;

Figure 5 is a view similar to Figure 2 but showing more of the actuating lever;

Figure 6 is a sectional view on lines 6—6 of Figures 2 and 5; and

Figure 7 is a sectional view on line 7—7 of Figure 2.

Referring then to the drawing 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 therefrom 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 flanged head 22 provided with a laterally disposed lug 23 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 tubular portion 27 whose inner end 28 is here shown as hexagonal in cross section and of greater diameter than its cross sectionally circular outer portion, as best shown in Figure 2.

A handle 29 is provided with a laterally turned head 30 having a chambered recess 31 therein, the wall of which is provided with a notch 32. A spindle 33 projects centrally from the chambered handle whose inner end 34 is circular in cross section, whose middle portion 35 is hexagonal in cross section and of less diameter than its inner portion, and whose tip 36 is circular in cross section and of less diameter than the cross sectionally hexagonal portion.

In assembling the device on a flushing tank as shown in Figure 1, the spindle 33 of the handle 29 is projected through the tubular fixture 21 with the lug 23 thereof disposed within the notch 32 and with its flanged head 22 seated against the recessed end of the portion 34 of the spindle 33, as best shown in Figure 2.

The cross sectionally circular tip 36 and a portion of the cross sectionally hexagonal part 35 of the spindle 33 projects into the tank 10 beyond the tubular fixture 21 which portions are respectively fixedly seated within the tubular portion 27 and cross sectionally hexagonal portion 28 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 its position shown in full lines in Figure 1 to its position shown in dotted lines in the same view for lifting the ball valve 14 from its seat 13 and resulting in the flushing of the tank 10, is limited in its tilting movement by the lug 23 of the fixture 21 within the notch 32 of the chambered head of the handle 29.

It will thus be seen that the valve actuated lever assembly herein shown and described is comprised of but few parts, that the assembly is simple yet sturdy in construction, that it is compact and efficient in use, that it may be readily and conveniently affixed to the wall of a flushing tank, and that the same is economical in manufacture.

While but one specific embodiment of the invention has 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 claims.

We claim:

1. In a device of the class described, a tubular fixture adapted to be fixedly secured through the wall of a tank, said fixture having a flanged head provided with a laterally projecting lug; a handle having a chambered head rotatable on the flanged head of the fixture and whose wall is provided with a notch spacedly embracing the lug for limiting the rotative movement of the handle relative to the fixture, said chambered head having a spindle formed integral with the head and spacedly encircled by the wall thereof and projecting through the fixture; and an actuating lever secured to the end of the spindle.

2. In a device of the class described, a tubular fixture adapted to be fixedly secured through the wall of a tank, said fixture having a flanged head provided with a laterally projecting lug; a handle having a chambered head rotatable on the flanged head of the fixture and whose wall is provided with a notch spacedly embracing the lug for limiting the rotative movement of the handle relative to the fixture, said chambered head having an integral spindle, cross sectionally non-circular, spacedly encircled by the wall thereof and projecting through the fixture; and an actuating lever having a head provided with a bore of like cross sectional character embracing and secured to the end of the spindle.

3. In a device of the class described, a tubular fixture adapted to be fixedly secured through the wall of a tank, said fixture having a flanged head at its outer end provided with a laterally projecting lug located at the bottom of the head, a handle having a chambered head rotatable on the flanged head of the fixture and whose wall is provided with a notch spacedly embracing the lug for limiting rotative movement of the handle relative to the fixture, said chambered head being provided with a spindle formed integral with the head and cross sectionally non-circular throughout the major portion of its length, spacedly encircled by the wall of the chambered head and projecting through the fixture and having a reduced inner end, and an actuating lever having a laterally turned tubular portion having a bore with a non-circular portion to fit the non-circular spindle and a reduced portion fitting the reduced end of the spindle to which the tubular portion is secured.

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