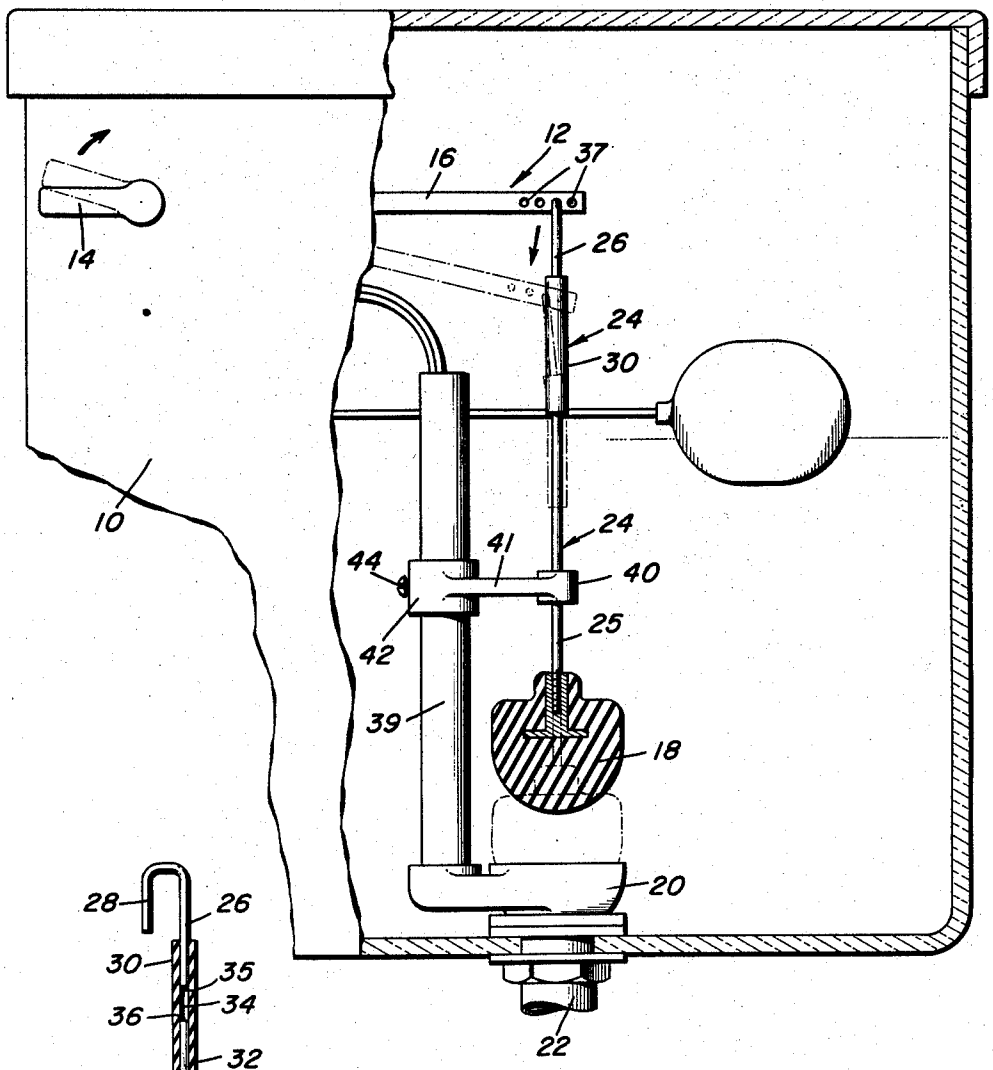
Oct. 20, 1959 E. S. LASECKI 2,908,914

FLUSH AND STOP ROD FOR TOILET TANK

Filed Dec. 20, 1956 2 Sheets-Sheet 1

Fig. 1



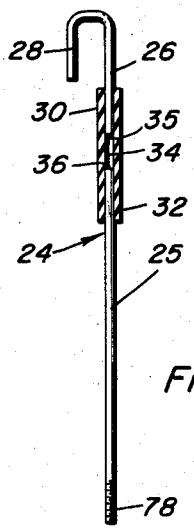


Fig. 2

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Oct. 20, 1959 E. S. LASECKI 2,908,914

FLUSH AND STOP ROD FOR TOILET TANK

Filed Dec. 20, 1956 2 Sheets-Sheet 2

Fig. 3

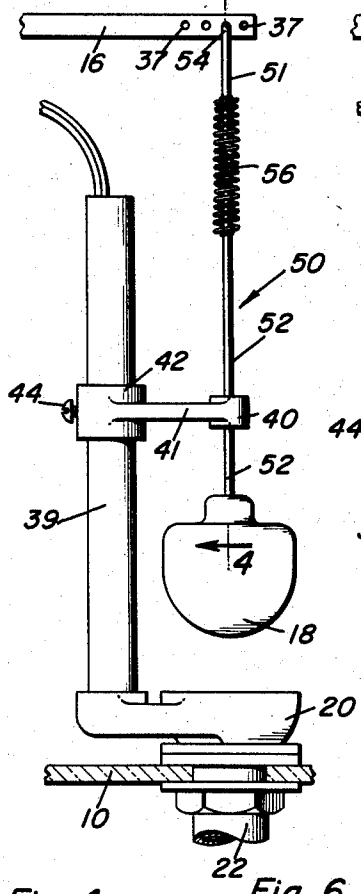


Fig. 5

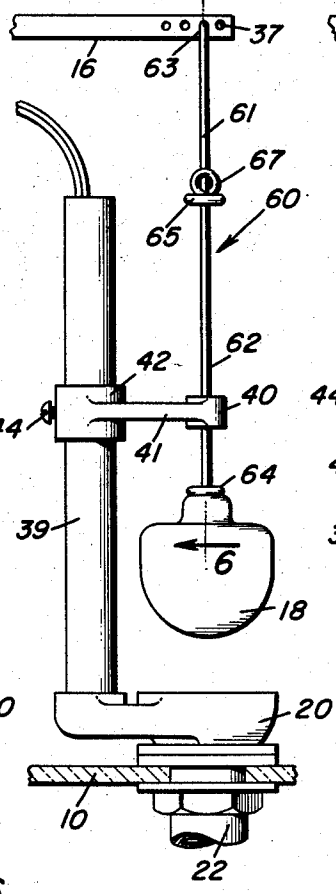


Fig. 7

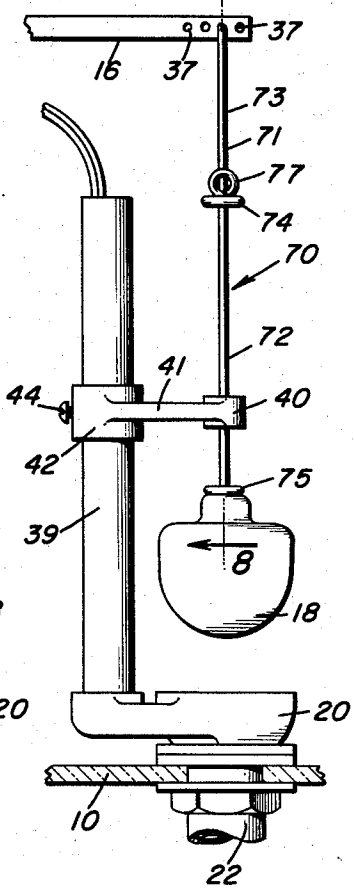


Fig. 4

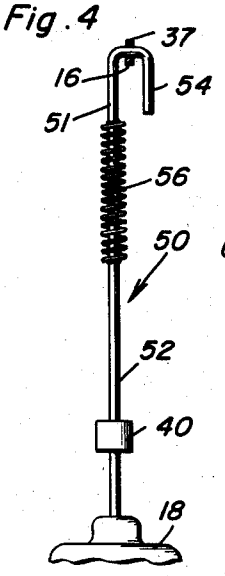
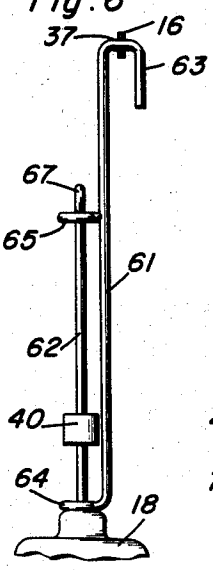


Fig. 6



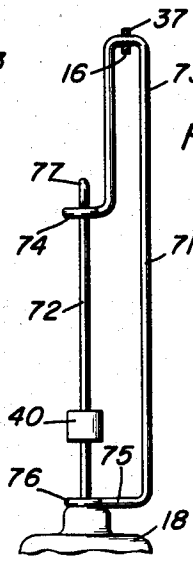


Fig. 8

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United States Patent Office 2,908,914 Patented Oct. 20, 1959

2,908,914

FLUSH AND STOP ROD FOR TOILET TANK

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Application December 20, 1956, Serial No. 629,712

2 Claims. (Cl. 4—67)

This invention relates to improvements in a mechanism for toilet flush tanks and more particularly to a device which enables the user to flush the toilet as usual but in the event the toilet bowl becomes stopped up, all that the user has to do to stop the bowl from overflowing is to raise the same handle that is used to flush and this, through one of the flush and stop rods of the invention stops the water flow from the tank to the toilet bowl.

The principal object of the invention is to provide a practical and dependable device for use in the ordinary flush tank, which enables the user to flush the toilet as usual but when desired, enables the user to stop the water flow from the tank by seating the bulb valve. In the event only a small quantity of water is needed for a single flush, all that is necessary is to raise the handle or otherwise manipulate the handle in such a manner as to cause ordinary flushing of the toilet and when the desired flow of water is obtained, move the handle to the opposite direction causing a positive shutting off of the water flow from the flush tank to the toilet.

A further object of the invention is to provide a device of the nature described above wherein it automatically constitutes a means to stop dripping caused by an improperly seated flush tank bulb, this being achieved by merely tapping the handle slightly in a downward direction when an upward direction motion of the handle is used for ordinary flushing.

A further and important object of the invention is to provide a mechanically simplified device to serve the above described functions whereby the device is commercially acceptable. I am aware of prior inventions dealing with flush tanks and the machanisms therein in order to serve a number of purposes. Very often such inventions are not commercially successful for the reason that they are too complicated and are impractical either from a manufacturing or installation or maintenance standpoint. My invention is simple and practical and serves purposes which justify the installation thereof either as original equipment or as a replacement part in the ordinary mechanisms which are now in use.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is an elevational view of a common type of flush tank mechanism in a flush tank and having a flush and stop rod in accordance with the invention mounted therein;

Figure 2 is a longitudinal sectional view of the rod in Figure 1;

Figure 3 is a fragmentary elevational view of a modification of the rod in a flush mechanism;

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

Figure 5 is an elevational view of a further modification of the invention;

Figure 6 is a sectional view taken on the line 6—6 of Figure 5;

Figure 7 is a further modification of the invention; and

Figure 8 is a sectional view taken on the line 8—8 of Figure 7.

In the accompanying drawings there is a flush tank 10 of ordinary construction and which includes within the walls thereof a flush tank mechanism 12 which is operated by a handle 14. When flushing the toilet the handle 14 is depressed thereby lifting beam 16 and pulling the tank bulb 18 off its seat 20. In the ordinary construction that allows the water stored in the tank to be discharged through pipe 22 in order to be flushed into the toilet bowl for the purpose of emptying and then refilling the trap in the bowl. Other standard parts in the tank are supplied but are not described in detail inasmuch as the invention deals with a substitute flush and stop rod, for example rod 24 which takes the place of the means generally used for elevating the bulb 18 from its seat 20.

Rod 24 (Figure 2) consists of shanks 25 and 26, the former being straight and the latter having a hook 28 at its upper end. The shanks are united by fitting snugly in a flexible connection 30 which in this instance, comprises a rubber or flexible plastic sleeve 32 having a bore 34. The confronting ends 35 and 36 of shanks 25 and 26 are spaced from each other in the resilient sleeve 32 so that there will be some bending possible during the operation of the flush mechanism 12.

Beam 16 is provided with a plurality of holes 37 and the hook 28 is inserted in a selected hole. The lower shank 25 of rod 24 is passed through a guide 40 which is in the form of a cantilever 41 having an eye at one end and a collar 42 at the opposite end which is vertically slidable on overflow tube 39 of the flush tank mechanism. Setscrew 44 in collar 42 bears against the surface of tube 39 in order that a selected vertical adjustment of the guide may be obtained and held.

Attention is now invited to Figures 3 and 4 wherein there is another embodiment of the invention. Instead of having rod 24 in the flush tank mechanism fragmentarily represented in Figures 3 and 4, there is a different form of the rod 50 and its is, too, made of two shanks 51 and 52 respectively with the shank 51 having a hook 54 at its upper end in order to fit in one of the holes 37 in beam 16. The ends of the shanks 51 and 52 are spaced from each other and are passed into a coil spring 56. The coil spring ends are welded or otherwise attached to the upper and lower shanks 51 and 52 at places spaced from the spaced confronting ends therof. Both the assembly and operation of this embodiment of the invention are the same as the embodiment of Figure 2.

Attention is now directed principally to Figures 5 and 6 where there is a further modification of the invention in the form of rod 60. Rod 60, again, is made of two shanks 61 and 62, however, the ends do not confront inasmuch as parts of the shanks are parallel to each other. The shank 61 has a hook 63 at its upper end passed through one of the holes 37 in beam 16 and has an eye 64 at the opposite end which protrudes laterally from the longitudinal axis of the shank 61 but in a direction directly opposite to the direction of lateral protrusion for hook 63. Eye 65 protrudes from an intermediate part of shank 61 and is parallel and coaxial with eye 64. Shank 62 has an eye 67 at its upper end which is on the upper side of eye 65. The shank 62 passes through the guide 40 and also passes through the eye 64.

In Figure 7 the last illustrated embodiment consists of a rod 70 which has two shanks 71 and 72. The shank 71 has a U-shaped upper part 73 which functions as a hook because it passes through one of the holes 37 in the

beam **16** and suspends the shank therefrom. The lower extremity of one side of the U-shaped hook on shank **71** has a laterally extending eye **74** through which the other shank **72** passes. The lowermost end of shank **71** has a lateral extension **75** with an eye **76** at its extremity, eye **76** being in parellel relationship to eye **74** and coaxial therewith so that shank **72** may also pass therethrough. Shank **72** is also passed through the guide **40** and has an eye **77** at its upper extremity and on the side of eye **74** opposite to the guide **40**.

Shanks **25**, **52**, **62** and **72** have their lower ends threaded as at **78** in order to connect to the flush tank bulb **18**, the latter being formed with a threaded bore in an insert or formed in some other way to accommodate a threaded shank.

In operation of all of the embodiments of the invention, when the flush mechanism is used in the customary manner, the beam **16** is elevated in response to movement of handle **14** and through any of the rods illustrated and all others within the purview of the invention, the bulb **18** is lifted thereby allowing an ordinary flush cycle. The flexible connections yield permitting the tank to be flushed in the normal way. Such a yielding is shown in the dotted line representation of Figure 1. However, since there is a drive connection established between the bulb **18** and the beam **16** through the agency of all of the embodiments of the invention, when the handle **14** is manipulated in the opposite direction the flush tank bulb **18** may be positively reseated.

In connection with the embodiments of Figures 5–8 inclusive, the lifting of the shanks **62** and **72** is occasioned by lifting of the eyes **65** and **74** respectively. The return of the bulb when desired, is occasioned by a downward force applied by the eyes **64** and **76** directly onto the flush tank bulb **18**.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous

modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. For use in a flush tank which has a movable beam and a bulb, a flush tank rod comprising a first shank having a hook at the upper extremity, said beam being provided with a plurality of apertures near one end thereof, said hook being disposed in a selected aperture, a second shank having threads at one end which are engaged with said bulb, flexible, elastic means on confronting ends of said shanks for establishing a drive connection between said shanks when said shanks are moved in either direction, and said flexible elastic means being elongate and having a bore in which said confronting ends of said shanks are disposed.

2. The flush tank rod of claim 1 wherein said drive connecting establishing means consists of a sleeve-like rubber body with said bore having a uniform diameter between its ends.

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