March 23, 1954 R. W. DOWNIN 2,672,879

PROTECTIVE GUARD FOR FLUSH VALVE HANDLES

Filed April 30, 1951

FIG. 1.

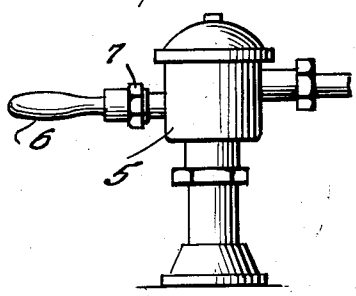



FIG. 2.

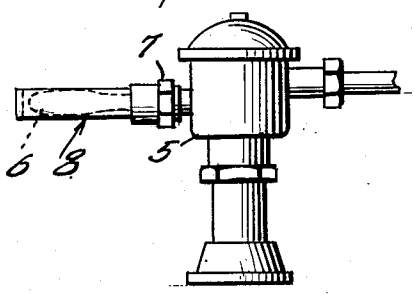



FIG. 3.

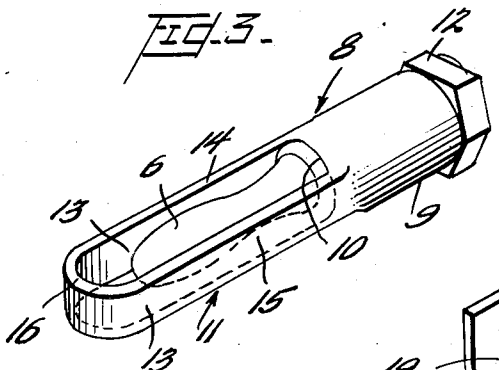
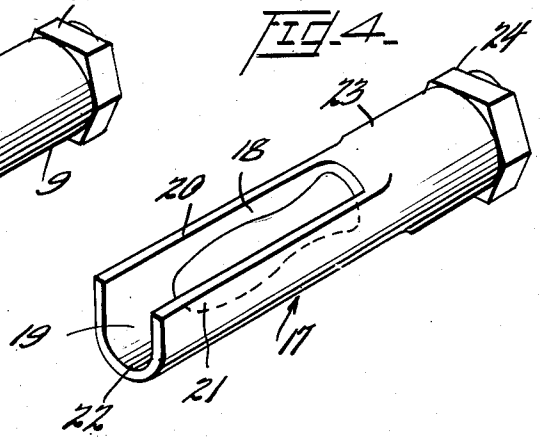



FIG. 4.




INVENTOR

Roland W. Downin,

BY Parker and Walsh

ATTORNEYS

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## PROTECTIVE GUARD FOR FLUSH VALVE HANDLES

Roland Willard Downin, Port Deposit, Md.

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7 Claims. (Cl. 137—382)

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This invention relates to guards for valve handles, and more particularly to protective guards for pivotal type valve operating handles, such as used, for example, in flush valves for toilets and urinals.

Plumbing fixtures equipped with flush valve assemblies employing pivotal or like type operating handles, when used commercially in public buildings, military installations and the like, are often damaged by abusive and improper use of the handle such as kicking, shaking and other types of rough handling. Such improper use results in damage to the integral parts of the flush valve assembly as well as to water supply lines, connections, and fixtures.

A principal object of the invention, therefore, is the provision of a protective guard for valve handles which will prevent damage to the valves, connections and the like of plumbing fixtures with which such handles are associated, resulting from abuse by kicking or other rough and improper handling when the valve handle is actuated.

A further object of the invention is the provision of a protective guard for pivotal type valve handles which will permit actuation of the handle by the hand or a portion of the hand, for example, a finger or thumb, but which will prevent actuation of the valve handle by the foot or otherwise than by hand.

A still further object of the invention is the provision of a protective guard for pivotal type valve handles which may be formed as a part of the valve structure, for example, as a part of the valve housing nut, or which may alternatively be formed as a separate structure designed for application to existing valve structures.

With these and other objects in view, the invention consists of certain novel features of construction, combination and arrangement to be hereinafter more fully described and claimed.

For a complete understanding of my invention reference is to be had to the following description and accompanying drawing in which:

Figure 1 is a side elevational view of a conventional type of flush valve assembly.

Figure 2 is a side elevational view of the flush valve assembly of Figure 1 equipped with a protective guard constructed in accordance with the present invention.

Figure 3 is a perspective view of a preferred construction of protective guard as applied to a pivotal type valve handle.

Figure 4 is a perspective view which illustrates an alternate type of construction of protective guard device.

In accordance with the invention it has been found that damage to plumbing fixtures equipped with valves employing pivotal and similar type

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operating handles may be substantially eliminated by the provision of a substantially rigid guard structure designed to partially surround or enclose the valve handle and having an opening or openings therein into which the hand or portion of the hand, such as a finger or thumb, may be inserted to actuate the handle.

The improved protective guard device of the invention may advantageously be employed with the conventional type flush valve assembly of the plumbing fixture illustrated in Figs. 1 and 2. Such assembly may in general comprise a housing or body portion 5, a pivotal operating handle 6 and a housing nut 7 which supports and attaches the handle 6 to the housing or body portion 5. The flushing operation is initiated in the usual manner by pivotal movement of the handle 6.

In the embodiment of the invention illustrated in Fig. 3 the protective guard device of the invention may desirably take the form of a frame or housing 8 comprising a base portion 9 provided with a bore 10 to receive a portion of the valve actuating handle and a body portion 11 integrally connected to the base portion 9. The base portion 9 is provided with a nut portion 12 which may be screw-threadedly engageable with the valve housing 5 to secure the protective guard device in assembly therewith. The nut portion 12 may also desirably, though not necessarily perform the function of supporting and securing the valve actuating handle in assembly with the valve housing 5.

The body portion 11 extends laterally outward from the base portion 9 in spaced relation to and along opposite side wall portions of a valve actuating handle 6 positioned therebetween. The body portion 11 partially surrounds or encloses the valve handle 6 and is provided with one or more openings 13 through which the hand or portion thereof, for example one or more fingers or a thumb may be inserted to actuate the valve handle.

In a preferred construction the body portion 11 may desirably comprise oppositely disposed arms or walls 14 and 15 integrally connected to the base portion 9 at their inner ends and integrally connected to or by a bight 16 at their outer ends. When so constructed and assembled with a valve the arms or walls 14 and 15 extend longitudinally of the valve handle 6 in spaced relation to opposite side wall portions thereof, the spaces between the arms or walls forming the access openings 13 through which the hand or a portion thereof may be inserted to actuate the valve handle. The arms or walls 14 and 15 are desirably, but not necessarily of somewhat greater width than the maximum transverse dimension of the handle 6 for most effective pro-

tection thereof against abusive use and possible damage to the valve, valve connections and the like.

In the modified form of the invention illustrated in Fig. 4 the body portion 17 substantially surrounds the handle 6 on three sides thereof and is provided with lateral and end openings 18 and 19 permitting access to the handle for manual actuation thereof. In a preferred construction the body portion 17 may desirably be substantially U-shaped or trough shaped in transverse cross-section providing opposed side wall portions 20 and 21 and a connecting wall or bight portion 22.

The body portion 17 is integrally connected with the base portion 23, which latter in turn may be integrally formed with the nut portion 24 as in the previously described embodiment.

The protective guard device of the invention may be formed in any suitable manner and of any suitable material for carrying out the objects of the invention, and in the preferred forms illustrated in the drawings comprises a band or piece of metal suitably shaped to protect the handle and including as a part thereof a nut portion 12 adapted to serve as a valve housing nut. However, while I prefer that the guard be formed integrally with the housing nut, such construction is not essential to attain the objects of the invention as the guard may be formed separately and then attached to the nut in any suitable manner such as by pressing, threading, brazing, welding soldering, clamping, pinning, keying, bolting, use of screws and the like. In such event, of course, the guard, particularly the base portion thereof, and the nut would be suitably shaped for cooperative engagement and securing together in the manner indicated.

Although the application of this protective guard has been described as applied to a flush valve serving a plumbing fixture, the intent of this invention is to cover the application of the protective guard to flush valves wherever used.

It is believed that the foregoing description, when taken in connection with the drawing will fully set forth the construction and advantages of this invention to those skilled in the art to which such a device relates so that further detailed description will not be required.

Having thus described my invention, I claim:

1. A protective guard for the pivotal operating handle of a flush or like type valve comprising a base portion adapted to be secured to such a valve and having a bore for receiving a portion of the operating handle thereof, a pair of opposed arms secured to said base portion and extending laterally outward therefrom, said arms adapted to extend lengthwise of a valve handle on opposite sides thereof, a bight portion connecting the outer ends of said arms and forming therewith a substantially U-shaped member, said arms having an opening therebetween permitting actuation of such a valve handle by hand.

2. A device of the class described comprising a pivotally mounted valve actuating handle, means removably securing said handle in operative position, and a protective guard for said handle comprising a substantially U-shaped frame member secured to said securing means and extending along opposite side wall portions of said handle and around the end thereof, said U-shaped frame member having a lateral opening permitting access to said valve handle for actuation thereof by hand.

3. In a flush or like type valve having an elongated operating handle pivotally mounted thereon for movement in a plurality of directions to actuate the valve, a protective guard for the operating handle designed to permit ready actuation thereof by hand and to prevent actuation thereof by foot, said guard comprising a base portion having a bore therein through which said handle extends, means securing said base portion to the valve, protective side wall portions carried by said base portion and extending along opposite sides of said valve handle at least to the end thereof and in close proximity thereto, at least one of said side wall portions having a width not substantially greater than the thickness of said valve handle and said valve handle being biased to a single inoperative position between said side wall portions, said one side wall portion having a side edge spaced from the other of said side wall portions to define an elongated opening therebetween extending along a side of the handle.

4. Apparatus of the type set forth in claim 3 in which the ends of said side wall portions are connected by an intermediate bight portion.

5. Apparatus of the type set forth in claim 3 including a curved wall portion connecting said side wall portions at the side thereof opposite said elongated opening.

6. In a hand operated flush or like type valve having a pivotal actuating handle, the improvement comprising a protective guard for the operating handle designed to permit ready actuation thereof by hand and to prevent actuation thereof by foot, said protective guard comprising a base portion through which said handle extends, means for securing the base portion to the valve, a body portion secured to the base portion and extending endwise therefrom along a side of said valve handle, around the end thereof, and along the opposite side of the handle, said body portion having an open portion extending lengthwise thereof alongside a substantial portion of the length of said handle to permit manipulation of the handle by hand.

7. A protective guard for the pivotal operating handle of a flush or like type valve comprising a base portion adapted to be secured to such a valve and having a bore through which the operating handle is adapted to extend, a pair of oppositely disposed side wall portions secured to said base portion for disposition on opposite sides of such a valve handle, the opposed side edges of said wall portions being spaced apart to form openings through which at least a portion of a hand may be inserted to actuate such a valve handle when positioned between such wall portions, and an intermediate bight portion connecting the ends of said wall portions opposite said base portion.

ROLAND WILLARD DOWNIN.

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