June 30, 1936. F. SOLARI 2,045,732

DEVICE FOR CLEANING OUT THE OVERFLOW PASSAGES OF WASHBASINS

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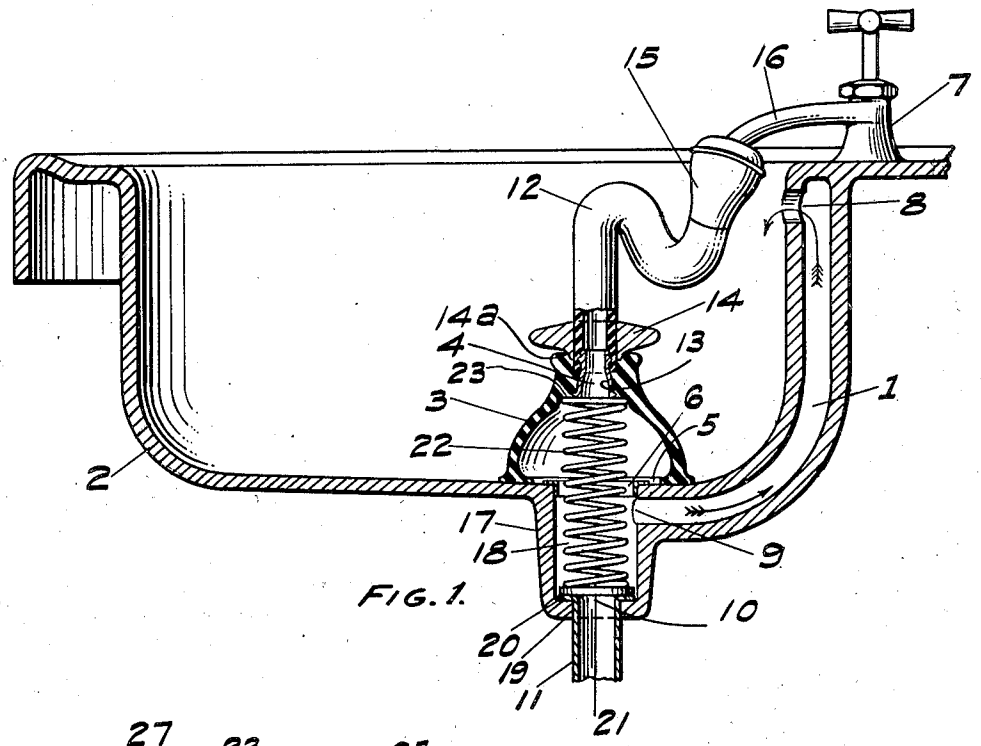


FIG. 1.

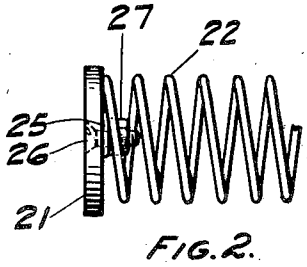


FIG. 2.

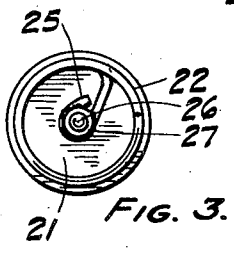


FIG. 3.

FRANK SOLARI
INVENTOR.

BY

ATTORNEY.

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DEVICE FOR CLEANING OUT THE OVERFLOW PASSAGES OF WASHBASINS

Frank Solari, San Diego, Calif.

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9 Claims. (Cl. 4—256)

The present invention relates to improvements in devices for flushing and cleaning out the overflow passages and drains of plumbing fixtures.

An important object of the invention is to improve upon a similar article, the application for patent of which is now pending under Serial Number 16,835, filed April 17, 1935, by reducing the number of parts and modifying the retained parts whereby the efficiency of operation is increased, and also contributing to simplify the structure in order to decrease the cost of its manufacture.

A further object of the invention is the inclusion of means which may be manually compressed and collapsed so that, in addition to the force of water acting against any obstruction or lodged particles in the drain or overflow passage, a manual force may be applied to augment the force of the water. This will lend a gushing action to the water and will tend to dislodge impactions by churning and agitation of the cleansing fluid, and hence will contribute to facilitate the process of cleansing and will insure the desired degree of sanitation.

Still further objects, features and advantages will hereinafter appear.

The foregoing objects are attained by means of a device now reduced to practice, the drawing of which is shown on the accompanying sheet wherein—

Fig. 1 is a view partly in side elevation and partly in vertical section showing the device positioned for cleaning out the overflow passage and drain of a conventional toilet wash basin,

Fig. 2 is a side elevation of the drain plug assembly, and

Fig. 3 is an end elevation thereof.

Referring in detail to the drawing, in Fig. 1 the device is shown in readiness to flush out the overflow passage 1 of a conventional basin 2. Said device comprises a nozzle or applicator portion 3 consisting of a cup shaped member preferably constructed of pliable rubber, and having a liquid supply passage extending therethru and a mouth portion 5. Said applicator portion, when manually compressed is adapted to seal the upper end 6 of the basin's outlet passage in a liquid tight manner.

The basin 2 is provided with a faucet 7 for discharging a liquid into the basin, and the overflow passage 1 has an intake opening 8 and a discharge opening 9 which is located above the bottom outlet passage 10 into which the drain pipe 11 is extended.

One end of a flexible conduit means 12 is fastened to the intake end of said nozzle by means of a pipe plug 13, and mounted on the conduit adjacent said nozzle is an annular manual grippable collar 14. Said collar 14 has its lower body portion terminating in a tapered external diameter 14a which extends into an annular crotch of similar configuration provided therefor in the upper end of the nozzle. As the cup is repeatedly manually collapsed to gush the tap water thru the overflow passage 1 thru the medium of said collar, said tapered part tends to compress the end of the conduit into a more intimate relation with the end of the pipe plug which is extended thereinto.

The other end of said conduit is provided with a faucet connection 15 to make a liquid tight connection with the spout 16 of the faucet 7.

Thus a circuitous flow of liquid is provided from the faucet thru the end 6 of the basin's outlet passage thence thru the overflow passage and into the basin as indicated by the arrows.

The basin 2 has a basin extension 17 which forms the outlet passage 18 or sump into which the overflow passage 1 empties as well as the basin itself.

An annular lip 19 surrounds the drain pipe 11, said pipe having at its upper end an outwardly directed peripheral flange 20 fitted within the lower portion of the passage 18 wherein the bottom outlet passage 10 is formed.

A closure element 21 closes the bottom outlet passage 10 in order to complete the circuitous fluid path aforesaid.

Since the outlet passages of wash basins are found to vary in their diameters, it has been found expedient to provide a closure element which is flexible and adapted to conform to the several different diameters to which it may be subjected. Said element is provided with a spiral spring 22 which after the closure element is seated on its seat will normally project upwardly into the basin.

Such an arrangement makes the closure adaptable for easy insertion into the drain passage and the coils of the spring provide open spaces thru which the water unrestrictedly flows thru the overflow passage back into the basin.

This unrestricted flow of the water permits a greater normal force of the water to dislodge impactions existing in the overflow passages than has formerly been found to exist.

The nozzle 3 is provided with a spring seat 23 against which the upper end of the spring 22 seats. As the applicator is repeatedly collapsed against the action of the spring 22, to cause a gushing action of the water, the spring in turn

aids in restoring the applicator to its original shape against the reverse pressure of the manual force exerted thereagainst.

The spring **22** and closure **21** have been preferably formed as a separate unit constituting an article of manufacture separately salable for the reason that there are times when it is desirous to flush out the drain after the sediment from the overflow passage passes therethru after cleaning, although it is considered within the province of the invention to combine the separate unit with the nozzle should the applicant so desire. Upon temporarily removing the nozzle and slightly elevating the closure **21** thus permitting the water flushed thru the overflow passage back into the basin to gradually pass thru the discharge passage **10** into the drain pipe, much of the extraneous matter may be removed manually from the basin before it is permitted to enter the drain pipe and provide an obstruction elsewhere.

One end of spring **22** is furnished with an eye **25** to receive a bolt **26**, a nut **27** screwing on to said bolt serving to secure that end of the spring to the closure **21**.

During the time the water is flowing thru the conduit and up thru the overflow passage **1**, a manual compressing or collapsing of the nozzle will add to the force of the water thus causing a more gushing action thereby obtaining a churning or agitating of the impactions in the passage **1** which will greatly aid in their dislodgement.

In operation, the parts being positioned as shown in Fig. 1, the operator will grip the grippable member **14** and will compress the resilient cup-shaped member by downward force thereagainst thus collapsing it against the combined opposition of its own resiliency and the compression spring **22**. Then he will release the pressure and permit said member to restore itself to the normal position. By repeating these movements a churning action of the liquid will be produced which will cause it to surge back and forth thru the overflow passage **1** thus efficiently cleansing said passage.

It should be understood that the present disclosure is for the purpose of illustrating only and that this invention includes all modifications and equivalents which fall within the scope of what is claimed. In the claims, the term "basin" refers to the type of basin illustrated in the drawing.

I claim:

1. In a device of the kind described, a cup shaped member having a liquid supply passage therethru, said member having a mouth portion for making a liquid tight connection with the upper end of the outlet passage of a basin, flexible conduit means to connect the liquid passage of said member with the spout of the wash basin's faucet, and a manually grippable collar mounted on said conduit adjacent said member.

2. In a device of the kind described, a cup shaped rubber member having a liquid supply passage therethru, said member having a mouth portion for making a liquid tight connection with the upper end of the outlet passage of a basin, flexible conduit means to connect the liquid passage of said member with the spout of a faucet, and manually grippable means extending around said conduit adjacent said member whereby to flex said cup shaped member to augment the force of the water passing therethru.

3. In a device of the kind described, a cup shaped member having a liquid supply passage therethru, said member being collapsible and having a mouth portion for making a liquid tight connection with the upper end of the outlet passage of a basin, flexible conduit means to connect the liquid passage of said member with the spout of a faucet, manually grippable means mounted on said conduit adjacent said member whereby to manually flex said cup shaped member to augment the force of the water passing therethru, said member having a spring seat, a gasket for closing the outlet passage of a basin below its overflow passage, and a spiral spring fastened to said gasket and having its free end abutting said seat.

4. A flexible cup shaped member having a liquid supply passage therethru, for closing the mouth of the outlet passage of a wash basin, flexible conduit means to connect the liquid supply passage of said member with the spout of the wash basin's faucet, an expansible closure element insertable within the outlet passage of said basin below its overflow passage, and a spiral spring fastened to said element in an endwise manner and having an end to extend above the floor of said basin into said cup shaped member.

5. As an article of manufacture a closure element insertable within the outlet passage of a basin below its overflow passage, and a spirally coiled spring of lesser diameter than that of said element and fastened thereto in an endwise manner.

6. The subject matter of claim 5 and, said spring having an end bent to form an eye, and a bolt extending thru said eye to secure said spring to said closure.

7. A nozzle comprising a flexible cup shaped member of a resilient character having a liquid supply passage therethru for closing the mouth of the outlet passage of a basin, flexible conduit means to connect the liquid supply passage of said member with the spout of a faucet, a closure element insertable within the outlet passage of the basin below its overflow passage entirely closing said outlet passage, and a spiral spring fastened in an endwise manner to said element, said cup shaped member being manually compressible against its own resiliency and the opposition of said spring whereby to augment the pressure of the water flowing thru the overflow passage of the basin while the device is in its operative position.

8. A device of the kind described comprising a flexible member having a liquid supply passage therethru, said member having a compressible portion around the delivery end of said passage to adapt it for being connected in a liquid tight manner with the upper end of a basin outlet passage, conduit means connecting the liquid supply passage of said member with the wash basin's faucet, a closure element insertable within the outlet passage of the basin below its overflow passage entirely closing said outlet passage, and yieldable means acting against said closure element and said flexible member.

9. In a device of the kind described, a cup shaped member having a liquid supply passage therethru, said member being resilient and having a mouth portion which is compressible around the delivery end of said passage to adapt it for making a liquid tight connection with the outlet passage of a basin, a spirally coiled spring to extend and seat within said cup member, a gasket, said spring being secured to said gasket in an endwise manner, said gasket being adapted to close entirely the outlet passage of said basin below its overflow passage while the aforesaid

compressible portion of the cup shaped member is positioned to close the outlet passage of the basin above the lower end of its overflow passage, thus providing for the admission of liquid under pressure to the lower end of said overflow passage to flush sediment therein upwardly into the basin, and manually grippable means bearing against said cup member whereby to collapse it against the action of said spring to cause a gushing action of the liquid passing thru said cup member, said spring tending to restore said cup member to its original shape as the manual pressure exerted against said grippable means is retarded.

FRANK SOLARI.