Sept. 24, 1968 E. D. ANDREWS 3,402,407

DRAIN COVER

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Fig. 1

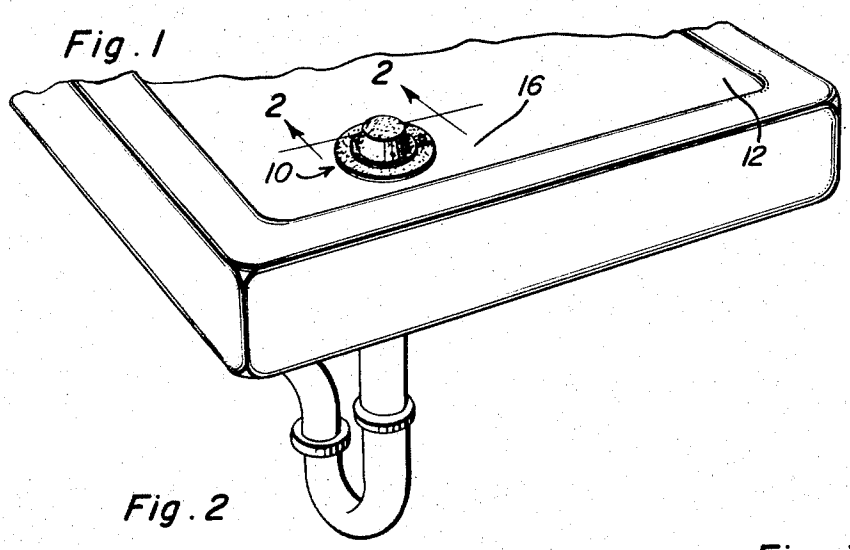


Fig. 2

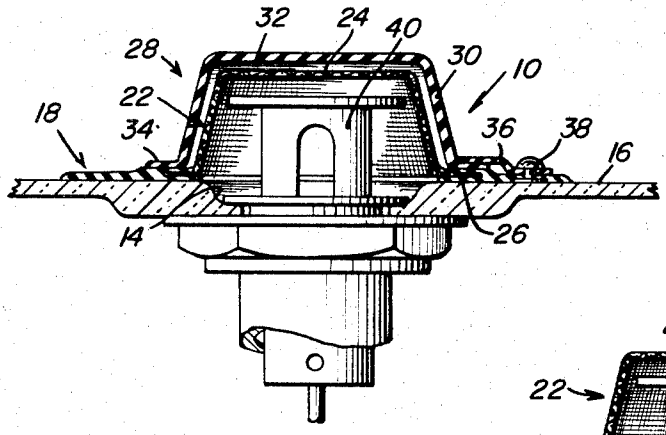


Fig. 3

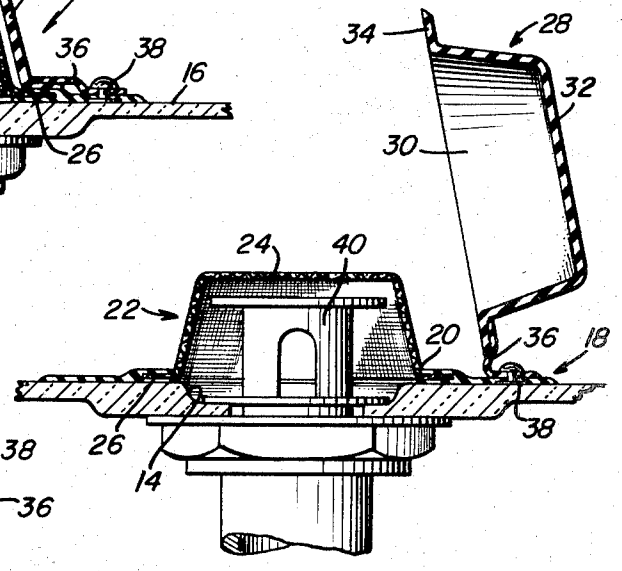
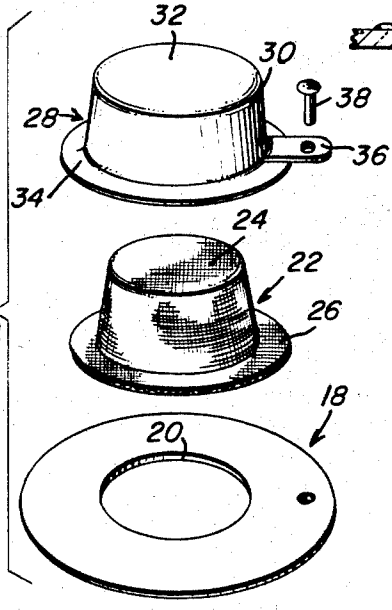


Fig. 4



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DRAIN COVER

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ABSTRACT OF THE DISCLOSURE

A drain cover which is self-sealing about a drain opening in a sink, tub or the like, and incorporates both a screening element and a closure cap for a selective retention or draining of the water, the screening element and cap having raised center portions.

The instant invention generally relates to drain covers, and more particularly is concerned with a drain cover incorporating both a screening element and a closure cap in conjunction with a mounting base which automatically seals to the water basin, be it sink, tub or even shower stall, upon being positioned about the drain therein.

It is a significant object of the instant invention to provide a drain cover which can be selectively closed or opened so as to allow or prevent the draining of water as desired in a simple and efficient manner.

In conjunction with the above object, it is a significant object of the instant invention to provide means whereby, upon a draining of the water, an effective screening element is provided so as to prevent passage of foreign matter down the drain.

Likewise, it is a significant object of the instant invention to provide a drain cover wherein the screening element is so constructed as to present a maximum screened draining surface about the drain so as to substantially elimnate any likelihood of a clogging of the screening element, even when high density suds, such as are found in hair shampoos are being drained from the basin.

Also, an important object of the instant invention is to provide a drain cover which can be utilized in conjunction with those drains incorporating a conventional vertically adjustable internally mounted drain stopper.

Also, an important object of the instant invention resides in the provision of a mounting base for the drain cover which can easily adapt itself to irregularities in the basin bottom and effectively seal therewith.

Also, it is significant that the drain cover of the instant invention be of a simple, inexpensive construction capable of repeated use and being of an easily cleaned nature.

Basically, the drain cover of the instant invention comprises an enlarged flat thin circular base highly flexible in nature and formed from a suitable plastic or rubber. This base has an enlarged central aperture defined therein of a size generally corresponding to that of a drain. The screening element is defined about the central aperture in the base and rises conically therefrom to terminate in a flat top. The cap is generally similarly shaped and hingedly secured to the mounting base to one side of the screening element for selective seating over the screening element or pivotal removal therefrom. The vertical offsetting of the screening element is of particular significance in that it provides adequate room for the vertically movable conventional mechanical stopper now generally provided in various types of water basins. By the same token, inasmuch as the entire screening element acts so as to drain the discharging water, this screening element being generally constructed of a suitable metal or plastic screening defined by crossed wires in the nature of a conventional window screen, it will be appreciated that a large draining area is in fact provided whereby any clogging is substantially precluded. This is particularly important in that it is contemplated that the drain cover of the instant invention be utilized when shampooing one's hair, thus, there will be, normally, a substantial accumulation of both high density suds and hair which in the absence of an enlarged screening area would tend to adversely affect the draining of the basin and/or require often cleaning as a basin is being drained.

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 a partial perspective view of a typical water basin having the drain cover of the instant invention mounted therein;

FIGURE 2 is an enlarged cross-sectional view taken substantially on a plane passing along line 2–2 in FIGURE 1;

FIGURE 3 is an enlarged cross-sectional view similar to FIGURE 2 with the closure cap pivoted open; and

FIGURE 4 is an exploded view of the elements comprising the drain cover of the instant invention.

Referring now more specifically to the drawings, reference numeral **10** is used to generally designate the drain cover comprising the instant invention. This cover **10**, as noted supra, is usable in conjunction with any type of water basin, such as that found in a sink **12**, as illustrated in the drawings, tub, or even shower stall.

With reference to FIGURE 2, it will be noted that the drain cover **10** is to be mounted about the drain opening **14** and sealed, through the pressure or weight of the water within the basin, to the bottom **16** of the basin.

Basically, the drain cover of the instant invention includes a thin and quite flexible mounting or sealing base **18**, preferably constructed of rubber or a suitable plastic. This mounting base **18** will normally be round and includes an enlarged circular central opening **20** of a size generally corresponding to that of the drain opening **14**. Projecting conically upward from the central opening **20** is the screen or screening element **22** which terminates in a flat top **24**. This element **22** has, at the base of the conical portion thereof, a radially outward extending peripheral flat flange **26** which is embedded within the mounting base **18** about the central draining hole **20** therein, thereby in effect integrally bonding the screening element **22** to the flexible mounting base **18** as can be best appreciated from FIGURES 2 and 3.

The closure cap **28** is of a shape and size closely conforming to the screening element **22** for seated reception thereover as illustrated in FIGURE 2. As such, the cap includes a conical body portion **30** terminating in a flat top **32**. In addition, the closure cap **28** also includes an outwardly directed peripheral flat base flange **34** which seats on the upper surface of the mounting base **18** outward of the central aperture **20** and the screening element **22** for sealed engagement therewith through the downward pressure or weight of the water to be received within the basin. This closure cap **28** is to be hingedly secured to the mounting base **18**, this being effected, in one embodiment, by providing for an integral laterally directed cap ear **36** which overlies the base **18** outwardly of the cap flange **34** and which is fixedly engaged with the base by suitable rivet means **38** or the like. This ear will of course be flexible and capable of being repeatedly flexed without breaking. In this manner, the cap can be moved between the two positions illustrated in FIGURES 2 and 3 as desired, depending upon whether the drain opening **14** is to be sealed or whether it is to be opened for a screened draining of the water from the basin.

The conical raised or center portions of the screen element 22 and cap 28 are of particular significance for several reasons. For example, these portions enable the utilization of the drain cover in conjunction with those basins having vertically projecting mechanical stoppers 40 such as are now quite common. In addition, and of particular significance is the fact that the raised shape of the screening element 22 provides a screening area which is greatly enlarged as compared to the cross-sectional area of the drain opening 14 itself. This is of particular significance when draining water wherein high density suds have been provided and wherein an abundance of foreign clogging matter, such as long hairs, can be expected. The enlarged screening area of the element 22 insures, even under such adverse conditions, a maximum draining flow of the water through the basin drain itself.

Another important feature of the instant invention resides in the making of the mounting base 18 of extremely flexible material. Thus, an effective seal can be provided with the basin bottom 16 about the drain opening regardless of the particular shape of the bottom, whether flat or rounded. Likewise, along the same lines, in those instances where the drain is provided closely adjacent the back wall of the basin, the flexible mounting base 18 will merely follow the curve of the bottom and wall and effectively seal to both under the pressure of the received water.

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. A drain cover comprising an enlarged planar base positionable in sealed engagement with a water basin about a drain therein, said base being planar and of a flexible rubber-like water impervious material and including a planar lower surface intimately, sealingly engageable with a water basin, the engagement being induced by water pressure, said base having an enlarged central hole defined therein for positioning in alignment with a basin drain, and a screen-like element affixed to said base peripheraly about the hole defined therein, said element projecting upwardly out of the plane of said base and freely spanning said hole in an elevated position relative to said base whereby a conventional vertically extensible drain stopper can be accommodated.

2. The cover of claim 1 wherein said screen-like element tapers conically upwardly from the periphery of the base opening and terminates in a planar hole spanning portion, the upwardly tapering and hole spanning portions of said element constituting a water draining area substantially greater than that of the cross-sectional area of the base opening.

3. The cover of claim 2 wherein said screen-like element includes a laterally directed integral flange peripherally about the lower edge of the upwardly tapering portion, said flange being embedded within the portion of the flexible base about the opening therethrough.

4. The cover of claim 3 including means for selectively covering said screen-like element and precluding the passage of water therethrough.

5. The cover of claim 4 wherein said last-mentioned means comprises an enlarged upwardly tapering imperforate cap terminating in a planar portion, the lower edge of said cap being provided with a laterally extending flange peripherally thereabout for overlying sealed engagement with said base about said screen-like element,

and means hingedly securing said cap to said base for selective movement between a first sealing position nested over said screen-like element, and a second position removed therefrom.

6. The cover of claim 1 including means for selectively covering said screen-like element and precluding the passage of water therethrough.

7. The cover of claim 6 wherein said last-mentioned means comprises an enlarged upwardly tapering imperforate cap terminating in a top portion, the lower edge of said cap being provided with a laterally extending flange peripherally thereabout for overlying sealed engagement with said base about said screen-like element, and means hingedly securing said cap to said base for selective movement between a first sealing position nested over said screen-like element, and a second position removed therefrom.

8. A drain cover comprising an enlarged flat base of a water impervious flexible material positionable in overlying and surrounding relation to the drain, said base including a planar lower face, said cover being free of any projection below the planar lower face of the base, said base having an enlarged central opening defined therethrough capable of alignment with the drain, a screen-like element overlying said opening, said element comprising a peripheral edge portion embedded and intimately sealed within the surrounding portion of said flexible base, said screen-like element including an upwardly tapering conical portion terminating in a flat top portion vertically spaced above the flat base whereby a drain incorporating a vertically projectable stopper can be accommodated, both of said portions defining draining areas about and over the base opening, a closure cap of water impervious material similar in shape to said screen-like element and of a size slightly larger than said screen-like element, and means hingedly securing said cap to said base whereby the closure cap is movable between a first water excluding position over said screen-like element and a second position removed therefrom.

9. The cover of claim 8 wherein said cap includes a flat laterally projecting flange peripherally about the bottom thereof for selective sealing engagement with said base about said screen-like element.

10. The cover of claim 5 wherein said means hingedly securing said cap to said base comprises a laterally directed flexible ear on said cap extending outwardly into overlying relationship to said base, and means fixing the outer end of said ear to said base.

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