Nov. 19, 1935. E. FOOSE 2,021,410

SUBSINK STRUCTURE

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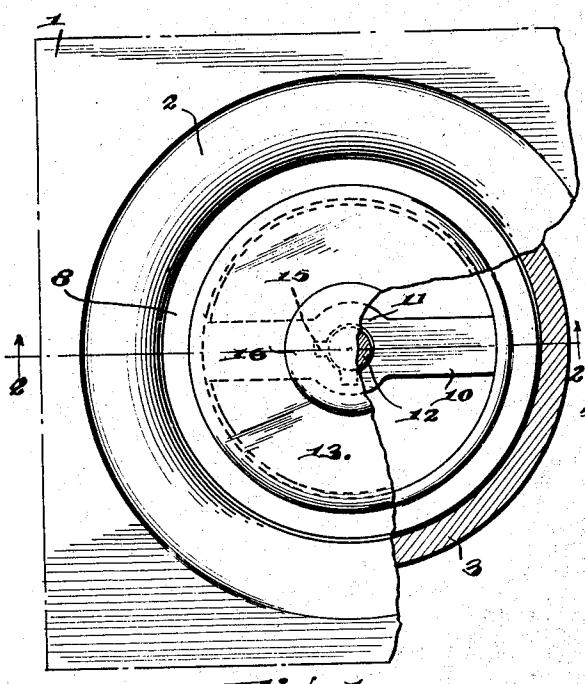


Fig. 1.

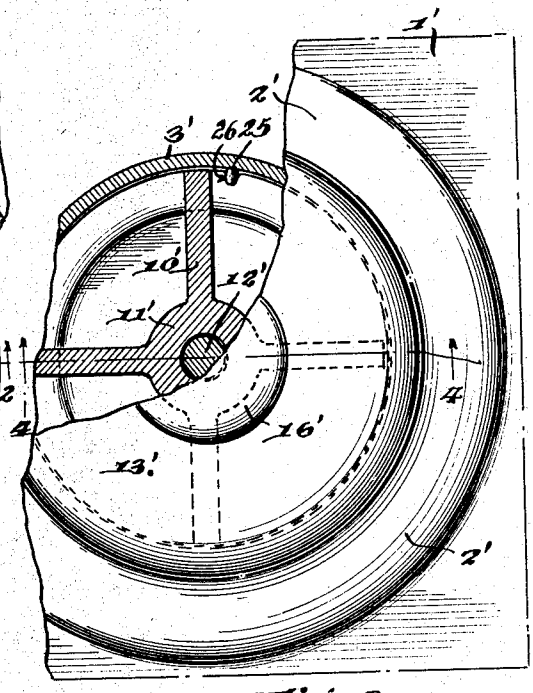


Fig. 3.

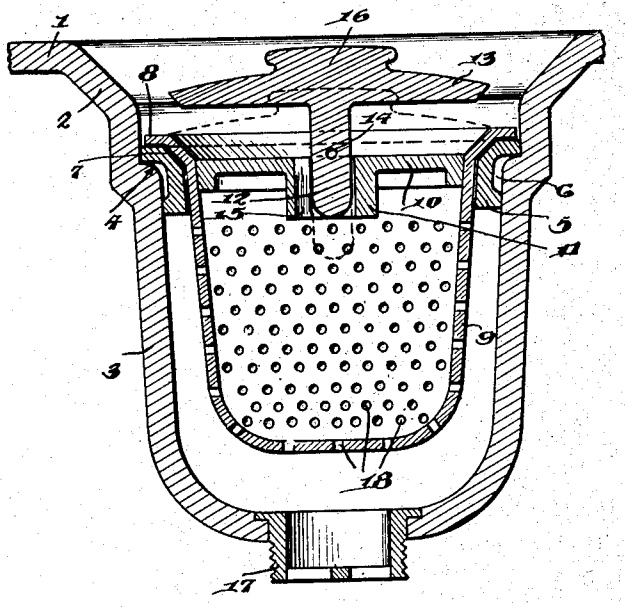


Fig. 2.

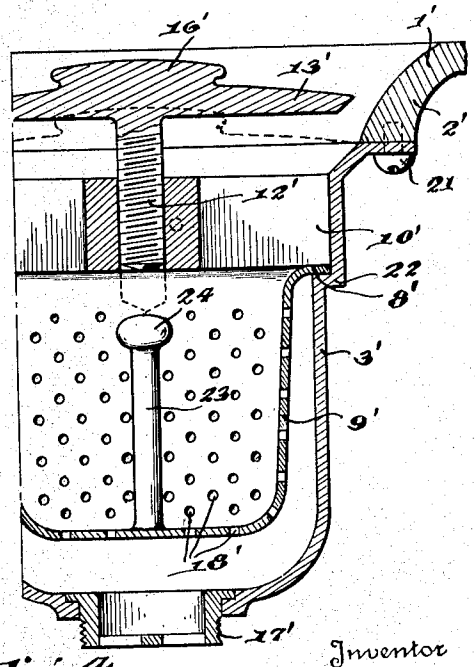


Fig. 4.

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SUBSINK STRUCTURE

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9 Claims. (Cl. 4—287)

This invention relates to subsink structures and it has for its primary object the provision of a sanitary drain opening of simple construction provided with a stopper which may be set in either open or closed position without complete withdrawal from said opening and which, in both said positions, underlies the upper surface of the adjacent portion of the sink bottom so as to afford no hindrance to the sliding of dishes or utensils thereover.

Another object is to provide at the inlet to a sub-sink chamber such a stopper on a support which is firmly seated within the chamber, and so placed that it will not be easily unseated by the moving of utensils over the bottom of the sink.

And another object is to provide a device of the character mentioned having a strainer underlying the stopper, both stopper and strainer being readily removable, as for cleaning.

And a still further object is to provide a sink stopper-and-strainer construction having relatively few parts of simple construction easily disassembled for cleaning or replacing of parts.

In describing my invention in detail, reference will be made to the accompanying drawing, in which—

Figure 1 is a top plan view of a portion of a sink bottom embodying one form of my invention, with a part broken away to show the chamber and strainer construction;

Figure 2 is a vertical sectional view of the same taken substantially on line 2—2 of Fig. 1;

Figure 3 is a view similar to Fig. 1 of another form of my invention; and—

Figure 4 is a vertical sectional view of the same taken substantially on the line 4—4 of Fig. 3.

In the drawing, in which like designating characters distinguish like parts throughout the several views, 1 indicates a sink bottom having a funnel-shaped, depressed portion 2 constituting a drain opening for the sink and forming a mouth for a strainer chamber 3 which, in the embodiment of my invention illustrated in Figs. 1 and 2, is formed integrally with said sink bottom.

In said embodiment of my invention, the interior wall of said chamber has formed thereon an annular shoulder 4 forming a seat for a gasket 5. Said gasket has formed in its outer surface facing the interior wall of said chamber a groove 6 for the reception of cement or solder for fixing said gasket in place within said chamber and forming a joint impervious to the seepage of water therethrough. Said gasket has formed upon the inner surface thereof a finely ground seat 7 adapted to receive thereon and to form a watertight joint with the lip 8 of a strainer 9 depending within said strainer chamber.

Said strainer has secured therein near its mouth, preferably by spot welding, a transverse yoke 10 having formed at its middle portion a sleeve 11 through the central aperture of which slides the depending stem 12 of a stopper 13. Said stem carries, between its lower terminal and its juncture with said stopper, a short stud 14; and formed in the sleeve 11 in communication with the central aperture thereof is a vertical groove 15 through which said stud may slide when said stopper is rotated to a position in which said stud registers therewith, permitting the stopper to fall to the position shown in dotted lines in Fig. 2, in which it closes the mouth of the strainer and prevents the flow of liquids through the drain. When the stopper 13 is lifted to the open position shown in section in Fig. 2 and rotated so as to throw the stud 14 out of register with the groove 15, said stud will rest upon the upper surface of the sleeve 11 so as to hold said stopper raised, or in its open position, thus permitting the free passage of liquids and small particles of solids and semi-solids thereby into the strainer 9.

The contacting surfaces of the stopper 13 and the strainer 9 are finely machined so as to provide a tight seat.

The stopper 13 may be provided with any convenient lifting means, as a knob 16; and the strainer chamber is provided with an outlet, such as the drain nipple 17.

Manifestly, the stopper 13 may be manually lifted clear of the strainer yoke 10, if desired, and, when it is so removed, the strainer 9 may also be lifted out of its chamber 3 by grasping the yoke 10 with the fingers or any sort of hooked tool; and, when said strainer is so removed, said yoke 10 affords no considerable impediment to a thorough cleaning of the strainer. After cleaning, the strainer may be dropped into position, and the stopper as readily inserted thereinto.

In the modification shown in Figs. 3 and 4, the depressed portion 2' of the sink bottom 1' terminates at a convenient distance below the sink bottom, and the strainer chamber 3' is secured thereto, as by screws or bolts 21. The chamber 3' has formed therein an interior annular ledge 22 upon which rests the outwardly flared lip 8' of the strainer 9'. Said strainer is provided with a centrally disposed stem 23 extending upwardly therein from its bottom and terminating in a

knob 24 for facilitating manual removal of said strainer, as for cleaning.

Resting upon the lip 8' of the strainer 9' is a yoke or spider 10'. Said spider comprises a centrally disposed sleeve 11' having a central aperture for the reception of the stem 12' of a stopper 13'. The stem 12' and the aperture in which it is received are correspondingly threaded so that by manual rotation of the stopper 13' with respect to said spider, the former may be raised or lowered within the drain opening. When lowered a sufficient distance, the circumferential edge of said stopper seats upon the adjacent portion of the chamber 3', the abutting surfaces of said stopper and said chamber being finely ground so as to form a substantially watertight joint when in contact.

Rotation of the spider 10' with the stopper 13' when the same are in position within the chamber and the former is being rotated to either its closing or open position is prevented by means of one or more pins or vertical ribs 25 formed upon or attached to the interior surface of the wall of the chamber 3', as shown in Fig. 3, said pins or ribs forming stops against which the arms of the spider strike in rotating. The lip 8' of the strainer 9' is provided with an indentation or indentations 26 for clearing said pins or ribs when said strainer is being placed within or removed from its position within the chamber 3'.

As will be readily understood, the stopper 13' and the spider 10' may be manually removed for cleaning by lifting the same out of position, and the strainer 9' may then also be readily removed by lifting it out of the chamber 3'.

In both forms of my invention illustrated in the accompanying drawing the depressed portion of the sink bottom is of a sufficient depth and the elements of my invention are of such dimensions and so disposed that the topmost portion of the stopper at all times lies below the level of the adjacent portion of the upper surface of the sink bottom, in either the closed or the open position of the stopper, thus affording no impediment to the passage of dishes or utensils thereover and exposing, when closed, no obtruding portion liable to be engaged in such a manner as to unseat the stopper and allow the water in the sink to escape.

I claim:

1. A drain fixture for sinks comprising in combination with a drain opening and a strainer chamber therebeneath, a strainer supported within said chamber, a stopper for said opening, and means interposed between said strainer and said stopper whereby the latter may be positioned in either open or closing position with relation to said opening.

2. A drain fixture for sinks comprising in combination with a drain opening and a strainer chamber therebeneath, a strainer supported within said chamber, a stopper for said opening, and means interposed between said strainer and said stopper whereby the latter may be positioned in either open or closing position with relation to said opening, said stopper being removable from said opening by manual manipulation, independently of said strainer and of said stopper-supporting means.

3. A drain fixture for sinks comprising in combination with a drain opening and a strainer chamber therebeneath, a strainer supported within said chamber, a yoke carried by said strainer at or near its mouth, and a stopper for said opening disposed above said strainer and supported in its open position by said yoke.

4. A drain fixture for sinks comprising in combination with a drain opening and a strainer chamber therebeneath, a strainer extending into said chamber and having an outwardly flared lip portion which seats upon said opening so as to prevent the passage of liquids between the walls of said opening and said strainer, a stopper for the mouth of said strainer, and means interposed between said strainer and said stopper whereby the latter may be set in either opening or closing position with respect to the former.

5. A drain fixture for sinks comprising in combination with a drain opening and a strainer chamber therebeneath, a strainer extending into said chamber and having an outwardly flared lip portion which seats upon said opening so as to prevent the passage of liquids between the walls of said opening and said strainer, a stopper for the mouth of said strainer, and means interposed between said strainer and said stopper whereby the latter may be set in either opening or closing position with respect to the former, said stopper being removable independently of said strainer and of said stopper-supporting means.

6. A drain fixture for sinks comprising in combination with a drain opening and a strainer chamber therebeneath, a strainer extending into said chamber and having an outwardly flared lip portion which seats upon said opening so as to prevent the passage of liquids between the walls of said opening and said strainer, a stopper for the mouth of said strainer, and means interposed between said strainer and said stopper whereby the latter may be set in either opening or closing position with respect to the former, said stopper being removable independently of said strainer and of said stopper-supporting means, and said strainer being slidably removable from said opening.

7. A drain fixture for sinks comprising in combination with a drain opening and a strainer chamber therebeneath, a strainer supported within said chamber, a yoke carried by said strainer at or near its mouth and a stopper for said opening disposed above said strainer and supported in its open position by said yoke, said stopper being slidably removable from said yoke.

8. A drain fixture for sinks comprising in combination with a drain opening and a strainer chamber therebeneath, a strainer supported within said chamber, a yoke carried by said strainer at or near its mouth and a stopper for said opening disposed above said strainer and supported in its open position by said yoke, said stopper being slidably removable from said yoke, and said strainer being slidably removable from said chamber.

9. A drain fixture for sinks comprising a strainer chamber affixed to the bottom of the sink and having a shoulder formed upon its interior surface, a cup-shaped strainer having a flared lip designed to rest upon said shoulder in such a manner as to prevent the flowage of liquids therebetween, said strainer being slidably removable from said strainer chamber, a yoke carried by said strainer near its mouth, a stopper for the mouth of said strainer, and means interposed between said stopper and said yoke whereby the former may be manually set in either closing or opening position with respect to said strainer, said means, when said stopper is set in its open position, retaining the same in said position.

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