Jan. 30, 1940. E. M. REEDY 2,188,613

SINK STRAINER

Filed April 16, 1938 2 Sheets-Sheet 1

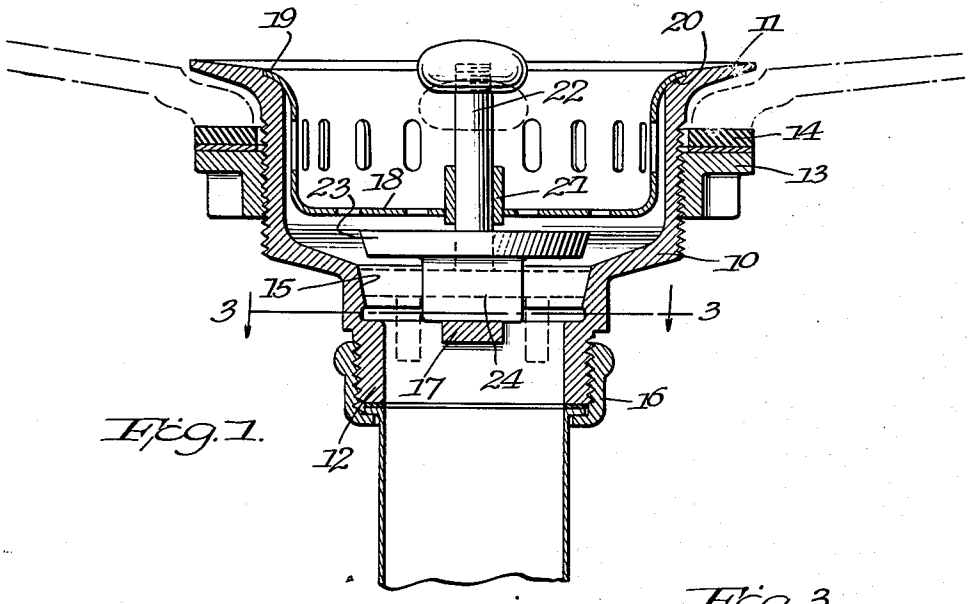


Fig. 1.

Fig. 2.

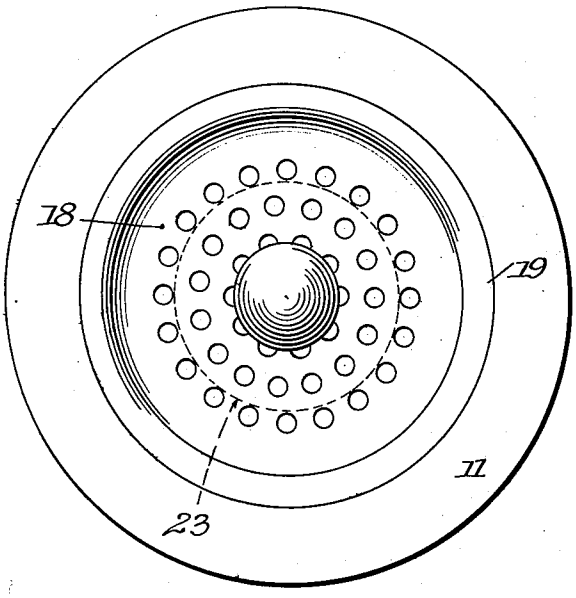
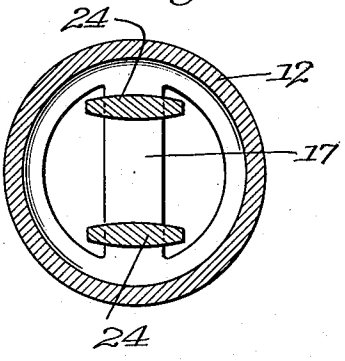


Fig. 3.



Inventor

Emmett M. Reedy.

By Cushman, Darby & Cushman

Attorneys

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SINK STRAINER

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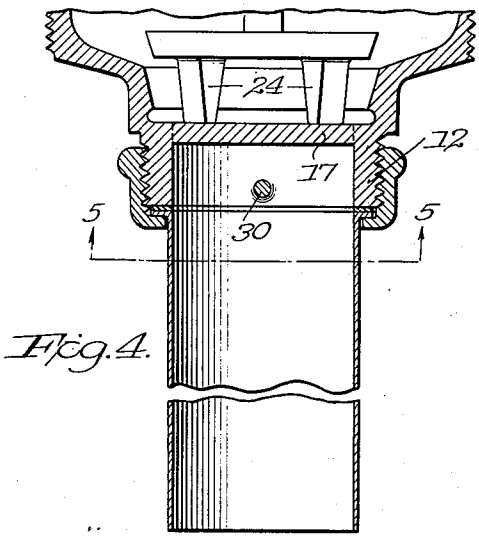
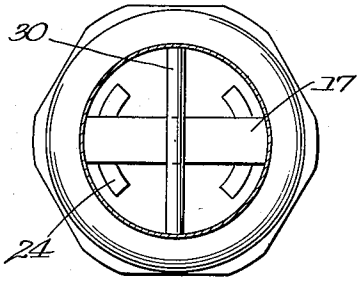


Fig. 4.

Fig. 5.



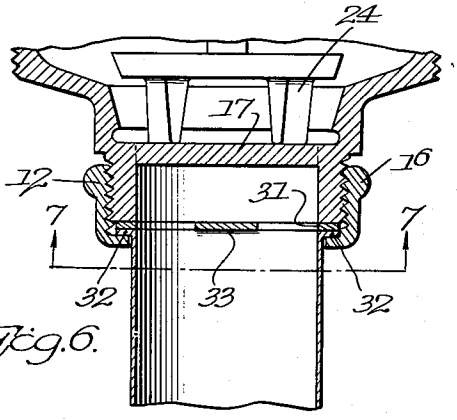
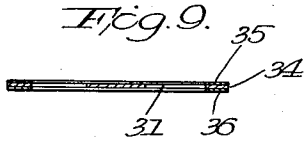


Fig. 6.

Fig. 9.



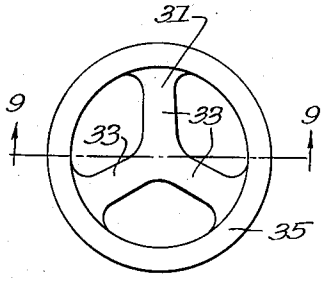


Fig. 8.

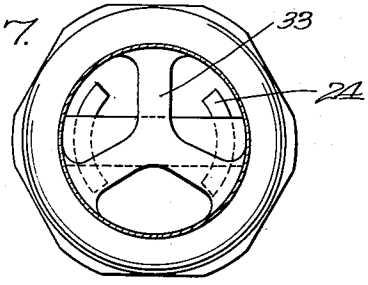


Fig. 7.

Inventor

Emmett M. Reedy.

By Lemmon, Darby & Lemmon

Attorneys

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UNITED STATES PATENT OFFICE

2,188,613

SINK STRAINER

Emmett M. Reedy, Los Angeles, Calif., assignor to Mueller Co., Decatur, Ill., a corporation of Illinois

Application April 16, 1938, Serial No. 202,557

1 Claim. (Cl. 4—287)

This invention relates to a drain fitting and is particularly designed for use with sinks and the like.

It has for its object to provide a fitting which may be readily adapted to existing types of sinks; in which a strainer is provided; together with a valve for closing the valve opening, said strainer being so associated with the valve that while the valve is capable of independent movement, both the valve and strainer may be simultaneously removed from the fitting when the valve is lifted. Provision is made, further, whereby the valve may be shifted from closed to open position and there held to permit free drainage, the construction and arrangement of the parts being such that the water-way to the drain pipe is not unduly reduced. Finally, the parts are so disposed and spaced one from the other that collection of grease or refuse between the parts will be eliminated and the members of the assembly will be cleared and flushed under water-flow.

One embodiment of the invention is shown in the accompanying drawings, in which:

Figure 1 is a vertical section through the drain fitting,

Figure 2 is a plan view of the drain fitting,

Figure 3 is a plan view taken on line 3—3 of Figure 1,

Figure 4 is a vertical section through a modified drain fitting structure,

Figure 5 is a bottom view of the modified drain fitting taken on line 5—5 of Figure 4,

Figure 6 is a vertical section through the drain fitting of Figure 1 showing a removable spider plate in position,

Figure 7 is a bottom view of the structure shown in Figure 6 taken on line 7—7,

Figure 8 is a plan view of the spider plate, and

Figure 9 is a vertical cross-section of the spider plate taken on line 9—9.

The invention as here illustrated comprises the body portion 10 provided with an enlarged strainer-receiving inlet section and a relatively small valve-receiving outlet section. The inlet section engages with an opening in the sink or other receptacle, illustrated in dotted lines in Figure 1. The body portion 10 is threaded at its upper portion, on which is mounted the threaded collar 13, and between which and the bottom of the sink or receptacle is the gasket 14, so that the body portion can be mounted securely on the sink in water-tight relation thereto, a flange 11 being provided to engage the upper side of the sink.

The relatively small outlet section of the body portion 10 is provided with the outlet 12 of smaller diameter than the upper part of the body portion 10, which portion 12 forms the drain outlet and is coupled to the drain pipe by means of the threaded collar 16 which holds the flanged end of the drain pipe snugly against the gasketed bottom of the drain portion 12.

The body portion 10 may be, and preferably is, of one integral piece, and is provided with a valve seat 15 in the outlet section, preferably at the juncture of the strainer and valve-receiving sections of the fitting.

Across the drain opening of the outlet portion 12, below the valve seat 15, is provided a bar 17 which may be and preferably is diametrically placed and preferably formed integral with the body portion.

Mounted for vertical movement in the upper part of the portion 10 is a strainer 18 having an outturned rim portion 19 which fits closely and in a substantially water-tight relation with a suitable groove 20 in the top of the portion 10 so as to form a smooth drainage surface from the flange 11 to the strainer. The said strainer 18 is provided with drainage openings in its bottom and also in its side wall, the cylindrical side wall of the strainer 18 being spaced from the inner wall of the fitting so as to give water-way from the side openings. Centrally of the strainer is provided a valve stem bearing portion or sleeve 21 which extends slightly below the bottom of the strainer so as to maintain the valve spaced always from the bottom of the strainer and prevent any obstruction or closing of the ports in the bottom of the strainer by the valve in any position of the parts.

Mounted in the bearing 21 is the valve stem 22, which is freely slidable in the bearing and has a suitable operating handle threaded to its upper end. Secured to the valve stem 22 is the valve member 23 adapted to engage the valve seat 15 in the fitting 10 and close the outflow port, as shown in dotted lines in Figure 1.

On its underside the valve 23 is provided with spaced, flat-bottomed lugs 24 of streamlined form in cross-section so that free flow is permitted and catching of waste eliminated, which, when the valve is raised, turned, and falls to closed position, will straddle the bar 17 and allow closing of the valve.

When it is desired to open the valve 23 and maintain it in open position, it may be lifted by means of the stem 22 and rotated until the lugs 24 are above the bar 17, and then lowered so that the lugs 24 resting on the bar 17 will support the valve in the open position shown in full lines

in Figure 1. In this position the fitting, strainer, and valve parts are all separated longitudinally, and free flow is permitted without any obstructing parts between which or above which refuse can collect.

When it is desired to remove both valve and strainer for the purposes of cleaning, this may be readily done by lifting the valve stem, the valve, and the strainer, leaving the fitting open for cleaning and giving access to the drain outlet and pipe.

With this construction the water-way to the drainage outlet is not materially interfered with. The bar 17 and the spaced lugs 24 are so proportioned as to not obstruct the water-way; the spaced lugs giving clearance and yet holding the valve and strainer in upright position and preventing tilting; and, further, the strainer and valve are always spaced one from the other so that there will be always free flow between them, and no accumulation of grease or other waste can occur.

In the modified drain fitting structure shown in Figure 4 a rod 30 may be and preferably is cast integral within the lower end of outlet 12. Rod 30 is preferably disposed diametrically across the drain opening and at right angles to bar 17. The rod is also positioned far enough below bar 17 so that when the valve element 23 is moved to closed position, i. e., when lugs 24 straddle bar 17, the lugs extending below the bar 17 will not engage the rod 30. This disposition of rod 30 will in no way interfere with the free flow through the outlet because any small debris that might pass the strainer would easily pass through the relatively unobstructed outlet passage.

When the strainer and valve assembly of Figure 1 are removed for cleaning it is possible that objects such as knives and forks might accidentally fall vertically into the outlet and past the bar 17. This likelihood might exist in strainers designed to handle large capacities. However, the rod 30 disposed crosswise with respect to bar 17 will form an obstruction that will prohibit the object falling irretrievably into the outlet.

In a like manner the spider plate 31 shown in Figures 6 through 9 will prevent such dropping of objects into the outlet. The spider plate there shown is adapted to be positioned between the bottom of the outlet portion 12 and the flanged end 32 of the drain pipe. It is held in this position when the threaded collar 16 is drawn tight.

The spider plate may have any number of arms 33 disposed in such a manner as to provide a relatively unobstructed drain outlet so that debris may easily pass yet the openings between the arms will prevent the passage of such larger objects as above explained. In Figures 6 through 9 a spider plate having three arms has been shown. However a plate having one cross arm and positioned at right angles to bar 17 might be used. Also in larger drain outlets more than three arms may be necessary to reduce the area between the arms to such size as to prevent the passage of large objects therebetween.

In Figure 9 the plate is shown as having a metallic core 34 with a thin gasket washer 35 and 36 on opposite sides. In this manner an effective gasketed seal is provided between the outlet and drain pipe.

The spider plate 31 will be positioned far enough below bar 17 to not engage the lugs 24 on the valve element 23 when the valve is moved to closed position, i. e., when the lugs straddle the bar 17 and extend below it.

Thus it is seen that in large drain fittings where a large object might pass bar 17 and fall into the outlet or become lodged in the trap, a means has been provided to prevent such accidents. At the same time due to the positioning of the rod or spider plate substantially below the bar 17 the free operation of the valve element is in no wise interfered with nor is the interposition of either of these elements such obstruction in the outlet flow passage as to hinder free drainage. This is evident from the fact that the rod or the arms of the spider plate need be only sufficient width or size as to withstand ordinary wear, these elements are in a protected area and are subjected only to the drainage flow.

It will be understood that the present disclosure is illustrative, and that such changes as involve only the exercise of mechanical skill may be made from the specific construction shown without departing from the purview of the invention.

I claim:

A drain fitting having a body provided with an enlarged inlet and a materially reduced outlet, a strainer removably supported to depend within the enlarged portion of the body, said reduced end of the body being provided with an integral valve seat, a valve having a stem slidably and rotatably mounted in a bearing carried by the strainer, a pair of spaced arms depending from said valve, and a bar integral with the body and extending entirely across the reduced end of the body immediately below said seat, said spaced arms being adapted to cooperate with said bar, whereby in one position of rotation of the valve stem the arms will straddle said means to allow the valve to slide down to closed position in engagement with said valve seat and in said elevated position to be rotated to place the arms on said means to maintain the drain passage open.

EMMETT M. REEDY.