A basket sink strainer adapted for installation in sinks of various styles, structural configurations, dimensions and materials, such installation requiring no special tools, fasteners or skills, all necessary attaching means being incorporated in and constituting integral parts of the basket sink strainer assembly.

3 Claims, 4 Drawing Figures
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BASKET SINK STRAINER

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to household sinks of the kinds installed in kitchens and utility rooms and it also applies to corresponding types of sinks such as are used in hospitals, nursing homes and other institutions, laboratories, commercial operations such as restaurants, and such industrial operations as photographic and chemical processing plants.

2. Description of the Prior Art


In one sense the prior art performs substantially all of the functions of the basket sink strainer herein described and claimed. The prior art strainers may be applied to various kinds of sinks, and they include integral attaching means. However, the basket sink strainer of the present invention is of simpler, less expensive construction, and it is provided with two installment adjustments as compared with the single installment adjustment of the prior art. It is easier to install and it provides a better installation than do the strainers of the prior art.

SUMMARY OF THE INVENTION

Speaking generally, a basket sink strainer made in accordance with this invention comprises a bowl which extends through the outlet opening of the sink, adjustable attaching means for securing the bowl to the sink, and a removable strainer having a stopper attachment. The bowl has an aperture communicating with a drain pipe and when the strainer is in one position within the bowl the stopper serves as a plug closing said opening, and when the strainer occupies a second position within the bowl the stopper is disengaged from the opening.

The principal feature of the invention resides in the adjustable attaching means. This attaching means comprises the following elements: a screw-threaded cylindrical extension on the bowl projecting in downward direction, a generally triangular retaining plate having a screw-threaded central opening adapted to receive the threaded extension of the bowl, an annular flange formed at the top of the bowl in concentric relation to the bowl and its threaded extension, a floating pressure ring below the annular flange of the bowl, and three adjusting screws which are in screw-threaded engagement with the retaining plate and in clamping engagement with the pressure ring. In the installation of this device the bowl is inserted downwardly through the drain opening in the sink, the annular flange at the top of the bowl resting upon the sink body around the drain opening. As will be understood, plumbers' putty should be placed between the annular flange of the bowl and the sink body to provide a seal therebetween. A resilient washer is then placed against the bottom of the sink in registration with the annular flange of the strainer bowl, and the pressure ring is then placed against the washer. The triangular retaining plate is then screwed to the threaded extension on the bowl, and the adjusting screws are then tightened against the pressure ring.

There are accordingly two adjustments in this procedure, one in the screw-threaded relationship between the retaining plate and the threaded extension on the strainer bowl, and the other in the adjusting screws between the retainer plate and the pressure ring. These two adjustment features cooperate with each other to provide an installation advantage which is not provided by the prior art.

DESCRIPTION OF PREFERRED EMBODIMENT OF THE INVENTION

Referring now to the details of the invention as illustrated in the drawing, it will be observed that the basket sink strainer 10 which is herein claimed is provided with a bowl 12, said bowl having an annular flange 14 formed along its upper periphery and a screw-threaded, cylindrical extension 16 projecting downwardly from the main body of the bowl, said extension having bottom wall 18 with outlet openings 20 and a centrally disposed slot 22 formed therein. As appears in the drawing, the screw-threaded configuration of extension 16 defines and comprises a helical screw thread with multiple convolutions, commonly called "helical screw threads." The bowl, its annular flange 14, and its cylindrical extension 16 are all arranged in concentric relation to each other. Two annular shoulders are thereby provided, the annular flange being one and the other being an annular portion 24 of the bowl situated between its cylindrical wall 26 and the cylindrical extension 16.

The strainer is also provided with a retaining plate 28. In preferred form, this retaining plate is of generally triangular shape, and it is provided with a vertically, upwardly directed outer peripheral flange 30 for strength and rigidity. The retaining plate has a central opening 32, and a screw-thread 34 is formed in the retaining plate along the peripheral edge which forms the hole. This screw-thread 34 is adapted to engage the threaded extension 16 of the bowl and to secure the retaining plate to said bowl in adjusted relation thereto.

The retaining plate is also provided with a plurality (preferably three) of tapped holes 36, one at each corner of its triangular shape. Inserted into holes 36 are thumb screws 38 which serve as adjustable clamping screws for clamping the strainer assembly in place in the sink.

As has been above indicated, in the installation of this basket sink strainer its bowl 12 and threaded extension 16 are inserted downwardly through the drain opening 40 in a sink 42. The annular flange 14 of the bowl rests on the bottom of the sink with a layer of plumbers' putty 44 between them to provide a liquid-tight seal. A washer 46 is placed around the bowl 12 and against the undersurface of the sink. Pressure ring 48 is then placed against the washer. It will be noted that the pressure ring is provided with inner and outer flanges which project downwardly therefrom for strength and stiffening purposes. The ring with its downwardly extending flanges defines an annular channel which is adapted to receive the upper ends of the clamping screws.

After the retaining plate 28 is mounted on the cylindrical extension 16 of the strainer bowl in screw-threaded engagement with the helical screw threads thereof, said retaining plate is tightened against the
upper end of said threaded extension and the clamping screws may now be tightened against the pressure ring to clamp the strainer in place. Annular flange 14 of the strainer bowl is clamped downwardly against the sink body and the pressure ring with its resilient washer 46 is clamped upwardly against the sink body, thereby securing the entire basket sink strainer in place in the drain outlet of the sink. An internally threaded clamping collar 50 together with a plastic (preferably nylon) bushing 52 are now used to attach the threaded extension 16 to a drain pipe 54. This is a conventional means for attaching one pipe to another.

Basket strainer 56 consists of a perforated cup 58 having an annular flange 60 along its upper periphery, a stopper 62 abutting the bottom wall of said cup, and a stud 64 projecting downwardly from the stopper. A plurality of openings 66 and 68 are formed in the side and bottom walls, respectively, of cup 58 for drainage purposes.

A preferred stopper construction includes a metal washer which abuts its lower face. A hole is formed in the stopper in registration with the hole in the washer, and there is a corresponding hole in the bottom wall of the cup formed centrally thereof. A screw 72 with a knob 74 serving as its head projects through said centrally formed hole in the bottom wall of the strainer cup 58 and engages a tapped hole in stud 64. It is by this means that the stopper and stud are removably secured to the strainer body.

In the use of the strainer assembly, knob 74 serves as a handle whereby the basket strainer may be raised, lowered and rotated. It will be observed that the lower end of stud 64 has a flattened portion 76. This flattened portion is of a size to project through slot 22 in the bottom wall of threaded extension 16. When flat portion 76 projects through said slot 22, strainer 56 is free to drop as far as stopper 62 will allow. The stopper now engages the inner wall of the threaded extension 16 and thereby functions as a plug which closes the bowl and prevents any drainage therefrom. The strainer 56 may be raised by means of knob 74 and rotated 90 degrees to prevent the flattened portion 76 of stud 64 from passing into slot 22. Said flattened portion 76 is thereby supported on the bottom wall 18 of the threaded extension 16 in order to maintain the basket strainer 56 in elevated position within bowl 12. The stopper 62 is thereby removed from engagement with the inner wall of the threaded extension 16, and liquids are thereby free to flow through holes 20 and slot 22 in the bottom wall of said threaded extension and into and through the drainage pipe 54.

The foregoing is illustrative of a preferred form of the invention, and it will be understood that variations and modifications may be incorporated therein within the broad scope of the appended claims.

What is claimed is:

1. In a basket sink strainer, the combination of:
   a. a bowl having an annular rim extending radially outwardly from its upper end and a cylindrical extension projecting downwardly from its lower end,
   b. said bowl, rim and cylindrical extension being disposed in coaxial relation to each other,
   c. said cylindrical extension having a plurality of external helical screw threads formed thereon and being provided with a bottom wall having drain openings formed therein,
   d. a retaining plate of generally triangular configuration in plan view having a vertically, upwardly directed peripheral flange extending over the entire periphery thereof and providing structural strength and rigidity thereto and an internal screw thread formed therein engaging the external helical screw threads of the cylindrical extension to mount said retaining plate on said cylindrical extension,
   e. a floating pressure ring encircling the bowl below and in substantial registration with the annular rim of said bowl,
   f. an annular washer between said rim and said pressure ring,
   g. a plurality of internally threaded holes formed in the retaining plate, and
   h. clamping screws in said internally threaded holes engaging the pressure ring for adjustably clamping the pressure ring and washer and the annular rim of the bowl to the bottom wall of a sink at its drain opening and
   i. an internally threaded clamping collar in screw-threaded engagement with the externally threaded cylindrical extension of the bowl, for attaching said cylindrical extension to a drain pipe.

2. The combination of claim 1, wherein:
   a. the retaining plate is of generally triangular configuration in plan view,
   b. having one internally threaded hole at each corner and one clamping screw in each said internally threaded hole.

3. The combination of claim 1, wherein:
   a. the floating pressure ring is provided with internal and external flanges projecting downwardly therefrom for structural strength and rigidity;
   b. said pressure ring with its downwardly extending flanges defining an annular channel adapted to receive the upper ends of the clamping screws.