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SINK STRAINER ASSEMBLY

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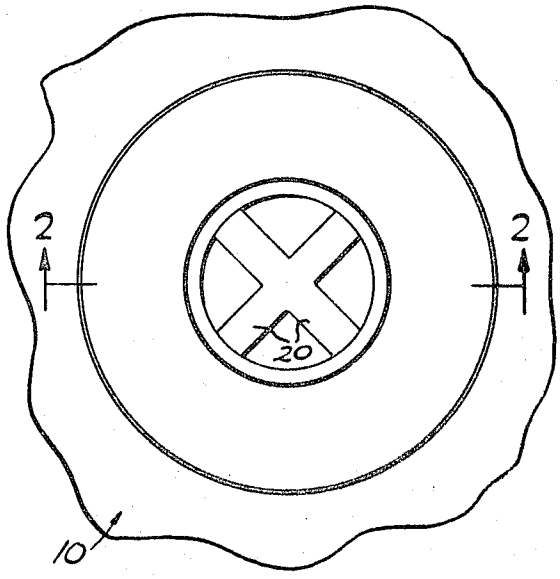


FIG. 1

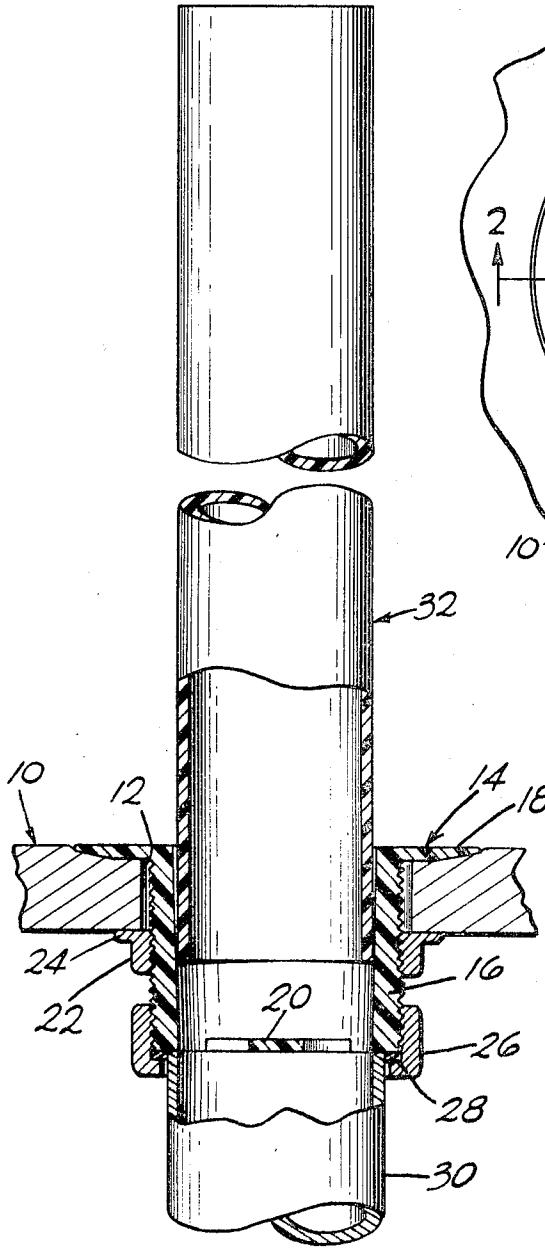


FIG. 2

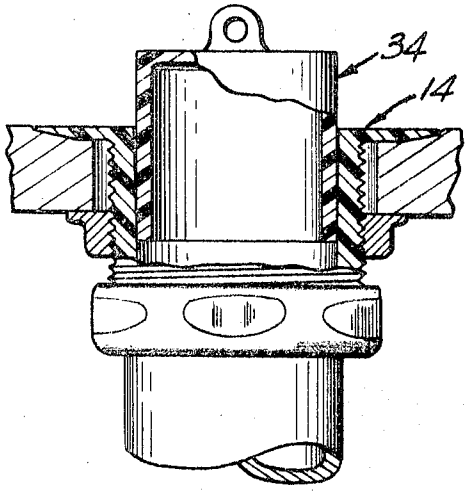


FIG. 3

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SINK STRAINER ASSEMBLY

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ABSTRACT OF THE DISCLOSURE

Apparatus for use with a sink, which includes a flat sink strainer, an overflow standpipe for insertion into the strainer and a stopper for insertion into the strainer optionally in place of the standpipe. The parts are made from organic plastic materials, and are constructed so that the need of a separate seal between the strainer and either of the other two parts is eliminated.

Background of the invention

The present invention relates to a strainer and an overflow standpipe or stopper adapted to be used with the strainer in a conventional laundry tub or sink.

When using automatic laundry equipment, it is conventional practice to use a laundry tub or sink to save the suds from one batch of laundry for use in washing a subsequent batch. This a normally accomplished by discharging the suds from the first batch into a tub or sink whose outlet is closed, after which the normal rinsing operation of the first batch is performed. The used rinse water is then discharged before the second batch can be laundered. In order to avoid the need for two separate sinks or tubs for handling both the suds and the rinse water, it is common practice to employ a standpipe which may be inserted into the outlet of the sink or tub, thereby closing the outlet to the contents of the sink or tub so as to permit the suds to be stored in the sink; and subsequently, when the rinse water is to be discharged, it can be discharged through the standpipe. Thereafter, the suds which are still retained in the tub can be pumped back into the washing machine for use in conjunction with the second or subsequent batch of laundry.

The conventional strainers and standpipes heretofore used have been metallic elements, the strainer being adapted to fit into the outlet of the sink for performing conventional straining purposes, and the standpipe has required an O-ring or similar sealing element to be used on its outer periphery adjacent to the discharge end thereof for effecting a liquid seal between the outer diameter of the standpipe and the inner circumference of the strainer so that suds stored in the sink will not leak between the standpipe and the strainer. Constructions of this type are relatively more costly and less effective than the present invention when it is kept in mind that the O-rings require means to retain them in place on the standpipe when the standpipe is being inserted into and withdrawn from the strainer. Also, if the rubber O-ring is inadvertently displaced from its normal position during use, the necessary seal will not be provided, resulting in the loss of the suds.

According to one form of the present invention, a sink strainer and overflow standpipe assembly is provided which comprises a strainer formed of organic plastic material and having a cylindrical discharge duct, the inner wall of which has a smooth surface with a relatively small inward taper from the inlet end to the outlet end of the duct. The outlet end of the duct has transverse strainer elements partially obstructing the duct outlet, and the inlet end has a radially outwardly directed flange for overlapping the periphery of the opening of the bottom wall of the sink or tub. The outer wall of the duct is threaded from

the outlet end to adjacent to the flange, and a fitting is threadedly connected to the threaded portion of the duct for cooperating with the flange in securing the strainer to the bottom wall of the sink in the opening thereof. An overflow standpipe, also formed of organic plastic material, having a constant external diameter along its length is adapted to be inserted into the tapered opening of the strainer for effecting a liquid tight seal between these parts. The diameter of the standpipe is greater than the minimum diameter and lesser than the maximum diameter of the taper to permit the standpipe to be press fitted into the duct so as to provide the necessary seal. In addition, a stopper having essentially the same circumferential dimensions as the standpipe may also be provided for use optionally with the strainer, the stopper being closed at the top so that when the standpipe is removed and the stopper is inserted in the strainer, the effective water-tight closure for the outlet is provided.

It is on object of the present invention to provide an improved strainer and overflow standpipe assembly, and also to provide a stopper for optional use in place of the standpipe.

Other objects of this invention will appear in the following description and appended claims, reference being had to the accompanying drawing forming a part of this specification wherein like reference characters designate corresponding parts in the several views.

Brief description of the drawing

FIGURE 1 is a top plan view of the strainer and standpipe assembly embodying the present invention, showing the assembly secured in the bottom wall of a sink;

FIGURE 2 is a fragmentary sectional view taken on the line 2—2 of FIGURE 1; and

FIGURE 3 is a view similar to FIGURE 2, but showing a stopper inserted in the strainer in place of the standpipe.

Before explaining the present invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawing, since the invention is capable of other embodiments and of being practiced or carried out in various ways. Also, it is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation.

Brief description of the preferred embodiments

Referring now to the drawing, the sink strainer and overflow standpipe assembly shown in FIGURES 1 and 2 will be described first. As is there shown, a bottom wall **10** of a conventional laundry tub or sink is shown having a discharge opening **12** therein. A strainer **14**, formed of a suitable organic plastic material is positioned in the opening **12**. The strainer **14** has a cylindrical portion or duct **16** having a radially outwardly directed flange **18** at its upper or inlet end and transverse strainer bars **20** partially obstructing the discharge or outlet end. The outer surface of the duct or cylindrical portion **16** is threaded from the discharge end substantially to the flange **18**, and screwed onto the duct **16** is the nut or fitting **22** which has a flange **24** for engaging the under-surface of the bottom wall **10** for securely attaching the strainer **14** to the bottom wall. It is believed readily understood, this is accomplished merely by screwing the nut **22** tightly against the under-surface of the bottom wall **10** to effect holding action between the flange **18** and the flange **24**. The flexible properties of the plastic flange **18** will assure a close and tight fit against wall **10** so that leakage from the tub or sink is avoided.

Also threadedly connected to the duct **16** is the second fitting **26** which includes a rubber O-ring or washer **28** to

effect a liquid tight seal between the duct **16** and a conventional drain pipe **30**. This seal is effected merely by tightening the fitting **26** on the duct **16** so as to urge the O-ring or washer **28** tightly against the drain pipe **30**.

The inner surface of the duct **16** has a relatively small taper from the inlet end to the outlet end. In the illustrated embodiment of the invention a one degree taper is employed. The purpose of this taper will presently be described.

The standpipe **32** is formed of a suitable organic plastic material and is cylindrical in shape. The diameter of the standpipe **32** is constant throughout its length, and the outer dimension is such that it is slightly larger than the smallest diameter of the duct **16** at the outlet end, and smaller than the largest diameter of the duct **16** at the inlet end. Thus, the standpipe **16** can be urged into the duct **16** to the position shown in FIGURE 2, thereby effecting a tight liquid seal between the duct **16** and the outer surface of the standpipe **32**.

From the foregoing description, it will be recognized that the construction and arrangement of the standpipe **32** and the strainer **14** is such that the need for an O-ring or similar construction such as is required by prior art devices is completely eliminated. The standpipe **32** can be quickly and easily removed from the strainer **14** whenever desired, and can be reinserted in place with equal facility.

Referring now to FIGURE 3, it will be seen that a stopper **34** can also be used optionally with the strainer **14**. The latter has essentially the same circumferential dimension as the standpipe **32**. Thus, the stopper **34** has a cylindrical portion of constant diameter which is essentially the same diameter as the outer diameter of the standpipe **32**. Thus, the stopper **34** can also be press-fitted into the strainer **14** to effect a liquid tight seal between the outer surface of the stopper **34** and the strainer **14**. The stopper **34** is closed at the upper end so that it will prevent liquid from being discharged through the interior of the stopper. It will be recognized that either the stopper **34** or the standpipe **32** may be used optionally in connection with the strainer and its associated parts.

Having thus described my invention, I claim:

1. A sink strainer and overflow standpipe assembly comprising a strainer formed of organic plastic material and having a cylindrical discharge duct the inner wall of which has a smooth surface with a relatively small inward taper from the inlet end to the outlet end of the duct, said outlet end having transverse strainer elements partially obstructing the outlet, said inlet end having a radially outwardly directed flange for overlapping the periphery of an opening in the bottom wall of a sink, the outer wall of said duct being threaded from outlet end to adjacent to said flange, a fitting threadedly connected to the threaded portion of said duct for cooperating with said flange in securing the strainer to the bottom wall of the sink in the opening thereof, and an overflow standpipe formed of organic plastic material and having a constant external diameter along its length, said diameter being greater than the minimum diameter and lesser than the maximum diameter of said inner wall to permit the bottom end of said standpipe to be press-fitted into said duct so as to provide a sealed joint between the inner diameter of the duct and the outer diameter of the bottom end of the standpipe.

2. The combination according to claim **1**, wherein said inner wall of the strainer has a one-degree taper.

3. A sink and overflow standpipe assembly according to claim **1**, wherein a second fitting is threadedly connected to the threaded portion of said duct for securing the outlet end of the duct to a drain pipe.

4. A sink and overflow standpipe assembly according to claim **1**, which includes a stopper formed of organic plastic material and having a cylindrical portion of constant external diameter along its length, said diameter being greater than the minimum diameter and lesser than the maximum diameter of said inner wall, said stopper being optionally interchangeable with said standpipe.

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