May 12, 1953 G. H. WOTRING 2,638,104

SOIL STRAINER ATTACHMENT FOR DISHWASHERS

Filed Nov. 24, 1950

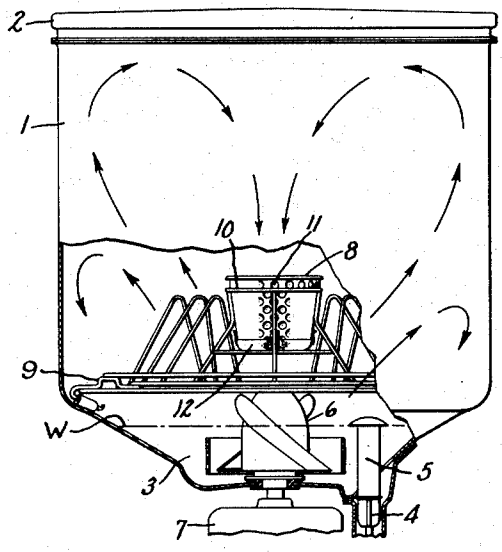


Fig. 1.

Fig. 2.

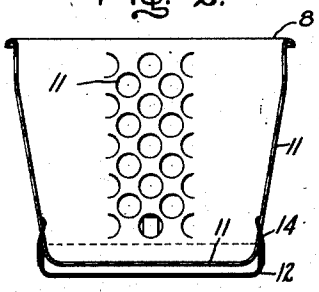
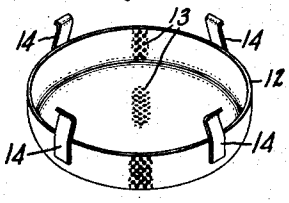


Fig. 3.



Inventor:
Gaylord H. Wotring,
by Marindale & Bair
His Attorney.

Patented May 12, 1953 2,638,104

UNITED STATES PATENT OFFICE

2,638,104

SOIL STRAINER ATTACHMENT FOR DISHWASHERS

Gaylord H. Wotring, Fairfield, Conn., assignor to General Electric Company, a corporation of New York

Application November 24, 1950, Serial No. 197,360

7 Claims. (Cl. 134—111)

1

My invention relates to dishwashing machines. More particularly, my invention relates to an attachment in the form of a soil strainer for the washing solution used in the machine.

Many dishwashing machines are of the recirculating solution type, that is, where the water or washing solution in the tub of the dishwasher is picked up by an impeller near the bottom of the tub, thrown upwardly against the dishes or other articles in the tub, and falls back to the bottom of the tub where it is again picked up by the impeller and recirculated. My invention is designed to be applied to dishwashers of this character. One object of my invention is to obtain an effective straining of soil particles from the water or washing solution being recirculated in a dishwasher. Another object of my invention is to make a soil strainer which is inexpensive, small in size, and easy to manufacture. A further object of my invention is to provide a soil strainer which may easily be added to many dishwashing machines now in use. Another object of my invention is to provide a strainer which may be readily emptied and cleaned.

The objects of my invention are met generally by providing a soil strainer in the form of a removable attachment to a silverware basket or similar part of a dishwasher, normally located in the path of water returning to the impeller for recirculation. Thus, the water or solution repeatedly recirculated will virtually all be strained.

Other objects and further details of that which I believe to be novel and my invention will be clear from the following description and claims taken with the accompanying drawing in which is illustrated an example of dishwasher embodying the present invention and incorporating my improved strainer.

In the drawing, Fig. 1 is an elevation, partly in section, of a dishwasher tub showing essential operating parts and the strainer of my invention applied thereto; Fig. 2 is an enlarged section of a removable silverware holder or basket as in the device of Fig. 1 with the strainer of my invention removably secured thereto; and Fig. 3 is a perspective view of the strainer of my invention.

A dishwasher of the character to which my invention is adapted to be applied comprises a tub 1 closed by the usual cover 2, supported in any suitable fashion from a floor or within a counter. In the bottom of the tub, a sump 3 is provided, and in one side of the sump a drain valve 4 for draining water from the tub is provided. Additionally, an overflow pipe 5, or its equivalent, may be provided for limiting the

2

height to which standing water may rise within the sump of the tub. The water level is indicated by the broken line W in Fig. 1. Water, or a solution for washing the dishes, is introduced into the tub in any suitable fashion, either manually or automatically.

Centrally located within the bottom of the tub is the usual impeller 6, which is located generally below the standing water level as shown. The impeller is driven as by a motor 7, and during rotation the impeller picks up water, throws it upwardly and outwardly in the general direction indicated by the arrows in Fig. 1. The water returns by gravity and much of it follows the central line of arrows so that it strikes the generally cup-shaped silverware basket 8 which is centrally located near the bottom of the tub above the impeller. As is usual in many dishwashers, the silverware basket may be supported on a dish rack 9 which rests in the tub above the standing water line. This dish rack, which may be made of wire or other suitable material, holds dishes and cooking utensils. The dishwasher may have an upper rack as well as a lower rack, if desired. Centrally of the rack is a ring 10 which removably receives the silverware basket 8 and holds the basket against shifting during the washing operation. The silverware basket may be made of a light gauge sheet metal which is perforated throughout its sides and bottom as at 11 with comparatively large holes. When the cover or top of the dishwasher is open, the silverware basket may be easily removed for loading and unloading. It is designed as usual for carrying and holding knives, forks, spoons, and similar small articles during washing. Because of its general cup-like shape, the basket acts as a guide, to a certain degree, for flow of water or washing solution through it.

In a dishwasher of the more or less conventional type above described, the washing solution sometimes picks up particles of food waste and other soil and recirculates this soil with the washing or rinsing solution. Because of this, even after one or two rinsing cycles, soil sometimes becomes lodged on dishes, silverware, or the racks and baskets holding the same, so that the user of the machine is dissatisfied with the performance of the dishwasher. To prevent the recirculation of soil and its subsequent deposit on the articles being washed, I provide an improved soil strainer in the tub. Preferably, this is in the form of an element easily removed and cleaned, and which can be added to many dishwashers already in use.

I have shown the soil strainer as a shallow

cup 12 formed of thin sheet metal with tiny perforations 13 covering its bottom and sides. I have found that a 26 gage brass sheet with .020 inch diameter holes therein, formed at a frequency of 714 holes per square inch, will give 23% open area in the strainer but will arrest the objectionable soil particles.

A strainer of the above character has been found to be satisfactory for the use intended. This strainer is preferably located, as shown, below the silverware basket, in the path of washing solution returning to the impeller through the basket. In place of the basket, any similar receptacle which will guide the circulating solution to the strainer and is deep enough to prevent collected soil from being splashed or washed out of the strainer may be used.

Spot welded or otherwise suitably secured to the strainer cup are a plurality of resilient arms 14 which are shaped to engage in some of the large perforations 11 in the sides of the silverware basket, or other receptacle, so that the strainer, although removable from the tub with the basket, is also removable from the basket for emptying and cleaning. It is understood that the entire surface of the basket is provided with spaced, large perforations, and that the entire surface of the strainer is similarly perforated with the tiny soil straining holes. For simplification of disclosure, only a few of the holes have been shown in the drawing.

Obviously, the strainer is made about the same size as the bottom of the basket, and solution guided and falling through the basket will be strained of soil particles before it is again circulated by the impeller. As the machine is operated, and as the solution is repeatedly recirculated by the impeller, virtually all of the water in the tub will have been strained and soil particles eliminated. Whenever the silverware basket is removed, the strainer may be snapped off from the basket for emptying and cleaning. During operation of the machine, the strainer is effective to keep the washing solution free from recirculating soil particles.

One outstanding advantage of the strainer of my invention is the fact that, whether it is full of soil or not, it does not interfere with normal water circulation in the machine. The water will circulate as usual, with no throttling when the strainer is in or out, empty or full. When the strainer is clogged, only the filtering effect is lost. The washer continues to function properly.

As will be evident from the foregoing description, certain aspects of my invention are not limited to the particular details of construction of the example illustrated, and I contemplate that various and other modifications and applications of the invention will occur to those skilled in the art. It is, therefore, my intention that the appended claims shall cover such modifications and applications as do not depart from the true spirit and scope of my invention.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. In a dishwasher having a tub, a silverware basket of perforated material suspended in the tub, and an impeller centrally located near the bottom of the tub below said basket, said impeller moving a washing solution in said tub through a certain recirculating dishwashing flow pattern which includes passing a portion of said solution downwardly through said silverware basket, that improvement comprising a soil strainer having perforations smaller than the perforations in said silverware basket and being removably secured to the bottom of said basket, whereby solution passing through said basket is strained of soil particles before recirculation by said impeller.

2. In a dishwasher having a tub, a receptacle with perforated bottom and sides removably suspended in said tub, a washing solution impeller in the tub for moving washing solution through a certain recirculating dishwashing flow pattern which includes passing a portion of said solution downwardly through said receptacle, that improvement comprising a soil strainer removably secured to and below said receptacle and having a straining portion located under said perforated bottom of said receptacle, said strainer portion including perforations smaller than the perforations in said receptacle, whereby solution passing through said receptacle is strained of soil particles before recirculation by said impeller.

3. In a dishwasher having a tub, a generally cup-shaped silverware basket with perforated bottom and sides removably suspended in said tub and an impeller centrally located near the bottom of the tub below said basket, said impeller moving a washing solution in said tub through a certain recirculating dishwashing flow pattern which includes passing a portion of said solution downwardly through said silverware basket, that improvement comprising a soil strainer removably secured to the bottom of said basket by spring arms removably engaging perforations on the sides of said basket, said strainer having a straining portion of fine mesh located under the perforations in the bottom of said basket, whereby solution passing through said basket is strained of soil particles before recirculation by said impeller.

4. In a dishwasher of the type having a tub, a water impeller centrally located in a sump at the bottom of said tub, and a perforated silverware holding basket removably suspended above said impeller in the path of washing solution circulated in the tub by the impeller, that improvement which comprises a soil strainer having a fine soil filtering surface therein removably mounted on said basket whereby the water circulated in said tub by the impeller is strained as it falls through said basket.

5. In a dishwasher of the type having a tub, a water impeller centrally located in a sump at the bottom of said tub, and a perforated silverware holding basket removably suspended above said impeller in the path of water circulated in the tub by the impeller, that improvement which comprises a soil strainer in the form of a shallow cup with fine soil filtering surfaces and resilient arms extending from said cup removably to seat in perforations in said basket, whereby said soil strainer cup may be removably mounted on the bottom of said basket and the water circulated in said tub by the impeller is strained as it falls through said basket.

6. In a dishwasher having a tub, a receptacle with a perforated bottom suspended in said tub, a washing solution impeller in the tub for moving washing solution in the tub through a certain recirculating dishwashing flow pattern which includes passing a portion of said colution into said receptacle and through said perforated bottom before returning it to said impeller for recirculation, that improvement comprising a soil strainer removably mounted below said perforated bottom and having perforations smaller than the perforations in said perforated bottom, whereby part of the solution is strained of soil

particles during circulation of said solution in said tub by said impeller.

7. In a dishwasher having a tub, a receptacle suspended in said tub and having an open top and bottom, a washing solution impeller in the tub for moving solution in the tub through a certain recirculating dishwashing flow pattern which includes passing a portion only of said solution into the open top of said receptacle and downwardly through said receptacle before returning it to said impeller for recirculation, that improvement comprising a soil straining portion below the open top of said receptacle, whereby part of

the solution is strained of soil particles during circulation of said solution in the tub by the impeller.

GAYLORD H. WOTRING.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
549,756	Van Horn	Nov. 12, 1895
2,023,107	Stoddard	Dec. 3, 1935
2,155,868	Pauly et al.	Apr. 25, 1939
2,254,824	Large	Sept. 2, 1941