Sept. 30, 1969 H. BERSON ET AL 3,469,586

PORTABLE DISHWASHER

Filed April 26, 1967 2 Sheets-Sheet 1

FIG. 1.

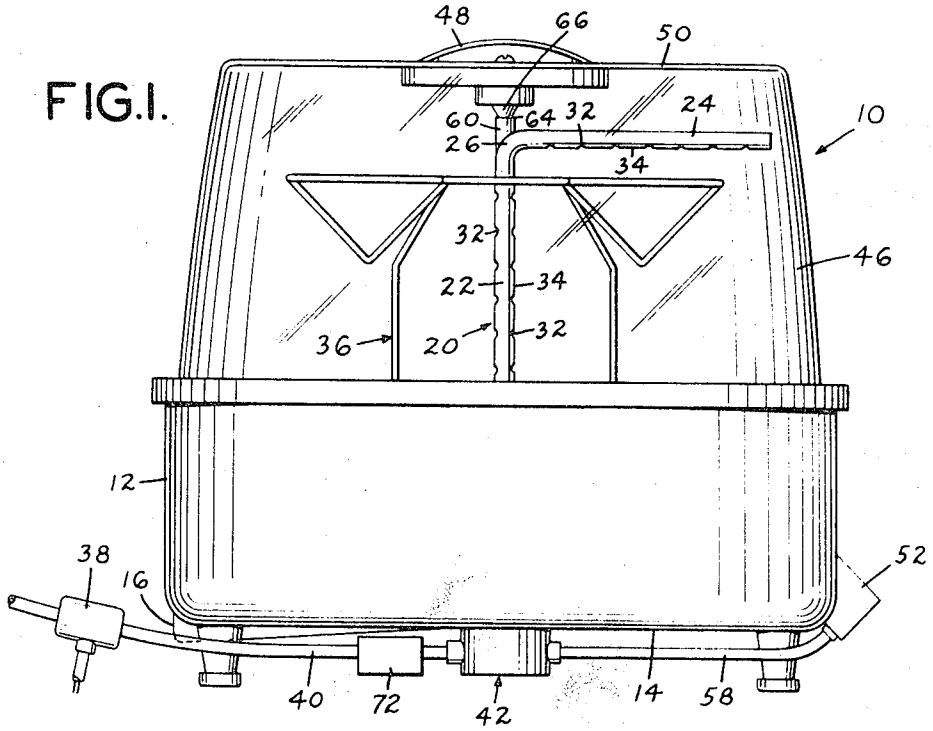
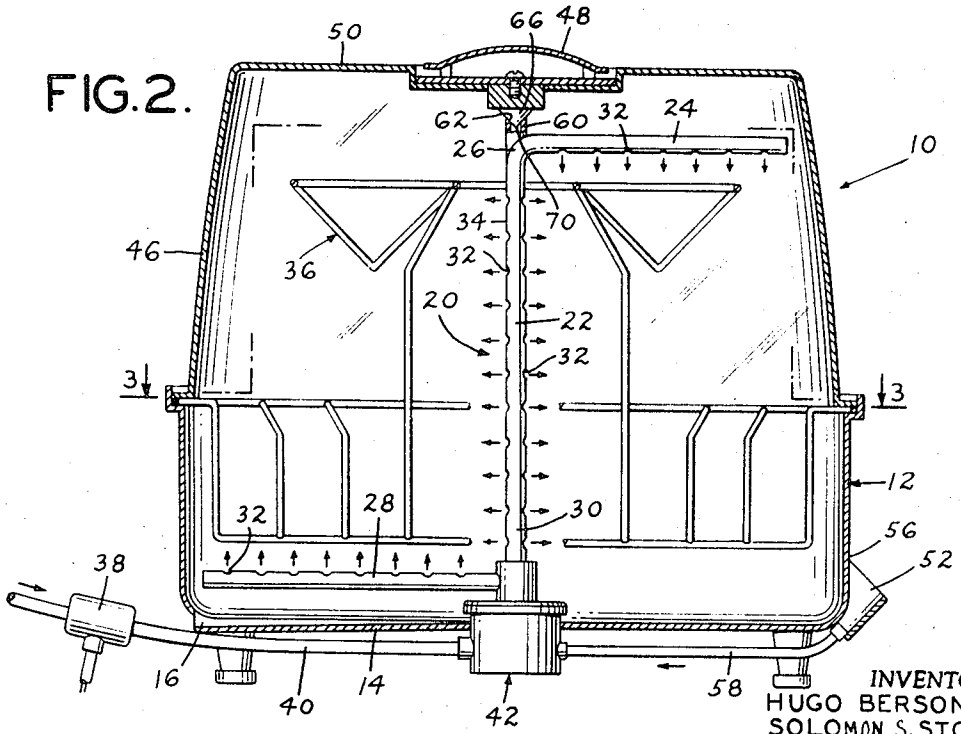


FIG. 2.



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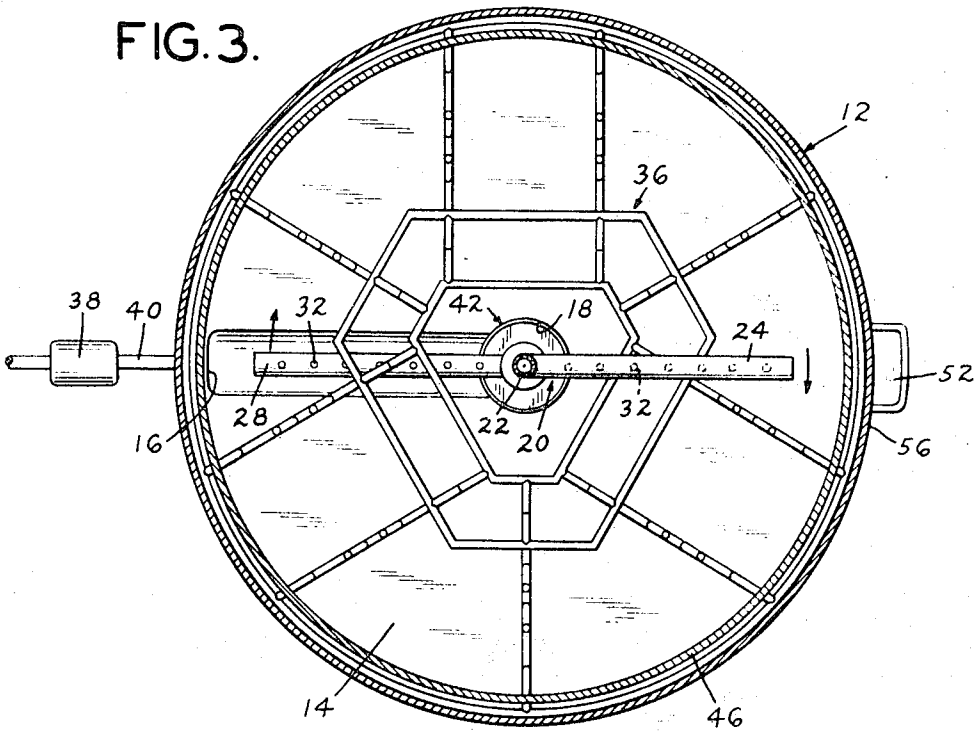
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PORTABLE DISHWASHER

Filed April 26, 1967 2 Sheets-Sheet 2

FIG. 3.



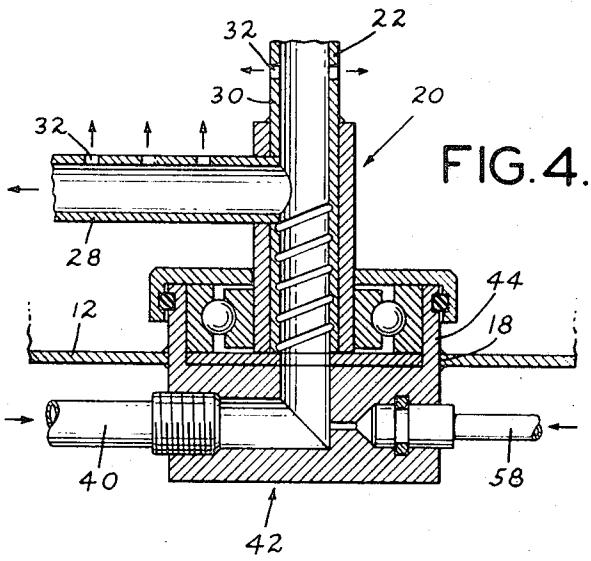


FIG. 4.

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United States Patent Office 3,469,586 Patented Sept. 30, 1969

3,469,586

PORTABLE DISHWASHER

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Filed Apr. 26, 1967, Ser. No. 633,820
Int. Cl. B08b 3/00
U.S. Cl. 134—93 5 Claims

ABSTRACT OF THE DISCLOSURE

A portable diswhasher adapted to be connected to a water faucet of a basin is provided with a base member and a cover adapted to fit over the base enclosing dishes stacked within the base member. The base member is provided with a bottom wall having at least one aperture to permit the drainage of water therefrom after the water has been directed against dishes stacked within the base member. A valve arrangement is connected to the base member and supports within the base a water dispensing unit which is rotatably connected thereto. A hose is connectable between the water facuet and a basin and the valve arrangement thereby bringing water to the water dispensing unit. A soap container is connected to the base member and communicates with the valve arrangement thereby delivering soap to the water dispensing unit so that it may be dispensed against the dishes to be cleaned.

The present invention relates to a washing machine and more particularly to a portable dishwasher.

Heretofore attempts have been made to produce a portable dishwasher which could be easily handled by the average housewife and yet one which would severe the purpose of adequately washing the dishes after the meal of an average family. However, these attempts have resulted in numerous types of portable dishwashers most of which were too cumbersome and too complicated for the ordinary housewife to handle.

Further, the prior art attempts at the portable dishwasher have resulted in some small units which were highly inefficient and were unable to accomplish the washing of the dishes in a reasonable amount of time. It is the general object of the present invention to avoid and overcome the foregoing and other difficulties in the prior art by the provisioin of an inexpensive and easily operated portable dishwasher.

Another object of the present invention is to provide a portable dishwasher which may be connected to an ordinary sink faucet.

A further object of the present invention is to provide a portable dishwasher which is light in weight and easily handled.

A further object of the present invention is to provide a portable dishwasher which will be capable of washing a set of dishes and at the same time providing a drying cycle for the dishes.

Still another object of the present invention is to provide a portable dishwasher which may be subject to few areas of malfunction.

The objects of the present invention have been achieved by providing a portable dishwasher comprising a base member, a rotatable water dispensing means rotatably mounted within said base member, at least one hose running to said water dispensing means and connectable to the faucet of a sink, a cover member connectable to said base member and capable of providing an area in which dishes may be cleaned, and means for rotating said water dispensing means.

For a better understanding of the present invention

reference should be had to be accompanying drawings, wherein like numerals of reference indicate similar parts throughout the several views and wherein:

FIGURE 1 is a pictoral representation of the invention,

FIGURE 2 is a cross sectional view,

FIGURE 3 is a cross sectional view taken along lines 3—3 of FIGURE 2, and

FIGURE 4 is a cross sectional view of the means for rotating the internal water dispensing unit and valve arrangement.

As shown in FIGURE 1, and referring particularly thereto a portable dishwashing machine is shown and is generally indicated by the reference numeral **10**.

In order to provide an area in which the dishes (not shown) are to be cleaned, a base member **12** may be provided. The base member **12** may be in the shape of a round deep pan, although the invention should not be construed to be limited by the shape hereinabove disclosed. The bottom of the base member **12** may be provided with a bottom wall **14** having at least one aperture **16** therein. The purposes of the aperture **16** is to permit a free flow or drain of water from the base member **12** during the washing operation of the dishes, thereby preventing any accumulation of water in the base member **12**.

In the approximate center of the bottom wall **14** there may be provided an opening **18** which is adapted to receive a rotatable water dispensing unit **20** which may be free to rotate and may be generally comprised of an upwardly extending hollow tubular member **22**, having at least one laterally extending tube **24** at its upper end **26**, and at least one second laterally extending tube **28** at its lower end **30**. A plurality of spray holes **32** may be provided along the outer surfaces **34** of the upwardly extending hollow tubular member **22**, the laterally extending tubular member **24**, and the second laterally extending tubular member **28**. In this manner water injected into the upwardly extending hollow tubular member **22** may be permitted to flow into the lateral tubular members **24**, **28** and may be sprayed out through the spray holes **32** in the surfaces thereof.

As shown in FIGURES 1 and 2, the proper disposition of the spray holes **32** permit a downward spray from the laterally extending tubular member **24**, and upward spray from the second tubular member **28** and a lateral spray from the upwardly extending tubular member **22**. In this manner when dishes are placed within the base member **12**, on a rack **36**, hot water injected into the upwardly extending hollow tubular member **22** may be permitted to impinge on the dishes from all angles thereby promoting the cleaning of the dishes there enclosed.

Since the upwardly extending hollow tubular member **22** is rotatable, and therefore the laterally extending tubular members **24**, **28** are rotatable therewith, a continuing rotating spray may be provided while hot water is being injected into the upwardly extending tubular member **22**.

It is well known to those skilled in the art that any dishwashing machine, in order to adequately clean soiled dishes must be capable of delivering hot water to the solid dishes under sufficient pressure to promote the removal of food and grease from the dishes. With this in mind, I propose the use of ordinary hot tap water from the faucet of a basin to be used as the water to be dispersed and impinge upon the dishes to be cleaned. However, means **38** may be provided within the base member **12** or connected externally to a hose **40** which may promote or increase the temperature of the water to be delivered to the upwardly extending hollow tubular member **22**. The utilization of the additional means **38** for increasing the temperature of the water to be delivered will be discussed more fully in the alternative embodiment to the present invention.

As shown in FIGURE 2 the hose 40 which is connectable to the basin faucet (not shown) may be disposed within the base member 12 and connectable to a valve arrangement 42 directly beneath the hole 18. The valve member 44 is so constructed as to permit the free flow of the water through the hose 40 into the upwardly extending hollow tubular member 22 and further permit the free rotation thereof during the surge of water thereinto. With this arrangement therefore, a free flow of hot water may be permitted into the upwardly extending hollow tubular member 22 during the rotation thereof. It has been found that the rotation of the hollow tubular member 22 may be promoted by the mere turbulence of the water entering the member 22 through the valve member 44, however, other means of promoting the rotation of the upwardly extending hollow tubular member 22 may be provided to insure a steady motion of the member 22 during surge of hot water thereinto.

It should be noted that the means for rotating the upwardly extending hollow tubular member 22 also may take a varying number of forms. However, it has been found that if the upwardly extending hollow tubular member 22 is made freely rotatable, using a ball bearing arrangement, then the turbulence of the water passing therethrough and the subsequent ejecting of the water through the spray holes 32 is sufficient to promote the rotation of the water dispensing unit 20. This arrangement may be seen in FIGURE 2.

It may be seen that the washing of the dishes as well as the rinsing cycles will last as long as the water continues to flow through the hose 40 leading from the basin faucet to the water dispensing unit 20. The various cycles are completely within the control of the user, so that if the dishes are not sufficiently clean, the cycles may be repeated until they are cleaned.

As shown in FIGURE 1 a cover 46 may be provided so that during the cleaning of the dishes the water spray may be confined to a specific area thereby preventing the spread of water to the area surrounding the dishwasher. Since the cover 46 may be made of a transparent material the condition of the dishes may be viewed by the user and determinations may be made as to whether or not another washing and rinsing cycle is required. A further purpose, and one of great importance, of the use of the cover 46 is to contain the heat created by the spray of hot water. This contained heat promotes the drying of the dishes by aiding in the quick evaporizing of any water accumulated on the dishes which have been put through the various cleaning cycles.

The cover 46 may be provided with a handle 48 which protrudes from the top 50 thereof such that the cover 46 may be lifted from the base member 12 with relative ease. In this manner, with the cover 46 being so easily removable, the portable dishwasher 10 may be loaded and emptied quickly and efficiently.

The introduction of soap to the dishwasher 10 is of prime importance to the proper cleaning of the soiled dishes in the rack. In order to provide a device for holding soap available for use in the cleaning of the dishes, a soap container 52 may be provided at the outer surface 54 of the base member 12. As shown in FIGURES 1 and 2, a soap container 52 may be provided at the outer periphery 56 of the base member 12 and which is freely accessible to the use of the portable dishwasher. A feed hose member 58 may lead from the soap container 52 down to the valve member 44 which supports the rotatable water dispensing means 20. Either a liquid detergent or powder may be used to clean the dishes and it may be seen that the soap, in a liquid form may flow from the soap container 52 down to the valve member 44 which supports the rotatable water dispensing means 20. At the junction thereof the soap may mix with hot water surging into the upwardly extending hollow tubular member 22 and may be sprayed onto the dishes through the spray holes 32 along with hot water surging therethrough. It

may be seen that when a powdered detergent is used, water may be placed in the soap container 52 to promote the flow of soap down to the valve member 44. This gravity feed system will provide soap whenever the user is desirous of placing soap in cleaning contact with the dishes in the rack 36 which is holding the soiled dishes.

It will be recognized by those skilled in the art that the upwardly extending hollow tubular member 22 may be caused to vibrate in position due to the surge of water therethrough. Vibration of this type impedes the rotative motion thereof and may decrease the cleaning efficiency of the dishwasher 10. In order to prevent or drastically limit the vibration of the upwardly extending hollow tubular member 22, an extension 60 may be provided in axial alignment therewith. The extension 60 may be provided with a bearing surface 62 at its upper end 64 which may be in juxtaposition with the center of the cover 46. A downwardly extending member 66 may be connected at the center of the cover to the under surface 60 of the cover 46 which may contactingly engage the bearing surface 62 at the upper end 64 of the upwardly extending hollow tubular member 22.

With this structural arrangement when the cover 46 is in position on the base member 12, the tip 70 of the downwardly extending member 66 will ride against the bearing surface 62 so that the upwardly extending hollow tubular member 22 will not vibrate during its rotative movement. It should be noted that this vibration preventative arrangement is strictly an optional feature.

The means 38 for increasing the water temperature, previously discussed, may take various well known forms such as an electric heater coil (not shown) which would be connectable either internally of the base member 12 or one which could be connectable to the water hose 40 which is connected between the water faucet being used and the water dispensing unit 20. It will be recognized by those skilled in the art that various other means of heating the water on its path of flow to the water dispensing unit 20 and it is contemplated to use any of these other various means which would be considered convenient and expedient to accomplish the purpose desired.

As a further means for promoting the removal of the food particles from the dishes, valve arrangement 72 may be provided which will increase the pressure of the water being emitted from the water dispensing means 20. It has been found through experimentation that the unit for increasing the water pressure is not a necessity, in most instances, because the water pressure at the sink faucet is sufficient to permit the proper pressure at the water dispensing means 20. However, this valve arrangement may be used optionally when and if desired to do so.

It will be recognized by those skilled in the art that the objects of the present invention have been achieved by providing a portable dishwasher which is light in weight, which may be connected directly to the faucet of a sink basin for the purpose of cleaning dishes quickly and efficiently.

While in accordance with the patent statutes a preferred embodiment of the present invention has been illustrated and described in detail, it is to be particularly understood that the invention is not limited thereto or thereby.

What is claimed is:

1. A portable dishwasher adapted to be connected to a water faucet of a basin comprising a base member having a bottom wall, said base member having at least one aperture to permit the drainage of water therefrom, a valve arrangement connected to said base member, a water dispensing unit rotatably connected to said valve arrangement for dispensing water against soiled dishes stacked within said base member, said water dispensing unit having an upwardly extending hollow tubular member and a first laterally extending tubular member extending laterally from the upper end of said upwardly extend-

ing hollow tubular member and a second laterally extending hollow tubular member connected near the lower end of said upwardly extending hollow tubular member, a hose connectable between the water faucet and valve arrangement for bringing water to said water dispensing unit, means for heating the water being adapted to be connected to said hose for increasing the temperature of the water flowing into said upwardly extending hollow tubular member, a cover adapted to fit over said base member thereby enclosing the soiled stacked dishes said upwardly extending hollow tubular member being provided with an extension, said extension having a bearing surface thereon, a downwardly extending element connected to said cover having its tip adapted to ride within said bearing surface of said extension for promoting unwaivering rotation of said water dispensing unit, and a soap container connected to said base member and in communication with said valve arrangement for delivering soap to said water dispensing unit thereby permitting soap to be dispensed against the stacked dishes to be cleaned.

2. A portable dishwasher according to claim 1 wherein said upwardly extending hollow tubular member and said laterally extending tubular members are provided with a plurality of spray holes so that water passing into said members may be sprayed out onto soiled dishes.

3. A portable dishwasher according to claim 2 wherein said upwardly extending hollow tubular member is rotatably inserted in said valve arrangement and may freely rotate when water passes through said valve arrangement into said upwardly extending hollow tubular member.

4. A portable dishwasher according to claim 3 wherein said valve arrangement is adapted to receive water from said hose and at the same time accept soap introduced into said soap container and pass the same therethrough to said upwardly extending hollow tubular member.

5. A portable dishwasher according to claim 1 wherein said valve arrangement is adapted to increase the water pressure in said water dispensing unit thereby creating a high pressure spray emanating from said water dispensing unit.

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