

April 22, 1941.

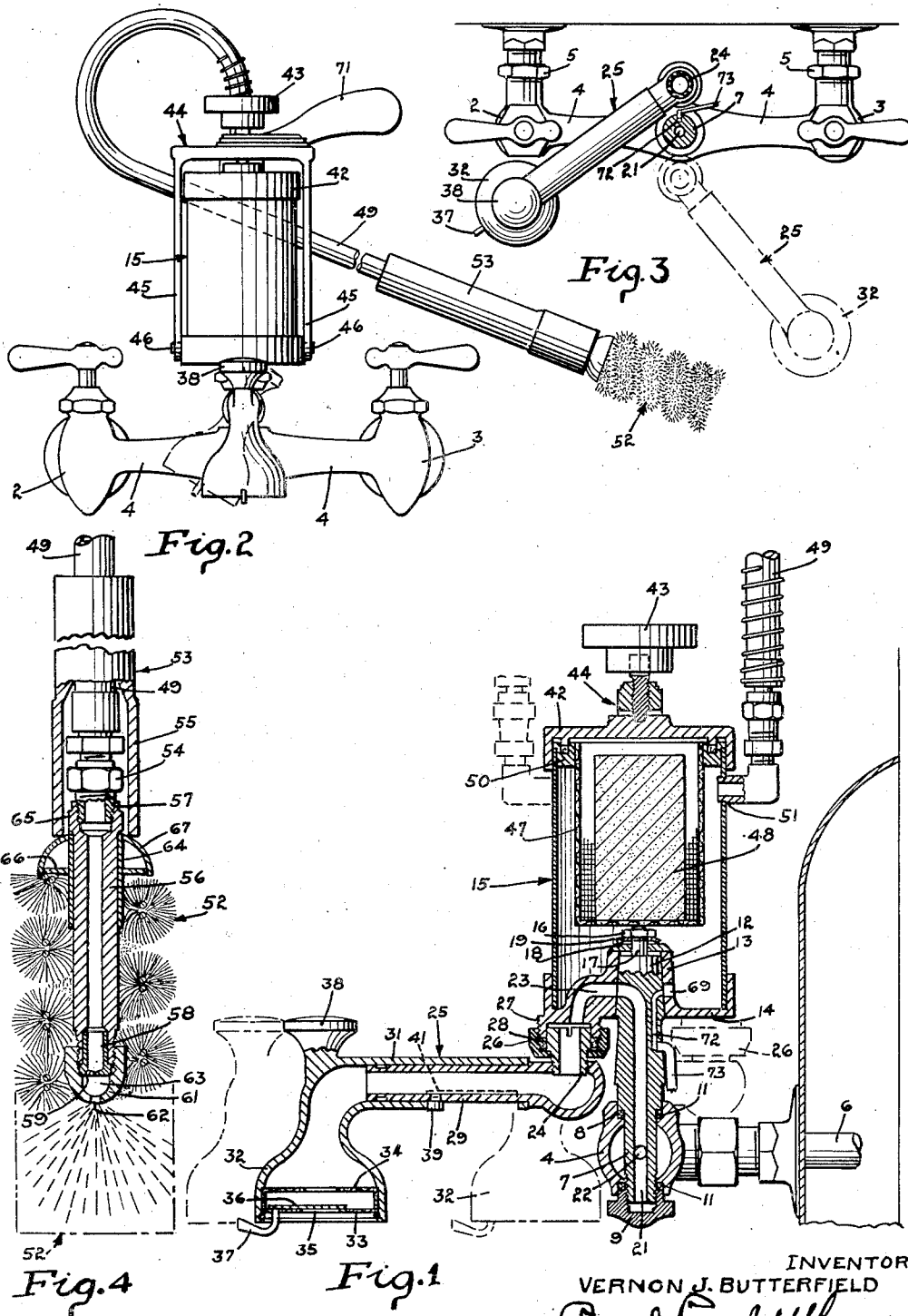
V. J. BUTTERFIELD

2,238,969

DISHWASHING APPARATUS

Filed May 10, 1938

2 Sheets-Sheet 1



INVENTOR
VERNON J. BUTTERFIELD
BY *Paul, Paul Moore*
ATTORNEYS

April 22, 1941.

V. J. BUTTERFIELD

2,238,969

DISHWASHING APPARATUS

Filed May 10, 1938

2 Sheets-Sheet 2

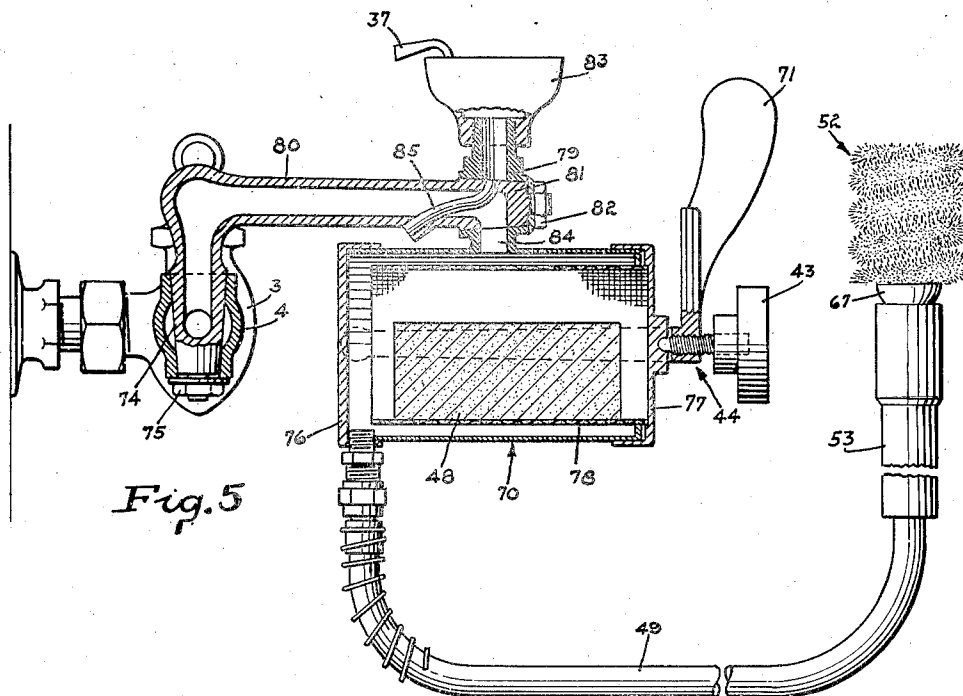


Fig. 5

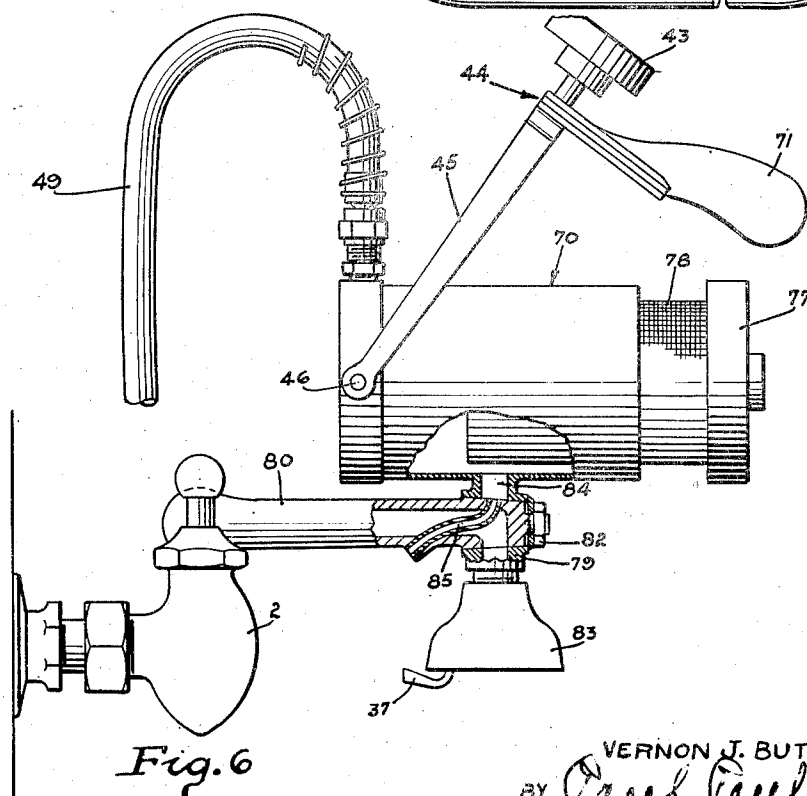


Fig. 6

INVENTOR
VERNON J. BUTTERFIELD
BY *Paul, Paul Moore*
ATTORNEYS

UNITED STATES PATENT OFFICE

2,238,969

DISHWASHING APPARATUS

Vernon J. Butterfield, Minneapolis, Minn., assignor of one-half to John R. Ware, Hennepin County, Minn.

Application May 10, 1938, Serial No. 206,988

4 Claims. (Cl. 299—84)

This invention relates to an improved dishwashing apparatus particularly designed for use in connection with combination sink faucets.

An object of the invention is to provide an apparatus adapted to be used in connection with combination sink faucets to facilitate washing dishes and other utensils with water, under pressure.

A further object of the invention is to provide such an apparatus comprising a suitable casing adapted to be mounted upon the faucet and providing a soap chamber having one end of a flexible conduit connected therewith, whose opposite end is provided with a suitable cleaning tool or implement, such as a brush, and means being provided for selectively directing water through the soap chamber and said hose or through the usual dispensing spout of the faucet, whereby hot, soapy water may be dispensed from the end of the hose through the cleaning tool to facilitate washing dishes and other utensils, and also whereby clear, unsoapy water may be dispensed from the dispensing spout for rinsing purposes.

A further object is to provide a simple and inexpensive apparatus for washing dishes, comprising a casing adapted to be attached to a combination sink faucet and providing a soap chamber having means for conducting water therefrom and applying it to dishes and other utensils to be cleaned, and said apparatus comprising valve means made operable by relative movement of the casing with respect to the faucet to selectively control the flow of water through the soap chamber or from the usual dispensing spout of the faucet, whereby soapy water may be applied directly onto the dishes, under pressure, to clean them, after which the soapy water may conveniently be rinsed therefrom by a spray of clear water dispensed from the usual spout of the faucet.

A further object is to provide a combination sink faucet having a dishwasher embodied therein comprising a casing mounted for rotative adjustment thereon and providing a soap chamber adapted to contain a bar of soap, and said soap chamber being provided with a flexible conduit having a cleaning tool or brush attached thereto for application to the dishes or utensils to be cleaned, a dispensing spout connected to the casing, and valve means being embodied in the support for the casing and cooperating with means therein for selectively controlling the flow of water through the soap chamber or from said spout, by relative rotation of the casing upon

its support, and said casing having a drain made operable to drain the soapy water from the casing, when the latter is positioned to cause clear water to dispense from the spout.

Features of the invention reside in the unique arrangement of the casing upon the faucet, whereby it presents a very neat appearance and does not take up valuable space over the sink and does not interfere with operations performed in the sink in the usual manner; in the pivotal mounting of the spout on the container, whereby it may be extended and also whereby its dispensing nozzle may be relatively rotated to facilitate spraying clear water over the dishes to rinse the soapy water therefrom; in the manner of mounting the casing upon the faucet, whereby a portion thereof cooperates with the post which supports the casing to provide valve means for selectively controlling the flow of soapy water from the soap chamber or clear water from the dispensing spout; and in the construction of the tool provided at the end of the flexible hose which may be in the form of a brush mounted for sliding movement upon a tubular member having a spray head or nozzle at one end and whereby, when the cleaning tool or element is in one position, soapy water may be sprayed from the end of the tool directly onto the dishes or other element to be cleaned, and when the brush is moved to another position upon its support, soapy water may be directed through the walls thereof, whereby the cleaning tool will be saturated with soapy water.

Other objects of the invention will appear from the following description and accompanying drawings and will be pointed out in the annexed claims.

In the accompanying drawings, there has been disclosed a structure designed to carry out the various objects of the invention, but it is to be understood that the invention is not confined to the exact features shown as various changes may be made within the scope of the claims which follow.

In the drawings:

Figure 1 is a vertical sectional view showing the general construction of the apparatus with the valve means positioned to direct clear water from the dispensing spout;

Figure 2 is a front view of Figure 1;

Figure 3 is a top view of Figure 2, showing the dispensing spout in different positions assumed when the casing is relatively rotated to selectively control the flow of water from the apparatus;

Figure 4 is an enlarged detail sectional view

showing the means for supporting the cleaning element or tool at the end of the hose; and

Figures 5 and 6 are views showing a modified construction wherein the casing providing the soap chamber is mounted directly upon the dispensing spout of the faucet.

The novel dishwasher herein disclosed is shown embodied in the construction of a more or less conventional combination sink faucet, comprising the usual hot and cold valves 2 and 3, respectively, and the connection 4 therebetween. The valves 2 and 3 are shown provided with the usual coupling elements 5 for connecting them to the water supply pipes 6, shown in Figure 1, and whereby the entire apparatus may be supported.

In the form shown in Figures 1 to 3, inclusive, the connection 4 of the faucet is shown provided with a vertical bore adapted to receive the lower end of the post 7 secured therein, by means of a shoulder 8 and nut 9. Suitable packings 11 are provided for sealing the joints between the post 7 and connection 4 to prevent leakage. The upper end portion 12 of the post 7 is shown tapered, and is adapted to be received in a correspondingly tapered bore provided in a hub 13, shown provided in the bottom wall or cap 14 of a suitable casing, generally indicated by the numeral 15. The casing is secured to the post 7 by a nut 16, received in threaded engagement with the terminal 17 of the post, as best shown in Figure 1. A suitable washer 18 is shown seated on the upper end of the hub 13, and a suitable spring washer 19 may be interposed between it and the nut 16 to secure the casing to the post 7 in leak-proof relation, and at the same time, permitting it to be relatively rotated thereon.

The post 7 is shown provided with a bore 21 having transverse bores 22 at its lower end establishing communication between the bore 21 and the interior of the connection 4. The upper end of the bore 21 of the post extends laterally from the tapered portion 12 of the post and is adapted to communicate with one end of a port 23 provided in the hub 13 and bottom wall 14 of the casing. The opposite end of the port 23 is shown communicating with a bore provided in a plug 24, shown received in threaded engagement with the inner end of a water dispensing spout, generally indicated by the numeral 25. The plug 24 is shouldered, and is adapted to be engaged by a clamping nut 26, which is received in threaded engagement with a threaded portion 27 of the bottom wall 14 of the casing, thereby to secure the spout 25 to the casing, and whereby it may be relatively rotated with respect thereto in a horizontal plane. A suitable packing 28 is shown interposed between the clamping nut 26 and lower end of the threaded portion 27 to prevent leakage around the plug 24.

The dispensing spout 25 is shown comprising telescoping sections 29 and 31, whereby the spout may be extended as indicated by the dotted lines in Figure 1. The outer section 31 preferably has a dispensing head 32 having a perforated plate 33 provided at its lower end, over which is mounted an anti-splash screen 34. The perforated plate 33 has a central opening 35 adapted to be closed by a disk 36 adapted to be moved into and out of registration with the opening 35 by a suitable lever 37. When the disk 36 is in the position shown in Figure 1, water is sprayed through the perforated plate 33 in the form of a relatively wide spray. When the disk is moved out of registration with the opening 35, water will dispense directly from said opening in the form of a solid

stream. This structure is more or less common and it is therefore thought unnecessary to further show and describe the same. A suitable finger knob 38 is preferably provided on the section 31 of the spout to facilitate moving it from one position to another. To prevent the section 31 from becoming detached from the inner section 29, a stud or pin 39 is secured in the inner section 29 and is adapted to engage the ends of a suitable slot 41, provided in the wall of the outer section 31, as will be understood by reference to Figure 1.

The casing 15 is shown provided at its upper end with a detachable cap or cover 42 secured in position by a clamping screw 43, received in threaded engagement with the upper end of a yoke 44, having the terminals of its arms 45 pivotally connected to the lower portion of the casing, as indicated at 46 in Figure 2. A soap container 47 is removably supported within the casing and is adapted to contain a bar of soap 48. The upper end of the soap container 47 is supported in an annular member 50, fitted into and seated upon the upper end of the casing. The cover 42 is seated on the annular member 50. As best shown in Figure 1, one end of a flexible hose 49 is connected to the upper portion of the casing, as indicated at 51, and is provided at its opposite end with a suitable cleaning tool, generally indicated by the numeral 52.

A feature of the invention resides in the novel means provided for attaching a cleaning tool to the hose 49, whereby it may be utilized to control or regulate the application of the soapy water on the dishes or utensils to be cleaned. As best shown in Figure 4, the hose 49 is provided at its free end with a sleeve-like member 53 which serves as a handle, as will be more readily understood by reference to Figure 2. A coupling member, generally indicated by the numeral 54, is attached to the end of the hose 49, within the enlarged portion 55 of the sleeve 53, and has one end of a nozzle 56 secured thereto by such means as threads 57. The opposite end of the nozzle is shown provided with a small fitting 58 adapted to be received in a bore provided in the nozzle 56 and having a plurality of small apertures 59 in the end wall thereof. These apertures are preferably disposed at an angle to the axis of the nozzle 56. A cap 61 is received in threaded engagement with the end of the nozzle 56 and retains the fitting 58 in place therein. The cap 61 has a discharge orifice 62, which preferably is axially aligned with the bore in the nozzle 56. A suitable chamber 63 is provided between the orifice 62 and the end wall of the fitting 58 into which the water is directed from the inclined orifices in the cap 58. By this arrangement the water discharging from the orifice 62 will be sprayed outwardly, as indicated by the dotted lines in Figure 4.

The cleaning element 56, which may be in the form of a brush, or a mop, or any other material device for cleaning, comprises a tubular member 64, which is slidably mounted upon the nozzle 56 between the cap 61 and the inner enlarged portion 65 thereof. The tubular member 64 may be provided with an annular web or flange 66 to which one end of the cleaning element 52 is suitably secured, and whereby the cleaning element or brush 52 becomes, in effect, an integral part of the tubular member 64 and disk 66. A finishing cap 67 is fitted over one end portion of the tubular member 64 and engages the pe-

riphery of the web 66, thereby to complete the formation of the cleaning element.

The tubular member 64 of the cleaning element, as previously stated, is slidable upon the nozzle 56, whereby the cleaning element or brush 52 may be moved from the full line position, shown in Figure 4, to the dotted line position, shown in this same figure. When the cleaning element is in the full line position shown, the water discharging from the end of the nozzle 56 may be sprayed directly onto the dishes or other utensils to be cleaned without interference from the brush or cleaning element. When the latter is in the dotted line position shown in Figure 4, the soapy water discharging from the orifice 62 will be directed through the bristles or walls of the cleaning element, thereby thoroughly saturating it with the soapy water, so that it may be rubbed over the surface of the dishes or utensils, thereby to thoroughly clean them.

Another feature of the invention resides in the means provided for selectively controlling the flow of clear or soapy water from the apparatus. As best shown in Figure 1, the hub 13 of the bottom wall 14 of the casing is shown provided with an aperture 69 which may be brought into registration with the upper end of the bore 21, by rotation of the casing 15 upon the post 7. Thus, when the casing is in the position shown in Figure 1, the water discharging from the faucet will flow through the bore 21 and port 23 directly into the discharge spout 25, in the conventional manner. The flow of water from the spout is, of course, controlled by manipulation of the hot and cold water valves 2 and 3 in the same manner as a conventional combination faucet.

When it is desired to pass the water through the soap chamber for the purpose of delivering soapy water from the end of the hose 49, the casing 15 is rotated, in the present instance, 180°, whereby the opening 69 in the hub 13 of the casing is brought into registration with the upper end of the bore 21. When thus positioned, the water discharging from the faucet by manipulation of the valves 2 and 3, will pass directly through the soap chamber in direct contact with the soap contained therein, so that soapy water will discharge from the end of the brush 52 or through its walls, as previously stated. Thus, it will be seen that the flow of water from the apparatus is controlled entirely by rotation of the casing 15 upon its support and by manipulation of the hot and cold water valves 2 and 3. The yoke 44 is preferably provided with a handle 71, whereby the casing may be conveniently rotated from one position to another, as will readily be understood by reference to Figure 2.

Another important feature of the invention resides in the provision of means whereby when the casing 15 is returned to its normal position, as shown in Figure 1, the water in the soap chamber will drain therefrom through a small drain 72 communicating at its lower end with a drain pipe 73. This drain discharges directly into the sink. By thus draining the soapy water from the soap chamber, economy is effected in that water is not permitted to remain in the soap chamber, and dissolve the soap, when forced circulation through the chamber is interrupted.

In the forms illustrated in Figures 5 and 6, a casing, generally indicated by the numeral 70, is shown mounted upon the outer end of a spout 80 of the faucet. The spout, as shown in Figure

5, has a tapered plug 74 received in a correspondingly tapered bore provided in the cross connection 4 of the faucet, and is secured therein by a suitable nut 75. By thus supporting the spout 80 on the faucet, it may be swung freely from side to side in the conventional manner. The casing 70 is shown provided with end walls 76 and 77, the latter being removably secured to the casing by the yoke 44, shown in the previous figures. A soap container 78 is removably supported within the casing 70 and is adapted to support a bar of soap 48 in a manner similar to the structure illustrated in Figure 1.

The cylindrical wall of the casing 70 is shown provided on one side with a hub 79 having a tapered bore therein adapted to receive the tapered end portion 81 of the spout 80. A nut 82 is received in threaded engagement with the end of the spout and serves to secure the casing in position thereon in such a manner that it may be relatively rotated about the axis of the spout 80 to control the flow of water therefrom.

The hub 79 is shown provided with a spray head 83 similar to the one illustrated in Figure 1, and is adapted to communicate with the interior of the spout 80, when in the position shown in Figure 6. When thus positioned, clear water may be discharged from the head 83 of the spout 80 by manipulation of the usual valves 2 and 3, in a manner similar to the structure illustrated in the previous figures.

When it is desired to discharge soapy water from the apparatus, the casing 70 is swung to the position shown in Figure 5, wherein it will be noted that the passage 84 in the hub member 79 will register with the discharge end of the spout 80 so that the water discharging from the spout will be by-passed through the soap chamber, wherein it will contact directly with the soap 48 and then discharge from the chamber through the hose 49 in a manner similar to that shown and described in the previous figures.

The structure illustrated in Figures 5 and 6 is provided with means for draining the soapy water from the soap chamber when the apparatus is not in use. The means for thus draining the soapy water from the soap chamber is best shown in Figure 6, and comprises a small tube 85 secured in the spout 80 and having one end communicating with the passage 84 of the soap chamber, when the latter is rotated to the position shown in Figure 6. When thus positioned, the upper end of the tube 85 will be in direct communication with the passage 84, whereby the water in the soap chamber will flow downwardly through the passage 84 and through the tube 85 from whence it may discharge into the sink.

The novel apparatus herein disclosed, has been found very practical and efficient in actual operation. It is very economical in the use of soap, in that the water in the soap chamber is immediately drained therefrom, when forced circulation is interrupted through the soap chamber. It will also be noted that the flow of either soapy or clear water from the apparatus may be conveniently controlled by relatively rotating the casing with respect to the faucet, as hereinbefore described. By means of this construction, additional valves are dispensed with, and the control of the apparatus is accomplished entirely by manipulation of the hot and cold water valves 2 and 3, and relatively moving the casing 15. In other words, no additional valves are required in the novel construction herein disclosed. The hot and cold water valves of the faucet must, of course, be

manipulated in the usual manner to control the temperature of the water to be dispensed, whether such water is dispensed directly from the dispensing spout, or from the hose attached to the soap chamber.

The casing 15, when mounted as shown in Figure 1, is positioned directly over the cross connection 4 between the valves 2 and 3, whereby it does not obstruct the usual clearance over the sink. Also, by mounting the spout 25, as shown in Figure 1, it may be swung freely from side to side, as indicated by the full and dotted lines in Figure 3, and when the apparatus is positioned to discharge soapy water from the hose 49, the spout 25 may be positioned substantially as shown in full lines in Figure 3. Should it be desired to spray clear water from the spout 25 onto the dishes for rinsing purposes, the casing is rotated substantially a half revolution, whereby the port 23 will establish communication between the bore 21 of the post 7 and the interior of the spout 25, as shown in full lines in Figure 1, thereby causing clear water, either hot or cold, to discharge from the head 32.

The structure illustrated in Figures 5 and 6, operates in substantially the same manner, except that the casing 70 is swung about the axis of the spout 80, as will be understood by reference to Figures 5 and 6.

In the drawings, I have shown the cleaning tool or element, as being in the form of a brush. It is to be understood that any suitable type or form of cleaning element may be used without departing from the scope of the invention.

I claim as my invention:

1. In a water dispensing fixture for sinks comprising hot and cold water faucets having a connection therebetween and provided with a single dispensing spout, a post supported in said connection and having a bore therein communicating with the interior of the connection, a casing rotatably supported upon the upper end of said post and providing a soap chamber, a hose connected to the upper portion of the soap chamber for dispensing soapy water therefrom, and valve means controlled by relative rotation of the casing for selectively dispensing clear water from the spout or soapy water from said hose.

2. In a water dispensing fixture for sinks comprising hot and cold water faucets having a connection therebetween, a post supported in said connection and having a bore therein communi-

cating with the interior of the connection, a casing rotatively supported upon the upper end of said post and providing a soap chamber, said casing having a dispensing spout at its lower end, a hose having one end connected to the upper end portion of the casing for dispensing soapy water therefrom, and valve means in the connection between the post and said casing made operable by relative rotation of the casing on said post, thereby to selectively discharge water from the spout or by-pass it through the soap chamber, whereby soapy water may be discharged from the conduit for washing dishes or other utensils.

3. In a water dispensing fixture for sinks comprising hot and cold water faucets having a connection therebetween, a post supported in said connection and having a longitudinal bore communicating with the interior of said connection, the upper end of said post being tapered, a casing having a soap chamber therein, said casing having a tapered bore in a wall thereof adapted to receive the tapered end portion of the post, a hose having one end connected to the upper portion of the casing, a port in a wall of the casing adapted to be moved into registration with the bore in said post whereby water may be passed through the soap chamber and be discharged from said hose, means for supporting soap in the soap chamber and whereby the water passed through the soap chamber will contact with the soap before it discharges from said hose, a dispensing spout in the lower portion of the casing, and valve means made operable by relative rotation of the casing on said post, thereby to selectively control the discharge of clear or soapy water from the fixture.

4. In a water dispensing fixture comprising hot and cold water faucets having a connection therebetween, a tubular member in constant communication with said connection, a casing mounted on said tubular member and adapted for rotary movement thereon, said casing having a soap chamber therein and provided with a dispensing spout, said casing also having a conduit connected thereto for dispensing soapy water, and valve means made operable by rotation of the soap chamber about the axis of said tubular member, thereby to selectively control the dispensing of clear water from the spout or soapy water from the conduit.

VERNON J. BUTTERFIELD.