May 13, 1930. A. J. QULIA 1,758,761

SPRAYING APPARATUS

Filed April 29, 1927

Fig. 1

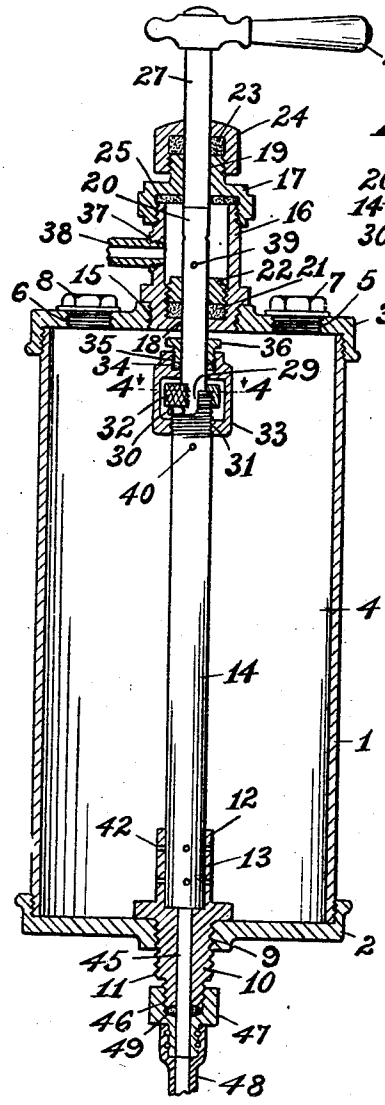



Fig. 5

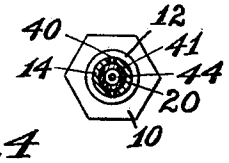



Fig. 6

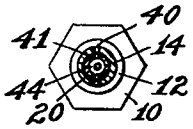



Fig. 4

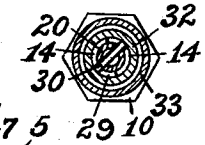



Fig. 2

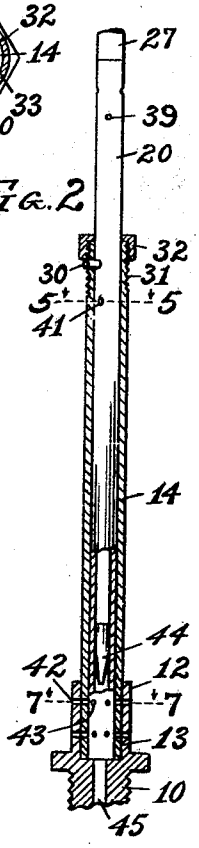



Fig. 3

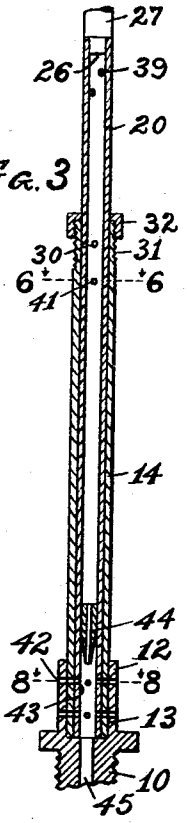



Fig. 9

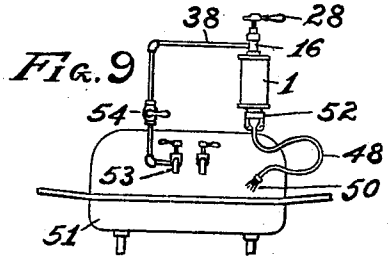



Fig. 7

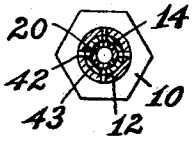
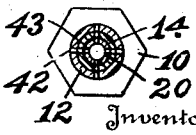



Fig. 8




Inventor

A. J. Qulia

By G. E. Dunstan,

his Attorney

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# UNITED STATES PATENT OFFICE

ARTHUR J. QULIA, OF SYRACUSE, NEW YORK, ASSIGNOR TO EMANUEL RICKERSBERG

## SPRAYING APPARATUS

Application filed April 29, 1927. Serial No. 187,463.

This invention relates to spraying apparatus and more particularly to a spraying device for washing dishes, kitchen utensils, and for cleansing purposes generally, and the like, such as cleaning floors.

The main object of the invention is to provide a spraying device which is adapted to be connected to a hot water supply, and may be conveniently and speedily manipulated to force either hot soapy water upon dishes to remove grease and dirt therefrom or clear hot water only for rinsing same.

Further objects of the invention are to provide a device of said character, which is of simple and practical construction, is water tight at all connections and joints, and is easy to install and convenient to operate.

With the above and other objects in view, the invention will be hereinafter fully described as illustrated in the accompanying drawings, and the novel features thereof will be distinctly pointed out in the appended claims.

In the drawings similar characters of reference indicate corresponding parts.

Figure 1 is a sectional elevation of a spraying device constructed in accordance with my invention,

Fig. 2 is a sectional elevation of the stand-pipe and tube, the tube being in the position for closing the inlet and outlet openings of said stand-pipe,

Fig. 3 is a similar view, the tube being in the position for opening the inlet and outlet openings of the stand-pipe,

Fig. 4 is a cross sectional view, taken on line 4—4 of Fig. 1,

Fig. 5 is a cross sectional view, taken on line 5—5 of Fig. 2,

Fig. 6 is a cross sectional view, taken on line 6—6 of Fig. 3,

Fig. 7 is a cross sectional view, taken on line 7—7 of Fig. 2,

Fig. 8 is a cross sectional view, taken on line 8—8 of Fig. 3, and

Fig. 9 illustrates the spraying device connected to the hot water faucet of a kitchen sink.

Referring to the drawings, 1 represents a cylindrical body which is closed at its lower end by a cap 2 and at its upper end by a cap 3 to provide a soap chamber 4. Suitable sized openings 5 and 6 are provided in the cap 3 for admitting soap in any suitable form within said chamber, and suitable covers 7 and 8 are adapted to close said openings. The lower cap 2 is provided with a central threaded opening 9 for receiving a plug 10, the threaded end 11 of which extends below the cap, and the upper end 12 thereof extends within the chamber 4 and is bored at 13 for receiving a stand-pipe 14 which is fixed thereto by soldering or in any suitable manner.

The upper cap 3 is provided with a central threaded opening 15 for receiving a cup 16, which is closed at its upper end by a cap 17. The bottom of the cup 16 is provided with an opening 18 and the cap 17 with an opening 19 for receiving a tube 20 which loosely fits into and is rotatably mounted in the stand-pipe 14. Said tube extends to the bottom of said stand-pipe and rests upon the bottom of the bore 13 of the plug 10. Suitable packing is provided around the tube 20 at 21 and is held by means of a threaded plug 22, and other packing is provided at 23 and held by a nut 24. A packing washer 25 prevents leakage at the joint between the cup 16 and its cap 17. The upper end of the tube 20 is closed at 26 by fixing to the tube a solid stem 27, and to said stem is fixed a suitable handle 28 for rotating said tube. For limiting the rotary movement of the tube 20, the upper end of the stand-pipe 14 is slotted vertically at opposite sides, as indicated at 29, and a transverse pin 30, which is fixed in said tube and rests upon the bottom edge of said slot, is adapted to engage the vertical edges of said slot. The upper end of the stand-pipe 14 is threaded at 31 and a ferrule 32 is fixed thereto, and its lower edge engages the transverse pin 30 for preventing vertical movement of the tube 20 and the withdrawal thereof from said stand-pipe. It is necessary to prevent leakage around the tube 20 above the upper end of the stand-pipe 14, and for this purpose, a box 33 enclosing same is threaded upon the stand-pipe at 31 below the ferrule 32 and the slots 29. Suitable packing 34 is arranged around the tube 20 within a recess

35 of the box 33, and a threaded gland nut 36 retains said packing in position.

The cup 16 is provided with a threaded opening 37 for connection thereto of a hot water supply pipe as 38, and suitable openings, indicated by 39, are provided through the walls of the tube 20 within said cup for admitting the hot water to said tube. Suitable inlet openings 40 are provided through the wall of the upper portion of the stand-pipe 14 just below the box 33, and outlet openings 41 are provided through the walls of the tube 20 in transverse alignment with said inlet openings and are adapted to register therewith for admitting the hot water to the soap chamber 4. Suitable inlet openings 42 are provided through the wall of the upper end 12 of the plug 10 and extend through the wall of the stand-pipe 14, and outlet openings 43 are provided through the wall of the tube 20 and are adapted to register with said inlet openings 42. The before mentioned stop-pin 30 is so arranged that the upper outlet openings 41 of the tube 20 will be out of registration with the inlet openings 40 of the stand-pipe 14, and likewise the lower inlet openings 43 of said tube will be out of registration with the inlet openings 42, when said tube is in the position as shown in Figs. 2, 5 and 7, and said openings of said tube will be in registration with said openings of said stand-pipe when said tube is rotated by means of the handle 28 to the position shown in Figs. 3, 6 and 8.

For creating a suction action at the lower end of the tube 20 when said tube is in the last mentioned position so as to cause the hot water entering said tube at 39 to pass through the upper registering openings 41 and 40 into the chamber 4, and the soapy water of said chamber to pass through the registering lower openings 43 and 42 again into said tube, a suitable injector nozzle 44 is fixed within said tube just above said lower openings. When the tube 20 is in the first mentioned position, and the upper openings 40 and the lower openings 42 are closed thereby, the hot water passes directly through said tube and through the outlet opening 45 of the plug 10. To the reduced threaded end 46 of the plug 10 is connected a coupling 47 of a suitable hose 48 for conveying either hot soapy water or clear hot water for use as desired. Suitable packing is provided at 49 to insure a tight joint at the coupling. A suitable nozzle, or a brush 50 for scraping, and scouring purposes during the spraying is fixed to the outlet end of the hose 48.

The body of the device is preferably supported above a kitchen sink 51, or other convenient place, by means of a suitable bracket 52, to which bracket is affixed the threaded portion 11 of the plug 10, or the device may be supported in any other suitable manner. The supply pipe 38 may be connected to a supply of hot water but preferably is connected to the shank of the hot water faucet 53, and a shut-off valve 54 is provided in said supply pipe so that the hot water faucet or the spraying device may be operated independently of each other.

Operation: Assuming that it is the desire to wash dishes or cooking utensils having grease or burned food clinging to the same. The articles to be washed may be arranged upon a draining rack resting in the sink. The hot water is turned on at 54. Either clear hot water or soapy hot water may be used alternately at will by the simple operation of turning the handle 28. When the handle 28 of the spraying device is turned to the position shown in Fig. 1, the tube 20 is in the position shown in Figs. 2, 5 and 7, and the openings 40 and 42 of the stand-pipe 14 are closed thereby, the clear hot water will pass through the openings 39 and directly through the tube 20, the hose 48, and out by way of the brush 50. By pushing the handle 28 rearwardly, until the stop-pin 30 engages the other edges of the vertical slots 29, the openings 41 and 43 of the tube 20 will register with the openings 40 and 42 of the stand-pipe 14, respectively, and a portion of the hot water flowing through the tube 20 will pass through the upper openings 41 and 40 and enter the soap chamber 4. The suction, caused by the hot water passing through the nozzle 44, will cause the soapy water from the chamber 4 to be drawn into the lower end of the tube 20 through the openings 42 and 43, and pass through the hose 48 and out by way of the brush 50. It is thus seen that by the simple operation of turning the handle 28, clear hot water or soapy hot water may be used at will. Hot soapy water, with the assistance of the brush may be used for washing purposes, and clear hot water for final rinsing, or either soapy or clear water may be used as desired.

It will be understood that although the spraying device as illustrated and described is well adapted to accomplish the intended purpose of providing clear water or soapy water alternately in a convenient manner for various cleansing purposes especially washing and rinsing of dishes and cooking utensils and scrubbing and cleaning floors, that slight changes in the details of construction may be made within the scope of the claims. For instance the openings in the tube 20 and stand-pipe 14 may be varied in number and size, or sizes relative to each other, as will provide the best results under various conditions and for various purposes.

Having fully described my invention what I claim is:

1. In a spraying device, the combination of a chamber, a stand-pipe in the chamber, a tube movably mounted in the stand-pipe, the tube being connected with a fluid supply, the stand-pipe being provided with upper open-

ings and lower openings, the tube being provided with openings adapted to register with said openings of the stand-pipe at the same time, and means for causing suction at the lower end of said tube by the direct flow through said tube.

2. In a spraying device, the combination of a chamber, a stand-pipe in the chamber, a tube movably mounted in the stand-pipe, the tube being connected with a fluid supply, the stand-pipe being provided with upper openings and lower openings, the tube being provided with openings adapted to register with said openings of the stand-pipe at the same time, and a nozzle in said tube above said lower openings for creating suction by the direct flow through said tube to cause flow from said chamber through said lower openings into said tube.

3. In a spraying device, the combination of a chamber, a stand-pipe fixed in the chamber, a cup above the chamber, a supply pipe leading to the cup, a tube passing through the cup and being rotatably mounted in said stand-pipe, the tube having an inlet opening within said cup, the tube being closed above said inlet opening, a handle fixed to the upper end of said tube, said chamber being provided with an outlet extending from the lower end of said tube, and means for establishing and cutting off communication between said tube and said chamber upon rotation of said tube by said handle.

4. In a spraying device, the combination of a chamber, a stand-pipe fixed in the chamber, a cup above the chamber, a supply pipe leading to the cup, a tube passing through the cup and being rotatably mounted in said stand-pipe, the tube having an inlet opening within said cup, the tube being closed above said inlet opening, a handle fixed to the upper end of said tube, said chamber being provided with an outlet extending from the lower end of said tube, the stand-pipe having upper and lower openings, the tube having openings adapted to register with said upper and lower openings of the stand-pipe, and means for creating suction at the lower end of said tube by the flow through said tube to cause flow through said chamber and into said tube.

5. In a spraying device, the combination of a chamber, a stand-pipe fixed in the chamber, a cup above the chamber, a supply pipe leading to the cup, a tube passing through the cup and being rotatably mounted in said stand-pipe, the tube having an inlet opening within said cup, the tube being closed above said inlet opening, a handle fixed to the upper end of said tube, said chamber being provided with an outlet extending from the lower end of said tube, the stand-pipe having upper and lower openings, the tube having openings adapted to register with said upper and lower openings, of the stand-pipe, means for creating suction at the lower end of said tube by the flow through said tube to cause flow through said chamber and into said tube, the stand-pipe being slotted, a stop-pin fixed in the tube and resting in said slot, means fixed to the stand-pipe for engaging said pin to prevent withdrawal of said tube from said stand-pipe, and means for preventing leakage at the joint between said tube and said stand-pipe.

6. In a spraying device, the combination of a chamber, a stand-pipe fixed in the chamber, a cup above the chamber, a supply pipe leading to the cup, a tube passing through the cup and being rotatably mounted in said stand-pipe, the tube having an inlet opening within said cup, the tube being closed above said inlet opening, a handle fixed to the upper end of said tube, said chamber being provided with an outlet extending from the lower end of said tube, the stand-pipe having upper and lower openings, the tube having openings adapted to register with said upper and lower openings of the stand-pipe, means for creating suction at the lower end of said tube by the flow through said tube to cause flow through said chamber and into said tube, the stand-pipe being slotted, a stop-pin fixed in the tube and resting in said slot, a ferrule, a box fixed to said stand-pipe and enclosing said ferrule and said slot, and means for preventing leakage between said box and said tube.

In testimony whereof I affix my signature.

ARTHUR J. QULIA.