April 1, 1947. T. M. MATLACK ET AL 2,418,360

DISH WASHER

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FIG. 1.

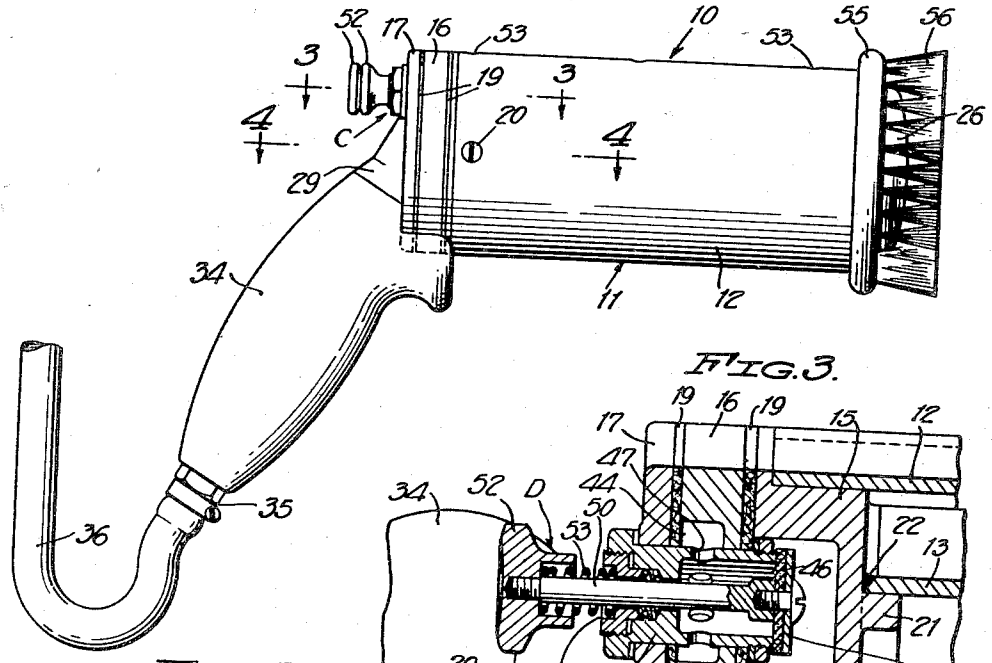


FIG. 3.

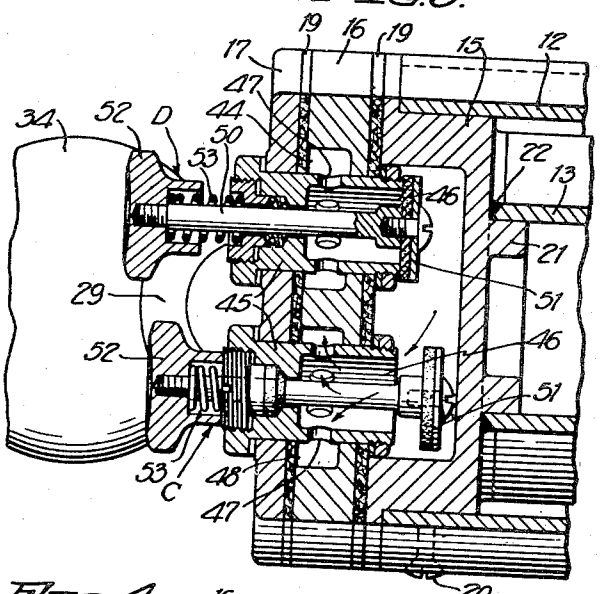


FIG. 2.

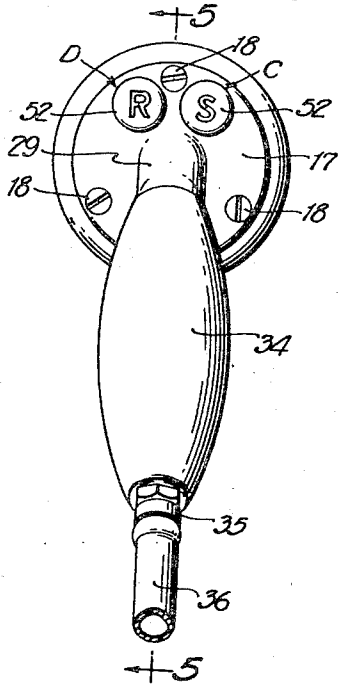
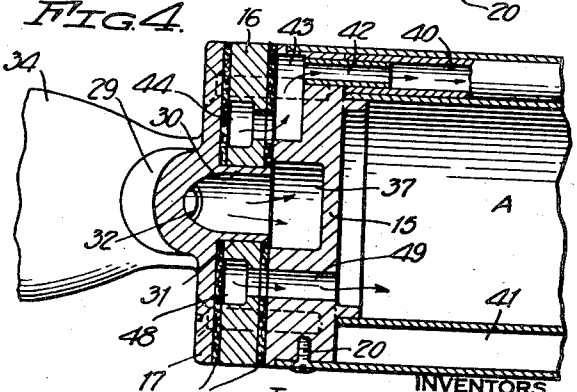


FIG. 4.



INVENTORS
THOMAS M. MATLACK
GEORGE D. HUTCHINSON
BY
Pattison
ATTORNEYS

WITNESS:

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DISH WASHER

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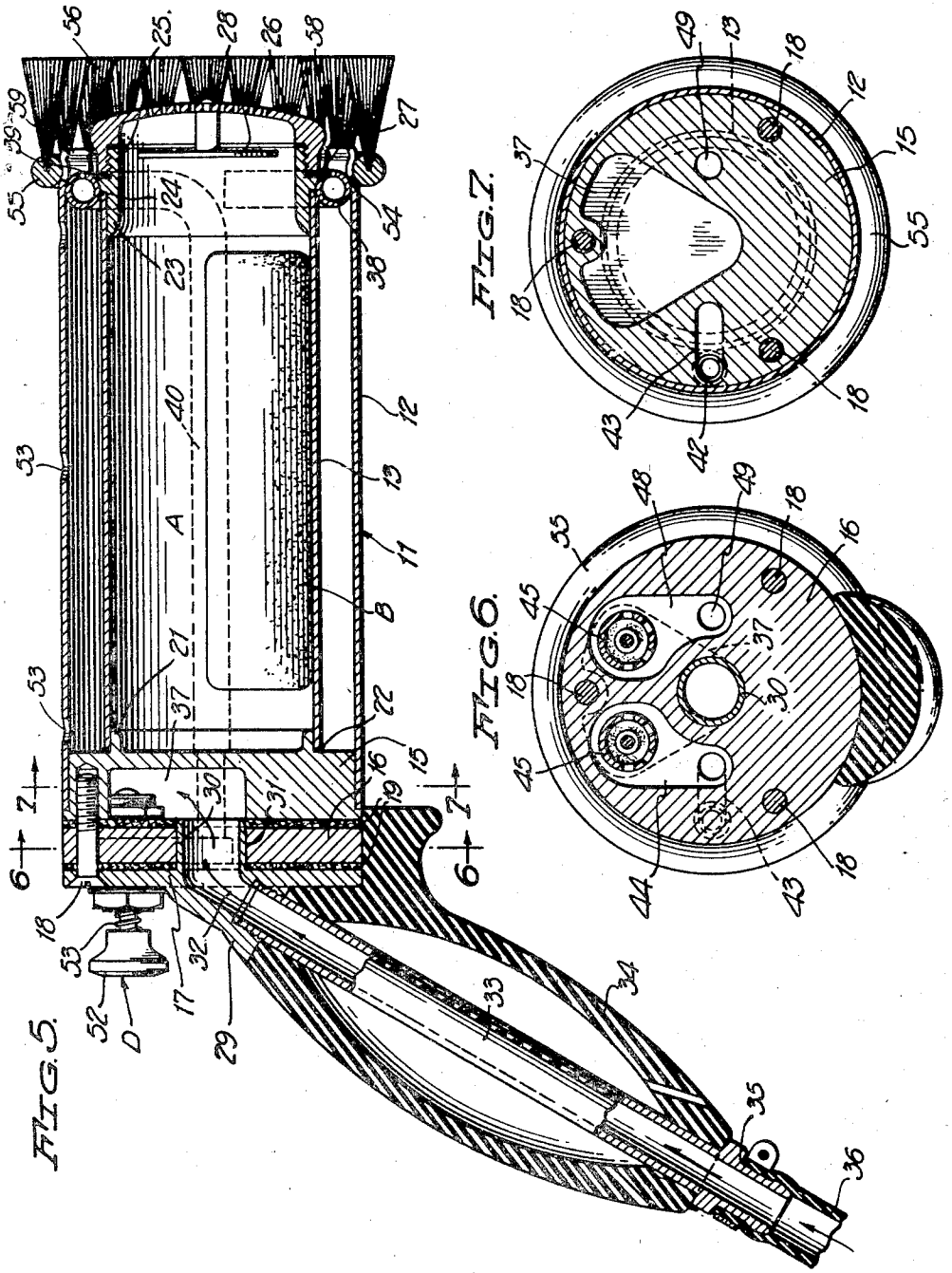


FIG. 5.

FIG. 7.

FIG. 6.

INVENTORS
THOMAS M. MATLACK
GEORGE D. HUTCHINSON.
BY
Ely & Pattison
ATTORNEYS

WITNESS:

Patented Apr. 1, 1947

2,418,360

UNITED STATES PATENT OFFICE

2,418,360

DISHWASHER

Thomas M. Matlack and George D. Hutchinson,
Jamesburg, N. J.

Application October 7, 1943, Serial No. 505,296

1 Claim. (Cl. 251—135)

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This invention relates to washing devices and more particularly to an improvement over the dishwasher set forth in U. S. Letters Patent No. 2,069,833 to William C. Horner, dated February 9, 1937, in which we are assignees of a part interest.

The primary object of this invention resides in a portable dishwashing device for sink use in the washing of dishes, silverware, glassware and other articles which must be soap washed and subsequently rinsed with clear water.

Another object of the invention is to provide a hand operated dishwashing device embodying a clear water spray and a soapy water spray, there being two separate valves to selectively control the sprays and which are so located that they may be operated by the thumb of the hand by which the device is held, thus leaving the other hand free to hold and turn the articles during a washing operation.

A further object of the invention is the provision of a dishwashing device which has been designed for simplicity of parts and assembly; cost of manufacture; and ease of use.

Other novel features of the invention will become apparent as the following specification is read in conjunction with the accompanying drawings, in which:

Figure 1 is a side elevational view of a dishwashing device constructed in accordance with our invention.

Figure 2 is a rear end elevational view with the coupling hose in cross section.

Figure 3 is an enlarged detail horizontal sectional view on the line 3—3 of Figure 1, the soapy water control valve being shown in open position.

Figure 4 is a view similar to Figure 3 taken on the line 4—4 of Figure 1.

Figure 5 is an enlarged vertical longitudinal sectional view on the line 5—5 of Figure 2.

Figure 6 is a vertical transverse sectional view on the line 6—6 of Figure 5.

Figure 7 is a vertical transverse sectional view on the line 7—7 of Figure 5.

Referring to the drawings by reference characters, the numeral 10 designates a washing device in its entirety constructed in accordance with our invention. The washing device 10 includes a cylindrical body 11 composed of an outer cylindrical casing 12, and an inner cylindrical casing 13 which is concentric to and spaced from the outer casing 12 in a manner to be hereinafter described. The rear end of the body 11 is closed by an annular end closure which includes an

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inner annular member 15, an intermediate annular member 16, and an outer end plate 17, the same being held together by screws 18. Gaskets 18—19 are interposed between the members 15 and 16, and between member 16 and the end plate 17. The inner end of the member 15 is provided with a stepped portion which telescopically receives the rear end of the outer casing 12 and is secured thereto by screws 20. Extending rearwardly from the member 15 is an annular flange 21 disposed concentric to the periphery of said member and in spaced relation thereto. The rear end of the casing 13 telescopes the flange 21 and is welded thereto as at 22.

The front end of the inner casing 13 telescopes the stepped inner end of a collar 23 to which it is welded as at 24. The outer end of the collar is externally screw threaded as at 25 and threadedly receives a spray-head 26. A gasket 27 is interposed between the spray-head 26 and the shoulder of the stepped portion of the collar for sealing the joint therebetween. The spray-head 26 is concavo-convex and clamped between the same and the collar 23 is a gasket. The interior of the inner casing 13 constitutes a soap compartment A in which a cake of soap B is placed. A disk 28 is supported by the spray-head 26 in spaced relation to the inner side thereof to prevent the soap from reaching the spray-head 26 and clogging the spray openings therein.

The end plate 17 has a rearwardly and downwardly extending boss 29 integral therewith. Also integral with the plate 17 and extending forwardly therefrom is a concentric nipple 30 which passes through a concentric opening 31 in the member 16. The passage in the nipple 30 communicates with a passage 32 in the boss 29. The outer end of the passage 32 is screw threaded to threadedly receive the upper end of a water tube 33 which passes axially through an elongated hand grip member 34. The lower end of the tube 33 is provided with a coupling fitting 35 by which one end of a flexible water supply hose 36 is connected to the tube. The other end of the hose 36 is adapted to be connected to a water faucet when the device 10 is in use.

The nipple 30 and passage 32 constitutes an angular shape water inlet which communicates with a water chamber 37 of substantially triangular shape as best seen in Figure 7, said water chamber being formed in the inner member 15 of the end closure 14. Mounted in the member 16 and plate 17 of the end closure are two manually operable control valves C and D. The valve

C controls the flow of water from the water chamber 37 to the soap compartment A. The valve D controls the flow of water from the water chamber 37 to a rinsing spray ring 38 fixedly mounted adjacent the front end of the inner cylindrical casing 13 and surrounding the same. The spray ring 38 has forwardly disposed spray orifices 39. A portion 40 of the tube from which the spray ring 38 is formed extends rearwardly parallel to the axis of the cylindrical body 11 and is disposed in the air space 41 between the casings 12 and 13. The rear end of the tube portion 40 connects with a coupling tube 42 extending transversely through the member 15 (Figure 4). The tube 42 communicates with a passage 43 leading to a chamber 44 which surrounds the body of the valve D.

The valves C and D are of like construction so that a description of one will suffice for the other. Each valve is of the push type and comprises a cylindrical body 45 extending transversely through the disk 17 and member 16 of the end closure 14. The body 45 has its inner end provided with a chamber 46 which opens into the water chamber 37. The body 45 has water outlet openings 47 therein, those of the valve D communicating with the chamber 44 and those of the valve C communicating with a chamber 48 in the member 16 and which surrounds the body 45 thereof and communicates with a horizontal water passage 49 which enters the soap compartment A through the member 15. A plunger 50 is slidably mounted in the body 45 axially thereof. The inner end of the plunger 50 carries a valve head 51 normally held in closed position against the inner end of the body 45 to shut off communication between the water chamber 37 and the chamber 46. The outer end of the plunger 50 carries a push button 52, there being a helical extension spring 53 interposed between the push button and the valve body 45 to normally urge the plunger outwardly to cause the valve head 51 to tightly seat against the open end of the valve body. The manipulating push buttons 52—52 of the valves C and D are disposed on the same horizontal plane closely adjacent each other, so that the thumb of the hand of an operator when grasping the hand grip member 34 may be brought into engagement with either push button and press the same inwardly against the action of the spring to actuate the plunger 50 and move the valve head 51 to open position away from the open end of the valve body. The valve C in Figure 3 is shown in open position whereupon communication is established between the water chamber 37 and the chamber 46 in the valve body.

The outer casing 12 has its top provided with spaced air openings 53 to permit circulation of air in the insulating space 41, it being understood that when hot water is passed through the compartment A and through the tube 40, the cylindrical body 11 will heat up to a degree which would be uncomfortable to the human touch.

The free front end of the outer casing 12 is provided inwardly from the edge with an annular groove 54 in which the ring body 55 of a circular brush 56 is seated. To facilitate the attachment and separation of the brush 56 relative to the casing 12, the end edge of the casing is formed with an annular inturned lip 57, and the free end of said casing is provided with radial slits 58 to form resilient jaw elements 59. Thus the ring body 55 of the brush may be forced over the jaw elements 59 during attachment or removal

of the brush from the casing 12. The bristles of the brush 56 extend forwardly beyond the plane of the spray head 26 to facilitate scrubbing during use of the soapy and clear sprays.

In use, the hose 36 has its free end connected to the hot water faucet of a sink or other appliance. Assume that the device 10 is to be used for washing dishes, glasses, silverware and other such articles. Water from the faucet will freely pass through the hose 36, tube 33, passage 32, and will fill up the water chamber 37. The pressure of the water in the chamber 37 acts upon the valve members 51 to hold them seated in closed position against the open ends of the valve bodies 45. The operator grasps the hand grip member 34 in one hand, leaving the thumb of said hand free to selectively actuate either of the push valves C and D. The other hand of the operator is free to grasp a plate, dish or other article to be washed, and toward which the front end of the cylindrical body 11 is directed. The operator may now press the push button 52 of the valve C, whereupon the valve opens and water from the water chamber 37 flows to the chamber 46 of said valve, through openings 47 into the chamber 48, passage 49, through the compartment A where it is subjected to the soap B which produces soapy water which is discharged in spray form through the spray head 26, onto the article being washed. Should any substance be present on the articles being washed which cannot be washed away, the same may be removed by bringing the brush 56 in contact therewith. To rinse the washed article of soap, the operator releases the push button of the valve C and with the thumb, presses the push button 52 of the valve D, whereupon the valve C closes and valve D opens. Water may now flow from the water chamber 37, through chamber 48 and openings 47 of valve D, through chamber 44, passage 43, coupling tube 42, tube 40 to spray ring 38 and be discharged in ring spray form through the discharge orifices 39. Thus clear water is discharged from the ring spray 38 onto the article being washed to cleanse the same of soap which may remain thereon by the previous washing operation.

From the foregoing description, it will be seen that we have provided a washing device 10 which is designed and constructed to render the same inexpensive of manufacture, easy to assemble, and which may be taken apart for cleansing and repair purposes. The compartment A may be replenished with soap by unscrewing the spray head 26 from the collar 23, whereupon a cake of soap may be inserted into the front open end of the casing 12. While we have specifically mentioned that the washing device 10 is primarily adapted for use in the washing of dishes and other articles in a sink, the device may also be used for other washing purposes, such as the washing of automobiles, screens, windows and the like.

While we have shown and described what we consider to be the preferred embodiment of our invention, we wish it to be understood that such changes as come within the scope of the appended claim may be resorted to if desired without departing from the spirit of the invention.

Having thus described the invention, what we claim as new and desire to secure by Letters Patent of the United States, is:

In a water spray device having a cylindrical casing open at one end, an end closure fixed to the open end of the casing, a water chamber pro-

vided in said end closure, a water passage leading from the water chamber to the casing, a push valve arranged in said water passage having a slidable valve actuating member disposed parallel to the axis of the casing and extending beyond the outer side of the end closure, and a hand grip member fixed to the end closure and extending at an angle relative to the axis of the cylindrical casing and having its inner end disposed adjacent the valve actuating member to enable pressing of the valve actuating member by the thumb of the hand of a user when grasping the hand grip member.

THOMAS M. MATLACK.
GEORGE D. HUTCHINSON.

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