

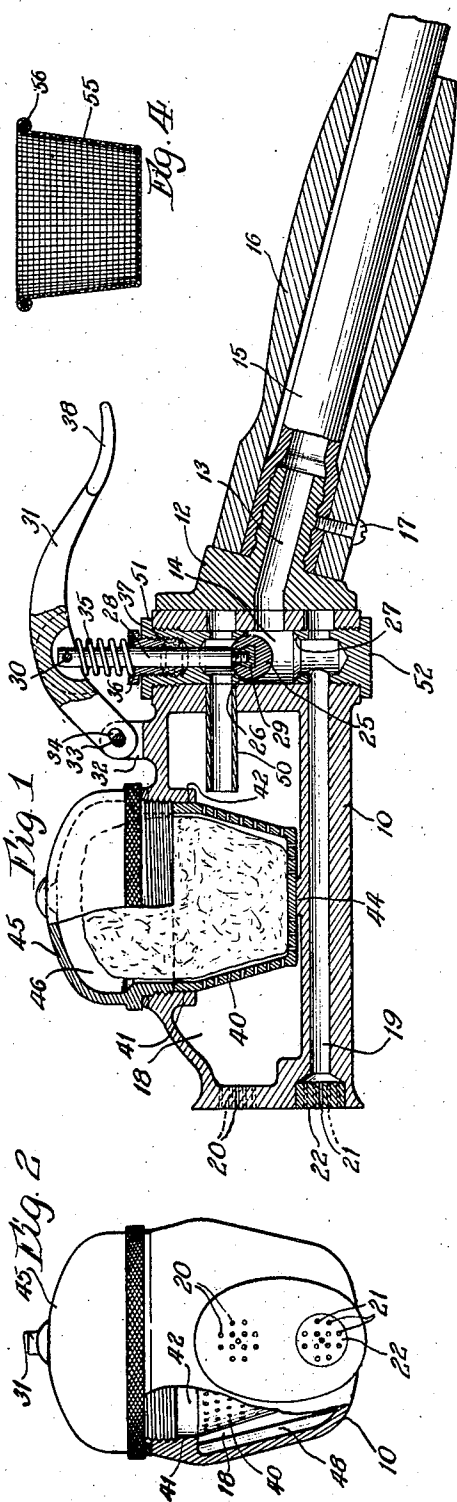
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B. B. LIPSNER ET AL

DISHWASHER NOZZLE

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UNITED STATES PATENT OFFICE.

BENJAMIN B. LIPSNER AND PAUL SPORER, OF CHICAGO, ILLINOIS, ASSIGNORS OF ONE-THIRD TO MILTON A. DREYFUS, OF CHICAGO, ILLINOIS.

DISHWASHER NOZZLE.

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To all whom it may concern:

Be it known that we, BENJAMIN B. LIPSNER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, and PAUL SPORER, a citizen of Yugoslavia, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Dishwasher Nozzles, of which the following is a specification.

More particularly our invention relates to a dish washer nozzle which can be applied to the hot water faucet of a kitchen sink and which may be controlled to deliver either a spray of clear water or a spray of water which holds in solution a cleaning substance, such as soap, or the like.

The chief object of our invention is to provide improved construction for a dish washer nozzle of the class described.

More specific objects of our invention are to provide a dish washer nozzle which has improved means for holding a cleaning substance, such as soap, soap powder, or the like, in a passageway of the nozzle; which has improved valve means for controlling the flow of water through the nozzle, and which has improved means for agitating the water as it passes through a soap supplied passageway of the nozzle to insure the delivery of a soap solution of the required proportions.

Other objects of our invention will become apparent as the detail description progresses, reference being had to the accompanying drawing, wherein—

Fig. 1 is a central longitudinal section through the improved dish washer nozzle.

Fig. 2 is a front elevation of the improved dish washer nozzle.

Fig. 3 is a top plan view of the improved dish washer nozzle, and

Fig. 4 is a central longitudinal section taken through a soap receptacle which may be used in place of the soap receptacle shown in Fig. 1.

Referring to the drawing, our improved dish washer nozzle comprises a housing 10 which has rigidly secured to it, by means of screws 11, an apertured bracket 12, the aperture in the bracket 12 providing a passageway 13, one end of which terminates in a valve chamber 14 formed in the housing 10. The bracket 12 has secured to it, in a manner well known to those skilled in the

art, one end of a flexible hose or tube 15. The other end of the flexible tube 15 may be provided with any suitable fitting (not shown) whereby it can be applied to the hot water faucet of a kitchen sink, or the like. The bracket 12 also carries a handle 16 which is rigidly secured to the bracket by means of a screw 17. It is, of course, understood that this construction permits water to be drawn from any suitable source of supply to the valve chamber 14 in the housing 10, and that it permits an attendant to point a spray of water issuing from the nozzle in any desired direction.

The housing 10 is provided with a plurality of passageways 18 and 19. The passageway 18 connects the valve chamber 14 with a group of perforations 20 formed in the forwardly extending tip of the housing 10. The passageway 19 connects the valve chamber 14 with a group of perforations 21 formed in a cylindrical block 22 rigidly secured in the forwardly extending tip of the housing 10. It is apparent that water may flow from the passageway 13 in the bracket 12 to either of the passageways 18 and 19 and that the passageways 18 and 19 may be considered branch passageways with respect to the passageway 13.

To control the flow of water through the passageways 18 and 19, we have provided a spherical valve 25 which is disposed in the valve chamber 14 and which is adapted to seat upon a valve seat 26 associated with the passageway 18, or to seat upon a valve seat 27 which is associated with the passageway 19. When the valve 25 is seated upon the valve seat 26 shown in Fig. 1, water may flow from the passageway 13 through the valve chamber 14 and through the passageway 19 to the perforations 21 in the forwardly extending tube of the housing 10, but the water cannot pass from the valve chamber 14 to the passageway 18. However, it is apparent that if the valve 25 is brought into a position wherein it seats upon the valve seat 27, the water which flows from the passageway 13 will flow through the passageway 18 to the perforations 20 but will not flow through the passageway 19. We have provided means for controlling the valve 25, the means comprising a valve stem 28 to which the valve is rigidly secured. We prefer to make the valve 25 of some resilient material, such as rubber, leather, or the like,

the valve being molded or forced upon a bushing 29 which is rigidly secured to the lower end of the valve stem 28. The upper end of the valve stem 28 is pivotally secured, by means of a pin 30, to a lever 31. The lever 31 is pivotally secured to and between a pair of lugs 32 formed integral with the housing 10, a screw 33 being provided to make the pivotal connection. It will be noted that the lever 31 is slotted as at 34 to permit it to be angularly displaced with respect to the pivoting screw 33 against the action of a helical compression spring 35 disposed around the valve stem 28. One end of the helical compression spring 35 rests against the lever 31 and the other end thereof rests against a threaded bushing 36 which forms part of a stuffing box 37 for the valve stem 28. The lever 31 is provided with a thumb-piece 38 whereby the operator of the nozzle may depress the lever 31 and cause the valve 25 to leave the valve seat 26 and engage the valve seat 27. The valve 25 will, of course, be returned to the valve seat 26 when the operator releases the lever 31.

The passageway 19 is but a continuation of the passageway 13 and is adapted to deliver clear water to the perforations 21, but the passageway 18 is enlarged to receive a perforate receptacle 40 which may be inserted into the housing 10 through an aperture 41 formed in the wall of the housing. The receptacle 40 is provided with a cylindrical surface 42 adapted to fit snugly within the aperture 41, the receptacle itself resting upon a lug 44 formed integral with the housing 10. A cup-like cover 45 is provided for the perforate receptacle 40, the cover 45 being threaded into the aperture 41 and serving to hold the perforate receptacle in place in the passageway 18. The receptacle 40, together with its cover 45, forms a chamber 46 in which any suitable cleaning compound, such as soap, or the like, may be placed. An advantage of this construction is that a comparatively large chamber is provided for the cleaning compound without necessitating a housing of relatively large proportions.

That portion of the inner surface of the housing 10 which is adjacent the perforate receptacle 40 is corrugated as at 48. The purpose of this construction is to provide means for agitating the water as it passes through the passageway 18 so that it will be driven in and out through the perforations in the receptacle 40 and thus be made to carry part of the cleaning compound away with it in solution.

The passageway 18 is partially formed by means of a pipe 50, one end of which communicates with the valve chamber 14 and the other end of which is disposed in close proximity to the perforate receptacle 40. As the water which flows from the hot water faucet is under a suitable head, the pipe 50 will

deliver the water with some force against the perforate receptacle 40, thus causing it to enter the perforations in the receptacle. The advantage of this construction is apparent.

To facilitate the manufacture of the device the valve seats 26 and 27 are formed upon threaded plugs 51 and 52, respectively. This is done to permit the valve chamber 14 to be made economically in the housing 10, the plugs 51 and 52 forming the end walls of the valve chamber.

In the operation of the device, soap powder, a bar of soap, or any other suitable cleaning compound may be placed in the perforate receptacle 40 by removing its cover 45. After the soap receptacle 40 has been filled, the cover 45 is replaced and the device is ready for use. The operator may direct a stream of soapy water upon the dishes, or the like, which are to be washed, the operator, of course, depressing the lever 31 so that the water from the faucet may flow through the passageway 13 into the passageway 18 where it dissolves some of the soap, or the like, contained in the receptacle 40. The soapy water is discharged through the apertures 20 in the forwardly extending tip of the housing 10. When the dishes are to be rinsed the operator releases the lever 31 thus permitting the valve 25 to return to the valve seat 26 so that the water from the faucet may flow through the passageways 13 and 19 to the perforations 21.

In Fig. 4 we have shown a soap receptacle 55 which may be used in place of the soap receptacle 40 shown in Fig. 1. The soap receptacle 55 is constructed of screen or wire mesh, the upper edge of the receptacle being reinforced by a metallic ring 56.

We are aware that changes in the form, construction, and arrangement of parts may be made without departing from the spirit and without sacrificing the advantages of the invention, and we reserve the right to make all such changes as fairly fall within the scope of the following claims:

We claim:

1. A dish washer nozzle comprising a passageway, the outlet of the passageway being aligned with the inlet thereof, means for connecting the passageway with a supply of water, a perforate receptacle for soap secured to the nozzle to project into the passageway, and a rib disposed in the passageway transversely thereof and spaced from the receptacle for agitating the water and for directing it to the receptacle.

2. A dish washer nozzle comprising a passageway, the outlet of the passageway being aligned with the inlet thereof, means for connecting the passageway with a supply of water, a perforate receptacle for soap rigidly secured to the nozzle and centrally disposed in the passageway, and projections

formed upon opposite walls of the passageway and spaced from the receptacle for agitating the water and for directing it to the receptacle.

- 5 3. In a dish washer nozzle of the class described, the combination with an integral casing having a plurality of side openings, said casing comprising a passageway formed therein for receiving water supplied to the
10 casing, and a plurality of branch passageways formed in the casing by an integral

portion of the casing, of a removable perforate receptacle for soap arranged in one of the side openings so as to project into one of the branch passageways, and valve mechanism arranged in the other side opening for controlling the flow of water from said first mentioned passageway to said branch passageways. 15

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