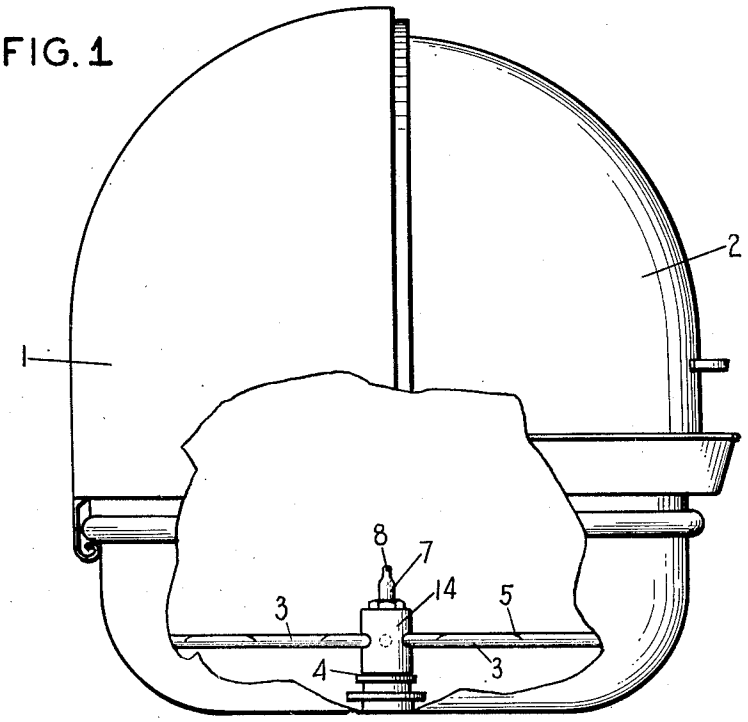
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NOZZLE FOR DISHWASHERS

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FIG. 1



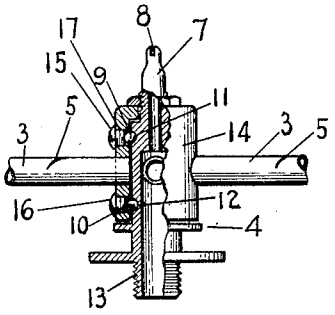


FIG. 2

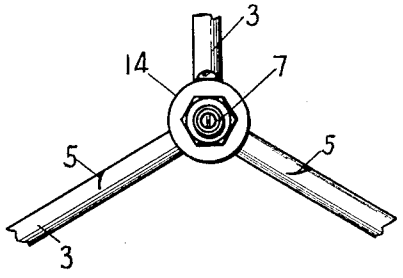


FIG. 3

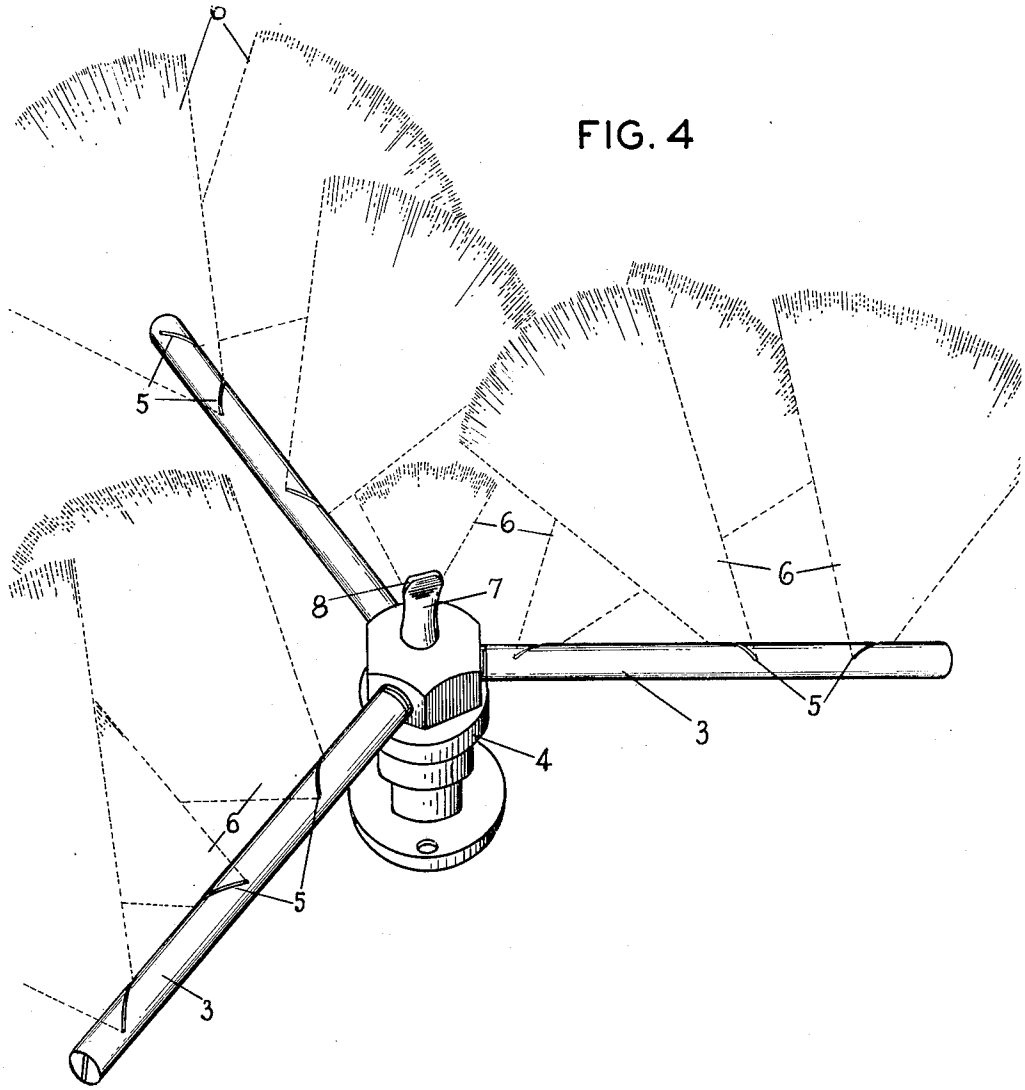
INVENTORS
ERNEST FISK
BY ALBERT H. KAHLENBERG
Dodson & Roe
ATTORNEYS

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FIG. 4



INVENTORS
ERNEST FISK
BY ALBERT H. KAHLENBERG
Dodson & Roe
ATTORNEYS

Patented Sept. 9, 1930

1,775,162

UNITED STATES PATENT OFFICE

ERNEST FISK, OF CHICAGO, AND ALBERT H. KAHLENBERG, OF OAK PARK, ILLINOIS, ASSIGNORS TO FRIEDLEY-VOSHARDT CO., OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS

NOZZLE FOR DISHWASHERS

Application filed June 20, 1929. Serial No. 372,236.

Our invention relates to those dishwashers in which the cleansing fluid is forcefully directed upon the dishes through a whirling nozzle, in the form of a jet or spray, the force of the water producing the rotation of the nozzle. Experience has shown that jets or streams of water are insufficient for cleansing all surfaces. This has led to the use of sprays, but here the water is split up into such fine particles as to lose in large degree its effectiveness.

Our invention has for its object, to avoid these objectionable features by providing for the ejection of water from the nozzle in sheets, and we have found in practice that the efficiency of the dishwasher is thereby materially increased.

Our means for accomplishing the foregoing objects may be more readily understood by reference to the accompanying drawings, which are hereto annexed and made a part of this specification, in which—

Fig. 1 is a side elevation of a dishwasher equipped with our improved nozzle;

Figs. 2 and 3 are detail views of the hub; and

Fig. 4 is an enlarged view of the nozzle, showing how the water is ejected in sheets.

Similar reference numerals refer to similar parts throughout the entire description.

As shown in the drawings, the dishwasher comprises a casing 1, having a door 2, through which the dishes (not shown) may be placed inside the dishwasher in the usual standard wire basket employed for this purpose.

The nozzle comprises a plurality of radially extending arms 3, formed of brass or copper tubing, which extend outwardly from a hub 14. In each of the arms 3 the outer ends of the tubes are closed by a screw which affords convenient access for cleaning the interior of the tube though obviously they may be closed in any convenient manner. The inner ends are threaded to screw into the hub 14. Into each of the arms 3 are cut a plurality of slots 5, through which the water will emerge in a sheet 6. As clearly seen in Fig. 4, these slots 5 are cut at an angle from the longitudinal axis of the arms 3. In the center of the standard 4 we mount an additional outlet 7, which is also provided with a slot 8, through which water emerges in a sheet 6. The hub 14 is mounted upon the top of a central hollow standard 4 which is provided with a plurality of ports or passages to permit the water to reach the inside of the tubes by way of the space between the standard 4 and hub 14. The lower end of the standard is provided with suitable means for connecting it to a source of liquid supply (not shown). The hub 14 is carried on anti-friction bearings. As shown, these comprise two sets of balls 9 and 10, mounted in races 11 and 12, formed in a central non-rotating standard 4 and the rotating hub 14. The hollow standard 4 has screw threads 13 at its lower end. Screws 15 and 16 are mounted in holes 17, formed in the hub 14. These holes 17 provide means for placing the sets of balls 9 and 10 in their respective races, then the screws 15 and 16 are screwed into place in the holes 17, and this will obviously exclude most of the outside water from the races 11 and 12. As the balls 9 and 10 are packed in grease, it is apparent that they will remain lubricated for an indefinite time, the cap 14 shielding them from all outside water.

The operation of the device is quite obvious to persons skilled in the art. The dishes are placed in the dishwasher, the door 2 closed, and the pump (not shown) started. The force of the water 6 as it is ejected from the slots 5 will impart a whirling motion to the arms 3 of the nozzle, and all surfaces of the dishes will be effectively cleansed, while there is an entire absence of noise or throb, such as accompanies many other forms of nozzles used for this purpose.

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

1. In a device for use in washing dishes, a central hollow standard having means at its lower end for connection to a source of liquid supply, a hub member mounted to rotate on the upper end of said standard, radially disposed hollow arms mounted on said hub member to rotate therewith, said arms being closed at their outer ends, there being communicating passages between the inte-

riors of said standard and arms, the upper sides of each of said arms being provided with elongated narrow slots for discharge of liquid from the interior of said arms, said slots being so disposed with respect to said arms that the median line of discharge from each slot is directed upwardly and rearwardly with respect to the direction of rotation, the slots being arranged so that their planes are angularly disposed with respect to the axis of said arms, a plurality of the slots on each arm being disposed so that their respective planes are substantially parallel and the remaining slots being so arranged that their planes are transversely disposed with respect to the planes of the first named slots.

2. In a device for use in washing dishes, a central hollow standard having means at its lower end for connection to a source of liquid supply, a hub member mounted to rotate on the upper end of said standard, radially disposed hollow arms mounted on said hub member to rotate therewith and closed at their outer ends, there being communicating passages between the interiors of said standard and arms, the upper sides of each of said arms being provided with three elongated narrow slots for discharge of liquid from the interior of said arms, said slots being so disposed with respect to said arms that the median line of discharge from each slot is directed upwardly and rearwardly with respect to the direction of rotation, the slots being arranged so that their planes are angularly disposed with respect to the axis of said arms, two of the slots on each arm being disposed so that their respective planes are substantially parallel and the third slot being so arranged that its plane is transversely disposed with respect to the planes of said first two slots.

3. In a device for use in washing dishes, a central hollow standard having means at its lower end for connection to a source of liquid supply, a hub member mounted to rotate on the upper end of said standard, radially disposed hollow arms mounted on said hub member to rotate therewith and closed at their outer ends, there being communicating passages between the interiors of said standard and arms, the upper sides of each of said arms being provided with three elongated narrow slots for discharge of liquid from the interior of said arms, said slots being so disposed with respect to said arms that the median line of discharge from each slot is directed upwardly and rearwardly with respect to the direction of rotation, the slots being arranged so that their planes are angularly disposed with respect to the axis of said arms, two of the slots on each arm being disposed so that their respective planes are substantially parallel and the third slot being so arranged that its plane is transversely disposed with respect to the planes of said first two slots, a central outlet mounted on said central hollow standard, there being a slot therein through which the water will emerge in a sheet.

ERNEST FISK.
ALBERT H. KAHLENBERG.