

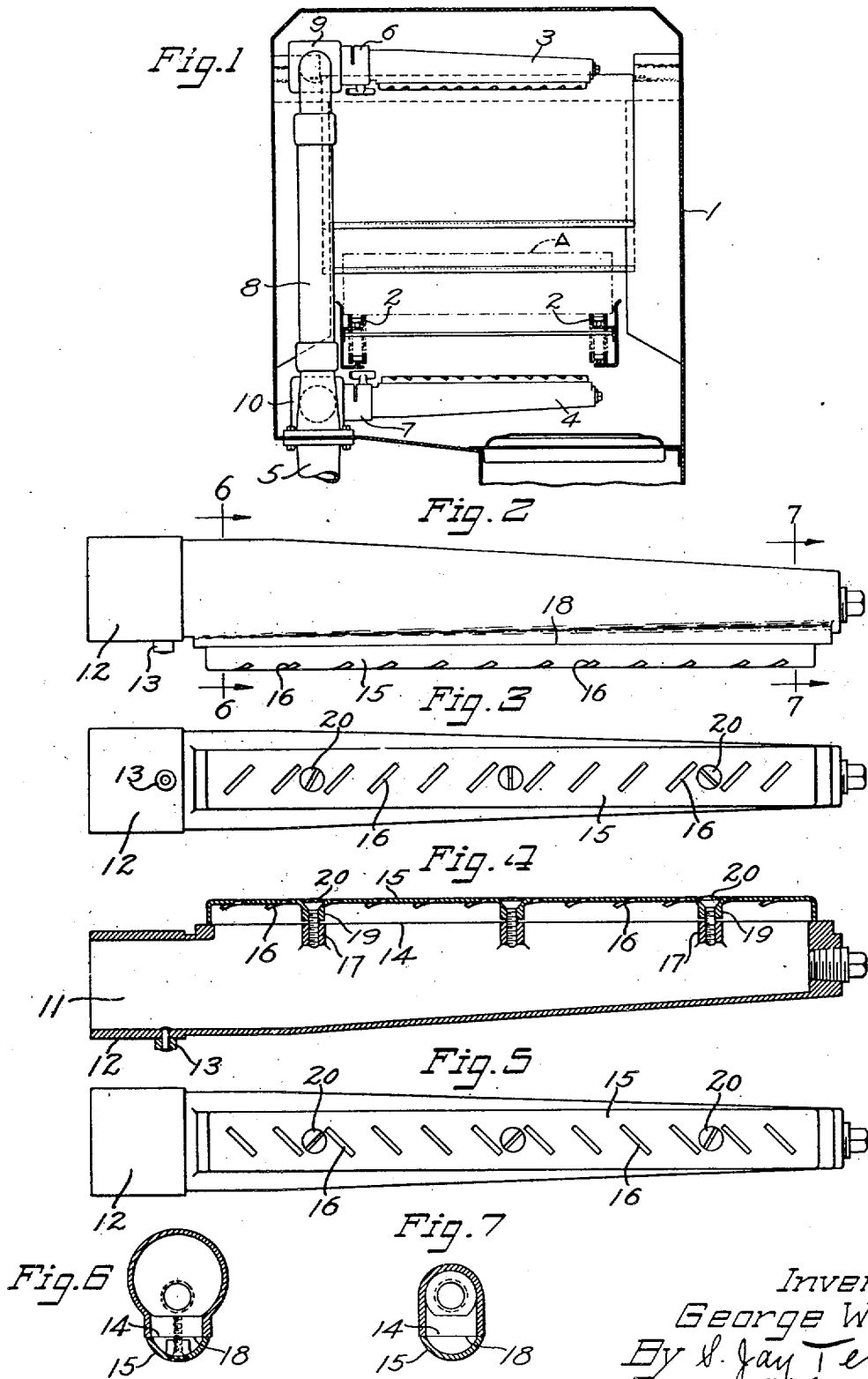
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G. WEBB

1,966,573

JET DEVICE FOR DISHWASHING MACHINES

Original Filed July 29, 1932



Inventor
George Webb
By *S. Jay Teller*
Attorney

UNITED STATES PATENT OFFICE

1,966,573

JET DEVICE FOR DISHWASHING MACHINES

George Webb, West Hartford, Conn., assignor to
Colt's Patent Fire Arms Manufacturing Co.,
Hartford, Conn., a corporation of Connecticut

Original application July 29, 1932, Serial No.
625,668. Divided and this application March
15, 1933, Serial No. 660,780

6 Claims. (Cl. 299—104)

The principal object of the invention is to provide for use in a dish washing machine a jet device having an apertured plate detachable from the main body of the device. This construction facilitates manufacture and makes it possible for the essential portion of the device, that is, the apertured plate, to be removed and replaced in the case of injury or breakage.

Other objects of the invention will be apparent from the following specification and claims.

This present application constitutes a division of my copending application for Dish washing machine, Serial No. 625,668 filed July 29, 1932.

In the accompanying drawing I have shown one embodiment of the invention, but it will be understood that the drawing is intended for illustrative purposes only and is not to be construed as defining or limiting the scope of the invention, the claims forming a part of this specification being relied upon for that purpose.

Of the drawing:

Fig. 1 is a fragmentary transverse sectional view of a dish washing machine having incorporated therein jet devices embodying the invention.

Fig. 2 is an enlarged side view of one of the top jet devices.

Fig. 3 is a bottom view of the jet device shown in Fig. 2.

Fig. 4 is an enlarged longitudinal sectional view of one of the bottom jet devices.

Fig. 5 is a top view of the jet device shown in Fig. 4.

Fig. 6 is a transverse sectional view taken along the line 6—6 of Fig. 2.

Fig. 7 is a transverse sectional view taken along the line 7—7 of Fig. 2.

Fig. 1 of the drawing illustrates one form of dish washing machine in which may be used a jet device incorporating the invention. It will be understood, however, that the invention is by no means limited to a dish washing machine of any particular type and that as to the said machine there may be wide variation. The machine as shown comprises a main casing 1 having a conveyor mechanism 2, 2 therein for carrying longitudinally through the machine a dish rack such as A. Positioned respectively above and below the conveyor are jet devices 3 and 4 adapted to receive liquid under pressure from a supply pipe 5. The jet devices 3 and 4 are detachably held in place by means of clamping rings 6 and 7. They are thus connected with a liquid supply means including piping 8 and manifolds 9 and 10.

Each of the devices 3 and 4 is or may be substantially the same in construction, and therefore a description of one of them will suffice for all. Each jet device comprises a duct 11, preferably a casting, which is open at one end to receive liquid from the corresponding manifold 9 or 10. Preferably the manifold is provided with a socket into which fits a cylindrical portion 12 on the duct, this cylindrical portion being clamped and held in place by means of the before-mentioned clamping ring 6 or 7. Adjacent the cylindrical portion 12 is a stud 13 adapted to enter a notch in the clamping ring to determine the proper location of the jet device. The duct 11 is preferably closed at the end opposite the end which communicates with the manifold and is tapered, the cross sectional area gradually decreasing from the open end toward the other end. The duct is provided along one side with an open longitudinal slot 14 preferably of uniform width throughout. Covering the slot 14 is a removable plate 15 having longitudinally spaced apertures or slots 16, 16 therein for delivering jets or sprays of liquid. Preferably the slot 14 is formed in an integral boss of substantially uniform width projecting transversely from the duct.

In order that the direction of flow through the apertures 16, 16 may be substantially perpendicular to the axis of the duct, I provide means in the duct for preventing, or at least restricting, the longitudinal flow of the liquid along that side of the duct which is adjacent the slot 14 and the apertured plate 15. Preferably the means for restricting the longitudinal flow comprises longitudinally spaced cross elements or bars 17 formed integrally with the duct 11, the said cross bars being positioned at least in part within the slot and extending across it. Referring by way of example to Fig. 4 it will be apparent that these cross elements or bars 17 restrict the longitudinal flow to the lower portion of the duct, thus making it possible for the liquid to flow upward from the said lower portion to the apertures 16, 16 in the plate 15. Inasmuch as the slot 14 is of uniform width, and inasmuch as the liquid is compelled by the cross elements 17 to flow more or less radially outward, the rate of flow to the several aperture 16, 16 is substantially uniform throughout the length of the device.

I have shown the before-mentioned transversely projecting boss on the duct 11 as having a flat outer surface in which the slot 14 is formed, the said surface being parallel with the

axis of the cylindrical portion 12 of the duct. The plate 15 is provided with a similar flat surface, thus providing a tight joint between the duct and the plate. It will be apparent that the flat surfaces on the duct and on the plate enable these parts to be accurately machined so that a tight fit can be obtained without difficulty. Preferably the plate 15 is provided with hollow bosses 19, 19 registering with the respective cross bars 17, 17. Screws 20, 20 extend through the bosses 19, 19 and into the cross bars 17, 17, thus firmly holding the plate 15 in place. The said plate 15 is preferably transversely curved with its convex surface outward. The apertures 16, 16 in the plate may vary as to size, shape and spacing, so as to provide the required types and forms of jets or sprays, but I have shown rectangular apertures diagonally positioned.

It will be apparent that with the construction which I have shown the entire jet device can be easily removed by loosening the clamping ring 6 or 7. After removal the plate 15 can be readily detached to provide access to the interior of the duct 11 and also to clean both sides of the plate 15. Should the plate 15 become worn or broken it can be easily replaced; or the said plate can be replaced by another plate having apertures of a different character.

What I claim is:

1. For a washing machine, a jet device comprising in combination, a duct open at one end and having an open longitudinal slot along one side, a plate removably secured to the duct so as to cover the said slot, the said plate having longitudinally spaced openings therein for delivering jets or sprays of liquid, and longitudinally spaced cross elements in the duct positioned immediately adjacent the plate and supported independently thereof for restricting longitudinal flow along the side of the duct adjacent the plate.

2. For a washing machine, a jet device comprising in combination, a duct open at one end and having an open longitudinal slot along one side with longitudinally spaced integral cross bars positioned within and extending across the slot, a removable plate covering the said slot and having openings therein for delivering jets or sprays of liquid, and screws extending through the plate into threaded openings in the cross bars.

3. For a washing machine, a jet device comprising in combination, a duct open at one end

and having an open longitudinal slot along one side with longitudinally spaced integral cross bars extending across the slot, a plate covering the said slot and having longitudinally spaced openings therein for delivering jets or sprays of liquid, the said plate being transversely curved with the convex side outward and the said plate having inward projecting apertured bosses thereon registering with the respective cross bars, and screws extending through the apertures in the bosses into threaded openings in the cross bars.

4. For a washing machine, a jet device comprising in combination, a tapered duct open at its larger end and of gradually decreasing cross-sectional area toward its other end, the said duct having along one side thereof a transversely projecting longitudinal boss of substantially uniform width and provided with an open longitudinal slot therein of uniform width throughout, and a plate removably secured to the duct so as to cover the said slot, the said plate having longitudinally spaced openings therein for delivering jets or sprays of liquid.

5. For a washing machine, a jet device comprising in combination, a tapered duct open at its larger end and of gradually decreasing cross-sectional area toward its other end, the said duct having along one side thereof a transversely projecting longitudinal boss of substantially uniform width and provided with an open longitudinal slot therein of uniform width throughout and the said boss having longitudinally spaced integral cross bars positioned within and extending across the slot, and a plate removably secured to the duct so as to cover the said slot, the said plate having longitudinally spaced openings therein for delivering jets or sprays of liquid.

6. For a washing machine, a jet device comprising in combination, a tapered duct open at its larger end and of gradually decreasing cross sectional area toward its other end, the said duct having along one side a transversely projecting longitudinal boss of substantially uniform width and provided with a flat outer surface with an open longitudinal slot therein of uniform width throughout, and a plate removably secured to the duct so as to cover the said slot and having a flat surface engaging the flat surface of the duct, the said plate having longitudinally spaced openings therein for delivering jets or sprays of liquid.

GEORGE WEBB.

CERTIFICATE OF CORRECTION.

Patent No. 1,966,573.

July 17, 1934.

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It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 2, line 49, claim 2, after "having" insert longitudinally spaced; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 11th day of September, A. D. 1934.

Leslie Frazer

Acting Commissioner of Patents.

(Seal)

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2. For a washing machine, a jet device comprising in combination, a duct open at one end and having an open longitudinal slot along one side with longitudinally spaced integral cross bars positioned within and extending across the slot, a removable plate covering the said slot and having openings therein for delivering jets or sprays of liquid, and screws extending through the plate into threaded openings in the cross bars.

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and having an open longitudinal slot along one side with longitudinally spaced integral cross bars extending across the slot, a plate covering the said slot and having longitudinally spaced openings therein for delivering jets or sprays of liquid, the said plate being transversely curved with the convex side outward and the said plate having inward projecting apertured bosses thereon registering with the respective cross bars, and screws extending through the apertures in the bosses into threaded openings in the cross bars.

4. For a washing machine, a jet device comprising in combination, a tapered duct open at its larger end and of gradually decreasing cross-sectional area toward its other end, the said duct having along one side thereof a transversely projecting longitudinal boss of substantially uniform width and provided with an open longitudinal slot therein of uniform width throughout, and a plate removably secured to the duct so as to cover the said slot, the said plate having longitudinally spaced openings therein for delivering jets or sprays of liquid.

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6. For a washing machine, a jet device comprising in combination, a tapered duct open at its larger end and of gradually decreasing cross sectional area toward its other end, the said duct having along one side a transversely projecting longitudinal boss of substantially uniform width and provided with a flat outer surface with an open longitudinal slot therein of uniform width throughout, and a plate removably secured to the duct so as to cover the said slot and having a flat surface engaging the flat surface of the duct, the said plate having longitudinally spaced openings therein for delivering jets or sprays of liquid.

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