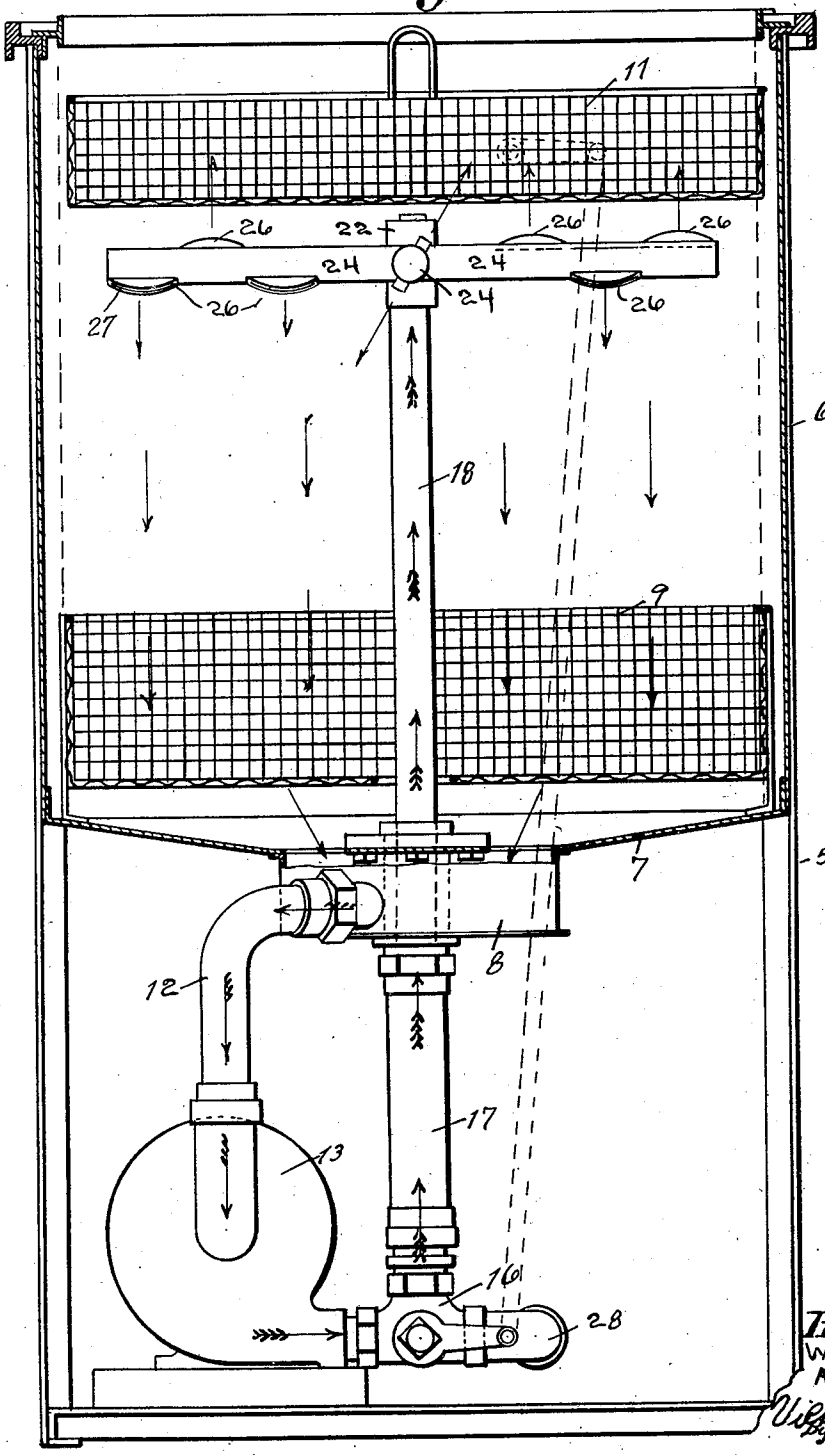
July 7, 1931. W. E. KETTERING ET AL 1,813,807

WASHING MACHINE

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Fig. 1.



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Fig. 2.

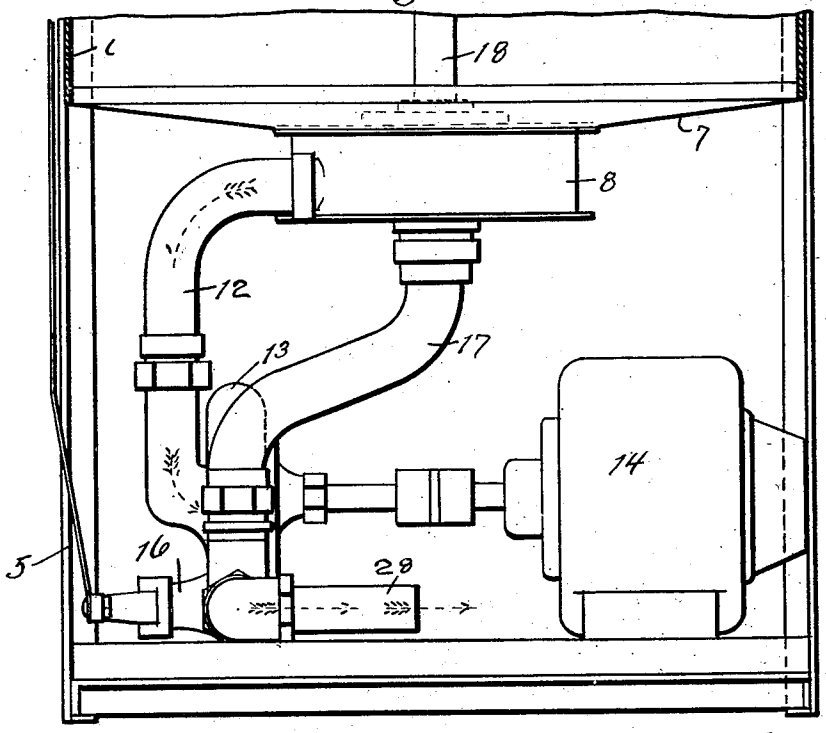
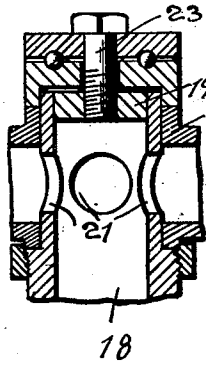


Fig. 3.



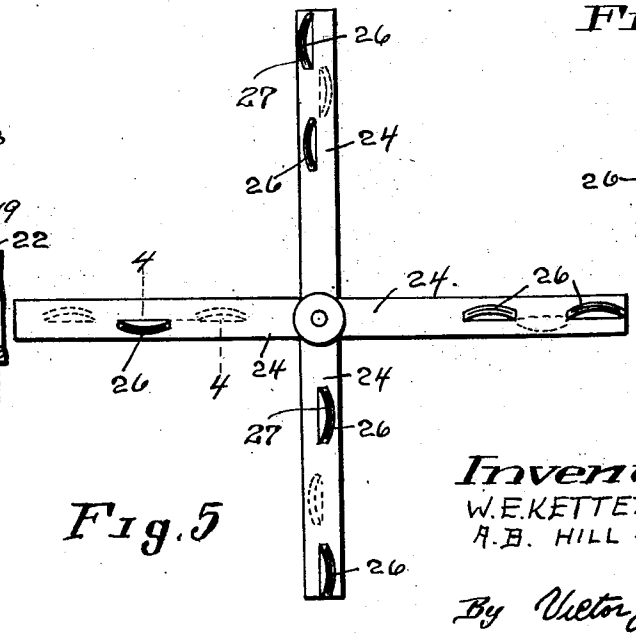
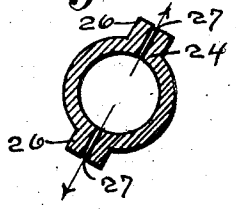


Fig. 5

Fig. 4.



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UNITED STATES PATENT OFFICE

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WASHING MACHINE

Application filed July 12, 1929. Serial No. 377,864.

This invention relates to improvements in washing machines and has particular reference to a machine for washing dishes. It might, however, be applied to a machine for washing clothes without departing from the spirit of the invention.

The principal object is to provide simple means whereby a fluid will be forcibly projected against trays within which dishes are placed.

Another object is to produce a device which will use a minimum amount of water.

A further object is to produce means whereby this water will be effectively carried to all parts of the dishes.

A still further object is to provide means whereby glasses, cups and the like may be segregated from the larger dishes.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a vertical cross section of our washing machine,

Figure 2 is a side elevation of the lower portion of our washer,

Figure 3 is an enlarged fragmentary view showing the manner of securing the revolving head,

Figure 4 is a cross section taken on the line 4—4 of Figure 5, and

Figure 5 is a top plan view of the washer head.

In the washing of dishes it is quite important that the water must be forcibly directed on the dishes in order to thoroughly cleanse them. Applicants are aware of the fact that sprays have been employed. These sprays however, are not sufficient to dislodge particles of food carried upon the dirty dishes. Applicants have therefore devised a revolving head having a plurality of nozzles which would direct a substantially fan shape stream of water against the articles being washed and further that the head is so arranged that the direction of travel of the water is constantly changing so that the surface of the dishes will be contacted from various angles, a very essential feature.

In the accompanying drawings, wherein for the purpose of illustration is shown a preferred embodiment of our invention, the numeral 5 designates the frame of our washer, which frame is preferably made of angle iron and supports a receptacle 6 having a bottom 7 which slants toward a sump 8. Within the receptacle 6 is positioned a lower basket 9 and upper basket 11. Any convenient means for supporting them may be employed.

A suitable cover may be placed above the receptacle so as to prevent water splashing therefrom. Connected to the side of the sump 8 is a pipe 12 which pipe extends downwardly and connects to the center of a pump 13. This pump is driven by a motor 14 in the usual manner. The pump 13 discharges to a three way valve 16. This valve is connected by a pipe 17 which passes upwardly through the sump 8 and discharges into a stand pipe 18. This stand pipe is provided at its upper end with a plug 19 and with openings 21.

A revolving head 22 is connected to the stand pipe through the medium of a bolt 23. This head carries arms 24 which may be of any desired number. Each arm has formed therewith and extending therefrom a series of nozzles 26 which are angularly disposed with relation to a vertical line and the nozzles have slots 27 therethrough which communicate with the interior of the arms 24. The nozzles are elongated and have curved outer faces merging at their ends into the arms, with the slots extending throughout the length thereof. It will be noted that the arms have their nozzles arranged on the upper and lower surfaces thereof, and that the nozzles discharge liquid in a substantially fan shape spray. The nozzles on the upper sides of the arms spray in a rearward direction, and the lower nozzles in a forward direction with respect to the motion of the arms, therefore the spray from the lower nozzles will have a greater force, due to the combined velocity of the water and the direction of rotation of the arms. The valve 16 is provided with a discharge pipe 28 which

may be connected to any suitable disposal receptacle.

The result of this construction is that when dishes are placed in the basket 9 and glasses, cups and silverware placed in the basket 11, water is admitted to the bottom of the receptacle to a point below the bottom of the basket 9. The motor 14 is then started with the result that this water is drawn from the sump 8 through the pipe 12, through the pump 13 thence through the valve 16 which at this time is so arranged that the water is delivered to the pipe 17 thence through the stand pipe 18, openings 21, arms 24, through which arms it is forcibly expelled through the nozzles 26. These nozzles will act through the reactive force of the water so as to slowly revolve, thus directing the jets of water in a fan-shape arrangement forcibly against the dishes. At the same time as these jets are revolving, the angle at which the water strikes will constantly change and as the liquid will have a greater force in a downward direction, dishes which are soiled the most are placed on the lower tray, while slightly soiled dishes, glassware, silverware and the like can be placed on the upper tray as above set forth.

As soon as the dishes have been completely washed, the valve 16 is manipulated so that water may be drawn off and discharged through the pipe 28.

It will thus be seen that we have produced a device which will accomplish all of the objects above set forth.

It is to be understood that the form of our invention herewith shown and described is to be taken as a preferred example of the same and that various changes relative to the material, size, shape and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claim.

Having thus described our invention, we claim:—

In a spraying device for washing machines, a hollow head constructed to be mounted for rotation, conduit arms formed with said head and being in communication therewith, said arms being formed with nozzles extending at a lateral inclination therefrom and arranged upon opposite sides thereof, said nozzles being disposed on the upper and lower surfaces of the arms, and the upwardly disposed nozzles discharge liquid in a rearward direction while the downwardly directed nozzles discharge liquid in a forward direction with respect to the direction of rotation of the arms.

In testimony whereof we affix our signatures.

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ALEXANDER B. HILL, JR.