

June 5, 1934.

C. CAISE

1,961,548

WASHING MACHINE

Filed Nov. 28, 1932

3 Sheets-Sheet 1

Fig. 1.

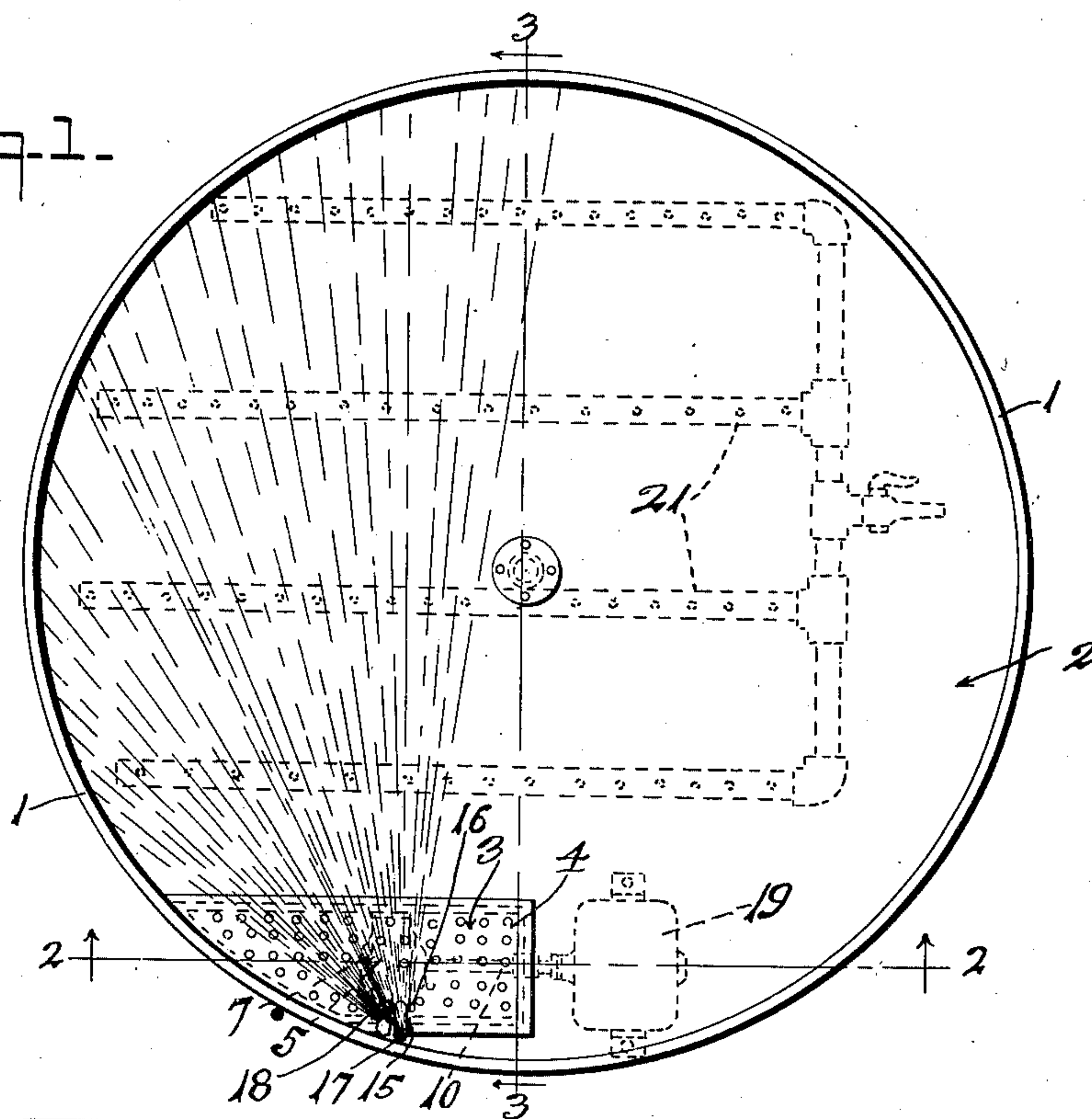
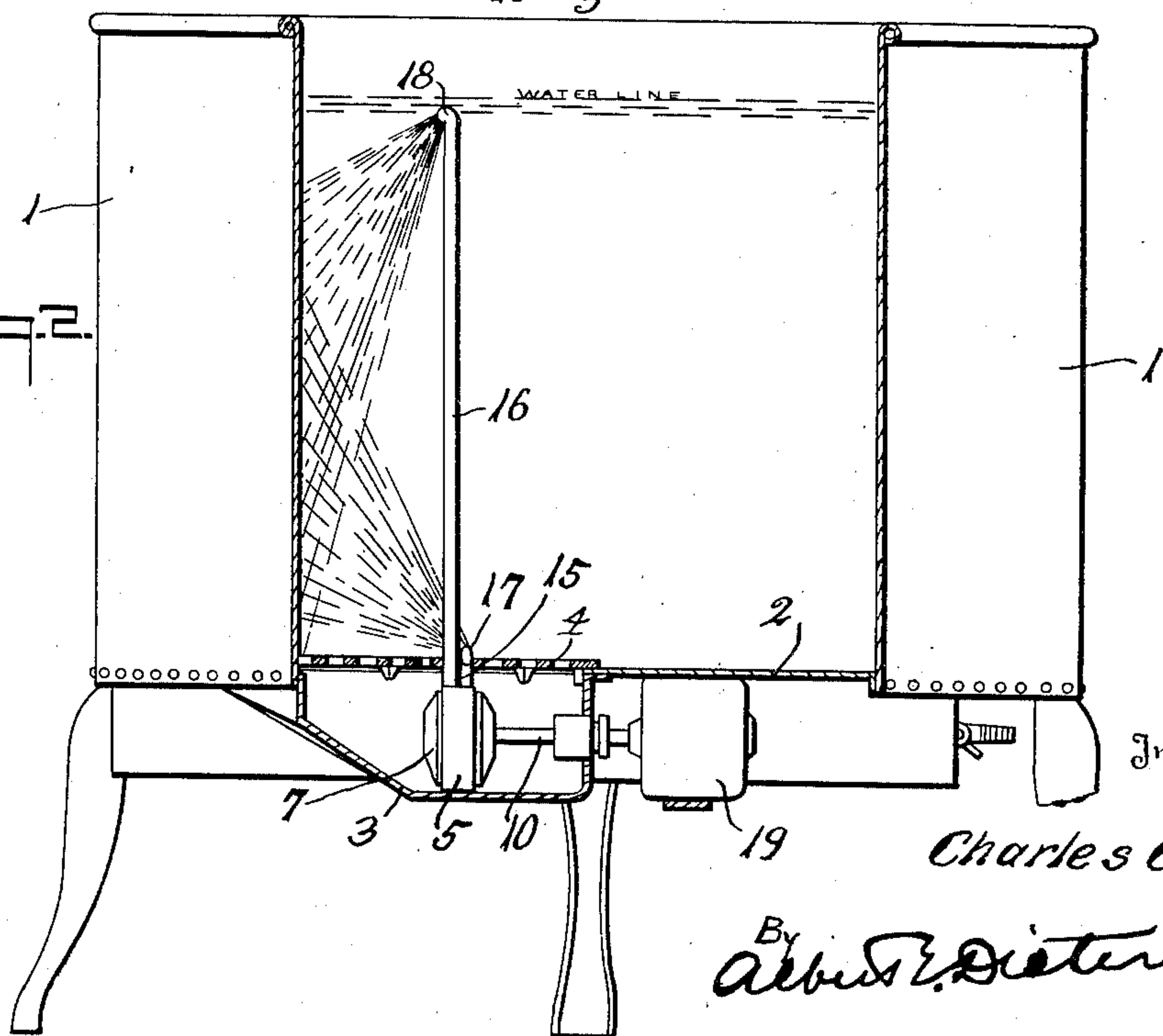


Fig. 2.



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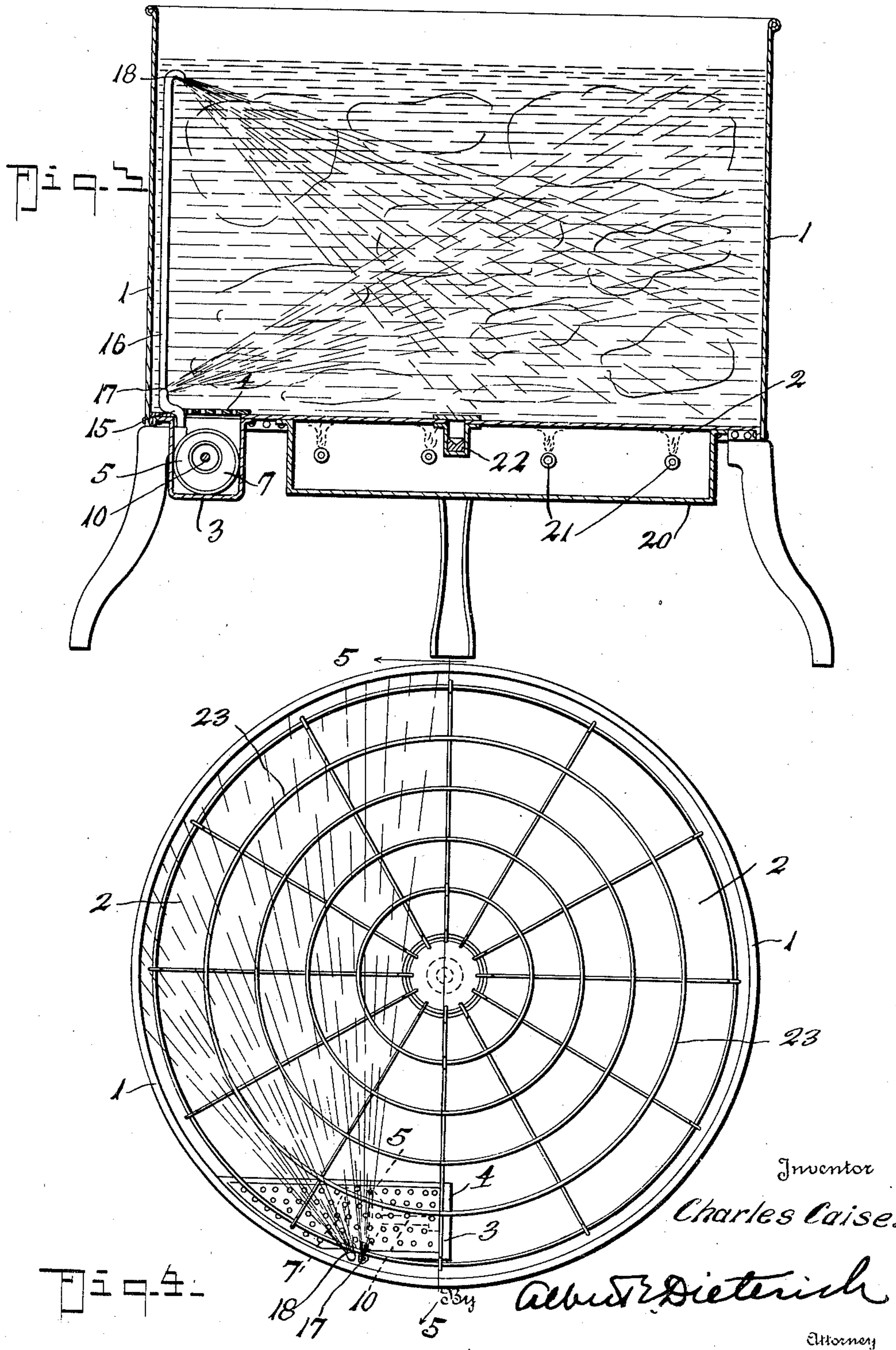
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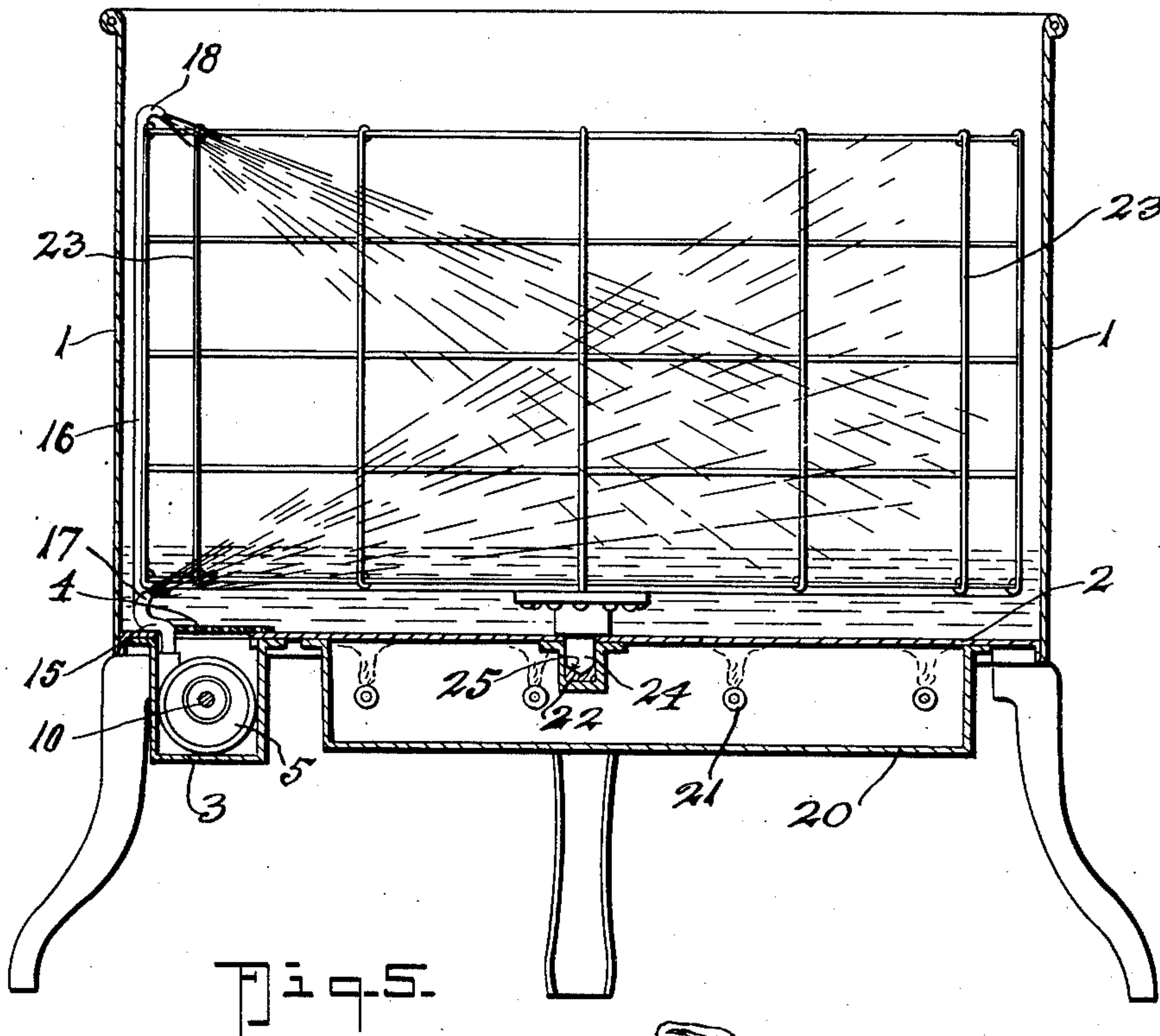


Fig. 5.

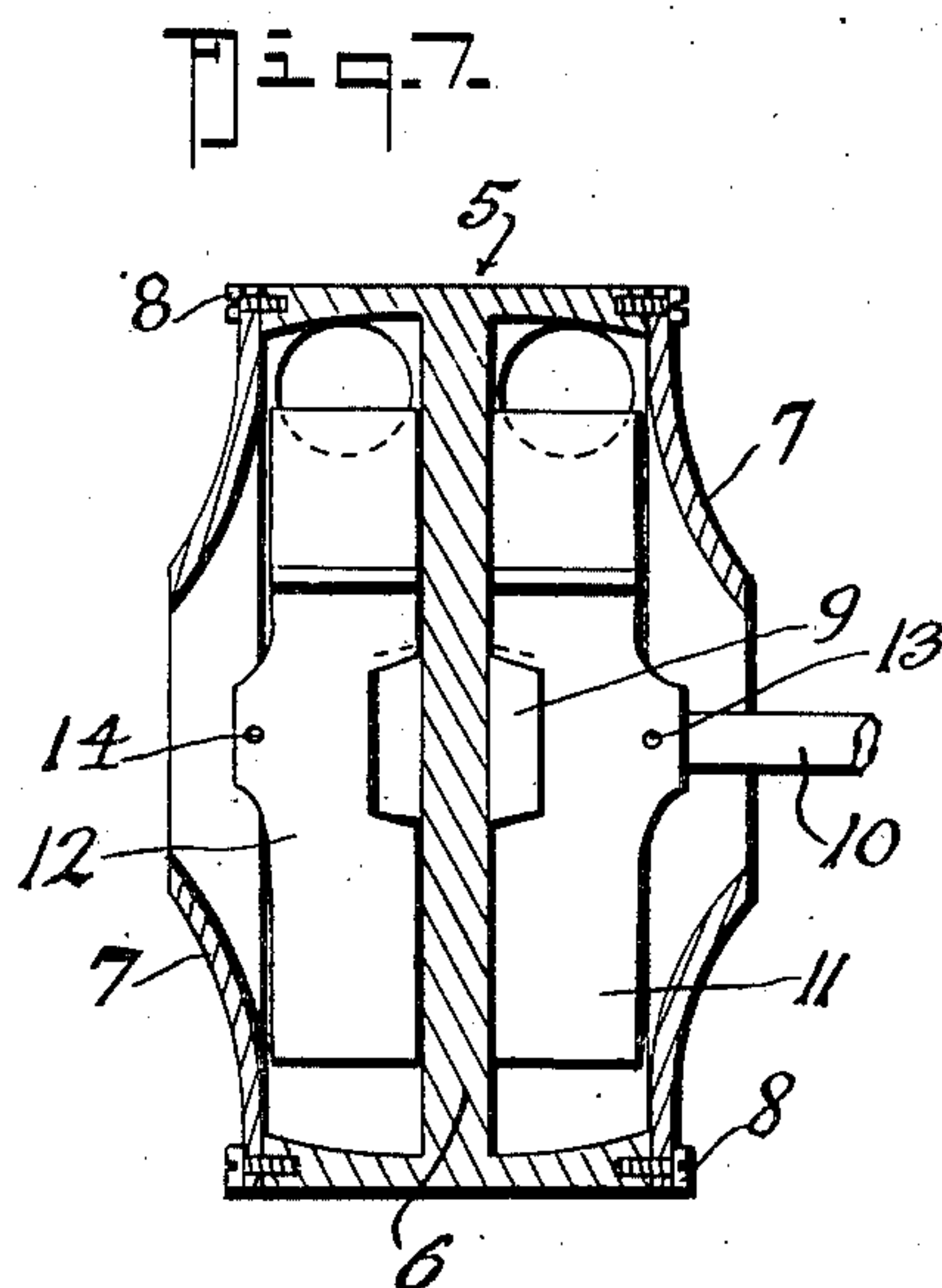


Fig. 7.

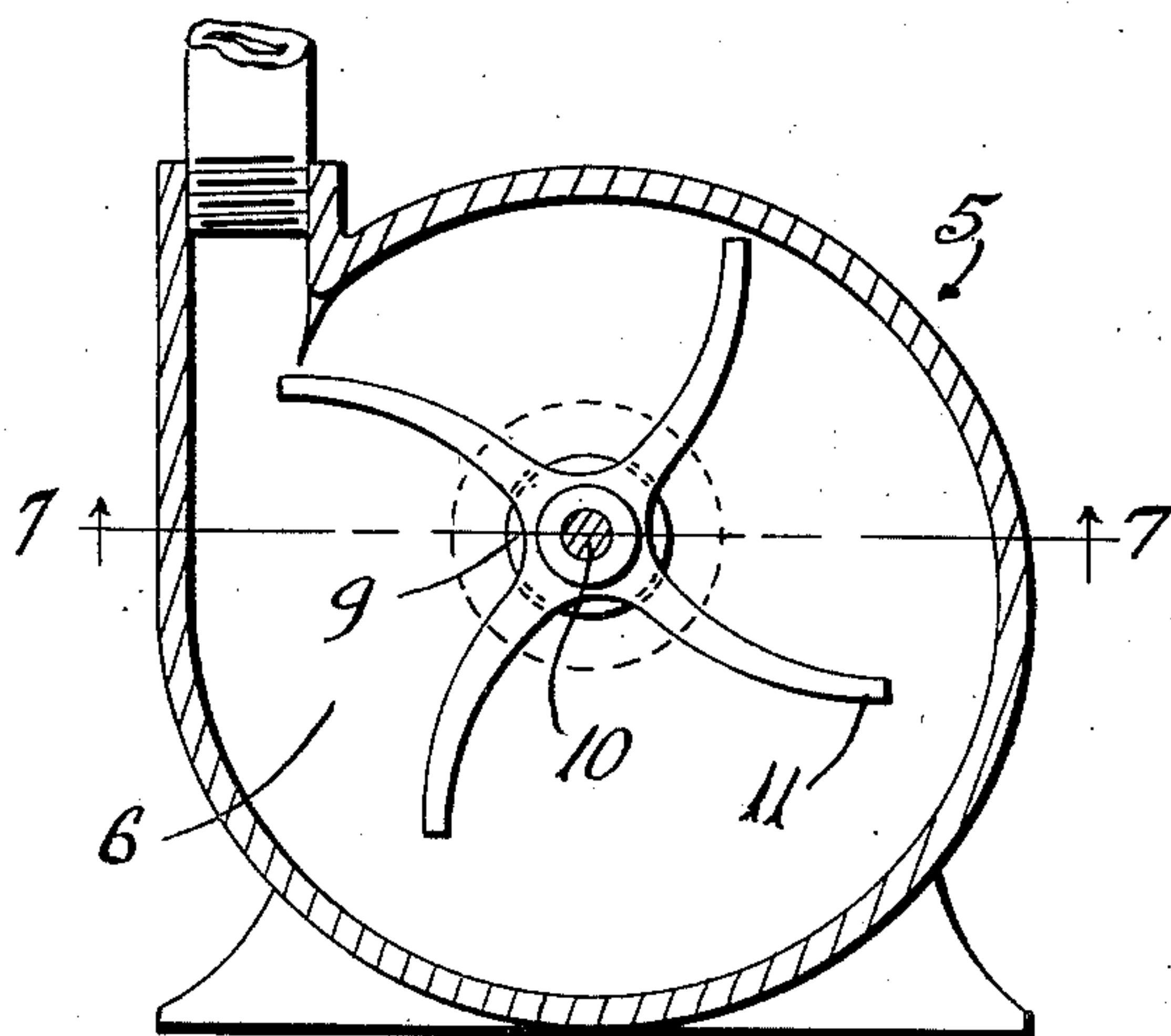


Fig. 6.

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UNITED STATES PATENT OFFICE

1,961,548

WASHING MACHINE

Charles Caise, Brooklyn, N. Y.

Application November 28, 1932, Serial No. 644,743

1 Claim. (Cl. 259—95)

My present invention relates to washing machines operating on the principle of that described in my Patent No. 1,878,825, issued September 20, 1932, and it particularly has for its object to provide for a machine utilizing the principle of my patented machine aforesaid but which will have a wider field of use than the machine shown and described in my aforesaid patent.

More specifically, it is an object of my invention to simplify the machine of my former patent so that much less power is required to operate it, the cost of manufacture is materially reduced, and the machine may not only be employed as a clothes washer but as a dish washer, or for washing other articles.

Further, it is an object of my invention to provide a washing machine which, while it is particularly designed as a clothes washer, may be converted into a dish washer by the simple addition of a wire or other suitable basket to hold the dishes immersed in the washing fluid.

Further, it is an object of my invention to provide a clothes washing machine in which the force of the injected water will keep the clothes not only free from the bottom of the casing but will also keep them immersed in the washing fluid, i. e., prevent them from rising to the top of the washing fluid in the casing.

Other objects will in part be obvious and in part be pointed out hereinafter.

To the attainment of the aforesaid objects and ends, the invention still further resides in the novel details of construction, combination and arrangement of parts, all of which will be first fully described in the following detailed description, then be particularly pointed out in the appended claims, reference being had to the accompanying drawings, in which:—

Figure 1 is a plan view of the machine constructed to be used as a clothes washer.

Figure 2 is a vertical section on the line 2—2 of Figure 1.

Figure 3 is a vertical section on the line 3—3 of Figure 1.

Figure 4 is a plan view of the machine when used as a dish washer.

Figure 5 is a vertical section on the line 5—5 of Figure 4.

Figure 6 is an enlarged vertical section of the centrifugal pump.

Figure 7 is a cross section on the line 7—7 of Figure 6.

In the drawings in which like numerals of reference designate like parts in all the figures, 1

represents the cylindrical casing which has a bottom 2 beneath which is a sump 3 covered by a suitable perforated plate 4. Within the sump 3 is located a duplex pump 5, preferably one of the centrifugal type. This pump 5 in its preferred construction comprises a central casting 6 having on each side an annular wall to which side plates 7—7 are secured in any suitable way, as by screws 8 for example.

As best shown in Figures 6 and 7 the side plates have central openings for the intake of water. The central casting or partition 6 is provided with an eccentrically located bearing 9 for the impeller shaft 10 which carries the impellers 11 and 12 respectively, the same being pinned at 13 and 14, respectively, to (or otherwise suitably secured to) the shaft 10. The shaft 10 passes through a suitable stuffing box in a wall of the sump 3 and is connected with (or may be integral with) the shaft of an electric motor 19 by which power is developed for the purpose of running the pump. From one side of the pump a short pipe section 15 runs up into the interior of the casing 1 adjacent its peripheral wall and has its outlet end or nozzle 17 directed upwardly and laterally toward a radius of the casing 1 that is located somewhere near the mid-horizontal plane of the casing.

From the other chamber of the pump a pipe 16 is run up adjacent the periphery of the casing 1 and has its discharge end or nozzle 18 directed downwardly and laterally toward the same radius toward which the nozzle 17 is directed. The focal point of the two nozzles 17 and 18 is preferably located approximately midway between the axis and the periphery of the casing 1. Thus it will be seen that the lower nozzle 17 tends to lift the contents to be washed in the casing 1 and keep the same off the bottom 2, while the nozzle 18 tends to depress the articles being washed beneath the upper surface of the washing fluid contained within the casing 1. Both nozzles tend to rotate the contents of the casing 1 about the vertical axis. Consequently the clothes are rotated about a vertical axis in a volume which is located above the bottom 2 and below the upper surface of the washing fluid, i. e., above the nozzle 17 and below the nozzle 18. A heater 20 with a burner 21 similar to that described in my patent aforesaid may also be provided so as to keep the fluid within the casing at the proper temperature.

When the machine is to be used as a dish washer it is provided with a short tubular socket 22 extending downwardly from the bottom 2 of the

casing 1 at the center thereof and in this socket fits the stub shaft 24 that carries the basket 23, the shaft 24 having a cone bearing end 25 to engage the bottom of the socket-bearing 22 where-
5 by friction is reduced to a minimum. The basket 23 is preferably of open mesh wire constructed to hold the dishes or other articles to be washed and as the basket is located in the space above the nozzle 17 and below the nozzle 18 it
10 will be given a rotary motion by the action of the streams of water or washing fluid issuing from the nozzles 17 and 18, thereby effectively washing the dishes or other articles.

Experiments have shown that by constructing
15 the machine as herein shown and described I am able to reduce the power of the motor required in the machine of my patent aforesaid by about one-half; i. e., where my patented machine would require $\frac{1}{2}$ H. P. motor the present machine would
20 operate with a $\frac{1}{4}$ H. P. motor.

Furthermore, I am enabled with the present construction to dispense with the perforated false bottom described in my patent aforesaid, although of course such bottom may be used in the
25 machine if found desirable.

While of course it will be possible to build one machine which may be used either as a clothes washer or as a dish washer, for obvious reasons in practice two separate machines would be used,
30 one for dish washing and the other for clothes washing. However, the construction of the two machines as to all parts in common may be iden-

tical, thereby reducing the cost of manufacture as will be obvious.

From the foregoing description, taken in connection with the accompanying drawings, it is
80 thought the complete construction, operation and advantages of my invention will be clear to those skilled in the art to which it relates.

What I claim is:

In a washing machine, a cylindrical casing having a bottom, combined with hydraulic means
85 for whirling the contents about the vertical axis, said means including a nozzle located near the bottom of the casing directed upwardly at an angle to a radial plane passing through said nozzle, and a second nozzle located at a higher level
90 than the first nozzle directed downwardly at an angle to a radial plane passing through said nozzle, the articles to be washed being located above the lower nozzle and below the upper nozzle, said
95 means also including a sump at the bottom of the casing, a duplex pump located within the sump, and a motor to drive the pump, one of said nozzles being in communication with one side of the pump and the other of said nozzles being in communication with the other side of said pump,
100 said nozzles being located adjacent one another and in close proximity to the wall of the casing and said sump being located beneath said nozzles and adjacent the same portion of the wall of the casing as that where the nozzles are located.
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CHARLES CAISE.

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