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F. T. HILLIKER
METHOD OF PRERINSING SOILED DISHES AND SIMULTANEOUSLY
RECOVERING TABLEWARE FROM TABLE SCRAPS
Original Filed Nov. 16, 1942

2,485,968

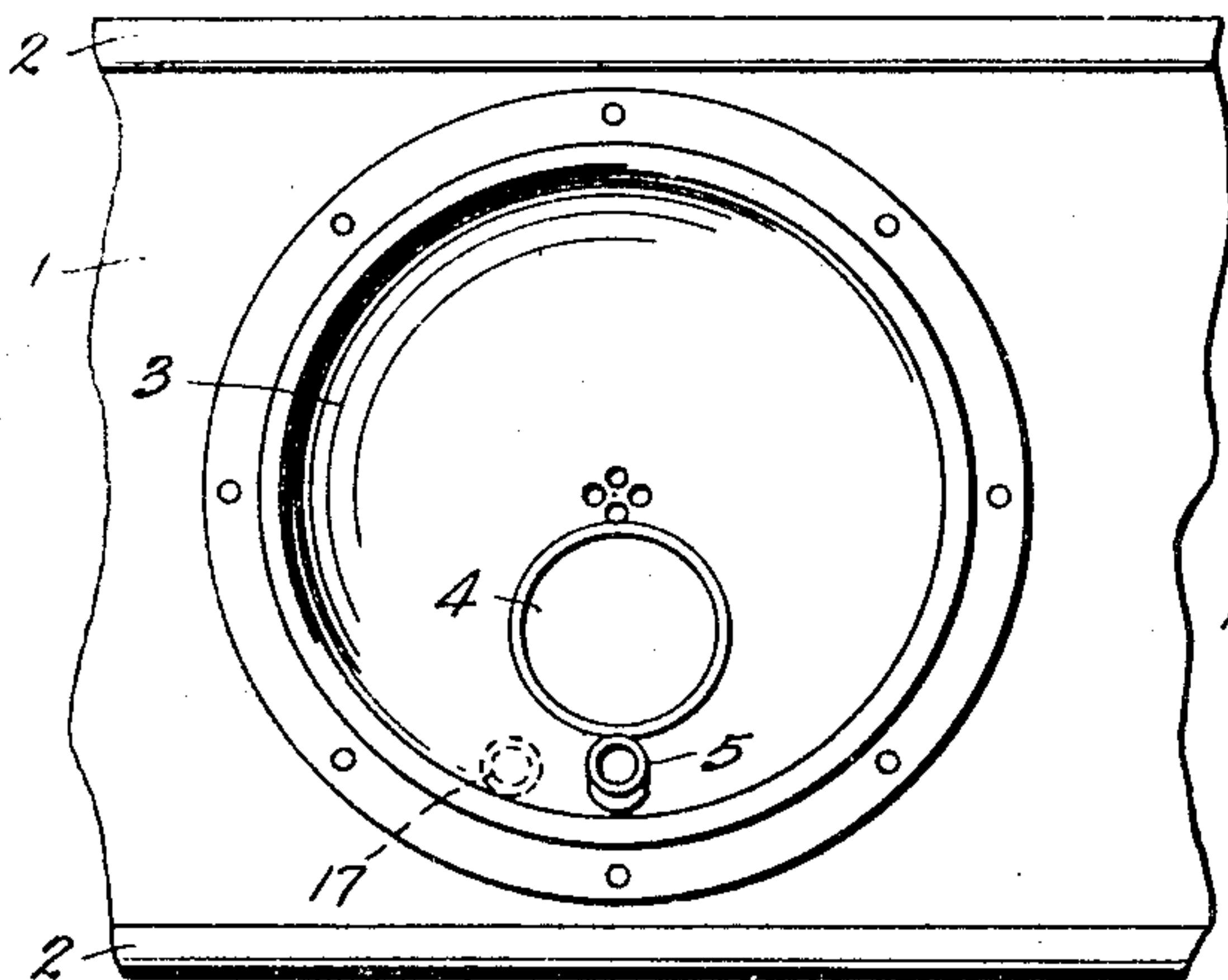


Fig. 1.

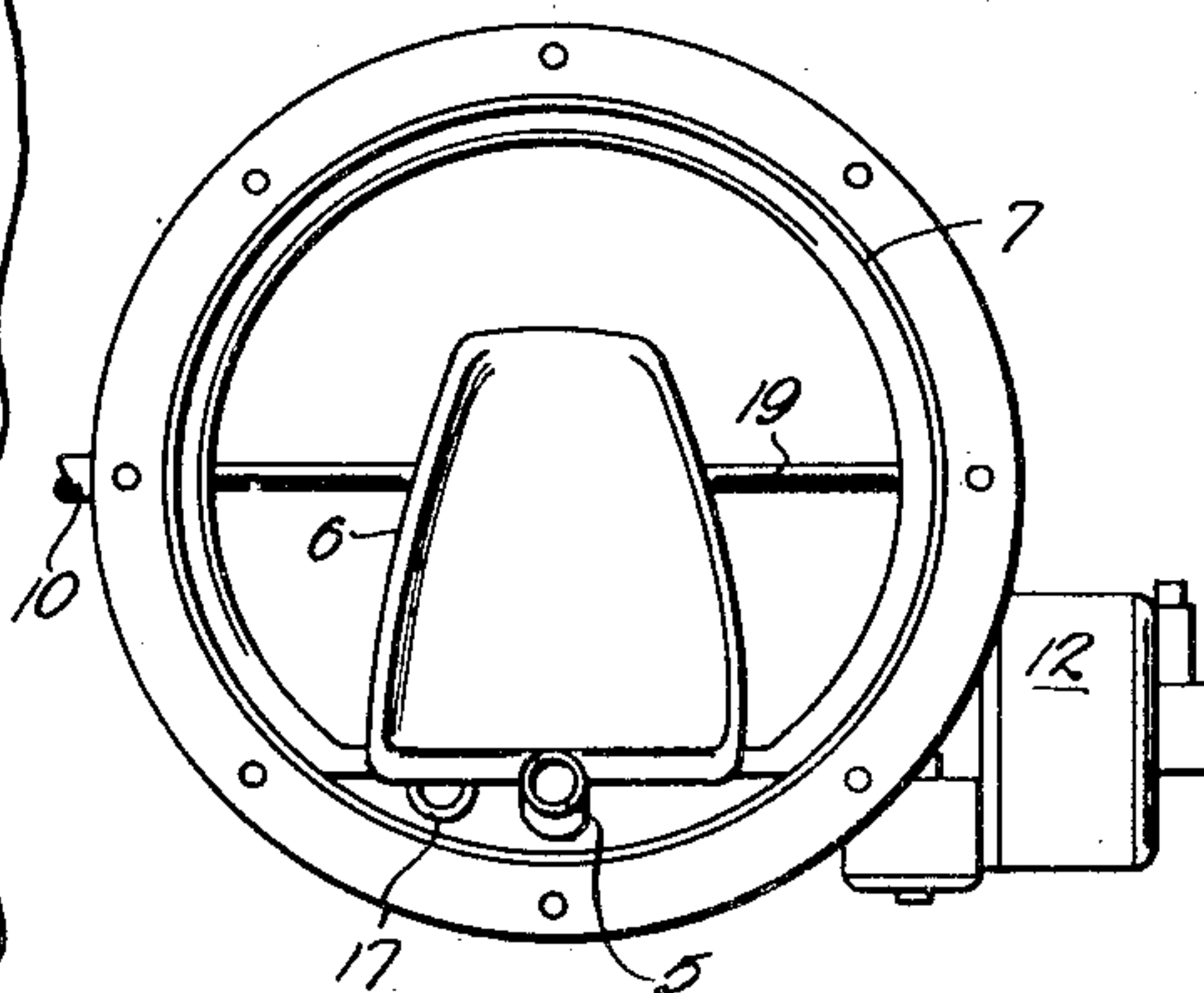


Fig. 2.

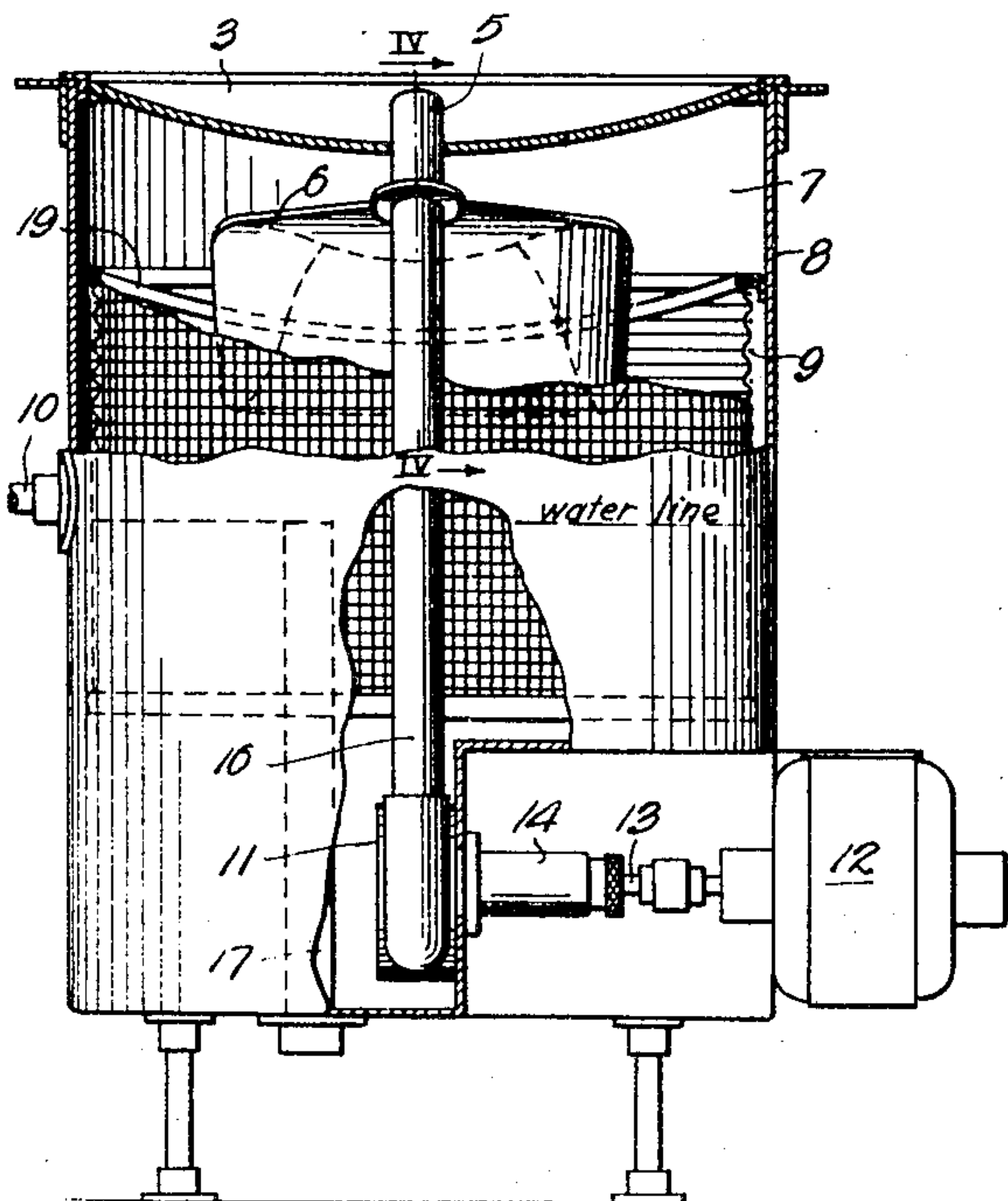


Fig. 3.

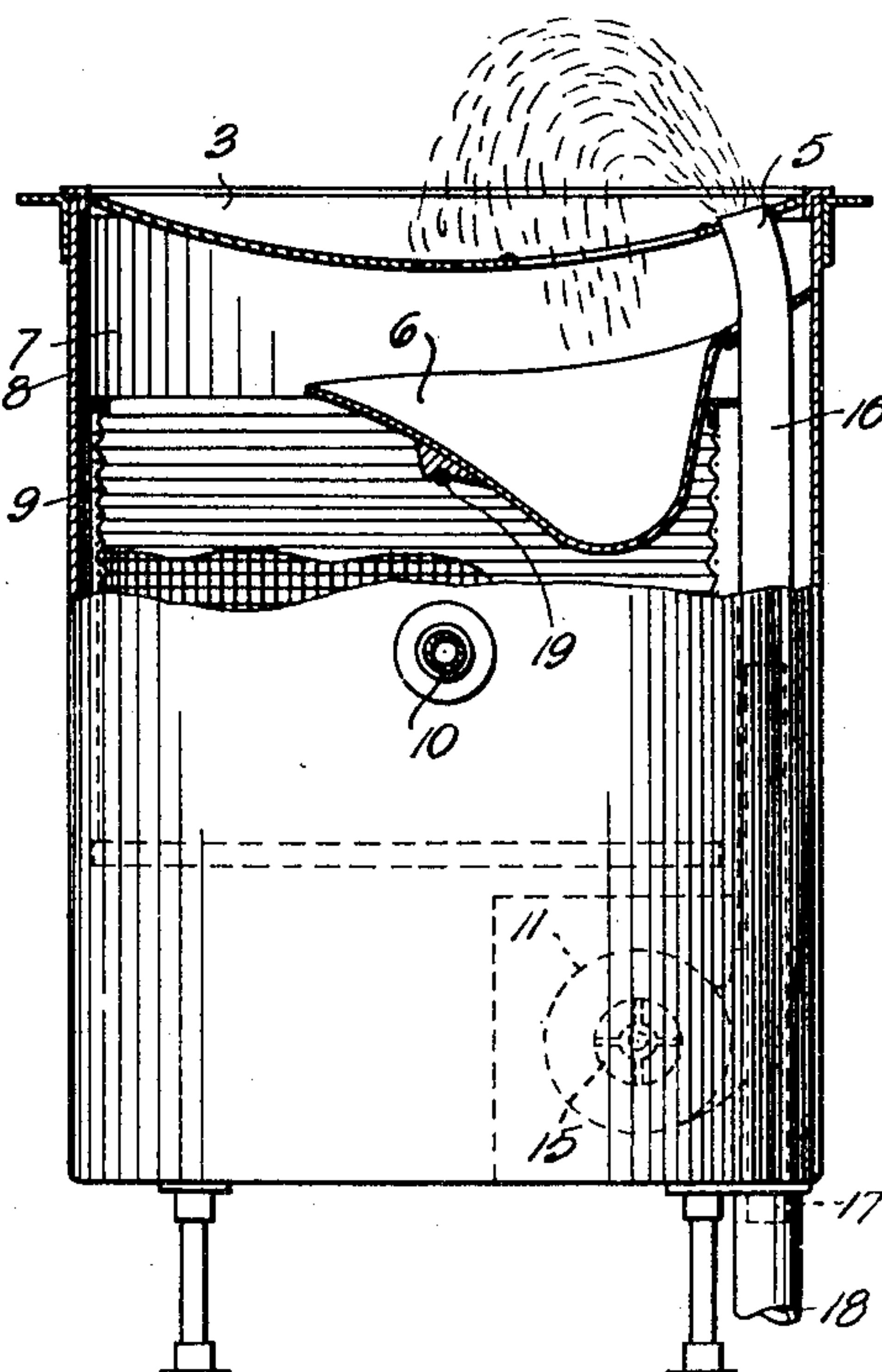


Fig. 4.

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METHOD OF PRERINSING SOILED DISHES
AND SIMULTANEOUSLY RECOVERING
TABLEWARE FROM TABLE SCRAPS

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Original application November 16, 1942, Serial No.
465,789. Divided and this application Novem-
ber 26, 1945, Serial No. 630,780

6 Claims. (Cl. 134—10)

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This invention relates to a method of pre-rinsing soiled dishes and simultaneously recovering table ware from table scraps and is a division of my application Serial No. 465,789, filed November 16, 1942, Patent No. 2,400,879, dated May 28, 1946.

The method is particularly useful in food service establishments, as for example, large restaurants, hotels, hospitals and institutions, private, public or governmental. Present methods of handling soiled table ware leads to its loss. An outstanding objection to present methods of handling soiled table ware is the fact that it goes into the dish washing machines so dirty that the machines' functional efficiency is reduced to such extent that the ware must be rewashed. One of the objects of the present invention is to give the ware a preliminary conditioning treatment of such nature as to so loosen and flood away food scraps and deposits that only one pass through a dish washer will be necessary.

Another object of the invention is to provide a method which will insure the recovery of all table ware which may be scrapped accidentally along with the refuse.

A further object of the invention is to provide a wet process of separating table scraps from table ware that has been scrapped and accidentally fallen through the scrap hole, based on the fact that I have discovered table ware and scraps may be separated by flotation of the garbage by permitting a column of water to fall into a pool or salvaging basin, the weight of the column determining the depth of the basin, to insure sufficient water turbulence to hold the scraps in suspension to float off over the lip or discharge edge of the basin while retaining or trapping the ware at the bottom of the pool.

Another object of the invention is to provide a method of the above character in which a determined quantity of water may be recirculated, the scraps being continuously withdrawn from the water, or being trapped in or from the water for intermittent withdrawal. It is to be understood that the term "water" is herein used in a general sense and is intended to cover any suitable liquid or chemical. It is to be understood also that water may be supplied from any source, such as for example, a water feed line or from the overflow of a dish washing machine. Of course, where water is plentiful and there is no advantage in its recirculation, the method to be later described is applicable without water recirculation, the water being continuously wasted.

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With the general objects named in view and others as will hereinafter appear, the invention consists in certain novel and useful steps, as hereinafter described and claimed; and in order that it may be fully understood, reference is to be had to the accompanying drawing, in which:

Fig. 1 is a top plan view of a scrapping and salvaging machine capable of carrying out the method of the invention.

Fig. 2 is a similar view omitting the table and depressed or basin portion of the machine.

Fig. 3 is an enlarged front sectional elevation disclosing the lower part of the water collecting chamber, with the scrap or garbage basket broken away and the ware salvaging basin in elevation.

Fig. 4 is an elevational view of the left-hand side of the machine with the upper parts of the tank or water collecting chamber, the salvage basin, and the garbage basket, in vertical section on the line IV—IV of Fig. 3.

In the said drawing, where like reference characters identify corresponding parts in all of the figures, 1 is a scrapping table of normal working height, and of any desired shape or configuration in plan view. The table 1, by reference, is provided with an upstanding marginal flange 2 to prevent accidental dislodgment of trays or table ware. The table may be slightly inclined to provide a depressed or basin area or it may be level, but, by preference, it is provided at any convenient point in relation to its dish receiving and discharging ends, with a removable concave or depressed scrapping basin or section 3 of shallow depth. A basin of this sectional profile permits dishes that have come to rest therein to be swept out of the basin with a sweep of the hand without the delay incident to picking them up from a vessel with too deep or sharply inclined walls. The preferred design materially speeds up handling time.

The concave section 3 has the additional function of providing a well lubricated or flushed area for the ready sweeping of scraps into a scrap hole 4. A water nozzle 5 is preferably positioned to discharge part of its downwardly falling water column onto the basin 3 and a part directly through the scrap hole 4 without contacting the periphery of said hole. By preference, the nozzle is substantially flush with the depressed or basin section of the table, and it is inclined to loft the water over the scrap hole, as shown in Fig. 4, since this method makes it possible to pass dishes horizontally through the stream and effectively wash top and bottom surfaces at one pass. This is preferable to having the stream flow in one

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direction since in such event a greater degree of turning, rotation, or oscillation of the dish on a horizontal axis will be required to pre-condition or flush all of its surfaces. If water waste is no problem and the garbage need not be recovered or separated from the flush water, as say, might be found on ship board, no further apparatus is essential.

However, in locations where the garbage must be removed from the water, and in those cases where the saving of water is an object, it will be apparent that means must be provided to remove or separate the garbage and water. There are several methods by which this object can be accomplished, such as trapping the garbage and wasting the water; retention of the water and the continuous or intermittent withdrawal of the garbage or scraps, or in those cases where the garbage disposal may require a percentage of water waste, then a volume of water can be recirculated and a volume can be continuously wasted, and any suitable means may be provided to continuously or intermittently replace the waste water. For convenience of illustration, the type of installation which would be employed in the average food service place, is illustrated herein, where the water is recirculated, the garbage being trapped or separated and intermittently withdrawn from the water.

In the present illustration of apparatus capable of performing the method, see Figs. 3 and 4, a removable ware salvaging basin 6 is shown, but the operation and construction of the apparatus will first be described as though this vessel or basin were not employed. The salvaging basin 6 is used in those cases where there is loss of ware. Positioned below the table to receive the scraps and water flowing through the scrap hole 4, is a water receiving chamber 7, shown in the form of a tank. Suspended or set within the tank 7 is a foraminous scrap receiving basket 9. Water is normally admitted from an outside source through pipe 10 until it stands at the water line shown in Fig. 3. Mounted within the tank is any suitable type of liquid pump 11, driven by any suitable power means, such as an electric motor 12 having its shaft 13 passing through a stuffing box 14 to drive the pump 11. The intake 15 of the pump 11 communicates with the bottom of the water chamber 7, the delivery side of the pump being connected by a pipe 16 to the nozzle 5, which, by preference, is substantially flush with the table top and is directed to loft the water in the direction of the scrap hole, as above described and as illustrated in Fig. 4. The tank water level may be maintained by providing an overflow pipe 17. It will be evident that with this system, the water can be recirculated continuously up to the point of too great contamination by the addition of solubles and small solids passing through the basket with the water. The tank may have a bottom drain for flushing purposes, one arrangement being to provide the overflow pipe 17, as shown, with a slip-joint connecting it to the sewer or drain pipe 18. When the basket 9 becomes full, or at intermittent periods, the pump 11 may be shut off, and the depressed portion 3 of the machine may be removed. The operator then removes the basin 6, if it is being employed, and by thereafter grasping the basket handle cross bar 19, may lift the basket or trap 9 and dump its contents.

Where salvaging of ware is desired, the catch or salvage basin 6 is interposed between the level

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of the accumulation of garbage in the basket 9 and the scrap hole 4. The machine is designed in accordance with the volume of dishes to be handled in the average food service unit operation. The size and proportions of the salvage basin 6 will be such as to maintain turbulence to the bottom of the vessel of such violence as to be insufficient to flood out the ware, but to insure the floating out of the garbage or scraps over the weir-like lip of the basin. The salvaging basin 6 is preferably of such proportion that all water falling through the scrap hole 4 will be intercepted, it being understood also that the structure is so designed that the operator cannot toss or throw ware or scraps through the scrap hole at such angle as to pass over or beyond the salvage basin 6.

The action of gravity on the relatively heavy table ware will cause the same to seek the bottom of basin 6 as the lighter particles of garbage and waste material are washed and floated over the lip of the basin. Table ware will collect for a period of time without interfering with the operation of the machine and the ware is removed periodically when the machine is not in use.

Briefly, the method consists of the step of first pre-rinsing the soiled dishes to remove both the table ware and the table scraps by flooding the dishes in a column of water. The water, table ware and the scraps are then pooled. The ware settles to the bottom of the pool by gravity. The water and scraps are then caused to flow from the upper portion of the pool and away therefrom. The column of water falls freely and, after the water moves from the pool, the scraps are separated therefrom. Such water, free of scraps, is then recirculated and replenished to compensate for loss of water when the scraps are removed.

From the above description, it will be apparent that I have produced a process embodying all of the features set forth as desirable, and while I have described and illustrated the preferred embodiment, it is to be understood that I reserve the right to all changes within the spirit and scope of the appended claims.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. The method of pre-rinsing soiled dishes and simultaneously recovering table ware from table scraps which comprises the steps of flooding off the ware and scraps from said soiled dishes in a column of water; pooling the ware, the scraps, and the water wherein through the action of gravity, the table ware settles to the bottom; and causing the water with entrained scraps to flow from the upper portion of the pool away from the pool.

2. The method of pre-rinsing soiled dishes and simultaneously recovering table ware from table scraps which comprises the steps of creating a pressureless column of falling water; flooding off the said ware and the said scraps from said soiled dishes with the falling water of the column; collecting the ware, the scraps, and the water to form a pool arresting the fall of said water and wherein, through the action of gravity, the table ware is required to settle to the bottom of the pool; and causing the water with entrained scraps to flow laterally from the upper portion of the pool away from the pool.

3. The method of pre-rinsing soiled dishes and simultaneously recovering table ware from

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table scraps which comprises the steps of directing a stream of water under pressure upwardly to create a freely falling column of water; flooding off the said ware and the said scraps from said soiled dishes with the falling water of the column; collecting the ware, the scraps, and the water to form a pool arresting the fall of said water and wherein, through the action of gravity, the table ware is required to settle to the bottom of the pool; and causing the water with entrained scraps to flow laterally from the upper portion of the pool away from the pool.

4. The method of pre-rinsing soiled dishes and simultaneously recovering table ware from table scraps which comprises the steps of directing a stream of water under pressure upwardly to create a freely falling column of water; flooding off the said ware and the said scraps from said soiled dishes with the falling water of the column; collecting the ware, the scraps, and the water to form a pool arresting the fall of said water and wherein, through the action of gravity, the table ware is required to settle to the bottom of the pool; causing the water with entrained scraps to flow laterally from the upper portion of the pool away from the pool; separating the scraps from the water after they leave the pool; and recirculating the water to form the said column of water.

5. The method of pre-rinsing soiled dishes and simultaneously recovering table ware from table scraps which comprises the steps of directing a stream of water under pressure upwardly to create a freely falling column of water; flooding off the said ware and the said scraps from said soiled dishes with the falling water of the column; collecting the ware, the scraps, and the water to form a pool arresting the fall of said water and wherein, through the action of gravity, the table ware is required to settle to the bottom of the pool; causing the water with entrained scraps to flow laterally from the upper portion of the pool away from the pool; separating the scraps from the water after they leave the pool; recirculating the water to form the said column of

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water; and adding previously unused water to the recirculated water in sufficient quantity to compensate for that water lost due to separation of the scraps and water.

6. The method of pre-rinsing soiled dishes and simultaneously recovering table ware from table scraps which comprises the steps of directing a stream of water under pressure upwardly to create a freely falling column of water; flooding off the said ware and the said scraps from said soiled dishes with the falling water of the column; collecting the ware, the scraps, and the water to form a pool arresting the fall of said water and wherein, through the action of gravity, the table ware is required to settle to the bottom of the pool; causing the water with entrained scraps to flow laterally from the upper portion of the pool away from the pool; separating the scraps and a portion of the water from the remaining portion of the water; capturing the said remaining portion of the water and recirculating the same to form the said column of water; and adding fresh water to that water in an amount substantially equal to that portion of the water separated with the scraps; and recirculating the captured water and the fresh water to form the said column of water.

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