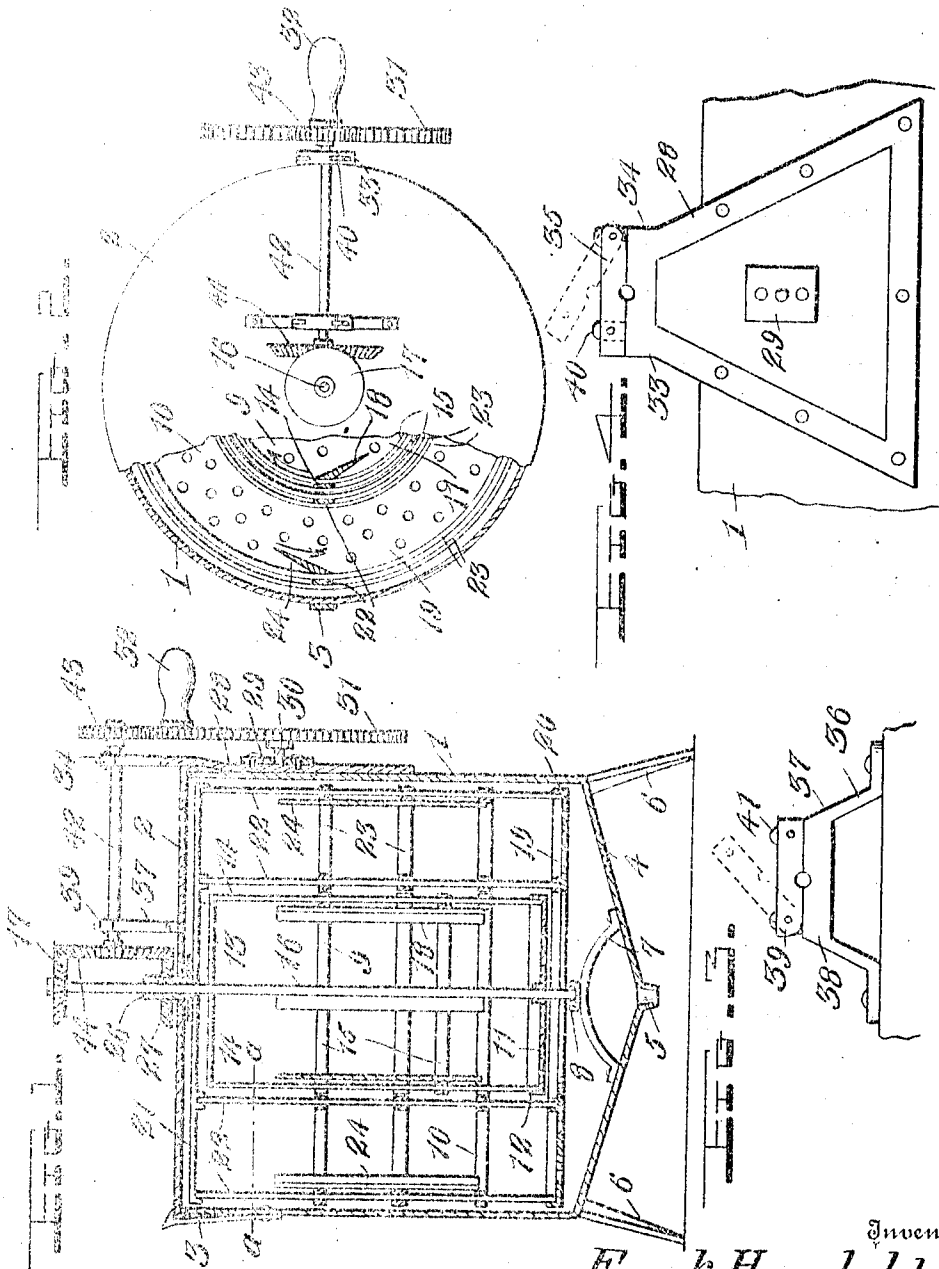


F. HOUSEHOLDER.
DISH WASHING MACHINE.
APPLICATION FILED MAY 3, 1911.

1,041,085.

Patented Oct. 15, 1912.



Witnesses

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FRANK HOUSEHOLDER, OF GUTHRIE, OKLAHOMA.

DISH-WASHING MACHINE.

1,041,085.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANK HOUSEHOLDER, a citizen of the United States, residing at Guthrie, in the county of Logan and State of Oklahoma, have invented certain new and useful Improvements in Dish-Washing Machines, of which the following is a specification, reference being had to the accompanying drawings.

This invention is an improved machine for washing dishes and other like articles and consists in the construction, combination and arrangement of devices hereinafter described and claimed.

The object of my invention is to provide an improved machine of this class which is extremely light, cheap and simple, is very strong and durable and may be very readily operated.

In the accompanying drawings Figure 1 is a vertical central sectional view of a dish washing machine constructed in accordance with my invention; Fig. 2 is partly a plan and partly a horizontal sectional view of the same on the plane indicated by the line *a-a* of Fig. 1; and Figs. 3 and 4 are detail elevations of the bearings for the counter-shaft.

The body 1 of the machine is cylindrical in form and is provided with a cover 2 which is detachably secured in place by a spring catch 3. The bottom 4 of the body is funnel shaped and provided with a central discharge spout 5. Supporting legs 6 are provided for the body to support the bottom thereof a slight distance above the top of the table or other surface on which the dish washer is used. The bar 7 which may be of the form here shown or of any other suitable form is disposed transversely over the central portion of the bottom and secured thereto and is provided at a point in the center of the body with a step bearing 8.

Concentrically disposed in the body 1 is an inner cylindrical cage 9 and an outer annular cage 10. The circular bottom 11 of the inner cage is provided with suitable perforations and has at its rim an upturned flange 12. The upper end of the inner cage is formed by cross bars 13. Vertical bars 14 have their upper ends attached to the ends of the cross bars and their lower ends secured to the bottom 11 and against the inner side of the flange 12 thereof. The said vertical bars are connected together at suitable points by horizontally disposed circular bands 15 which are arranged both on their

outer and inner sides. The centrally disposed vertical shaft 16 extends through and is secured to the centers of the bottom 11 and cross bars 13 and has its lower end detachably stepped in the step bearing 8, its upper end extending through and projecting above the cover 2. A beveled gear 17 is secured to the upper end of the shaft 16. The inner cage 9 is provided at suitable points with inwardly projecting, vertically extending deflecting blades 18 which are disposed at oblique angles to the peripheral surface of the cage.

The bottom 19 of the outer cage 10 is annular in form to provide a central opening of sufficient diameter for the inner cage 9, the said bottom 19 being provided at its inner and outer sides with upturned rims or flanges 20 and being also provided with suitable perforations. Cross bars 21 form the upper end of the outer cage 10 and the inner and outer walls of said outer, annular cage are formed by vertical bars 22 which are disposed at suitable distances apart and connect the cross bars and the bottom, and horizontally disposed circular bands 23 which are secured to the said bars both on their inner and outer sides so that the bands brace and strengthen the bars and co-act therewith to form walls of open construction which serve to keep the dishes in place in the cage and at the same time permit the free passage of water and like material through the cage. The outer cage is provided at its outer wall with inwardly projecting and longitudinally extending deflecting blades or paddles 24 which are disposed at oblique angles to the peripheral surface of the cage and which extend in a direction opposite to the blades 18. At the center of the cross bars 21 of the outer cage, on the upper sides thereof, is a tubular bearing 26 through which the shaft 16 extends, the said tubular bearing extending through a central opening in the cover 2. The said tubular bearing is provided with a beveled gear 27 which is reversely disposed with respect to the gear 17.

On the outer side of the body is a substantially triangular standard frame 28 which is secured to the body by means of rivets. A plate 29 which is disposed near the center of the frame 28 is also riveted to the outer side of the body and is provided with a stub shaft 30 on which is mounted a spur gear 31 which is provided with a crank 32 by which it may be manually

rotated. At the upper end of the standard frame 28 is a bearing 33 which comprises a fixed roller member 34 and a pivoted upper member 35. A substantially inverted U-shaped standard 36 is secured on the cover 2 near the center thereof and is provided at its upper end with a bearing 37 which comprises a fixed lower member 38 and a pivoted upper member 39. The bearing 33 has guides 40 for the upper bearing member 35, and the bearing 37 has similar guides 41 for the upper bearing member 39. Securing pins are placed in registering openings in the said guides and pivoted bearing members to lock the latter in position. A counter-shaft 42 is detachably mounted in the bearings 33 and 37 and is provided at its outer end with a spur gear 43 which is engaged by the gear 31 and at its inner end with a beveled gear 44 which engages the gears 17 and 27. The bearings 33 and 37, by reason of their being each provided with a pivoted upper member, permit of the removal of the shaft 42 when desired.

It will be understood that when the gear 31 is revolved by its crank the inner and outer cages will be revolved in opposite directions. The dishes to be washed having been placed in the cages and the vessel 1 supplied with water, the rotary movement of the cages in the water will cause the dishes to be thoroughly cleansed and this will be facilitated by the action of the blades 18 and 24 with which the cages are respectively provided, the said blades, owing to their being obliquely disposed at the sides of the cages, forcing cross currents of water around the dishes. The cages, or either of them, may be, if desired, provided with suitable compartments to support articles such as knives, forks and spoons, while they are being washed. The cover being removable and the cages being also removable, together

with the various gears, all the parts of my machine may be very readily disassembled whenever it is desired to clean the machine or for other purposes.

It is to be particularly noted that the blades 18 and blades 24 of the inner and outer dish holding cages, respectively, are vertically elongated and disposed and are of the same length, the upper ends and lower ends of the respective blades terminating in the same horizontal planes. By this means, in the operation of the device, two strong oppositely flowing currents will be set up which will be of heights practically equal to the depth of the aggregate number of dishes mounted in the machine, and consequently, the dishes will be effectively cleaned.

Having thus described my invention I claim:

A dish washing machine, comprising a casing, concentrically disposed inner and outer dish holding cages mounted for rotation in the casing and each provided with a plurality of inwardly projecting vertically disposed and vertically elongated blades extending at oblique angles to the peripheral surfaces of the cages, the blades of the inner cage extending in a direction opposite to that of the blades of the outer cage and all of the blades being of substantially the same length, the upper ends and the lower ends of the blades of the inner cage lying in the same planes as the corresponding ends of the blades of the outer cage, and means for rotating the cages simultaneously in opposite directions.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

FRANK HOUSEHOLDER.

Witnesses:

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