A. E. ROEVER.

DISH WASHING MACHINE.

APPLICATION FILED AUG. 23, 1916. RENEWED OCT. 1, 1921.

1,396,466. Patented Nov. 8, 1921.

Fig. 1.

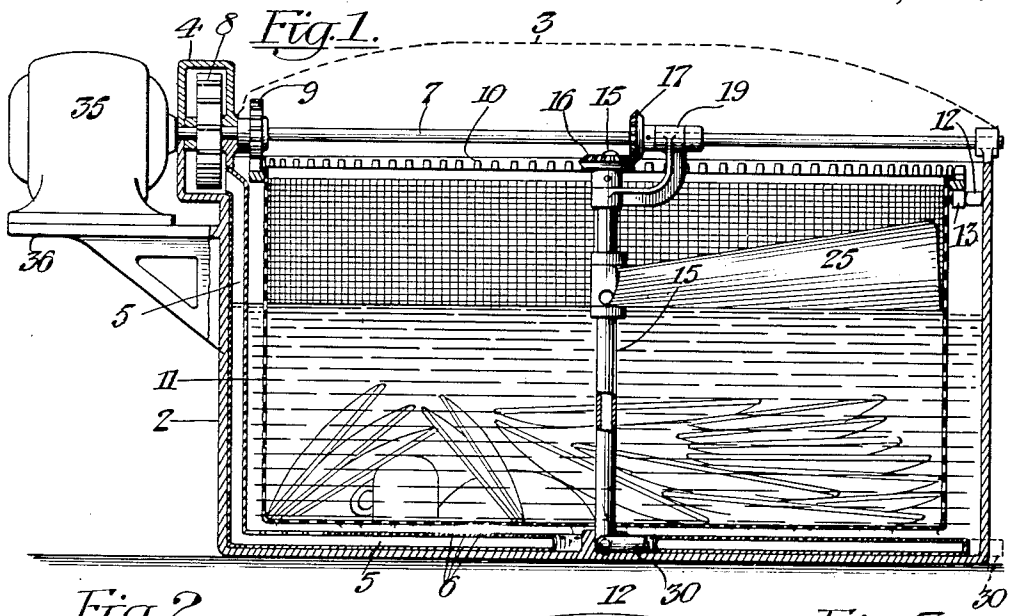

Fig. 2.

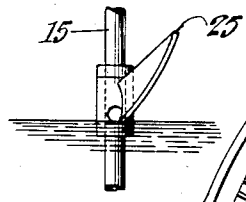

Fig. 3.

Witness

Titus H. Irons

Inventor

August E. Roever

By his Attorney.

C. P. Reed

UNITED STATES PATENT OFFICE.

AUGUST E. ROEVER, OF BROOKLYN, NEW YORK.

DISH-WASHING MACHINE.

1,396,466. Specification of Letters Patent. Patented Nov. 8, 1921.

Application filed August 23, 1916, Serial No. 116,423. Renewed October 1, 1921. Serial No. 504,731.

To all whom it may concern:

Be it known that I, AUGUST E. ROEVER, a subject of the German Emperor, having applied for naturalization as a citizen of the United States and received my first papers, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Dish-Washing Machines, of which the following is a specification.

This invention relates to dish washing machines, the object of the invention being to provide an improved apparatus of the class described by means of which dishes will be quickly and thoroughly cleansed by the combined action of air and water.

A further object of the invention is the provision of an improved apparatus of the class described having means for removing the scum from the greasy water.

In the drawings accompanying and forming part of this specification, Figure 1 is a cross sectional view of this improved dish-washing apparatus; Fig. 2 is a detail view of the scum removing device; and Fig. 3 is a top view of this improved apparatus.

Similar characters of reference indicate corresponding parts in the several figures of the drawings.

This improved dish-washing machine in the preferred form thereof comprises a receptacle 2, provided with a removable cover 3. One side of this receptacle is provided with a fan housing or chamber 4 in communication with which is a plurality of pipes 5 having perforations along those portions 6 thereof which extend along the bottom of the receptacle. Carried by the receptacle along the top thereof and extending through the fan housing is a shaft 7 suitably supported by the receptacle. Inside the housing and carried by the shaft 7 is a fan 8 and outside of the housing is a spur gear 9 in mesh with an annular gear 10 encircling a foraminous or perforated drum 11 located within the receptacle in such a manner that the perforated pipes hereinbefore referred to will be between this drum and the receptacle 2. By means of the gear on the shaft and the annular gear, the drum will be rotated. For the purpose of supporting the annular gear and thereby the drum for rotation, the receptacle 2 is provided with a series of inwardly extending projections 12 carrying rolls 13 located under the ring gear. Journaled in the bottom of the receptacle 2 and extending through the drum is a hollow vertical shaft 15 having a beveled gear 16 at its upper end in mesh with a similar gear 17 carried by the horizontal shaft whereby the vertical shaft is rotated. These two bevel gears are suitably supported by a bracket 19 located on the horizontal and vertical shafts. Carried by this vertical shaft is a scum removing device consisting preferably of a curved blade 25 located in such a position that it will sweep the top of the water, thereby to remove the greasy scum and assist in its passage out through the foraminous casing or cause the scum to be forced into the hollow vertical shaft from which it may pass or be forced out from the casing in any suitable way as by a pipe 30.

For driving the horizontal shaft a motor 35 is shown supported on a suitable bracket 36 secured to the receptacle.

From the foregoing it will be observed that when the dishes are placed in the drum, this drum will be rotated and at the same time air will be forced by the fan into the drum to thoroughly cleanse the dishes, while the scum will be removed by the sweeping blade, thus providing a very simple and inexpensive dish-washing machine.

It will be understood that the various details may be more or less modified without departing from the spirit or scope of this improvement. For instance, the drum may be perforated only at its bottom, or at its bottom and part way up its side and may be of wire mesh or any other suitable material.

As shown, it will be observed that the foraminous drum rotates in one direction and that the scum sweeping instrumentality rotates in the opposite direction, and that the fan, the drum and the scum sweeping instrumentality are all operated simultaneously from a small motor, which may be readily placed in operation by the user whenever it is desired to use the apparatus, so that it requires no effort other than to place the dishes in the apparatus and remove them in order to wash them.

I claim as my invention:

1. In a dish washing machine, the combination of a water carrying receptacle, a foraminous drum located therein, means for rotating said drum horizontally and comprising a shaft, a fan chamber at one side of said receptacle, a motor driven rotary fan

located in said chamber on the end of said shaft for forcing air into the casing, and a conduit leading from the fan chamber into the casing for admitting air into the drum at the bottom thereof.

2. In a dish washing machine, the combination of a water carrying receptacle, a foraminous drum located therein, motor driving means for rotating said drum horizontally and comprising a motor carried by the receptacle exteriorly thereof, and a horizontal shaft connected with said motor, a fan chamber at one side of the receptacle and at the inner side of the motor and into which said shaft extends, a rotary fan in said chamber and connected with said shaft, and a conduit connecting said chamber with the bottom of the receptacle whereby air will be forced from the fan chamber into the drum at the bottom thereof.

3. In a dish washing machine, the combination of a receptacle, a foraminous drum therein, an annular gear carried by said drum at the top thereof, means carried by the receptacle for supporting said gear and thereby suspending the drum in the receptacle, a shaft extending across the top of said drum, a gear carried by said shaft and in mesh with said annular gear, and motor driven means connected with said shaft for rotating it and thereby the drum.

4. In a dish-washing machine, the combination of a casing, a foraminous drum therein, a ring gear carried by said drum, means carried by the casing for supporting said ring gear, a shaft located along the top of said casing, a gear carried by said shaft and in mesh with said ring gear, motor driven means for rotating said shaft, a fan housing carried by said casing, a fan therein and also driven by said motor, and means communicating with said housing and extending along the bottom of the drum and having perforations for the passage of air into said drum.

5. In a dish-washing machine, the combination of a casing, a foraminous drum therein, a ring gear carried by said drum, means carried by the casing for supporting said ring gear, a shaft located along the top of said casing, a gear carried by said shaft and in mesh with said ring gear, motor driven means for rotating said shaft, a fan housing carried by said casing, a fan therein,—means communicating with said housing and extending along the botttom of the drum and having perforations for the passage of air into said drum, and means for removing the scum from the water and operated by said shaft.

6. In a dish washing machine, the combination of a casing, a rotatable dish supporting drum within said casing, means for rotating it, means for removing the scum from the water and comprising a rotating blade positioned to sweep the scum from the water, and means for rotating said blade.

7. In a dish washing machine, the combination of a casing, a dish supporting drum within said casing, rotatable means for removing the scum from the water, and motor driven means for forcing air into said drum.

8. In a dish washing machine, the combination of a casing, a dish supporting drum within said casing, means for removing the scum from the water and comprising a rotating blade, motor driven means for rotating it, and means for forcing air into said drum.

9. In a dish washing machine, the combination of a casing, a dish supporting foraminous drum therein, means for removing the scum from the water, means for forcing air into the drum, and motor driven means for simultaneously operating said air forcing means and scum removing means.

10. In a dish washing machine, the combination of a casing, a foraminous drum supported therein, a shaft extending along the top of said casing, a vertical shaft journaled at the bottom of said casing, gears carried by said shafts for rotating the vertical shaft from the horizontal shaft, a scum removing curved blade carried by said vertical shaft, a ring gear carried by said drum, a gear carried by said first shaft and in mesh with said ring gear, a fan housing carried by said casing, a fan therein and carried by said horizontal shaft, means communicating with said housing and having perforations for transmitting air from the housing to the drum, and a motor carried by said casing for rotating said first shaft and thereby the fan and scum removing blade.

11. In a dish washing machine, the combination of a casing, a dish supporting drum within said casing, and a rotatable scum removing instrumentality effective to remove the scum and assist in its passage out of said casing and means for rotating the drum and said instrumentality in different directions simultaneously.

12. In a dish washing machine, the combination of a casing, a dish supporting drum within said casing, and a scum removing instrumentality effective to remove the scum and assist in its passage out of said casing, and comprising a curved blade adapted to sweep the top of the water.

13. In a dish washing machine, the combination of a casing, a dish supporting drum within said casing, and a scum removing instrumentality effective to remove the scum and assist in its passage out of said casing and comprising a curved blade adapted to sweep the top of the water and a tube for receiving said scum from said blade.

14. In a dish washing machine, the combination of a casing, a dish supporting drum

within said casing, and a scum removing instrumentality effective to remove the scum and assist in its passage out of said casing and comprising a rotatable blade adapted to sweep the top of the water, means for rotating said blade, and means adapted to receive the scum from said blade and lead it out of said casing.

15. In a dish washing machine, the combination of a casing, a rotatable dish supporting drum within said casing, motor driven means for rotating the drum within the casing, means for forcing air into the drum at the bottom thereof and having connection with the means for rotating the casing whereby both are operated by the same means simultaneously, and rotatable means within the drum for removing the scum.

16. In a dish washing machine, the combination of a casing, a rotatable dish supporting drum within said casing, motor driven means for rotating the drum within the casing, a fan for forcing air into the drum at the bottom thereof and having connection with the means for rotating the casing whereby both are operated by the same means simultaneously, and rotatable means within the drum for removing the scum and also operated by said drum rotating means.

Signed at New York, in the county of New York and State of New York, this 21st day of August, 1916.

AUGUST E. ROEVER.