March 1, 1927. 1,619,236

G. S. BLAKESLEE

DISHWASHING MACHINE

Filed Aug. 16, 1920 2 Sheets-Sheet 1

Fig. 1.

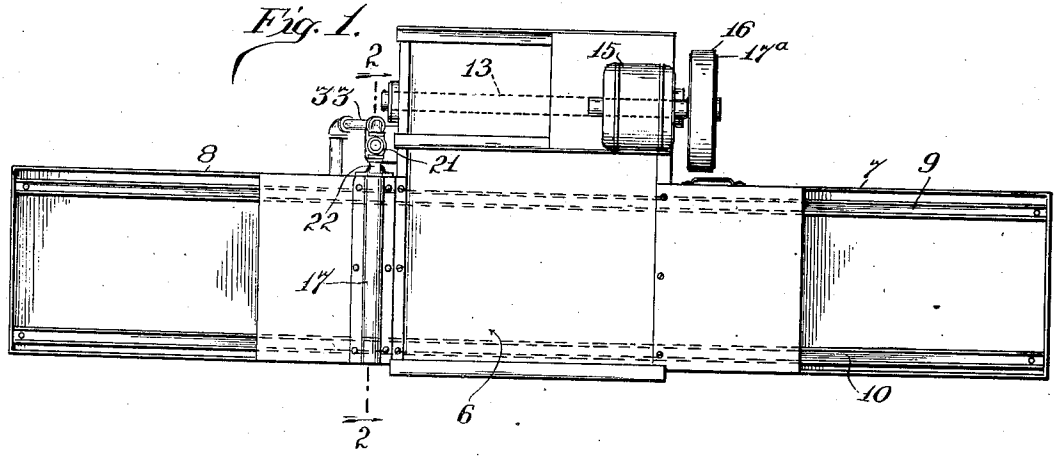


Fig. 2.

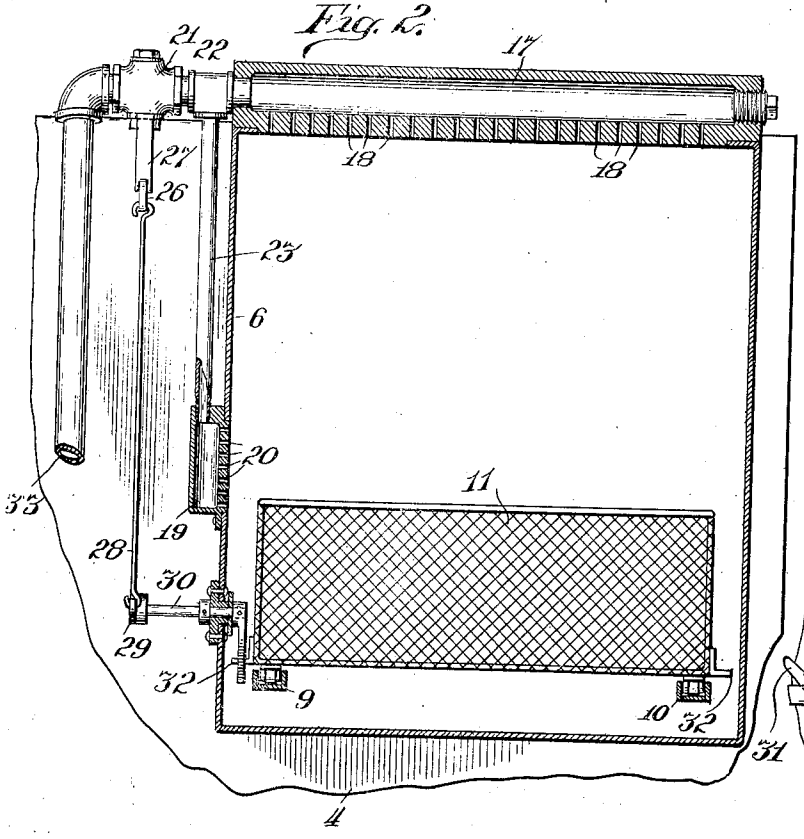
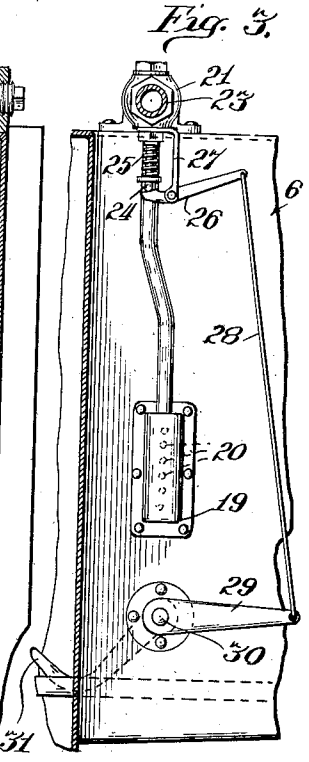


Fig. 3.



Witness
Milton Lenoir

By

Inventor
George S. Blakeslee,
Adams & Jackson,
Attorneys

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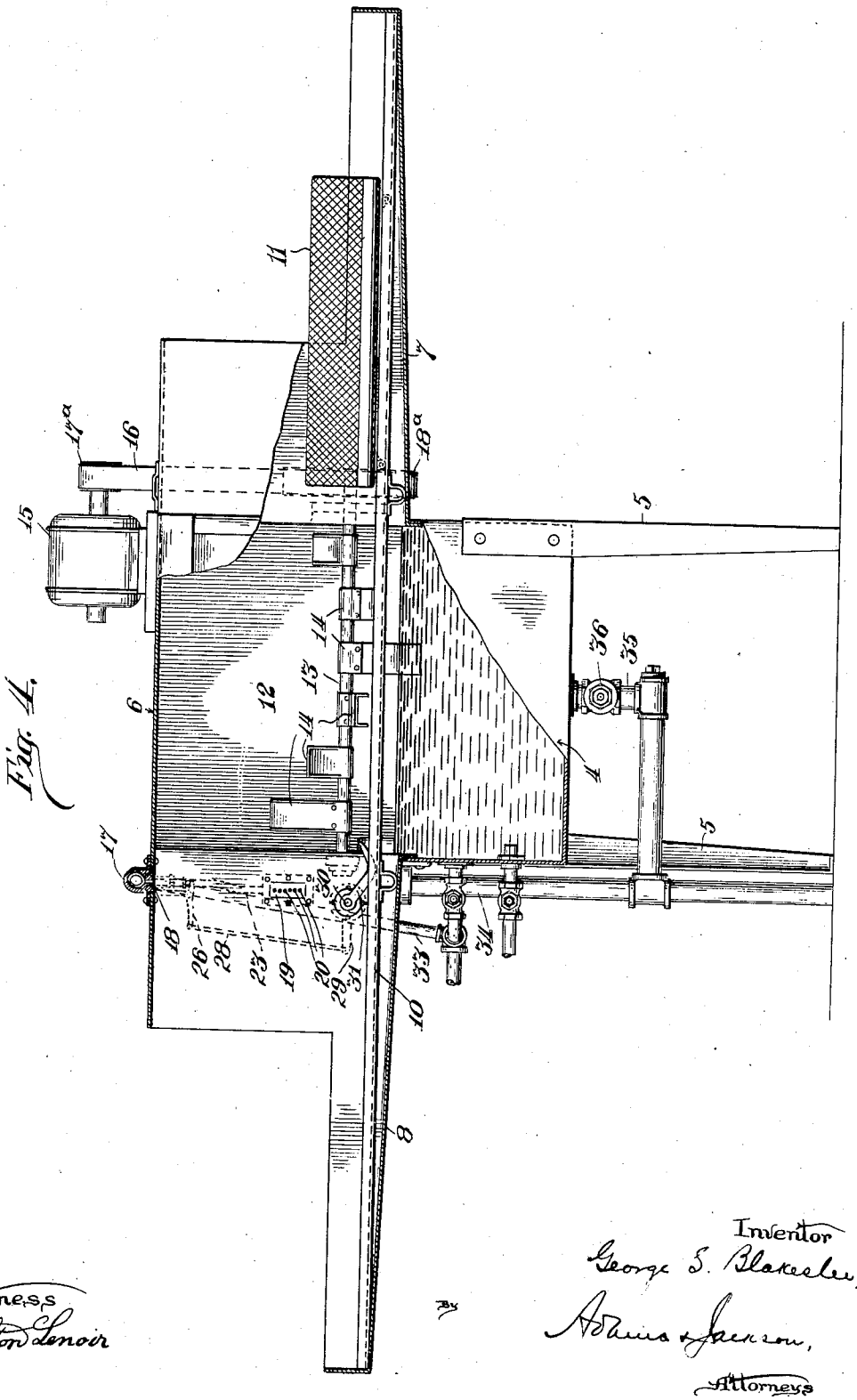


Fig. 4.

Witness
Milton Lenoir

Inventor
George S. Blakeslee,
By Adams & Jackson,
Attorneys

Patented Mar. 1, 1927. 1,619,236

UNITED STATES PATENT OFFICE.

GEORGE S. BLAKESLEE, OF OAK PARK, ILLINOIS; GEORGE R. BLAKESLEE EXECUTOR OF SAID GEORGE S. BLAKESLEE, DECEASED.

DISHWASHING MACHINE.

Application filed August 16, 1920. Serial No. 403,760.

My invention relates to dish washing machines and has for its object to provide a small, compact and efficient machine for washing and rinsing china and glassware. I accomplish this object as illustrated in the drawings, and as hereinafter described. What I regard as new is set forth in the claims.

In the accompanying drawings,—

Fig. 1 is a plan view of my improved machine;

Fig. 2 is an enlarged partial vertical cross-section thereof on line 2—2 of Fig. 1;

Fig. 3 is a partial side elevation, some parts being in section, illustrating the sprinkling apparatus; and

Fig. 4 is principally a longitudinal vertical section of the machine, parts of the housing being shown in elevation.

Referring to the drawings,—4 indicates a tank adapted to contain wash water, said tank being supported by legs 5 and having a housing 6 which extends over it and also over the inner ends of the aprons hereinafter described, but is open at its ends so that the articles to be washed can be moved through the housing over the tank. 7, 8 indicate aprons which extend longitudinally of the machine at the inlet and outlet ends thereof at about the level of the water in the tank. As shown in Fig. 4, the bottoms of said aprons are inclined toward the tank so that they drain thereinto.

9, 10 indicate rails which extend longitudinally of the machine over the aprons and the tank and adjacent to the side walls of the housing. These rails are preferably in the form of channel bars, and they are designed to support a reticulated basket 11 provided with wheels adapted to run on said tracks. At one side of the tank the housing 6 is offset as shown at 12 in Fig. 1, forming a compartment in which is mounted a longitudinally-extending shaft 13 which carries a number of buckets or paddles 14 arranged spirally thereon, as shown in Fig. 4. The shaft 13 is a short distance above the normal water level, so that as said shaft rotates the buckets 14 dip successively into the water in the tank and operate to throw it violently upon the contents of the basket 11 while said basket is being moved past said buckets. The shaft 13 is driven by a motor 15 preferably mounted on top of the housing 6, said shaft being connected to the motor by a belt 16 and pulleys 17^a, 18^a, as shown in Fig. 4. As the buckets 14 operate in succession, it will be evident that the shaft 13 may be driven with comparatively slight expenditure of power.

The rinsing apparatus is located at the outlet end of the machine adjacent to the tank 4, and comprises a pipe 17 which extends transversely of the housing over the path of the baskets 11, said pipe being provided at its under side with a plurality of openings or jets 18 adapted to discharge water in streams downwardly over the apron and upon the contents of the basket as it passes out from over the washing tank. The rinsing apparatus also comprises a vertically-disposed pipe 19 located at one side of the housing 6, preferably in the same vertical plane as the pipe 17. The pipe 19 also is provided with a plurality of openings or nozzles 20 arranged to discharge water over the apron in horizontally directed jets arranged substantially one above another. The pipes 17 and 19 are connected together and to a valve 21 by a coupling 22 and a connecting pipe 23, as shown in Fig. 2, so that when the valve 21 is open water under pressure is admitted to both pipes 17 and 19. The valve 21 is preferably of the type known as a whistle valve, although any other suitable kind of quick acting self-closing valve may be used. In the construction shown, said valve comprises a plunger 24 which is normally projected by a spring 25, and may be forced inwardly against the tension of said spring to open the valve by a lever 26 pivotally supported by a bracket 27. The lever 26 is connected by a rod 28 to an arm 29 carried by a rock-shaft 30. This rock-shaft is provided with a lever arm 31 which normally occupies a position in which it will intercept the basket 11 as said basket is moved out from over the tank. Preferably the basket 11 is provided at one side near its lower margin with an angle iron 32, or equivalent device, for actuating the lever arm 31, and in order that the basket may be passed through the machine with either end foremost, one of the angle irons 32 is provided at each side thereof, as shown in Fig. 2. 33 indicates a hot water supply pipe connected with the valve 21 for supplying hot water from any suitable source to the sprinkling apparatus.

From the foregoing description it will be

understood that the articles contained in the basket 11 will be thoroughly washed by the passage of the basket past the buckets 14. The basket may either be moved continuously through the machine, or, if desired, it may be allowed to remain at rest opposite the paddle wheel shaft if longer washing is considered necessary. When one basket has been moved into the machine another one may be pushed in after it, thereby forcing the first one out, whereupon one of its angle irons 32 will engage the upturned end of the arm 31, which is inclined as shown in Fig. 3, thereby lifting said arm, and rocking the shaft 30 in a clockwise direction as viewed in Fig. 3. This will operate the lever 26 to open the valve 28, thereby causing the discharge of streams of water through the openings 18 and 19 of the pipes 17 and 20. In loading the baskets, articles such as cups and glasses, etc., are arranged with their open ends toward the side of the machine at which the pipe 19 is located. Consequently, as the dishes pass out of the machine, they are thoroughly rinsed both inside and out, and the hollow ware drains into the apron 8. As the sprinkling water is very hot, the dishes dry immediately and without wiping. As soon as the basket passes beyond the arm 31, said arm drops back to its normal position, and the valve 21 automatically closes, shutting off the sprinkling water.

The machine described is well adapted for use in places where a limited amount of space is available, and it may be operated very economically since not much power is required to operate it, and there is no waste of hot water, inasmuch as the rinsing water drains into the wash water tank. This also serves to keep the wash water in better condition, as it is being frequently replenished with hot comparatively fresh water. A suitable over-flow pipe 34 is provided for maintaining the desired level of water in the tank 4, as shown in Fig. 4. 35 indicates a drain pipe having a valve 36, for draining the tank when desired.

What I claim as my invention and desire to secure by Letters Patent, is—

1. A dish washing machine comprising a tank, means for conducting the articles to be washed over said tank, means for throwing water from said tank upon such articles, an apron at the outlet end of the tank under the path of the articles, spraying means adjacent to the outlet end of said tank adapted to throw water laterally over said apron upon such articles, and means located at the outlet end of the tank and actuated by the articles moving out from over the tank for operating said spraying means.

2. A dish washing machine comprising a tank, means for conducting the articles to be washed over said tank, means for throwing water from said tank upon such articles, an apron at the outlet end of the tank under the path of the articles, spraying devices adjacent to the outlet end of the tank and adapted to throw water downward and also laterally over said apron upon such articles, and means located at the outlet end of the tank and actuated by the articles moving out from over the tank for operating said spraying devices.

3. A dish washing machine comprising a tank, means extending over said tank for supporting baskets containing the articles to be washed, an apron at the outlet end of the tank under the path of the articles, means for throwing water from said tank upon such articles, spraying devices adjacent to the outlet end of said tank and operating to throw water downward and also laterally over said apron upon such articles, a normally closed valve controlling the supply of water to said spraying means, and means actuated by the basket moving out from over the tank for opening said valve.

4. A dish washing machine comprising a tank, means extending over said tank for supporting a basket containing the articles to be washed, means for throwing water from said tank upon such articles, spraying devices arranged to throw water upon such articles, a normally closed valve controlling the supply of water to said spraying devices, an arm operatively connected with said valve and adapted, when actuated, to open the same, and a basket insertable with either end forward and having means at opposite sides thereof either of which is adapted to engage and operate said arm as the basket is moved out from over the tank according to which end is in front.

5. A dish washing machine comprising a tank, means extending over said tank for supporting baskets containing the articles to be washed, means for throwing water from said tank upon such articles, an apron at the outlet end of the tank under the path of the articles, a housing extending over said tank and the inner end portion of said apron, a spray pipe disposed transversely of the upper portion of said housing adjacent to the outlet end of the tank, said pipe having perforations in its under side at intervals throughout its length whereby it is adapted to deliver jets of water downwardly over said apron across the path of the articles, a vertically-disposed pipe at one side of said housing and arranged to discharge jets of water laterally over said apron across the path of the articles adjacent to the outlet end of the tank, a valve for controlling the discharge of water through said pipes, and means actuated by the movement of the articles out from over said tank for opening said valve.

GEORGE S. BLAKESLEE.