Oct. 30, 1928. 1,689,383

H. M. GOWDY

PROPELLER BLADE FOR DISHWASHING MACHINES

Filed Aug. 12, 1926 2 Sheets-Sheet 1

Fig. 1.

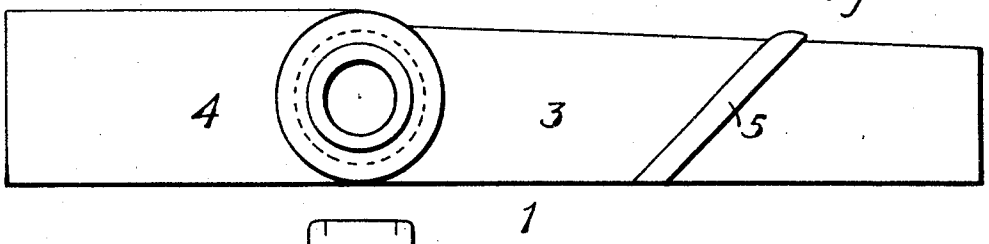
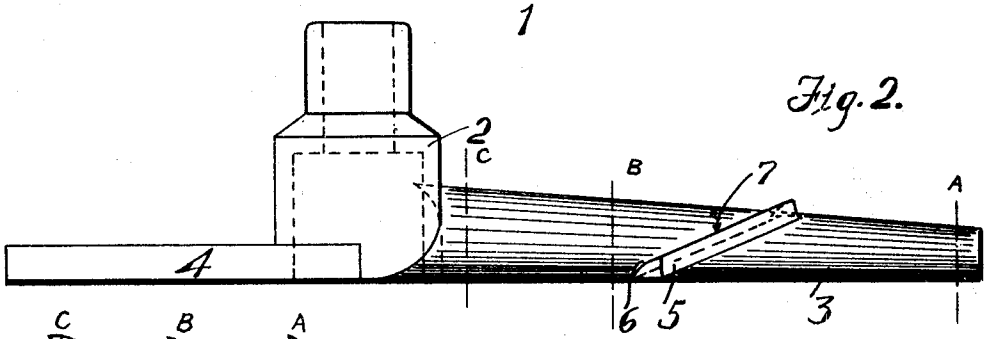


Fig. 2.



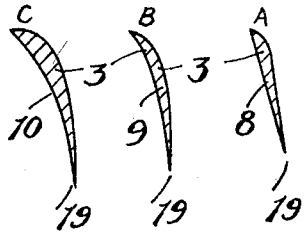


Fig. 3.

Fig. 4.

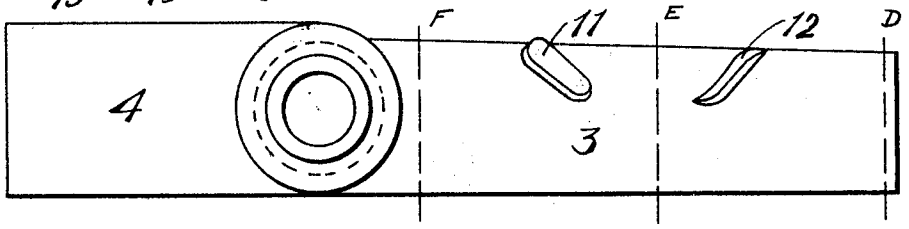
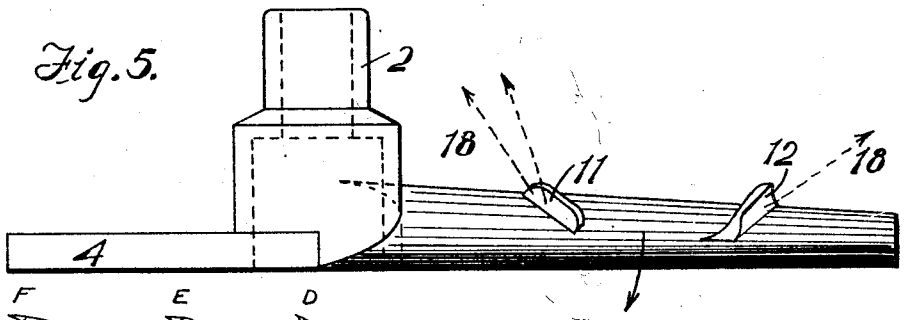


Fig. 5.



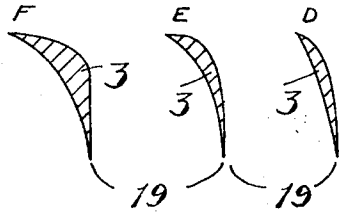


Fig. 6.

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Oct. 30, 1928. 1,689,383

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PROPELLER BLADE FOR DISHWASHING MACHINES

Filed Aug. 12, 1926 2 Sheets-Sheet 2

Fig. 7.

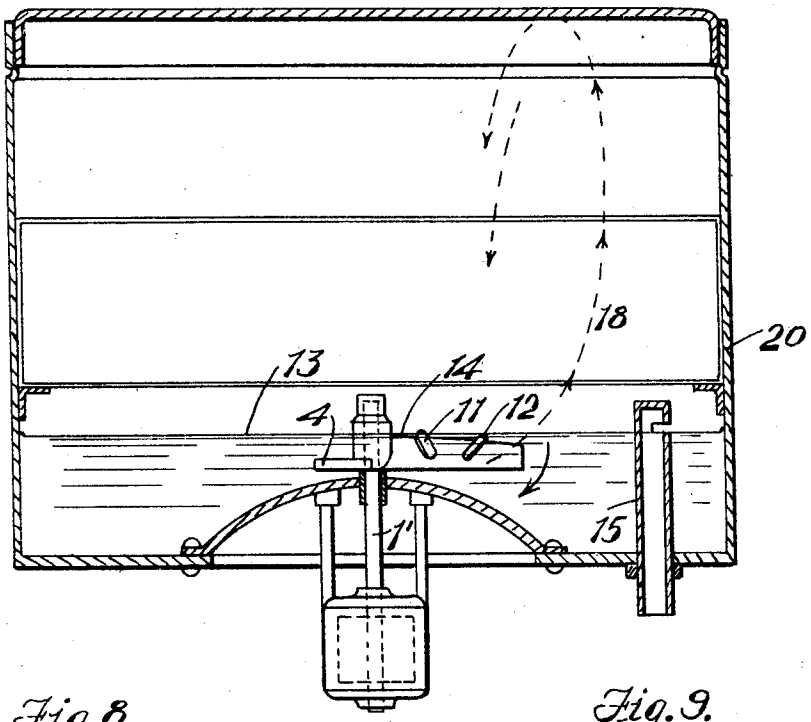


Fig. 8.

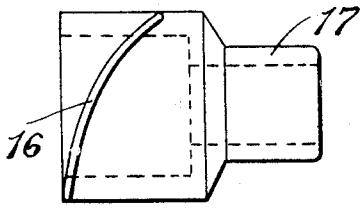


Fig. 9.

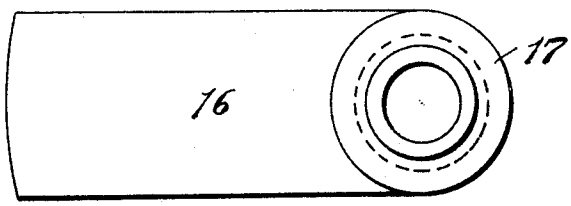
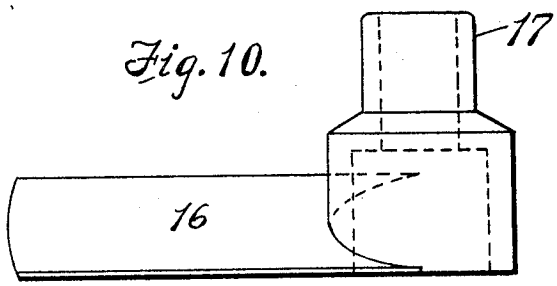


Fig. 10.



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UNITED STATES PATENT OFFICE.

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PROPELLER BLADE FOR DISHWASHING MACHINES.

Application filed August 12, 1926. Serial No. 128,817.

This invention relates to improvements in propellers for dishwashing machines. The type of propeller herein described is disclosed in my co-pending application, Ser. No. 90,525, filed Feb. 25, 1926, in which a single blade is employed for projecting the water upward against the dishes that are contained within the dish receiving receptacle.

An important feature is that the blade is of uniform curvature throughout its length and is so constructed and located that the water is removed from the upper surface only of the inclosing receptacle.

In the application above referred to, the inclosing tank is provided with a plurality of water deflecting plates which are located on and attached to the bottom of the tank. These plates are each formed with inclined sides in close proximity to which the propeller blade is revolved.

These plates serve the purpose of supporting the rack in which the dishes to be washed are placed. The above application further describes a curved plate which forms a part of the bottom and having bars therein located immediately below the plane of revolution of the propeller blade. A suitable electric motor is provided for rotating the propeller blade with direct connecting means between the blade and the motor.

In the present application one form of the propeller blade is provided with a projection or rib which is arranged at an angle to the length of the blade. Another form is provided with projections of shorter lengths that do not extend completely across the blade.

Referring to the drawings:

Fig. 1 is a plan view of the blade showing the hub portion and a rib arranged at an angle to the length of the blade.

Fig. 2 is a side elevational view of Fig. 1.

Fig. 3 illustrates the curvature of the blade at the sectional lines indicated at A, B, and C.

Fig. 4 is a plan view of a modification in which the projections extend part way across the blade and oppositely inclined.

Fig. 5 is a side elevational view of Fig. 4.

Fig. 6 is a sectional view of the blade on the section lines D, E, and F.

Fig. 7 is an outline view of the inclosing casing showing the motor, propeller blade and overflow pipe.

Fig. 8 is an end elevational view of Fig. 9 looking from the left, which is a modification.

Fig. 9 is a plan view of the propeller blade.

Fig. 10 is a side elevational view of Fig. 9.

Referring to the drawings in detail:

1 designates the blade as a whole having the hub portion 2 for receiving the attaching shaft, the blade portion 3 and the counter weight portion 4. 5 designates a rib which is formed with inclined or curved side edges. This rib is arranged at an angle to the longitudinal line of the blade, the angle being indicate at 7. For the purpose of illustrating the upper warped surface of the blade the section lines A, B, and C are drawn. At the section A, the curvature 8 on the upper surface is of greater radius than that shown at either 9 or 10 on the section lines B and C. The object of forming a warped surface being that as the outer end of the blade travels through a greater arc in the same time water will be thrown upward with an even thickness of spray throughout the length of the blade. At the section lines B and C which travel through a shorter distance a greater curvature is necessarily required.

Referring to Fig. 4 which is a modification. The blade 3 is formed with the two projections 11 and 12. These projections are shown in side elevation in Fig. 5 and inclined in opposite directions, the purpose of which is to cause the water to be thrown upward in thin sheets of finely divided spray. In other words these projections operate to spread the water into thin sheets and in opposite directions.

The upper surface of the blade 3 is understood to be a warped surface as indicated by the section lines D, E, and F.

This warped surface is for the purpose of causing the sheet of water to be thrown uniformly upward as stated throughout its entire length.

Referring to Fig. 7 the water line is indicated at 13 which corresponds substantially with the upper edge 14 of the propeller blade. The overflow pipe is indicated at 15 and the casing at 20.

Referring to Fig. 8 the blade 16 is of uniform curvature throughout its length. The hub is indicated at 17 having an opening to receive the attaching motor shaft.

The operation of the propeller may be described as follows: When the blade portion 3 is rotated, it throws the water upward in thin sheets as indicated by the dotted lines 18. Since the upper surface only of the

water is engaged by the forward or thin edge 19 of the propeller it operates to remove a thin sheet or layer of water and throw it upward with a uniform thickness throughout the length of the blade. This would not be the case if the propeller was completely submerged. The angular disposed projection or rib 5 operates to evenly spread the water into thin sheets as it is thrown upward. The two projections 11 and 12 being angularly disposed toward each other operate to spread the water evenly throughout the length of the blade.

From this description it will be seen that when the blade 3 is rotated at a high velocity by the motor, the water is thrown upward in an even and uniform razor-like sheets of water. The claims in this application are confined to the propeller blade, while the claims in my copending application are confined to the dishwashing machine.

What I claim is:

1. A single propeller blade which is designed to revolve in a horizontal plane for a dishwashing machine comprising a member which is formed with a uniform curvature on its upper surface from the tip to the base portion of the same, the curvature being concavo-convex with the concave surface on the upper side of the blade.

2. A propeller blade for dishwashing machines having a uniform curved upper surface and of the same width throughout its length and a projection or rib on the upper surface which is arranged at an acute angle to the median line of the blade.

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