Jan. 14, 1941. W. W. BARNUM 2,228,684

CAN WASHING MACHINE

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Fig. 1.

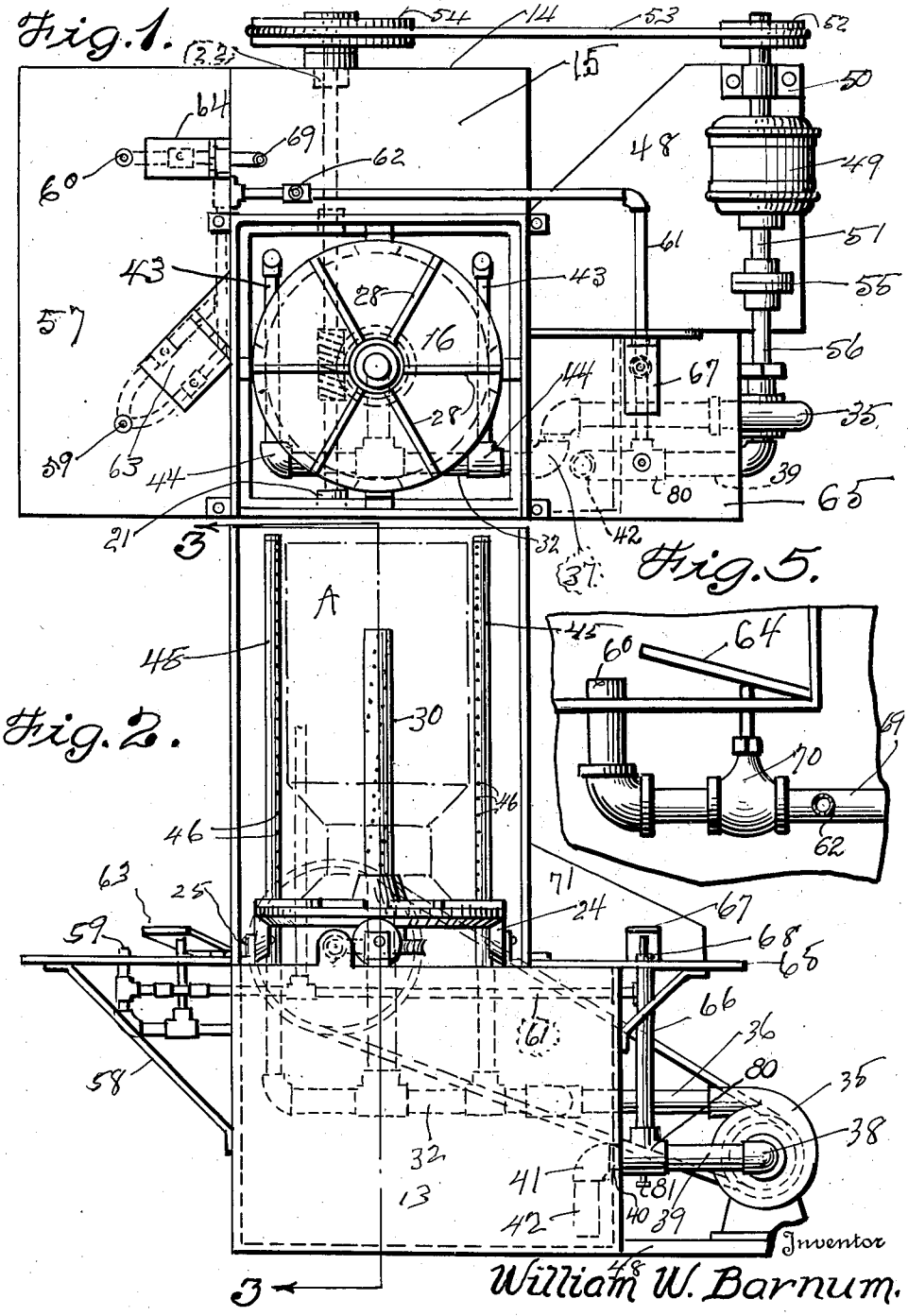


Fig. 5.

Fig. 2.

Inventor

William W. Barnum.

By

Attorney.

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Fig. 3.

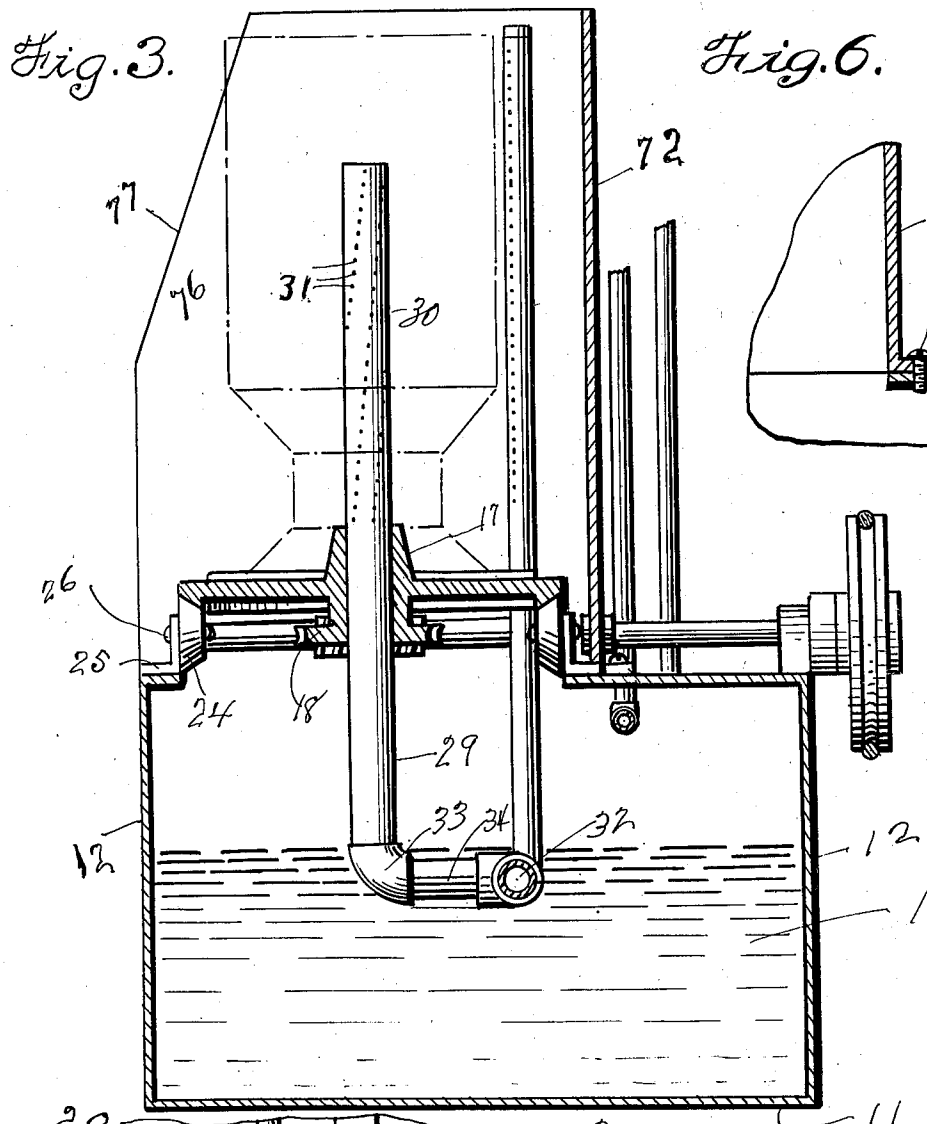


Fig. 6.

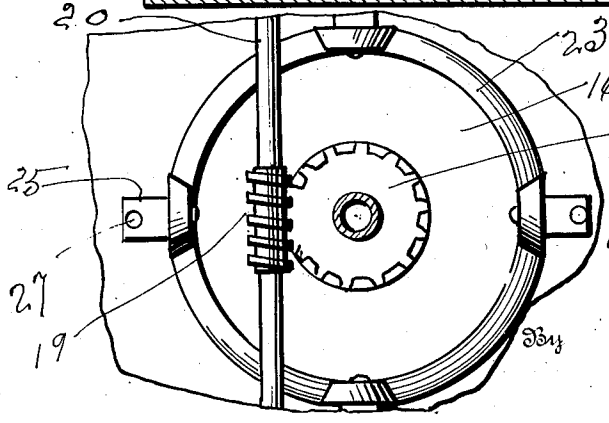


Fig. 4.

Inventor
William W. Barnum.

By

Attorney.

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CAN WASHING MACHINE

William W. Barnum, Niagara Falls, N. Y.

Application December 8, 1938, Serial No. 244,677

2 Claims. (Cl. 141—7)

This invention relates to improvements in can washing machines and more particularly to machines intended for washing cans used in the dairy trade.

The primary object of this invention, is to provide a machine of the above mentioned character which will thoroughly cleanse any can by rotating the can on a turn-table so that all surfaces of the can will be presented to internal and external water jets.

A still further object of this invention is to provide a can washing machine of the character described, having means for rotating the turn-table and common means for operating a water pump to circulate the cleansing fluid through the spray pipe and onto the receptacle being cleansed.

A further object of this invention is to provide a can washing machine of the character described which is comparatively simple in operation and which is constructed of a comparatively few number of parts producing a can washer which is within easy reach of the average dairy owner.

Other objects and advantages of this invention will become apparent during the course of the following description, wherein for the purpose of illustrating the invention attention is directed to the drawings wherein,

Figure 1 is a top plan view of the can washing machine;

Figure 2 is a side elevational view of the same;

Figure 3 is a vertical cross-sectional view taken on line 3—3 of Figure 2, looking in the direction of the arrows, illustrating the can supporting turn-table and showing the internal spray pipe centered therein;

Figure 4 is a fragmentary bottom plan view of the turn-table and its asociated parts, illustrating in detail the manner in which the turn-table is rotated;

Figure 5 is a side elevational view of a rinsing jet, showing a platform operated valve for controlling the supply of fluid to the jet when a can is placed on the platform; and

Figure 6 is a vertical cross-sectional view showing the connection between the walls of the can receiving chamber and the water tank.

In the drawings, wherein for the purpose of illustrating the invention and wherein like reference characters will be employed to designate the same, the reference character 10 will generally be employed to designate a water tank having a bottom wall 11, side walls 12 and end walls 13 and 14. The top of the tank is partially covered as at 15, leaving a square opening in the top of the tank 10.

Rotatably mounted above the squared opening in a turn-table 16 having a hub 17 which is attached or formed integral with a gear 18 capable of engaging a worm wheel 19 mounted on a driven shaft as at 20. The driven shaft 20 has its opposite ends journalled in the end walls 13 and 14 of the water tank and it will be noted that one of the ends of the drive shaft is fitted in a journal 21 while the opposite end extends through the end wall 14 and is provided with a journal box 22. The turntable 16 has its edge beveled as at 23, which edge is adapted to rest and be supported on bevelled rollers 24 carried by suitable brackets 25 secured to the water tank adjacent the squared opening in the top wall thereof. A spindle 26 extends through the bracket and through the bevelled roller 24 for supporting the roller in a rotatable manner and the brackets may be anchored in place by rivets or screws as at 27.

The upper surface of the turn-table 16 is provided with radial ribs 28 which are adapted to space the can from the turn-table when the can is placed thereon as shown in Figure 2 in an inverted position.

A spray pipe 29 extends upwardly through the hub 17 and has its free end as at 30 provided with a series of apertures 31 arranged in spiral relation for the purpose of projecting a stream of water against the interior of all surfaces of the dairy receptacle or can.

The spray pipe 30 is connected to a manifold pipe 32 by means of a union including an elbow 33 and a short coupling pipe 34. The manifold 32 is connected to the exhaust side of a water pump 35 by means of a pipe line 36 connecting the manifold 32 by means of an elbow joint 37. The intake of the pump 35 as at 38 is connected to the water tank 10 by means of a short pipe line 39 extending through the tank as at 40 and connecting an elbow 41 to which is attached a drain tube 42.

Also connected to the exhaust side of the pump 35 and to the manifold 32 are extension pipes 43 by means of unions 44 adapted to supply cleansing fluid under pressure to the stationary spray pipes 45 having a series of jets 46 adapted to direct a spray of cleansing fluid or water to the continuously rotating surface of the can being cleansed. The jets issuing from the perforations 46 may be presented at an angle to the work and preferably in the direction against rotation of the can.

An extension 48 is formed on the bottom wall of the water tank 11 and is adapted to support an electric motor 49 held down by means of a tie bracket 50 secured in place by bolts or the like.

The armature shaft 51 of the motor extends on both sides thereof and on one end of the armature shaft there is provided a pulley 52 over which is trained a belt 53 for driving a pulley 54 secured to the outer end of the driven shaft 20.

The opposite end of the armature shaft 51 is provided with a universal coupling 55 for establishing a connection between the armature shaft 51 and the drive shaft 56 of the pump 35. The drive shaft of the pump 56 is connected to the usual impeller located within the casing of the pump 35. A source of current from a domestic supply line having a switch may be connected to the motor 49 but this is not shown as it is obvious.

When current is supplied to the motor 49, the turn-table 16 will be rotated in a clockwise direction and water fed to the tank 10 will be circulated by the pump 35 through the spray pipes 30 and 45 to cause the interior and exterior of a can marked "A" to be thoroughly cleansed. In addition, to the above mentioned spray pipe, the can may be pre-treated by placing the same on a platform 57 connected to the water tank 10 and braced therefrom by a brace bar 58 so that the can may be subjected to cleansing fluid from the jets 59 and 60. The jets 59 and 60 are supplied with cleansing fluid through a feed pipe 61 connected to a domestic water supply line as at 62 so that when the platform operated valves are operated by placing the can on the pivoted platform 63 and 64, rinsing fluid direct from the domestic water supply 62 may be sprayed into the interior of the cans.

The cans may be pre-treated before being placed on the turn-table 16 and being subjected to the spray of cleansing liquid from the pipes 30 and 45 by placing them on a platform 65 through which projects a spray pipe 66 controlled by the platform 67 when the same is depressed by the weight of the can being placed thereon to open the valve 68. The supply pipe 61 is also connected to the pipe 42 to supply or replenish the water in the tank 10 when the same decreases by reason of loss and to the spray pipe 66. The fitting 80 as shown in Figures 1 and 2 has the supply line 61 connected thereto and said fitting 80 also carries the upright jet or spray pipe 66 as well as being interposed between the pipe 42 and pipe 39 that forms communication between the tank 10 and the pump 35. The fitting 80 includes a multi-way valve operated by the handle 81 and said valve is ported so that in one of its positions communication is formed between the pipe 61 and spray pipe 66 and in another position communication is formed between the supply pipe 61 and pipe 42 that permits the flow of water to the tank 10.

A warm water pipe 69 may supply the jet 60 with rinsing water so that when the can is placed on the platform 64, the valve 70 will be opened to allow the domestic warm water supply to pass into the interior of the milk can.

A guard plate 71 may extend upwardly from the platform 65 so that the water spray will not damage articles placed near the machine. Also, a guard 72 is placed above the turn-table 16 and around the sides thereof and said guard member is provided with a flange 73 on its bottom edges adapted to be attached to the top wall 15 of the water tank 10 by means of screws or the like as at 74. It will be noted that one wall of the guard 72 is removed for the purpose of inserting and removing the can and that the side walls 76 thereof are angularly cut as at 77 so that sharp edges thereof will not be presented in the path of the operator.

It is to be understood that the form of the invention herewith shown and described is to be taken as the preferred embodiment of the same, and that various changes in the shape, size and arrangements may be resorted to without departing from the spirit and scope of the invention as claimed.

I claim:

1. A can washing machine comprising a rectangular water receptacle having an opening in the top wall thereof, rollers mounted on the edge of the opening, a turn-table rotatably supported by the rollers, a spray pipe extending upwardly through the opening and centrally through the turn-table, additional spray pipes extending upwardly through the opening and around the periphery of the turn-table, a pump for circulating liquid from the tank and through the spray pipes, means for rotating the turn-table and selective spray stations adjacent the rectangular receptacle having connection with rinse water supply lines.

2. A can washing machine comprising a rectangular receptacle having an opening in a portion of the top wall thereof, rollers mounted on the edges of the opening, a turn-table supported by the rollers, means for rotating the turn-table, a spray pipe extending upwardly through the opening and centrally through the turn-table, additional spray pipes extending upwardly through the opening adjacent the outside diameter of the turn-table and a pump driven by the turn-table rotating means for circulating liquid from the receptacle through the spray pipes.

WILLIAM W. BARNUM.