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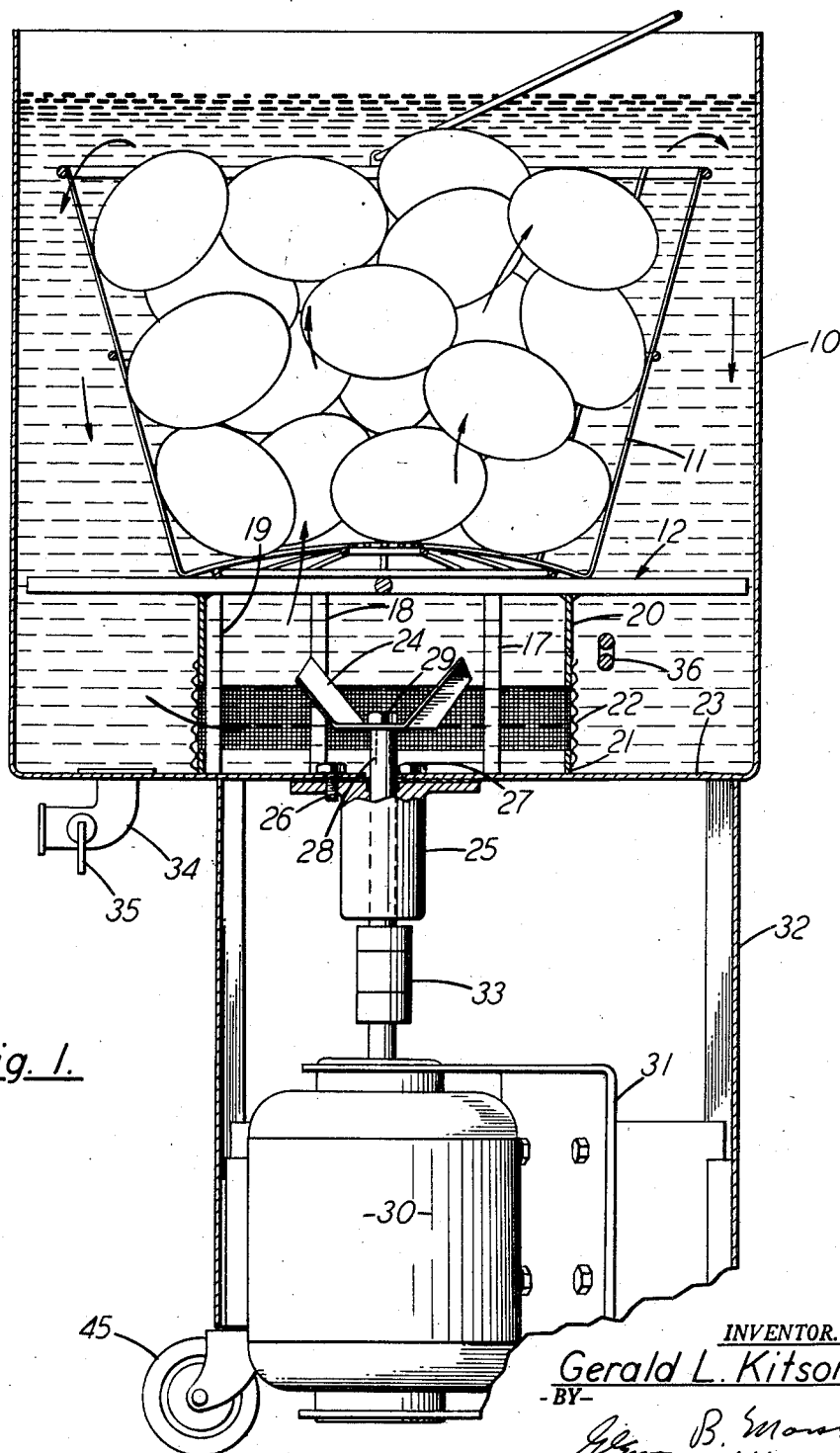
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2,818,077

MACHINE FOR WASHING EGGS

Filed July 20, 1955

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Fig. 2.

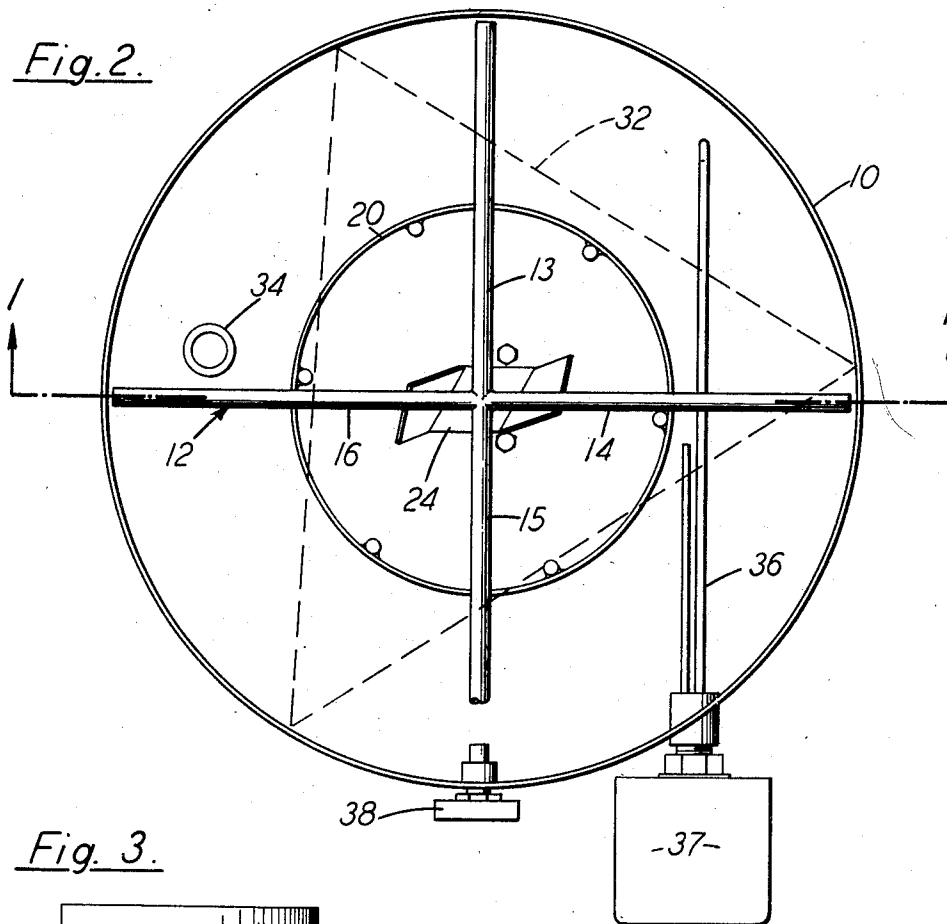
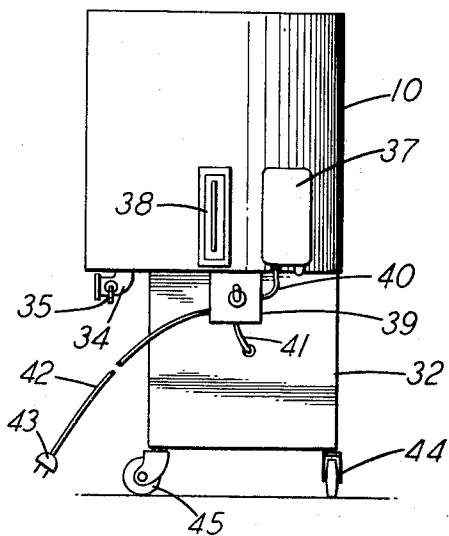


Fig. 3.



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MACHINE FOR WASHING EGGS

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1 Claim. (Cl. 134—111)

Poultrymen have generally recognized the fact that the marketability of eggs is considerably improved by thoroughly washing them. Handling large quantities of such fragile articles in a washing operation presents a problem, however, and it is the purpose of this invention to provide a machine for performing this function without the use of conveying equipment and also without the necessity of agitating or moving the collection of eggs during the process. A machine embodying this invention is capable of thoroughly washing a basket full of eggs without shifting the eggs within the basket, and yet assure that the eggs in the central portion of the mass are properly cleaned.

The preferred form of the machine includes a container of slightly larger dimensions than necessary to accommodate the particular perforate basket in which the eggs are placed, and the container is provided with a support which positions the basket at a distance above the bottom. Circulation of a quantity of liquid within the container is maintained through the use of a propeller on a normally vertical axis, and positioned directly under the center of the egg basket. The action of the propeller tends to direct a stream of liquid upwardly through the center of the eggs, with recirculating flow proceeding radially outward from the upper part of the basket and downwardly along the sides of the container, and then inwardly along the bottom to the propeller area.

An important feature of the invention is the provision of a filter arrangement which continually removes foreign material from the flow of liquid recirculating through the eggs. In the preferred form of the invention, this filter is in the form of a cylindrical section of screen surrounding the propeller. The recirculating flow of liquid passes through the screen as it moves inwardly along the bottom of the container into the propeller area, and entraps any foreign material that has been dislodged from the eggs by the action of the liquid.

A suitable bearing is provided in the floor of the container to accommodate a vertical shaft for driving the propeller, and a motor is preferably mounted exteriorly of the container for supplying power to the shaft. It is also preferable to include an electrical heating element and a thermostat so that the temperature of the recirculating cleaning fluid can be maintained at the desired level. Ordinarily, water is used in the container, and a detergent containing five percent quaternary ammonium is added. This solution is maintained at approximately 120 degrees, and the washing process takes approximately three minutes under these conditions.

The several features of the invention will be discussed in detail through an analysis of the particular embodiments illustrated in the accompanying drawings. In the drawings:

Figure 1 presents a sectional elevation of a complete egg-washing unit.

Figure 2 is a top view of the device shown in Figure 1.

Figure 3 is a view on a smaller scale showing the exterior of the device.

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The illustrated machine includes a container 10 in which a perforate basket 11 containing a quantity of eggs is placed. The basket 11 is preferably of an open wire construction which will provide the minimum resistance to the recirculation of cleaning solution. The basket 11 is supported on a frame generally indicated at 12 which includes the radially-extending horizontal members 13, 14, 15, and 16, and also includes vertically-arranged legs as indicated at 17, 18, and 19 in Figure 1. Imperforate cylindrical sections 20 and 21 surround the legs, and are separated by the filter screen 22. The net effect of the frame 12 is not only to support the basket 11 in spaced relationship above the bottom 23 of the container, but to provide a conduit for a stream of liquid within the container so that the flow thereof induced by the propeller 24 is directed upwardly through the eggs contained in the basket 11. As this recirculating flow progresses, it moves radially outward at the top toward the sides of the container 10. The flow then moves downwardly along the sides of the container toward the bottom, and from there radially inward through the screen 22 and into the propeller area where upward flow is again resumed. During this recirculating flow, foreign material washed from the eggs within the basket 11 is entrapped on the outside of the screen 22. The entire frame 12 including the screen 22 may be removed readily for cleaning.

A bearing unit 25 is secured to the bottom 23 of the container by bolts as indicated at 26 and 27 in Figure 1. A shaft 28 supports the propeller 24, which is secured in position by the bolt 29. A motor unit indicated at 30 is mounted on the bracket 31 secured to the base frame 32, and drives the shaft 28 through the coupling indicated at 33.

A drain outlet 34 provided with a valve 35 is mounted in the bottom 23 of the container, and the temperature of the liquid within the container is maintained through the action of the electric heating element indicated at 36. A heater thermostat 37 controls the action of the heating element 36, and a thermometer 38 is preferably incorporated for recording the temperature of the liquid within the container 10. A relatively conventional junction box 39 is mounted on the lower frame 32, and power is distributed from it to the heater thermostat 37 by a cable indicated at 40, and to the motor 30 by the cable 41. A cable 42 terminates in a plug 43 for engagement with a power receptacle in the conventional manner. The machine is preferably provided with casters as indicated at 44 and 45 for ease of maneuvering.

The particular embodiments of this invention which have been illustrated and described herein are for illustrative purposes only and are not to be considered as a limitation upon the scope of the appended claim. In this claim, it is my intent to claim the entire invention disclosed herein except as I am limited by the prior art.

I claim:

An egg-washing machine, comprising: a container for liquid; bearing means intersecting the bottom of said container and disposed on a normally vertical axis; a shaft rotatably mounted in said bearing means; propeller means mounted on said shaft and disposed within said container; motor means mounted exteriorly of said container and operative to drive said shaft; removable supporting frame means establishing a perforate platform above said container bottom; filter means on said supporting frame defining a space around said propeller means and underneath said supporting means; means forming a conduit normally above said propeller means and extending normally upwardly to a point adjacent said perforate platform, and communicating with said space defined by said filter means; and perforate basket means normally disposed on top of said supporting frame means,

the bottom of said basket means being substantially co-extensive with the adjacent portion of said conduit, said propeller means maintaining a recirculating flow of liquid upwardly through the central portion of said basket means, down along the sides of said container, and thence inward along the bottom of said container through said filter means.

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