Nov. 6, 1951 L. R. DOLSON ET AL 2,574,252

EGG WASHER

Filed May 16, 1947 2 SHEETS—SHEET 1

Fig. 1.

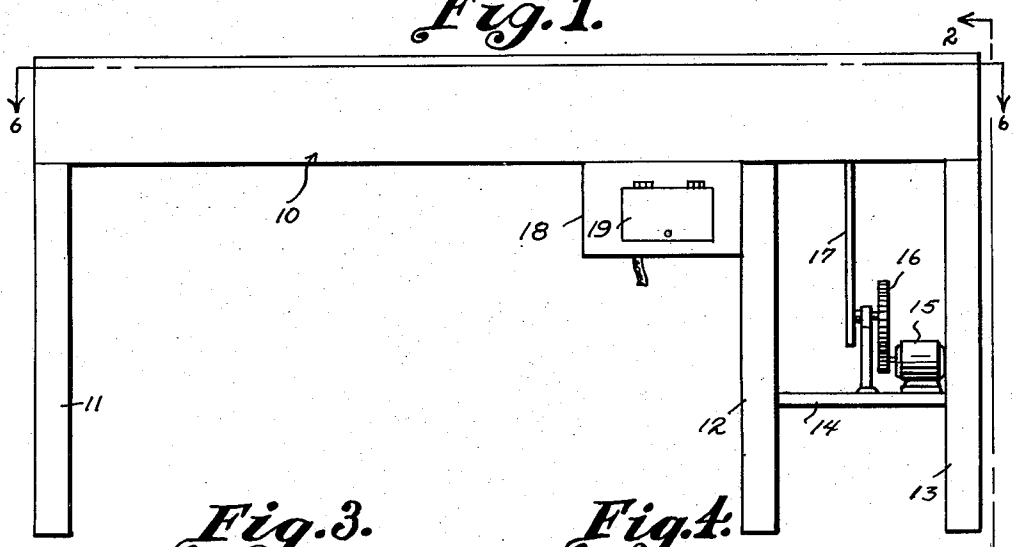


Fig. 3.

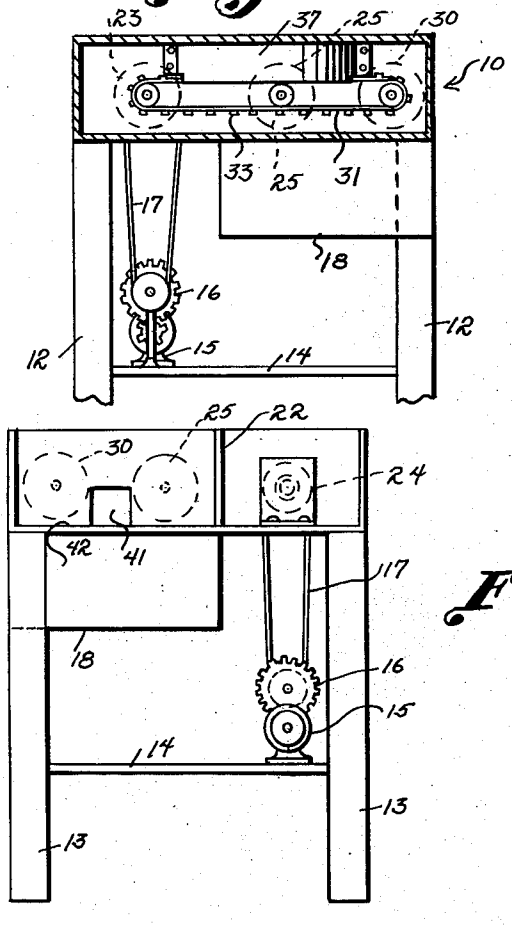


Fig. 4.

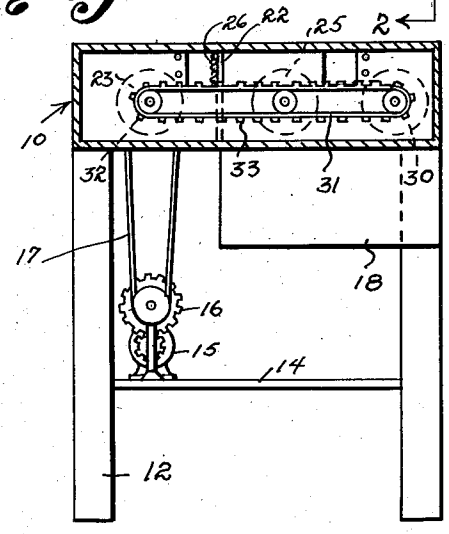


Fig. 2.

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Fig. 5.

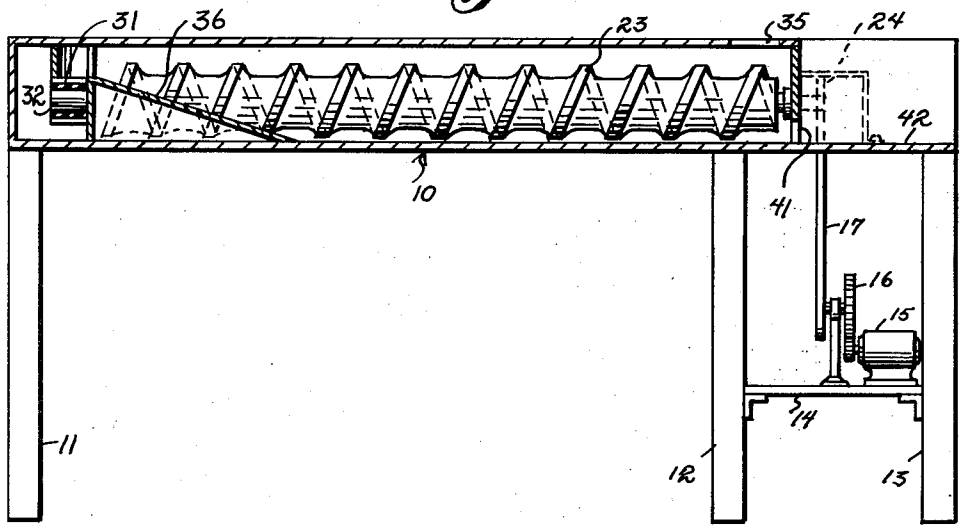


Fig. 6.

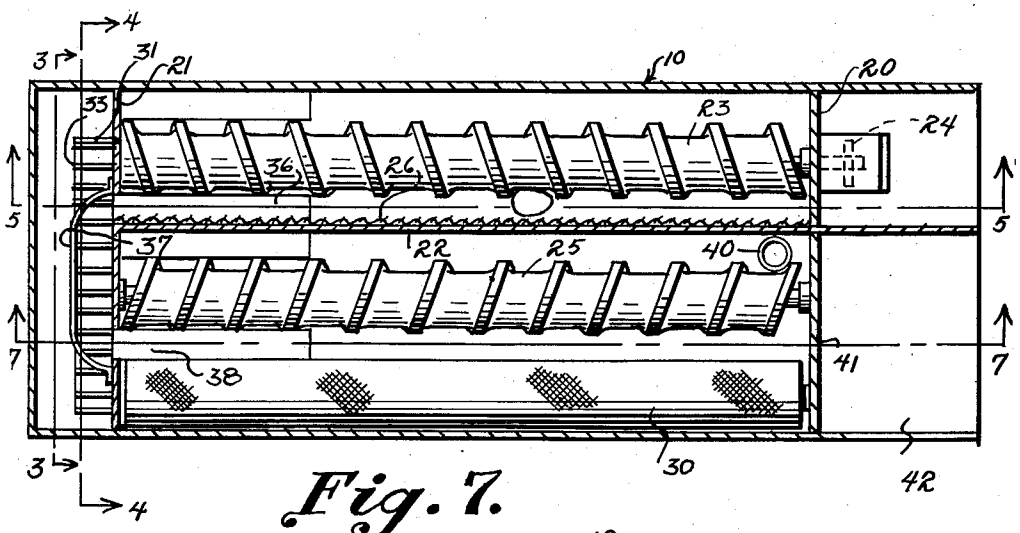
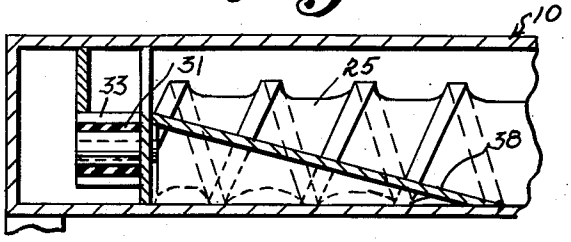


Fig. 7.



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2,574,252

EGG WASHER

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Application May 16, 1947, Serial No. 748,476

4 Claims. (Cl. 15—3.13)

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This invention relates to an egg washer and cleaner, and more particularly to such a device adapted for the washing and cleaning of eggs in commercial quantities.

A primary object of this invention is the provision of an improved egg washer and cleaner which may be readily operated by a single operator, and which will, in a single operation wash, clean and dry a relatively large number of eggs.

An additional object of the invention is the provision of such a device wherein eggs are fed into one end of the device, and returned to the same end thereof for packing.

A further object of the invention is the provision of such a device, which due to its unique construction utilizing padded rollers, operates with relatively small egg breakage.

Still another object of the invention is the provision of such a device which is sturdy and durable in construction, efficient and reliable in operation, and relatively inexpensive to manufacture, assemble and utilize.

Still other objects reside in the combination of elements, arrangement of parts, and features of construction, all as will be more fully pointed out hereinafter and disclosed in the accompanying drawing wherein there is shown a preferred embodiment of this inventive concept.

In the drawings:

Figure 1 is a side elevational view of one form of the device embodying features of the instant invention.

Figure 2 is a sectional view taken substantially along the line 2—2 of Figure 1 as viewed in the direction indicated by the arrows.

Figure 3 is a sectional view taken substantially along the line 3—3 of Figure 6 as viewed in the direction indicated by the arrows.

Figure 4 is a sectional view taken substantially along the line 4—4 of Figure 6 as viewed in the direction indicated by the arrows.

Figure 5 is a sectional view taken substantially along the line 5—5 of Figure 6 as viewed in the direction indicated by the arrows.

Figure 6 is a sectional view taken substantially along the line of 6—6 of Figure 1 as viewed in the direction indicated by the arrows, and

Figure 7 is an enlarged fragmentary sectional view taken substantially along the line 7—7 of Figure 6 as viewed in the direction indicated by the arrows.

Similar reference characters refer to similar parts throughout the several views of the drawing.

Referring now to the drawings in detail, the

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device of the instant invention comprises a rectangular body portion, generally indicated at 10, and carried by supporting legs 11, 12, and 13. A shelf 14 extending between supporting legs 12, and 13, is adapted to carry a suitable electric motor 15, which drives through suitable gearing 16, a belt 17, which in turn drives other elements to be more fully described hereinafter. Suspended beneath the body portion 10 is a supplemental cabinet 18, adapted to contain an electric heater and fan of any desired conventional type, such for example, as the so-called Wessex heater. Access may be had to the heater through a hinged door 19.

Referring now particularly to the body portion 10, it will be seen, that, as best shown in Figure 6 transverse partitions 20 and 21 extend thereacross at spaced intervals from the end of the body, and that a longitudinally extending partition 22 divides the body into two longitudinal compartments. A padded helix 23 providing a screw conveyor is journaled for rotation in the end walls 20 and 21, and is provided at one extremity with a suitable pulley 24, adapted to be driven by the belt 17. A second helix 25 providing a screw conveyor oppositely disposed relative to helix 23 is positioned in the other compartment, and suitably journaled in the partitions 20 and 21. The side of the partition 22 adjacent helix 23 is provided with padding material 26.

A drying roller 30 is provided in alignment with helix 25, and in the same compartment therewith. Helix 25 and drying roller 30 are adapted to be driven by means of a belt 31, surrounding the stub axle extending through the partition 21, and also surrounding the axle 32 of helix 23, belt 31 also serving as a conveyor belt, being provided with cleats 33 on the outer surface thereof, for a purpose to be more fully described hereinafter.

The apparatus is fully covered, and is provided in its top with a single aperture 35 (see Figure 5) positioned between the helix 23 adjacent one end thereof and the padded partition 22, to permit the insertion of eggs thereinto. The compartment formed surrounding the helix 23 is adapted to be partially filled with suitable cleaning fluid, disinfectant, and the like, and as will be readily apparent an egg dropped thereinto is fed by the helix in the direction indicated by the arrows in Figure 6 towards the opposite end of the compartment. At this end of the compartment a ramp 36 is provided which leads upwardly to the conveyor belt 31, an arcuate guide rail 37 being provided to guide eggs which pass up the ramp

36 and through a suitable aperture in the partition 21 onto the belt, and from the belt to a downwardly extending ramp 38, which deposits them between the helix 25 and the drying roller 30. The winding of the helix 25 being opposite to that of the helix 23, it will be seen that although the helices are rotated in the same direction the path of travel in the compartment containing helix 25 is opposite to that of the path of travel in the compartment containing helix 23. This latter compartment comprises a drying compartment, and is provided with an aperture 40 in the base thereof communicating with the compartment 18 containing a heater, through which warm dry air is blown into the compartment. The roll 30 may be covered with absorbent material, and thus expedite the drying of the eggs. The end wall 20 provided with an aperture 41, positioned between the helix 25 and the drying roller 30, from which the washed and dried eggs are adapted to be deposited on a padded drying table 42 or the like, from which they may be readily transferred to cartons, or other desired localities.

From the foregoing the operation of the device should now be readily understandable. A single operator may stand at the end of the machine, and position eggs individually through the aperture 35, into the cleaning tank, through which they will be fed by the helix to the ramp 36, and thence to the conveyor belt 31, where they will be guided by the guide rail to the ramp 38 down into the drying tank, being fed gradually between the helix 25 and the drying roller 30 and out the outlet 41, to the drying table, from which they may be readily removed for any desired purpose. It will thus be seen that there is herein provided a compact, simple, efficient unitary device for individually cleaning and drying eggs in a relatively rapid time, which accomplishes all the objects of this invention, and others, including many advantages of great practical utility and commercial importance.

As many embodiments may be made of this inventive concept, and as many modifications may be made in the embodiment hereinbefore shown and described, it is to be understood that all matter herein is to be interpreted merely as illustrative and not in a limiting sense.

We claim:

1. In an egg washer and dryer, a body portion including a receptacle having a longitudinally extending partition therein, and transverse partitions adjacent the opposite ends of the receptacle, said longitudinally extending partition dividing said receptacle into washing and drying compartments, parallel disposed egg guiding helices in each compartment and journalled at their opposite ends in said transverse partitions, said helices being oppositely spiralled to convey eggs from one end of the receptacle to the other, and then back to the original end, a drying roller having an absorbent covering thereon journalled at its ends in the transverse partitions in the drying compartment in parallel relation to the helix therein, a conveyor belt for conveying eggs from one compartment to the other in one end of said body outwardly of the transverse partition at that end, said belt having operational engagement with the ends of the helices and the end of the drying roller, means for rotating the helix in said washing compartment so that the rotation of said latter helix will, by means of the belt, cause simultaneous rotation of said helices and said roller, and said transverse partition adjacent said

conveyor belt having apertures therein in alignment with the washing and drying compartments upwardly inclined ramps at the end of the helices adjacent the conveying belt for feeding the eggs onto the belt in alignment with the apertures in the transverse partition and receiving the eggs therefrom, an arcuate shaped guide rail overlapping the upper ends of the ramps and the apertures in the transverse partition above the conveyor belt for guiding the eggs on the belt from one compartment to the other, resilient padded outer surfaces on said helices and cushioning means on the partition longitudinally dividing the receptacle to prevent damage to the eggs during the washing and drying thereof.

2. In an egg washer and cleaner, the combination which comprises an elongated horizontally disposed casing having a longitudinally disposed dividing partition extended therethrough providing a washing tank in one side and a drying compartment in the other, a layer of padding material on the side of the partition positioned in the tank, a screw conveyer having threads spaced to receive eggs journaled in the tank side of the casing and positioned whereby eggs carried thereby brush against the padded material on the partition, a rotary drying roll journaled in the drying compartment of the casing, another screw conveyer having threads spaced to receive eggs journaled in the said drying compartment of the casing parallel to the said drying roll and positioned to hold eggs in wiping contact with the said drying roll, means rotating the said screw conveyers, and a transversely disposed feeder conveyor for feeding eggs from the tank to the screw conveyer in the drying compartment of the casing.

3. In an egg washer and cleaner, the combination which comprises an elongated horizontally disposed casing having a longitudinally disposed dividing partition extended therethrough providing a washing tank in one side and a drying compartment in the other, a layer of padding material on the side of the partition positioned in the tank, a screw conveyer having threads spaced to receive eggs journaled in the tank side of the casing and positioned whereby eggs carried thereby brush against the padded material on the partition, a rotary drying roll journaled in the drying compartment of the casing, another screw conveyer having threads spaced to receive eggs journaled in the said drying compartment of the casing parallel to the said drying roll and positioned to hold eggs in wiping contact with the said drying roll, a transversely disposed feeder conveyer at one end of the casing positioned to receive eggs from the screw conveyer in the tank, guiding means positioned to coact with the said feeder conveyer for receiving eggs from the screw conveyer of the tank and delivering the said eggs to the screw conveyer of the drying compartment, and means rotating the said screw conveyers, feeder conveyer, and drying roll.

4. In an egg washer and cleaner, the combination which comprises an elongated horizontally disposed casing having a longitudinally disposed dividing partition extended therethrough providing a washing tank in one side and a drying compartment in the other, a layer of padding material on the side of the partition positioned in the tank, a screw conveyer having threads spaced to receive eggs journaled in the tank side of the casing and positioned whereby eggs carried thereby brush against the padded material on the partition, a rotary drying roll journaled in the drying

compartment of the casing, another screw conveyer having threads spaced to receive eggs journaled in the said drying compartment of the casing parallel to the said drying roll and positioned to hold eggs in wiping contact with the said drying roll, a transversely disposed feeder conveyer at one end of the casing positioned to receive eggs from the screw conveyer in the tank, guiding means positioned to coact with the said feeder conveyer for receiving eggs from the screw conveyer of the tank and delivering the said eggs to the screw conveyer of the drying compartment, said screw conveyers including padded rollers with spiral ribs thereon, means supplying heat to the said drying compartment, and means rotating the said conveyers.

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