S. EBERLY.

CAN RIGHTING MACHINE.

APPLICATION FILED SEPT. 20, 1920.

1,422,943.

Patented July 18, 1922.

3 SHEETS—SHEET 1.

Fig. 1.

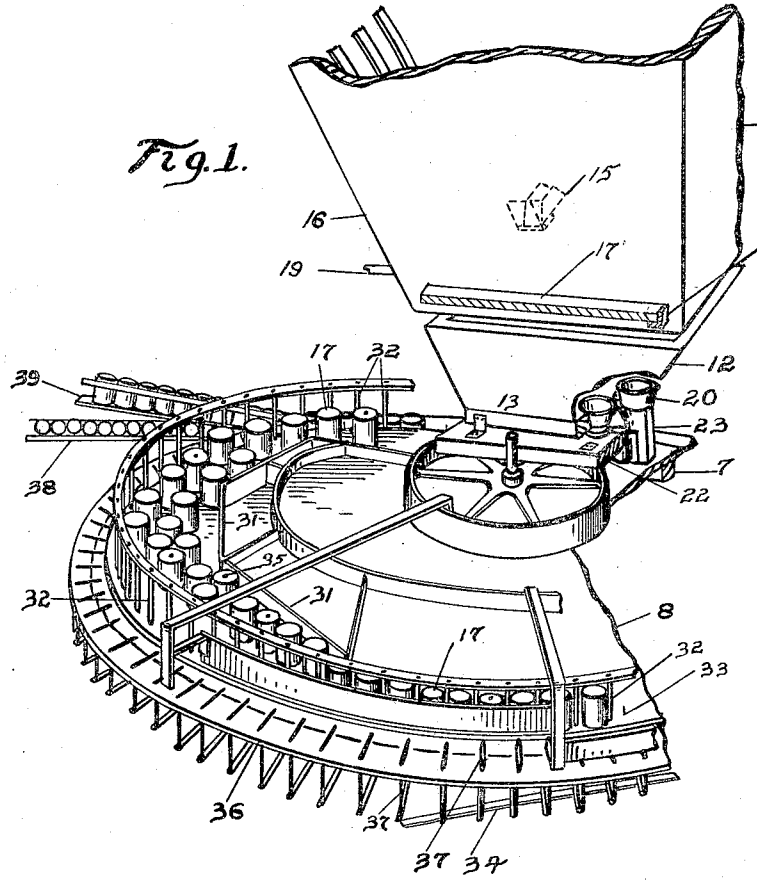
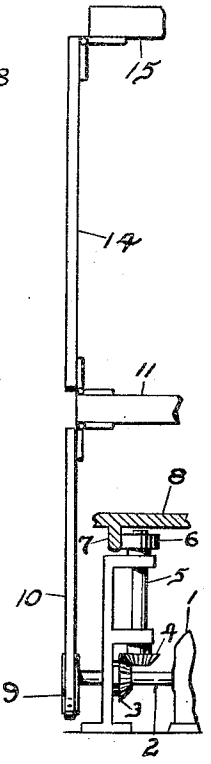


Fig. 2.



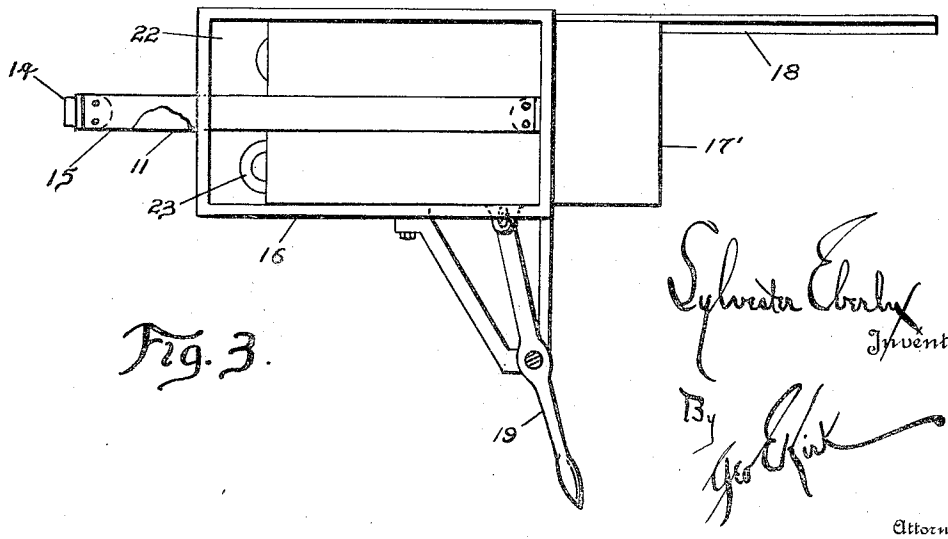


Fig. 3.

Sylvester Eberly
Inventor

By Geo. E. Kirk

Attorney

S. EBERLY.

CAN RIGHTING MACHINE.

APPLICATION FILED SEPT. 20, 1920.

1,422,943. Patented July 18, 1922.

3 SHEETS—SHEET 2.

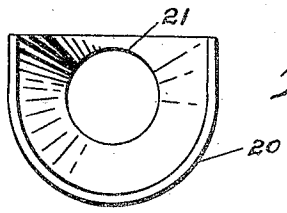
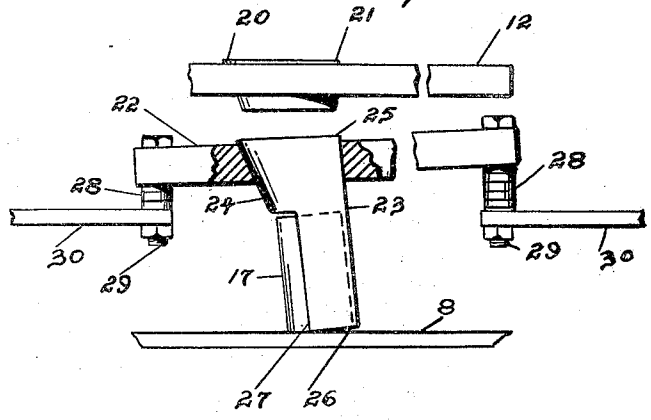


Fig. 4

Fig. 5



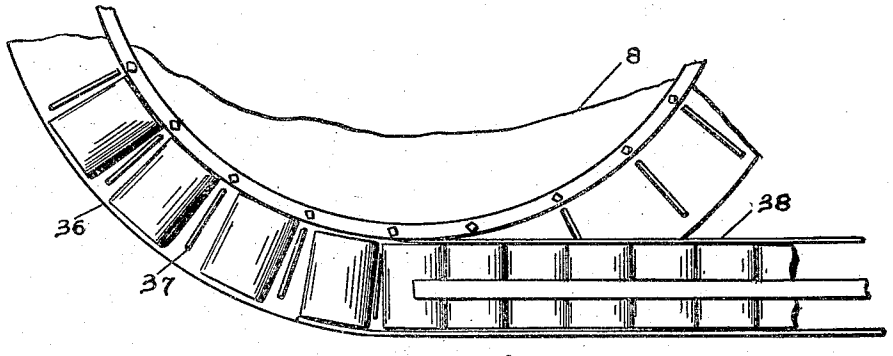


Fig. 6

Sylvester Eberly Inventor

By

Attorney

S. EBERLY.

CAN RIGHTING MACHINE.

APPLICATION FILED SEPT. 20, 1920.

1,422,943. Patented July 18, 1922.

3 SHEETS—SHEET 3.

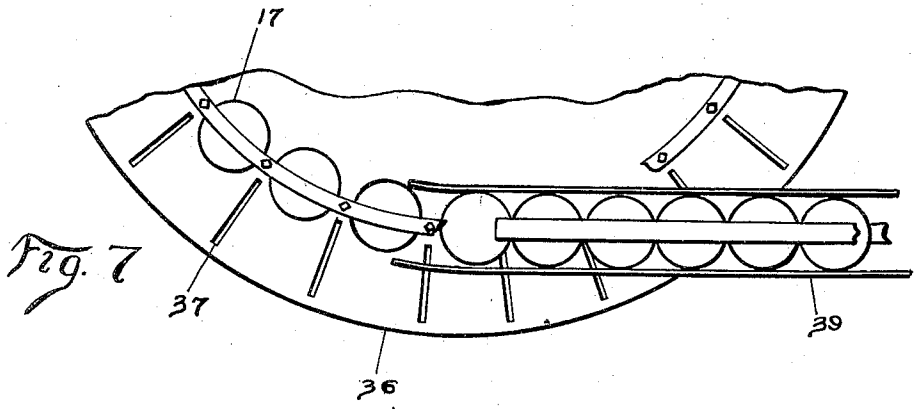


Fig. 7

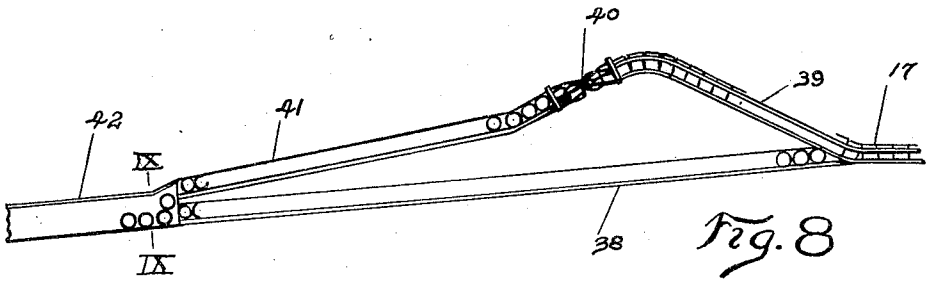


Fig. 8

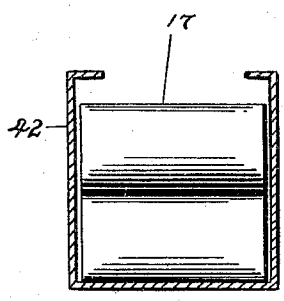


Fig. 9

Sylvester Eberly
Inventor

By Geo. Kirk

Attorney

UNITED STATES PATENT OFFICE.

SYLVESTER EBERLY, OF TOLEDO, OHIO, ASSIGNOR TO DAVID A. YODER, OF TOLEDO, OHIO.

CAN-RIGHTING MACHINE.

1,422,943. Specification of Letters Patent. Patented July 18, 1922.

Application filed September 20, 1920. Serial No. 411,456.

To all whom it may concern:

Be it known that I, SYLVESTER EBERLY, a citizen of the United States of America, residing at Toledo, Lucas County, Ohio, have invented new and useful Can-Righting Machines, of which the following is a specification.

This invention relates to sorting or righting containers or vessels of cylindrical form having tops and bottoms.

This invention has utility when incorporated in apparatus for grouping or arranging cans, especially such as are used for containing liquid, as evaporated milk, so that they have their filling or top openings all in the same direction.

Referring to the drawings:

Fig. 1 is a fragmentary perspective view of an embodiment of the invention in a can righting machine for cans having a central filling opening in one end;

Fig. 2 is a detail view of shaker and agitator connections of the can supply means;

Fig. 3 is a plan view of the hopper valve and agitator;

Fig. 4 is a plan view of can delivery funnel;

Fig. 5 is a fragmentary view in side elevation of the can delivery means to the sorting table of the machine;

Fig. 6 is a fragmentary plan view of the selected or sorted can way from the machine for on-side travel;

Fig. 7 is a fragmentary plan view of the way for the remaining on-end cans from the machine;

Fig. 8 is a view, with parts broken away of the consolidation means for the two streams of cans; and

Fig. 9 is a section on the line IX—IX, Fig. 8.

Motor 1, provided with shaft 2 carrying bevel gear 3 in mesh with bevel gear 4 on upstanding shaft 5 carrying friction disk 6 in contact with depending flange 7, serves to drive main table 8 of the sorting mechanism.

The shaft 2 also carries eccentric 9 from which upwardly extends link 10 to bar 11 of shaker hopper 12 having hinge mounting 13 above the table 8. Upward from the bar 11 extends another link 14 hinged to agitator bar 15 extending through the main or reserve supply hopper 16.

Cans 17 tumbled promiscuously into the main hopper 16 may not clog therein, due to the action of the jolting bar 15 in its agitating movement slightly up and down keeping the bulk of cans loose against jamming or packing. To preclude excess delivery or over-supply to the shaker 12, valve or slidable member 17′ may be shifted along the guide 18 by handle 19 to vary the outlet capacity of the main hopper 16.

The cans falling past the valve 17′ land in the shaker 12, and, due to the vibration thereof, tumble about to work one end downward in single file or one at a time into funnels 20 shown as having abrupt side 21 on the side thereof toward which the table 8 moves in coming under the shaker 12 to take the cans therefrom.

Below the shaker 12 is a fixed or non-vibratory frame 22 (Fig. 5) having outlet members 23 of tubular form disposed to register with the funnels 20 of the shaker 12. These outlet members 23 have upper funnel portions 24, with an abrupt side 25 similar to the shaker funnels 20, 21. The funnel tubular member has bottom 26 open, and likewise an open side 27 from such open bottom. The lateral opening 27 is on the side away from which the table 8 moves in withdrawing an on-end can 17 from the outlet member 23. In operating this machine for capacity output, the angular velocity of the traveling table 8 has a tendency to disturb the equilibrium of the cylindrical vessels being deposited thereon. To give such stability to these discharged cans or containers, the outlet guide tubes 23 may be adjusted for a slight inclination by so tilting that the can will tend to have its forward edge reach the table 8 first. Under this mode of operation, the movement of the table causes the can 17 to land flat on its end. The adjustment of the tilt as well as clearance of the outlet tube 23 from the table 8 is brought about by inserting washers 28 on bolts 29 mounting the frame 22 on the supports 30.

The cans 17 on-end upon the tablbe 8, in table rotation, are directed by non-traveling guides 31 to single file position or arrangement about the table outer portion between the posts 32. Centrally of the space between adjacent posts 32 is a pin 33 controlled by fixed cam 34, to rise, and if not registering with a filling opening 35 in a can 17, it will strike the imperforate or bot-

tom end of the can and in lifting such can throw it over on its side upon flange extension 36 of the table 8, where bars 37, also controlled by the cam 34, maintain stalls for the cans on-side. In the rotation of the table, the on-side cans are deflected upon way 38 to roll therealong (Fig. 6).

The on-end cans remaining from these selected or thrown out on-side cans of the way 38 all have the perforate filling opening down. These on-end cans are also crowded off the rotating table 8, by table rotation to slide along way 39. This table with its co-acting device is accordingly mechanism effecting sorting and arranging of the cans. As the on-end cans are positively thrust upon the way 39 by the posts 32, there is propelling means to cause this stream of cans to move up the incline of the way 39 (Fig. 8), to descend through 90° swirl in a right hand turn to end on-side on the same direction as the on-side cans of the way 38. Chute 41, from the swirl 40 is disposed directly over the way 36 for delivering to consolidation way 42 wherein the cans may roll down in all grouping into a single stream of one can on-side high.

There is in this disclosure, a positive selecting and movement of each can from arrival at the selecting position. As so handled the machine may be speeded up to materially increase the capacity. The number of cans may be regulated as to the number of filling machines being used, or the rate of operation of these machines, independently of changing the speed of the table 8, or shutting down the table for intermittent operation, by merely adjusting the valve 17'. In operating the machine at 400 cans per minute and even upward therefrom, the quick shiftings of the cans are all so positively controlled that there is no knocking of the cans about. All the selecting and moving is done smoothly and speedily with no lost movement of the cans. The cans seem to just naturally take the path and proceed as a stream to a common grouping or arrangement.

What is claimed and it is desired to secure by Letters Patent is:

1. A supply hopper, mechanism for arranging vessels and to which mechanism the hopper may deliver cylindrical vessels, an agitator in the hopper, and driving means for the mechanism and said agitator.

2. A supply hopper, mechanism for arranging vessels and to which mechanism the hopper may deliver cylindrical vessels, and a valve for adjusting flow of vessels from the hopper to the mechanism.

3. Mechanism for arranging cylindrical vessels, supply means thereto including a shaker provided with an outlet through which but one vessel may travel at a time, said mechanism including a table movable past the discharge end of the outlet, and a funnel entrance for the outlet abrupt on the side from which the table comes toward the outlet.

4. Mechanism for arranging cylindrical vessels including a traveling table, and supply means to the table including a tubular outlet member through which but one vessel may pass at a time, said member being open toward the table and on the side away from which the table moves, and further tilted to direct a vessel to have its edge on the side through the side opening of the member reach the table first.

5. Mechanism for arranging cylindrical vessels including a traveling table, supply means to the table including a tubular outlet member through which but one vessel may pass at a time, said member being open toward the table and laterally on the side away from which the table moves, and means for adjusting the clearance of the member as to the table.

6. Mechanism for arranging cylindrical vessels including a traveling table, means for selecting vessels from the table, a way to which the selected vessels are delivered from the table, a second way to which the remaining vessels are driven by the table, and means for consolidating the two vessel streams in a single way embodying a device for similarly disposing the vessels of the two ways.

7. Mechanism for arranging cylindrical vessels embodying means for arranging the vessels on-end, selecting means for disposing selected vessels from on-end to on-side position, a support for the on-side vessels, a way to which the on-side vessels may roll, a way to which the remaining on-end vessels are forced by the mechanism including a swirl for turning these on-end vessels to end the same direction as the on-side vessels, thereby forming two rolling streams of vessels ended the same direction, and a chute for delivering the swirled vessels into the stream of the other vessels.

In witness whereof I affix my signature.

SYLVESTER EBERLY.