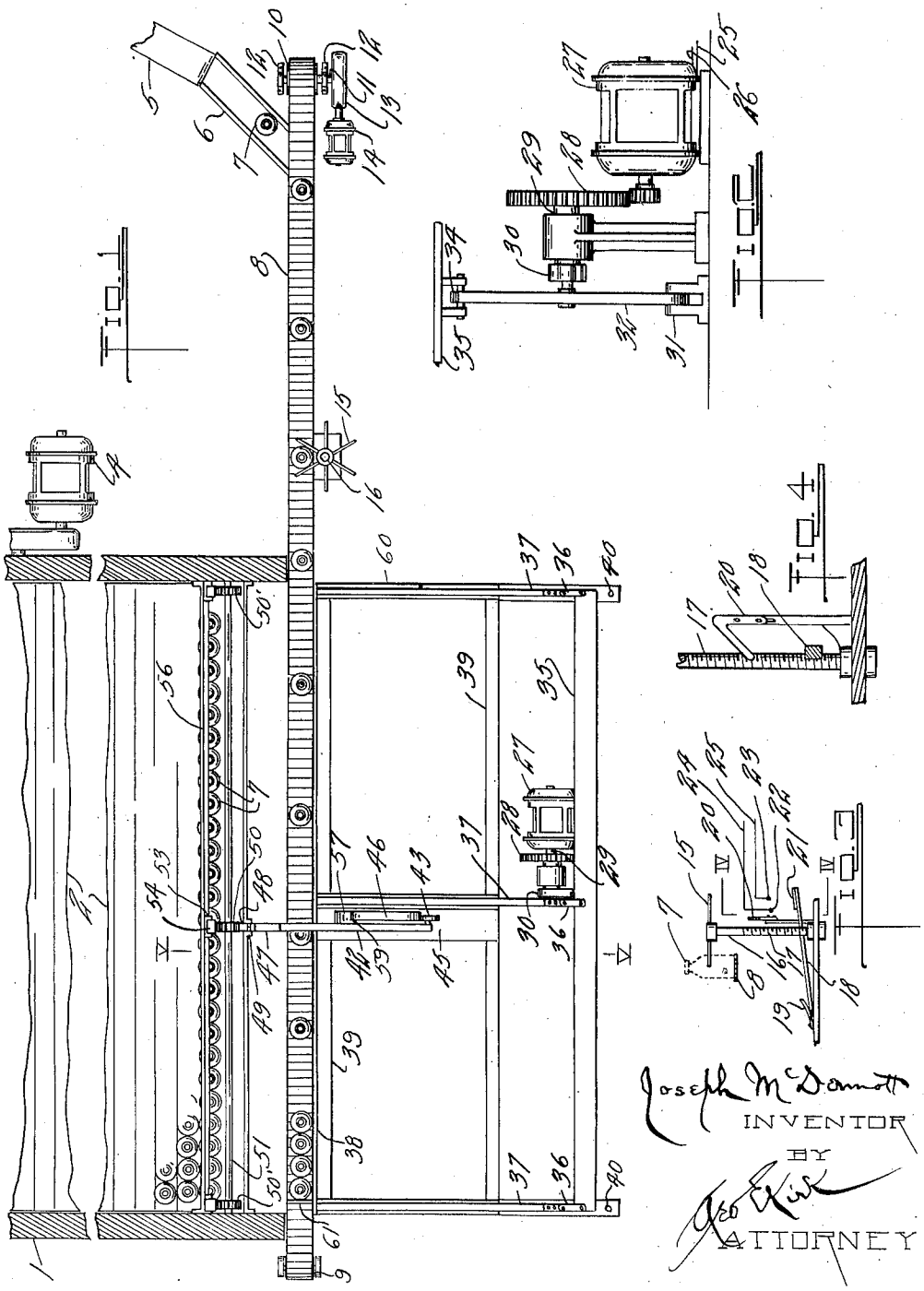
Oct. 27, 1925. 1,558,691

J. McDERMOTT

LEER CHARGING MECHANISM

Filed July 23, 1924 2 Sheets-Sheet 1



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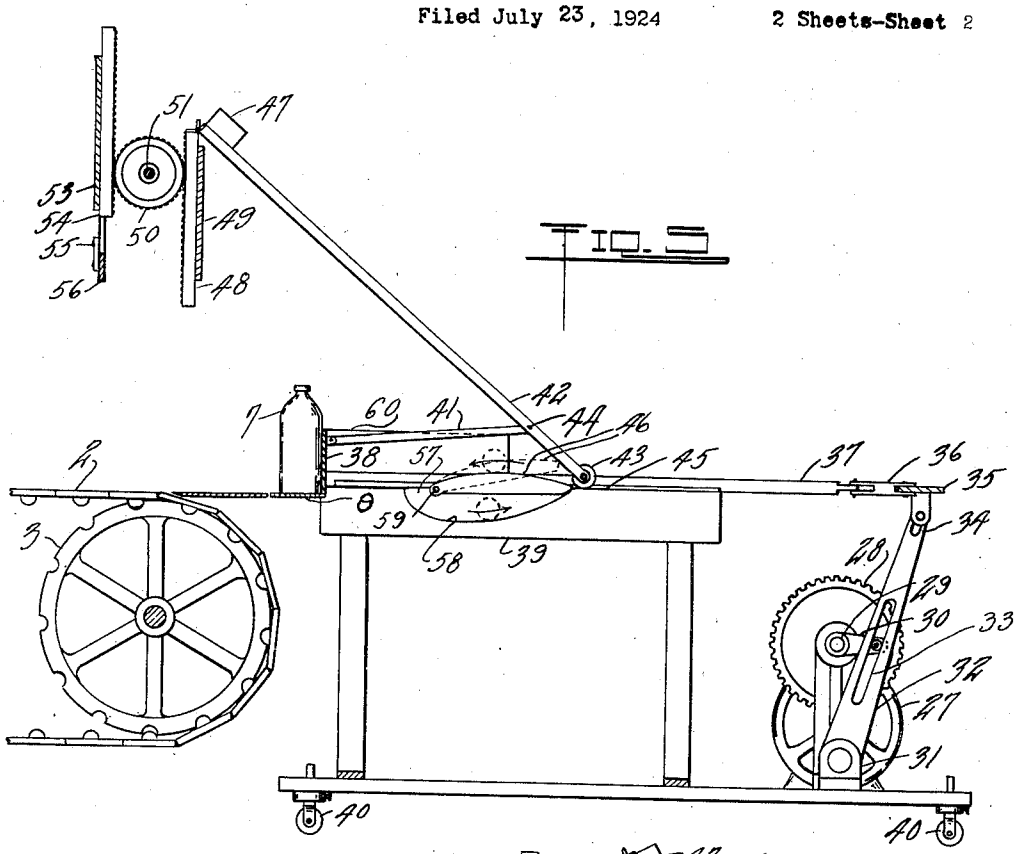


FIG. 5

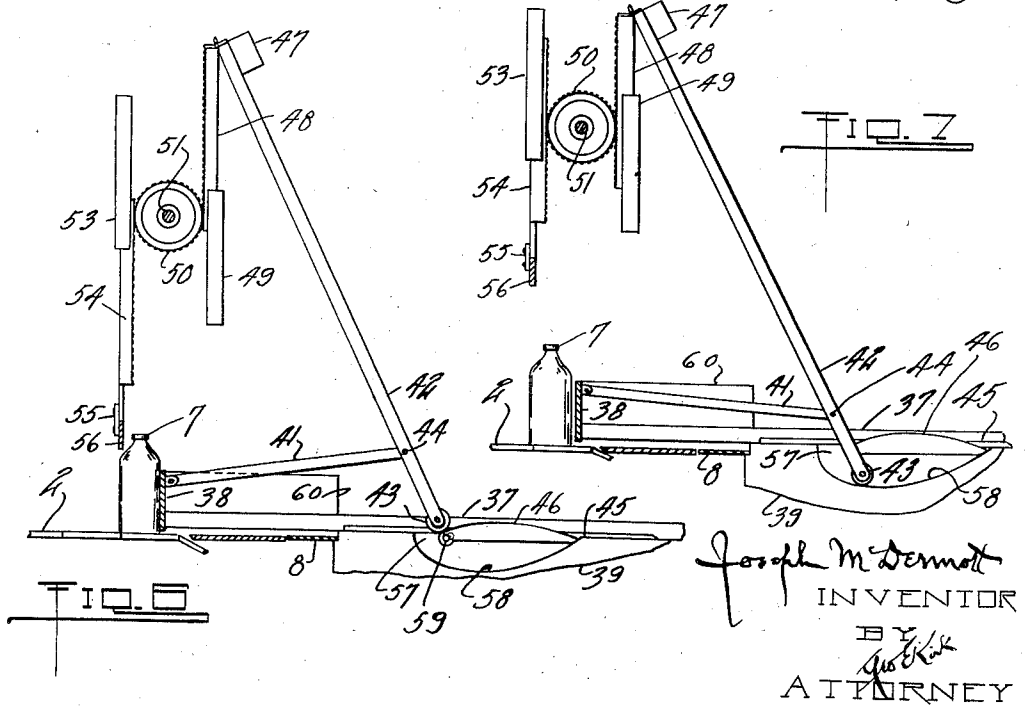


FIG. 7

FIG. 8

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UNITED STATES PATENT OFFICE.

JOSEPH McDERMOTT, OF TOLEDO, OHIO.

LEER-CHARGING MECHANISM.

Application filed July 23, 1924. Serial No. 727,722.

To all whom it may concern:

Be it known that I, JOSEPH McDERMOTT, a citizen of the United States of America, residing at Toledo, Lucas County, Ohio, have invented new and useful Leer-Charging Mechanisms, of which the following is a specification.

This invention relates to thrusting, as a group, a plurality of articles from a conveyor.

This invention has utility when incorporated in leer chargers, and, more particularly, as adapted for handling bottles in transferring such from a supply conveyor to a leer.

Referring to the drawings:

Fig. 1 is a plan view, with parts broken away, of an embodiment of the invention as a leer charger for conveying bottles as manufactured to a leer to there be annealed;

Fig. 2 is a detail view of features of the drive for the transfer device or charger;

Fig. 3 is a detail view of a controller or counter for determining the timing of the pushing operations of the transfer device;

Fig. 4 is a view on the line IV—IV, Fig. 3;

Fig. 5 is a section on the line V—V, Fig. 1, showing the transfer device in starting position;

Fig. 6 is a view of features of the transfer device in fully thrust forward position; and

Fig. 7 is a similar view of the transfer device as starting to recover.

Leer 1 is shown as having therein transversely extending pans or flights of conveyor 2, passing over follower wheel 3. This first conveyor is driven by motor 4. Delivery means 5 by way of chute 6 conducts newly blown bottles 7, as ware to be annealed, to conveyor 8 extending transversely of the leer 1 and in proximity to follower wheel 3, so that this conveyor 8 rides very closely to the flights 2 of the first conveyor. This conveyor 8 has idler follower wheel 9 and live driving wheel 10. The wheel 10 is mounted on shaft 11 which wheel 10 is actuated by the shaft 11 mounted in brackets 12 driven through speed reduction gearing 13 from motor 14. The motor 4 may give a slow speed continuous travel to the first or leer conveyor 2, while the motor 14 may give a continuous and somewhat more rapid travel to the transverse or second conveyor 8.

As the articles or ware 7 travel along the conveyor 8, such ware is effective to operate counter-wheel 15 (Figs. 1, 3, 4) on shaft 16 having threaded portion 17 with which may coact arm 18. This arm 18 as engaging the threaded portion 17 of the shaft 16 is thus lifted against the resistance of spring 19 adjacent the pivotal mounting in the arm 18. Adjustable trip-guide 20 provides an inclined face which serves to thrust this arm 18 out of engagement with the threaded portion 17 at a determined point in the operation of the shaft 16 as contact 21 has closed the circuit between the contacts 22, 23. This arm 18 as thus released is thrown by the spring 19 to shift the contact 21 out of engagement with contacts 22, 23, to open this circuit. Such contact 21, as the arm 18 was lifted, effected closing of circuit in lines 24, 25, so that current from lines 25, 26, operated motor 27, and through speed reduction gearing 28 imparted one complete rotation to shaft 29 carrying crank 30 as determined by the interval of the contact 21 maintaining its circuit closed. The throwing of the arm 18 opened this circuit.

Bracket 31 serves as a fulcrum for upstanding lever 32 having slot 33 coacting with the crank 30. Accordingly, upon rotation of the shaft 29, the lever 32 is rocked, and is effective through slotted connection 34 to reciprocate bar 35. The bar 35 has adjustable connections 36 for thrusting bars 37 connected to pusher bar 38 parallel to the bar 35. This pusher bar 38 and its control mechanism is mounted on frame 39 carried by rollers 40, and may be brought into adjusted position as to the second conveyor 8.

From the bar 38 extends, away from the conveyor 8 and toward the bar 35, link 41 to lever 42 having at its lower end roller 43. In the reciprocation of the pusher bar 38 as effected by the crank 30, this link 41 in effecting transfer of the bottles 7 from the conveyor 8 to a leer flight, moves transversely of the conveyor 8, and in such movement is effective through the link 41 and the lever 42 to have the lever 42 rock on its bearing connection 44 with the link 41 as the roller 43 travels from way portion 45

over way portion 46. The upper free end of this lever 42 carries counter-weight 47 and has detachable pivotal connection with rack 48 held by keep 49 in mesh with pinion 50 on rock shaft 51 carried by the leer.

Accordingly, in this upward movement of the upper end of the lever 42, the shaft 51 is rocked. Keep 53 serves to hold racks 54 in position against the opposite side of the pinion 50 from the rack 48 and in mesh with evener pinions 50′ on said shaft 51. Suspended below this rack 54 and connected thereto by adjustable means 55 is a guard 56 parallel to the pusher bar 48. This mechanism effects simultaneous control of this guard 56 as the pusher 38 has its ware shifting travel. The pusher 38 is moved horizontally, while the guard 56 is moved vertically. This guard 56 in its lowered position is forward of the upper portion of the ware 7 when such ware is thrust from the conveyor 8 upon the conveyor 2, and thereby in the rapid operation precludes toppling of such ware 7 over.

As this thrust travel for the ware is completed, the roller 43 rides beyond the way 46 and enters by throat 57 way 58 so that in the return travel of the pusher 48 as effected by the crank 30, the roller 43 rides under the guide portion 46 mounted on pivot 59, and swings such guide portion 46 upward on such pivot 59 as the roller 43 rides out of the way 58 back to the way 45. This depression or change for return travel by the way 58 for the roller 43, holds guard 56 in a steadying position as to the ware 7 for the brief interval after the thrusting forward of such ware for the conveyor 8.

However, as the roller 43 returns to the way 45, the guard 56 has been lifted clear of the ware 7 so that in the travel of the conveyor 2 with the ware 7 thereon, such ware is cleared by the guard 56, and such guard 56 does not return to the toppling preventing position until the next thrust forward of the pusher 48 as determined by the threaded portion 17 lifting the arm 18.

The trip 20 is adjusted to accommodate such number of bottles 7 as required to fully charge a row transversely of the leer 1. There is, accordingly, a simple provision herein for rapidly and definitely delivering into a leer ware for annealing, and such delivery of ware may be in compact relationship with positive positioning of such ware in a close up row. The placing of the rows one behind the other may also be in close relationship as determined by the relative speeds of the supply of bottles and the speed of the conveyor 2.

Arm 60 fixed with the pusher 38 rides over the conveyor 8 and holds back movement of any bottles 7 as actuated by the conveyor 8, so that during the pushing operation, the conveyor 8 is clear of ware back of the pusher bar 38. As soon as the pusher bar 38 has come to its recover or starting position, the guard plate 60 fixed therewith is also clear of such conveyor 8 and the conveyor 8 may be effective for shifting the ware along into position against fixed stop 61 at the opposite side of the leer.

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

1. A leer comprising a first conveyor therethrough, a transverse second conveyor thereinto in position adjacent said first conveyor, and an independent transfer device shiftable relatively to said two conveyors into position at an end of the leer and alongside the second conveyor, said transfer device embodying a pusher for moving ware from the second conveyor to the first conveyor.

2. A leer comprising a first conveyor therethrough, a transverse second endless conveyor thereinto in position adjacent said first conveyor, an independent transfer device shiftable relatively to said two conveyors into position at an end of the leer and alongside a reach of the second conveyor, said transfer device embodying a pusher for moving ware from the second conveyor to the first conveyor, and means for determining the charging of ware from the second conveyor to the first conveyor, said means being connected to control the operation of said pusher.

3. A leer comprising a first conveyor therethrough, a transverse second conveyor thereinto into position adjacent said first conveyor, and an independent transfer device shiftable relatively to said two conveyors into position at an end of the leer and alongside the second conveyor, said transfer device embodying a pusher for moving ware from the second conveyor to the first conveyor, said pusher including a guard movable into ware coacting position as ware is thrust by the pusher from the second conveyor to position upon the first conveyor toward said guard.

4. A leer comprising a first conveyor therethrough, a transverse second conveyor thereinto in position adjacent said first conveyor, an independent transfer device shiftable relatively to said two conveyors into position at an end of the leer and alongside the second conveyor, said transfer device embodying a pusher for moving ware from the second conveyor to the first conveyor, said pusher including a guard movable into ware coacting position as ware is thrust by the pusher from the second conveyor to position upon the first conveyor toward said guard, and connection from the pusher for clearing the guard from the ware as the pusher moves away from the guard.

5. A leer charger comprising a horizontally shiftable ware moving pusher, a guard

for holding ware against toppling over as shifted by said pusher; control connections therebetween embodying linkage, a rock shaft, a rack and pinion connection therefrom to said pusher, and rack and pinion connection therefrom to said guard, and pusher actuating means for simultaneously controlling said guard and pusher.

6. A leer charger comprising a horizontally shiftable ware moving pusher, a vertically shiftable guard, an actuator for the pusher, a link therefrom; a lever to which the link is connected, a roller carried by the lever, a rack to which the lever extends, a pinion, a rock shaft carrying said pinion and with which the rack is in mesh, and an additional rack in mesh with said pinion and connected to said guard.

In witness whereof I affix my signature.

JOS. McDERMOTT.