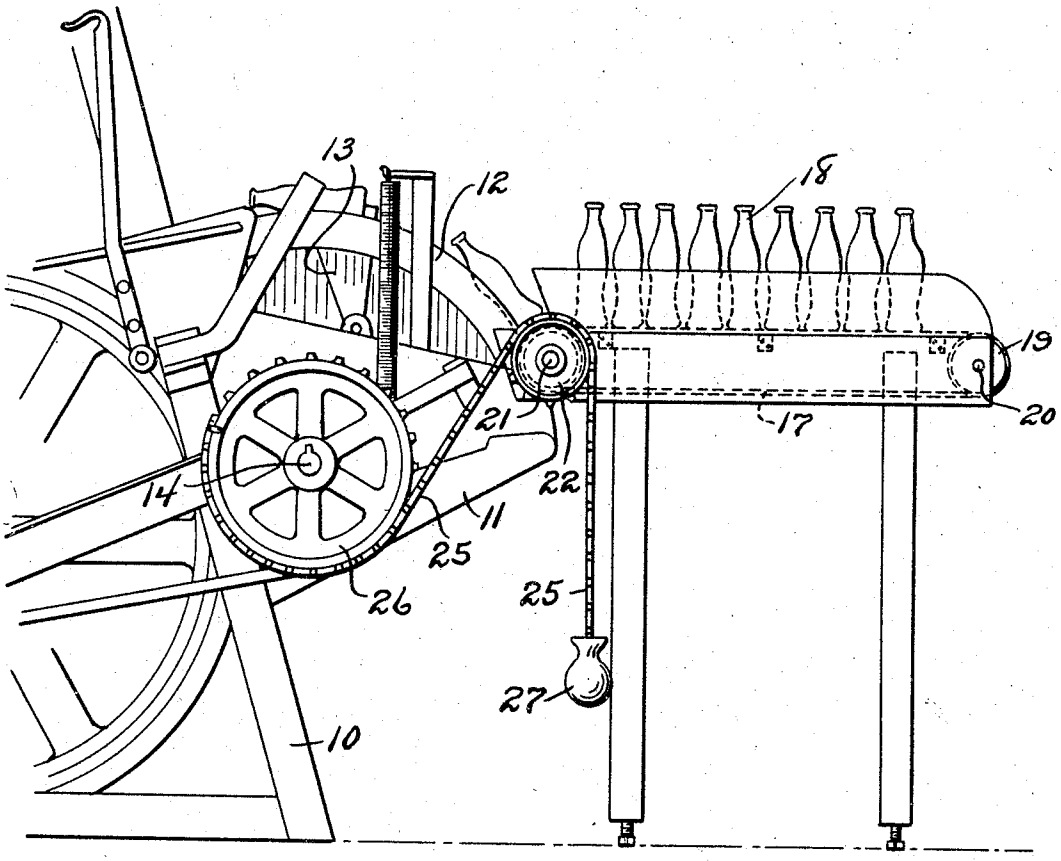
Aug. 5, 1930. F. E. FOWLER 1,772,418

CONVEYER FOR BOTTLE WASHING MACHINES

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Fig. 1.



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Fig. 2.

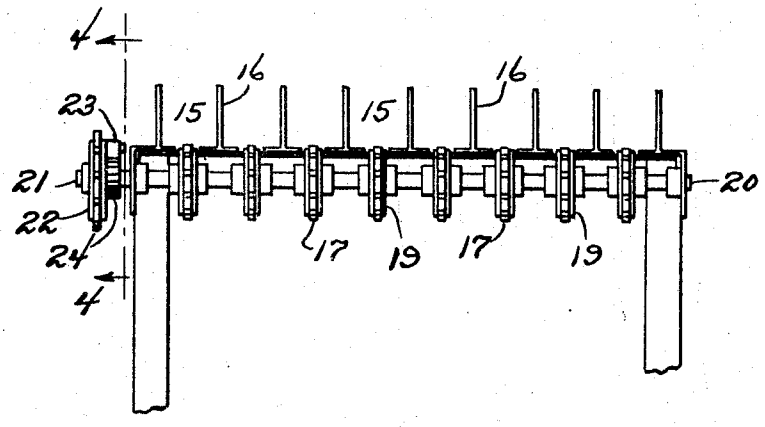


Fig. 3.

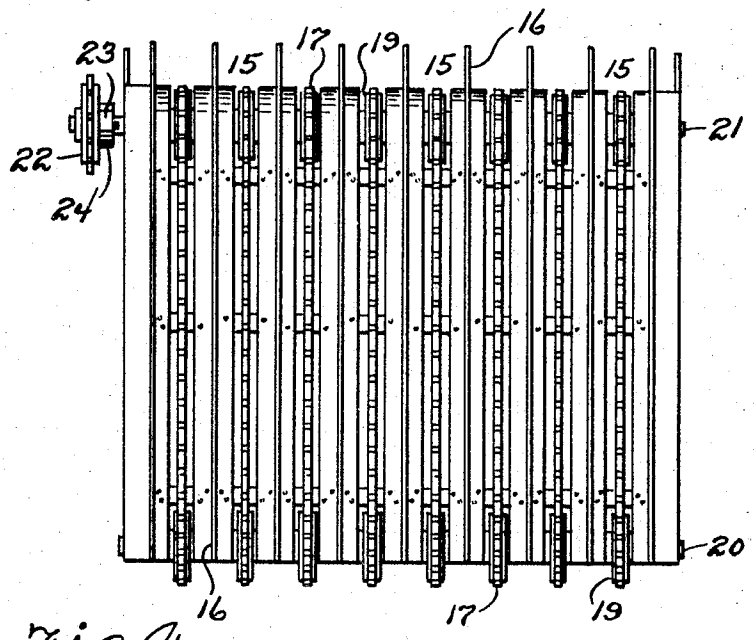
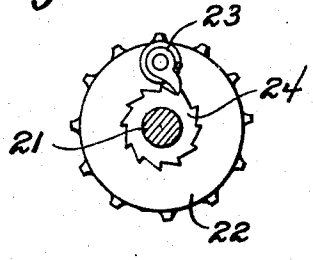


Fig. 4.



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CONVEYER FOR BOTTLE-WASHING MACHINES

Application filed March 8, 1929. Serial No. 345,415.

This invention relates to improvements in bottle washing machines and has for an object the provision of means for automatically feeding the bottles to the machine so that a single attendant may sort and arrange the bottles for feeding and thus dispense with the services of a helper or sorter.

Another object of the invention is the provision of a bottle feeding machine which may be applied to a type of bottle washing machine now in use, without requiring changes in the construction of the washing machine.

Another object of the invention is the provision of a feeding mechanism which is simple in construction, reliable in use, and in which the maximum number of bottles may be arranged for feeding and thus leave an interval of time for the attendant to sort remaining bottles.

With the above and other objects in view, the invention further includes the following novel features and details of construction, to be hereinafter more fully described, illustrated in the accompanying drawings and pointed out in the appended claim.

In the drawings:—

Figure 1 is an elevation showing a fragmentary portion of a bottle washing machine with the invention associated therewith.

Figure 2 is an end view of the feeding troughs.

Figure 3 is a top view.

Figure 4 is an enlarged fragmentary sectional view taken substantially on the line 4—4 of Figure 2.

Referring to the drawings in detail wherein like characters of reference denote corresponding parts, the invention which is designed to be used in connection with a type of bottle washing machine now in use is shown in Figure 1 as associated with the loader. In this figure a portion of the frame of the bottle washing machine is indicated at 10, while the loader is indicated at 11. This loader includes arcuate shaped tracks 12 over which the bottles are moved to the washing machine proper, movement being effected by fingers 13 which are operatively associated with the reciprocatory shaft 14. A number of tracks 12 are arranged across the loading mechanism 11 so that a number (for example eight) of bottles may be moved by the loader at each operation, there being a finger 13 for each bottle.

The foregoing is the usual type of loading mechanism which forms a part of the bottle washing machine referred to and the feeding mechanism which constitutes the present invention is utilized in conjunction therewith.

This feeding mechanism comprises a plurality of horizontally arranged troughs 15 which are open at each end and which register with the tracks 12, there being one of these troughs for each of the tracks, so that as the bottles are moved longitudinally of the troughs in a manner to be explained, they will pass from the troughs onto the tracks of the loading mechanism.

The troughs 15 are shown as being formed of inverted transversely T-shaped rails 16 which are spaced apart to receive chain conveyers 17, there being one of these conveyers arranged centrally of each trough and extending slightly above the bottom of the trough. The bottles, which are indicated at 18, are thus moved along the bottoms of the troughs through their engagement with the conveyers.

The conveyers 17 are in the form of chains which travel over sprockets 19 mounted upon shafts 20 and 21, the latter being the driving shaft of the conveyers.

Mounted for free rotation upon the shaft 21 is a sprocket 22 and this sprocket carries a pivotally mounted spring influenced dog 23 which engages a ratchet gear 24 fast upon the shaft 21. Movement of the sprocket 22 in one direction will thus rotate the shaft 21 and drive the conveyer chains 17, while movement in an opposite direction will permit the sprocket to run free of the shaft so that no movement of the conveyer chains will occur.

Extending over and engaging the sprocket 22 is a chain 25. One end of this chain is connected with the shaft 14 through the medium of a relatively large sprocket 26, while

the opposite end of the chain carries a weight 27.

The bottles are placed by the attendant into the troughs 15 of the feeding mechanism and the first row of bottles adjacent the loading mechanism is engaged by the fingers 13 and moved upward over the tracks 12 to the washing machine. During this movement the sprocket wheel 26 moves in the direction of the arrow shown in Figure 1 and the sprocket wheel 22 runs free upon the shaft 21, the chain moving under the influence of the weight 27. No movement of the conveyer chains 17 will occur.

After the fingers 13 reach their limit of forward movement they move in an opposite direction so that the shaft 14 and consequently the sprocket 26 will move in a reverse direction, that is, in a direction reverse to that indicated by the arrow in Figure 1. The chain 25 will thus move the sprocket 22 in the direction of the arrow shown in Figure 1 so that the conveyer chain 17 and consequently the bottles 18 will be moved toward the loading mechanism as long as the sprocket 22 moves in this direction. This is due to the fact that the dog 23 engages the ratchet gear 24 and locks the sprocket to the shaft 21. Another row of bottles will thus be in position for engagement by the fingers 13 when the latter again move forward and upward.

The washing machine referred to has an output of eighty bottles per minute so that then movements of the fingers 13 are required to load the machine. The feeding mechanism of the present invention holds ninety-six bottles, or twelve bottles to each trough 15, so that after the machine is fully loaded, two rows or eighteen bottles remain in the feeding mechanism, giving the attendant sufficient time to sort his bottles before it becomes necessary to reload the feeding mechanism.

Of course the capacity of the feeding mechanism may vary with the capacity of different types of bottle washing machines.

The invention is susceptible of various changes in its form, proportions and minor details of construction and the right is herein reserved to make such changes as properly fall within the scope of the appended claim.

Having described the invention what is claimed is:—

The combination with a bottle washing machine having a loading mechanism including a reciprocatory shaft, bottle moving fingers operable simultaneously therewith, of a bottle feeding mechanism including a horizontally disposed trough having an open end disposed adjacent the loading mechanism, an endless conveyer operating within the trough to feed the bottles to the loading mechanism, a driving shaft, means connecting the driving shaft with the endless conveyer, a sprocket mounted freely upon the driving shaft, a ratchet mechanism connecting the sprocket and driving shaft, a weighted chain engaged over the sprocket of the driving shaft, and means connecting the chain with the reciprocatory shaft to move said chain and operate the conveyer when the reciprocatory shaft is operated.

In testimony whereof I affixed my signature.

FRANK E. FOWLER.