C. H. LOEW AND J. R. GRUETTER.

LABEL SEPARATOR AND REMOVER FOR BOTTLE WASHING APPARATUS.

APPLICATION FILED JUNE 30, 1919.

1,423,342. Patented July 18, 1922.

2 SHEETS—SHEET 1.

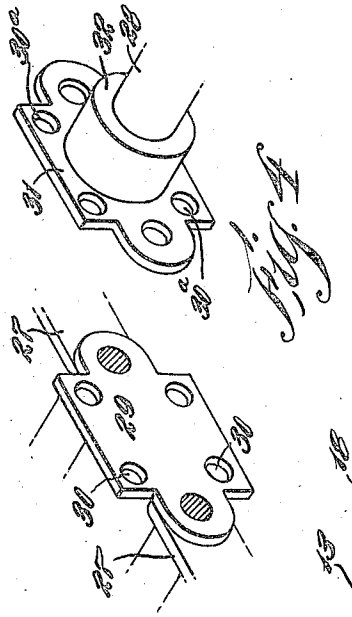


Fig. 4.



Fig. 3.

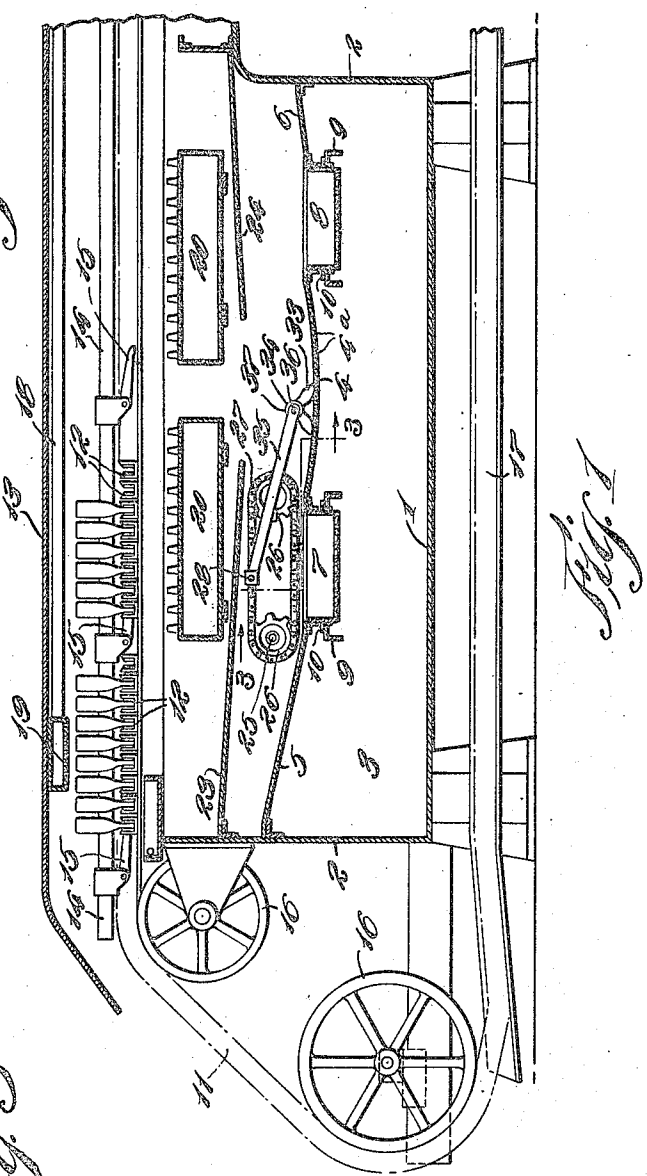


Fig. 1.

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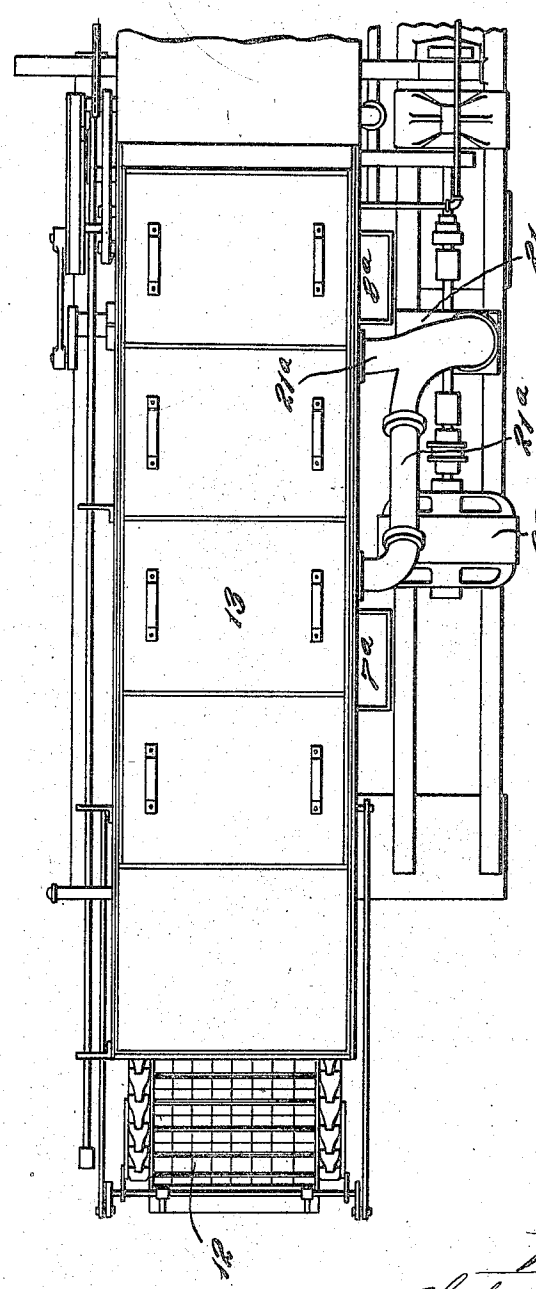


Fig. 2.

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# UNITED STATES PATENT OFFICE.

CHARLES H. LOEW AND JOHN R. GRUETTER, OF CLEVELAND, OHIO, ASSIGNORS TO THE LOEW MANUFACTURING COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

## LABEL SEPARATOR AND REMOVER FOR BOTTLE-WASHING APPARATUS.

1,423,342. Specification of Letters Patent. Patented July 18, 1922.

Original application filed March 17, 1917, Serial No. 155,422. Divided and this application filed June 30, 1919. Serial No. 307,840.

*To all whom it may concern:*

Be it known that we, CHARLES H. LOEW and JOHN R. GRUETTER, citizens of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Label Separators and Removers for Bottle-Washing Apparatus, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

This invention relates to bottle washing apparatus, and more particularly to the means for collecting the labels and sediment dislodged from the bottles during the washing operation, this application being a division of our application No. 155,422 filed March 17, 1917. It is the general purpose of the invention to provide an apparatus of this character with simple and effective means for the collection and removal of the labels, without interference with the ordinary operation of the apparatus, and particularly without delay in or detriment to the supply of cleansing liquid to the bottles.

We realize the foregoing objects in and through the construction shown in the drawings forming part hereof, wherein Fig. 1 represents a longitudinal sectional view through a portion of a bottle washing apparatus embodying our invention; Fig. 2 is a plan view of a portion of such apparatus; Fig. 3 is a sectional detail corresponding to the line 3—3 of Fig. 1; and Fig. 4 is a detail in perspective of the connection between the label remover and the endless belt by which it is driven.

The apparatus shown in Figs. 1 and 2 may be substantially identical with that shown in our application hereinbefore referred to. In these views, 1 denotes the bottom wall, 2 the end walls and 3 one of the side walls of a tank. The lower part of this tank forms a receptacle for the cleansing solution for the bottles and, in order to prevent the access of labels and other sediment to such solution, a cover for the liquid in such receptacle is provided, said cover comprising a centrally curved shelf section 4 extending transversely between the side walls 3 and upwardly inclined sections 5 and 6, the central section 4 being perforated, as indicated at $4^a$ for the drainage of liquid discharged therefrom. Interposed between the bottom of each cover section 5 and 6 and the adjacent end of the intermediate or shelf section 4 is a box, the boxes being indicated at 7 and 8 respectively and each having the bottom and side walls thereof perforated to permit liquid carried thereinto with the labels to be drained into the lower or receptacle portion of the tank. One end of each of the boxes 7 and 8 will project through a side wall 3, to permit of their convenient removal, and the projecting portion of each box may be provided with a cover indicated at $7^a$ and $8^a$. The boxes are slidably mounted upon rails 9, by means of angle irons 10, the rails being conveniently supported by the side walls of the tank.

An endless bottle conveyor is indicated at 11, the said conveyor comprising a plurality of transverse bottle supporting frames 12, which conveyor is advanced intermittently through the apparatus, beneath the roof 13 and above the liquid receptacle, as by means of a pawl-carrying rod 14 on each side of the tank, each rod having a plurality of detent pawls 15 and being reciprocated, as by means of an electric motor and suitable connections, such as shown and described in our aforesaid application. The conveyor is shown as conducted around the guide wheels 16, its lower branch or section being supported by a suitable longitudinal track 17 beneath the tank.

Liquid for washing the bottles externally may be delivered from the liquid receptacle through a pipe 18 and a spray box 19 located above the bottle conveyor, while liquid for washing the insides and outsides of the bottles may be supplied to the same from the same receptacle by means of a pair of jet boxes 20 each having nozzles, the boxes being supplied with liquid from the tank 1, as by a pump 21 supplied from said tank, driven by the electric motor 22 and delivering liquid to the boxes 19 and 20 thereof the pipes $21^a$ and suitable connections such as shown, described and claimed in our aforesaid application.

Above the inclined walls 6 and between the jet boxes 20 and said walls are the imperforate walls 23 and 24. These walls extend transversely of the tank from opposite ends thereof, having their adjacent ends

spaced from each other and adapted to deliver labels upon the central section 4 therebeneath.

With the construction and arrangement of parts thus far shown and described, it will be evident that any labels and other sediment removed from the bottles by the action of the liquid supplied from the boxes 19 and 20 will be delivered to the central shelf 4 of the roof above the liquid in the bottom of the tank. Two pairs of stud shafts 25 are carried by the side walls 3 and project inwardly therefrom. These stud shafts are provided with sprocket wheels 26. A pair of sprockets on each side of the tank drives a chain, indicated at 27. To the proximate sides of these laterally spaced chains, a rod 28 is connected, a convenient manner of effecting this connection being indicated in Fig. 3, wherein a special side plate 29 is provided for each chain, each of which side plates is extended to provide openings 30 adapted to register with corresponding openings $30^a$ in a similar plate 31 having a sleeve 32 which supports the adjacent end of the rod 28. The plates 29 and 31 being connected, as by means of bolts $30^b$ extending through the said openings 30 and $30^a$, the two chains will serve to drive the rod 28.

The rod 28 operates a label remover which is arranged to reciprocate upon the central perforate shelf section 4 of the label collecting roof. The label remover is shown as a forked scraper each fork having a scraping edge 33, the central portion 34 of the scraper being pivotally connected to links 35, as by means of pins 36 extending through openings in lugs 37 on the scraper. The opposite ends of the links 35 are pivoted upon the rod 28, through sleeves 38. The rod is shown as provided with stop collars 39 which cooperate with the sleeves 38 to center the links upon the rod.

With the parts constructed and arranged as described, it is believed that the operation will be easily understood. Labels and sediment dislodged from the bottles will be conducted to the curved central shelf section 4. The liquid delivered with the labels and sediment will drain through the perforations of this section. The chains 27 may be driven in any convenient manner from the motor 22 as shown and described in our application No. 155,422 aforesaid. This will cause the label remover to be reciprocated upon the shelf section 4, removing the labels therefrom into the boxes 7 and 8. Any surplus liquid conducted into these boxes will drain through the openings thereof into the receptacle beneath and may be re-used for the treatment of other bottles.

The construction described herein provides economical means for collecting and removing labels from a bottle washing apparatus and one which has proven to be extremely efficient in operation.

Having thus described our invention, what we claim is:—

1. In an apparatus of the character described, the combination of a liquid receptacle, a bottle support above said receptacle, a label collecting shelf below said support and above the bottom of the receptacle, an endless rotary carrier above said shelf, and a label engaging device attached to said carrier and cooperating with said shelf to remove labels therefrom.

2. In an apparatus of the character described, the combination of a shelf, a bottle support above said shelf, a label receiving device below said shelf, and means movable along said shelf for removing labels therefrom and delivering the same to the said device.

3. In an apparatus of the character described, the combination of a liquid receptacle, a bottle support above said receptacle, a shelf having liquid draining means and arranged below the bottle support and above the bottom of said receptacle, a collecting box or chamber in operative relation to said shelf, and label removing means cooperating with the said shelf to remove the labels therefrom into said box or chamber.

4. In an apparatus of the character described, the combination of a liquid receptacle, a bottle support above said receptacle, a shelf having liquid draining means and arranged below the bottle support and above the bottom of said receptacle, a collecting box or chamber having a bottom provided with liquid draining means and extending through the said wall of the receptacle, an endless rotary carrier above said shelf, and a label engaging device attached to said carrier and cooperating with said shelf to move the labels therefrom into said box or chamber.

5. In an apparatus of the character described, the combination of a liquid receptacle, a bottle support above said receptacle, a shelf arranged below the bottle support and above the bottom of said receptacle, a collecting box or chamber in operative relation to each end of said shelf, a reciprocable label remover cooperating with said shelf, and means for driving the said label remover, thereby to transfer the labels from said shelf into said boxes.

In testimony whereof, we hereunto affix our signatures.

CHARLES H. LOEW.
JOHN R. GRUETTER.