Nov. 11, 1952 J. O. ASH 2,617,635

BOTTLED BEVERAGE MIXER

Filed July 18, 1950 2 SHEETS--SHEET 1

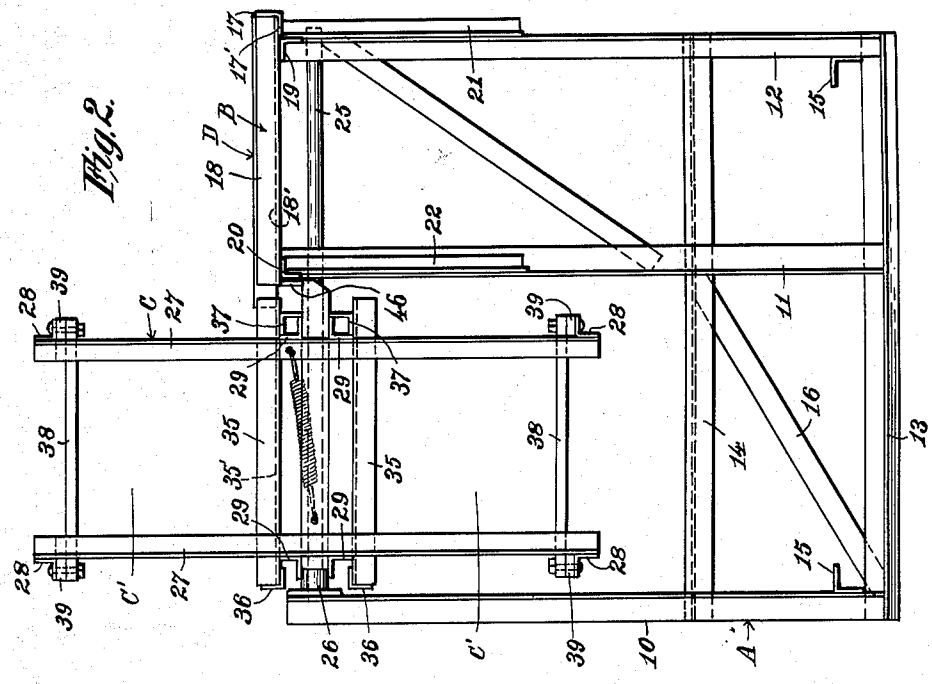


Fig. 2.

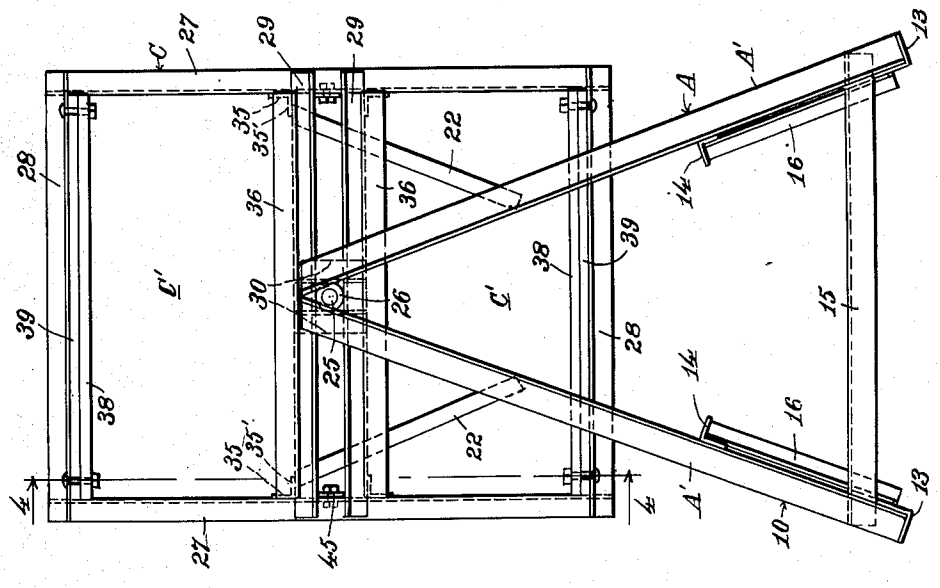


Fig. 1.

INVENTOR.
James Oswald Ash
BY
Chas. L. Allen
Attorney

Nov. 11, 1952 J. O. ASH 2,617,635

BOTTLED BEVERAGE MIXER

Filed July 18, 1950 2 SHEETS—SHEET 2

Fig. 3.

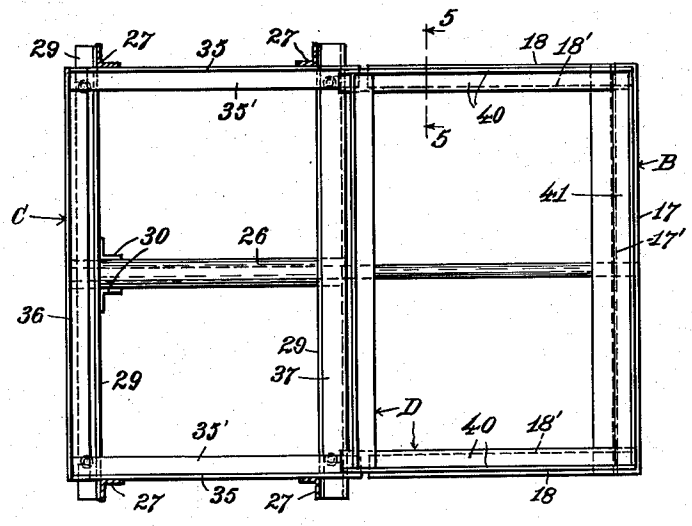
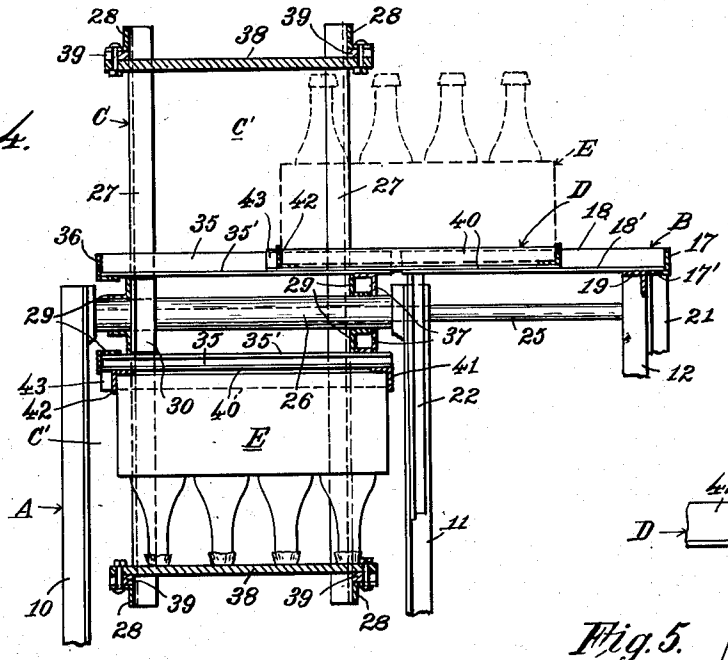


Fig. 4.



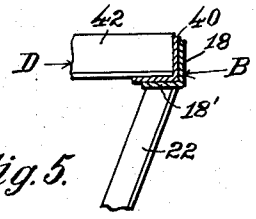


Fig. 5.

INVENTOR.
James Oswald Ash

BY
Chas. R. Allen
Attorney

Patented Nov. 11, 1952

2,617,635

UNITED STATES PATENT OFFICE

2,617,635

BOTTLED BEVERAGE MIXER

James Oswald Ash, Madisonville, Tex., assignor to Madison Mixers, Inc., Madisonville, Tex.

Application July 18, 1950, Serial No. 174,519

5 Claims. (Cl. 259—57)

1

This invention relates to an apparatus for mixing and testing bottled and crated beverages.

In bottling works, especially for soft drinks, the several ingredients of the beverage are introduced separately into the bottles; that is, a given quantity of a heavy syrup and flavoring material is first put into the bottles, and then the charged water is introduced and the sealing caps applied. It is then necessary to agitate the contents of the bottles to properly mix the contents. As the syrup mixture is much heavier than the charged water, the mixing may be accomplished by inverting the bottles for a short time and then righting the same. This double reversing, with a suitable interval of time between the reversals is sufficient for a proper blending of the mixture.

As soon as the bottles are filled and capped they are passed from the filling and capping machine to the inspection table where an inspector sees that the bottles are properly filled. The bottles are then inverted, not only to mix the syrup and charged water, but to detect whether or not they are securely sealed by the caps. Should any of the caps be defective or defectively applied, this will become apparent when the bottles are inverted as the gas in the mixture will force some of the same from the inverted bottles. After sufficient time has elapsed the bottles are righted; and the defective ones, if any, are rejected. The perfect ones are then usually placed in the crates ready for commercial distribution.

The object of the present invention is to provide a mixing and cap testing device whereby the manual work of the inspector is greatly facilitated.

A further and specific object of the present invention is to provide a comparatively simple apparatus whereby an inspector, upon filling a crate with bottles from the inspection table, may readily and quickly invert the filled crate and leave the same in inverted position while filling a succeeding crate from said table.

A further object of the invention is to provide a device of the class mentioned which shall be self contained, which needs no installation, and one that may be placed in convenient position with relation to the inspection table.

A further object of the invention is to provide a device as stated adapted to be hand operated by the inspector thereby requiring no additional cost for labor or power.

Other objects will appear hereinafter.

With the above objects in view, the invention

2

consists generally in a table provided with a slideway, a cradle rotatably mounted adjacent said table on an axis, parallel with the slideway on the table, and having a pair of axially opposite slideways adapted to be brought alternately into alignment with the table slideway upon each half-revolution of the table, and a slide adapted to hold a bottle-filled crate, and movable along said slideways from the table to the cradle, and from the cradle to the table after a complete revolution.

The invention further includes means for maintaining the bottles within the crate, as the crate-filled bottles are inverted, said means consisting of a plate fixed on the cradle outwardly of each of the cradle slideways, and with said slideways forming a pair of crate receiving chambers.

The cradle and table are mounted upon a suitable frame forming a unitary structure which may be placed in any convenient or desirable location without necessitating any installation. It is preferably located adjacent the usual inspection table in order that the inspector may fill a crate on the table with bottles from the inspection table, as will be described hereinafter.

The invention further consists in various details of construction and arrangements of parts all as will be fully described hereinafter and particularly pointed out in the claims.

The invention will be more readily understood by reference to the accompanying drawings, forming a part of this specification and in which:

Fig. 1 is an elevation of the device as viewed from the cradle side;

Fig. 2 is an elevation at right angles to that illustrated in Fig. 1;

Fig. 3 is a detail plan view of the table top, the uppermost slide base of the cradle, and the crate supporting slide, the vertical elements of the cradle being shown in section, and the supporting frame being omitted to avoid confusion;

Fig. 4 is a vertical section on substantially the line 4—4 of Fig. 1; and

Fig. 5 is a detail section on the line 5—5 of Fig. 3.

Referring to the drawings, A indicates generally the frame of the device upon which is fixedly supported a table B, and rotatably mounted a cradle C.

The frame A is preferably formed of angle-bars, and comprises three spaced parallel sec-

tions 10, 11 and 12, the elements A' of which are upwardly converging. The sections 10, 11 and 12 are connected by longitudinal members 13 and 14. The members 13 are secured to the lower ends of the frame sections and constitute a footing or base for the apparatus. Transverse struts 15 rigidly space the lower end of the elements A' of sections 10 and 12; and suitable diagonal braces 16 add rigidity to the structure. The struts and braces may be located as desired, and, per se, form no essential part of the invention.

The table B is mounted above the upper ends of the frame sections 11 and 12, and comprises a transverse end angle-bar 17 and longitudinal side angle-bars 18, the lower flanges 18' of which extend inwardly with the outer ends thereof resting on and secured to the inwardly extending base flange 17' of the transverse bar 17. The angle-bars 18 constitute slideways as will be fully described hereinafter.

Fixed to the under faces of the flanges 18' of the slideways are transverse supporting members 19 and 20. Diagonal braces 21, fixed to the outer ends of the member 19 and to the frame members 12, and similar braces 22 extending from the ends of the member 20 to the frame member 11, rigidly support the table B in position.

At substantially the upper ends of the frame members 10, 11 and 12 is a longitudinally extending shaft 25; and mounted on said shaft, between the members 10 and 11, is a sleeve 26 which carries the cradle C.

The cradle C comprises generally an open, preferably rectangular frame-work mounted on the sleeve 25, and providing a pair of axially opposite compartments C', each adapted to receive and hold a bottle filled crate. The cradle is transversely rotatable with one side in close proximity to the inner end of the table B, so that the compartments C' may be brought alternately into juxtaposition with the table from which and to which the crates may be readily slid.

Preferably, the cradle is formed with four corner posts 27, preferably angle-bars, connected at or adjacent their outer ends by transverse angle-bars 28, and adjacent the center by similar transverse bars 29. One flange of each of the bars 29 rests against the sleeve 26, and short angle-bars 30, perpendicular to the bars 29 at the end of the cradle adjacent the frame member 10, engage the sleeve 26 upon opposite sides thereof and are secured at their ends to said transverse bars. See Figs. 1, 3 and 4.

Fixed to the inner flanges of the corner posts 27, at opposite sides of the cradle, and resting against the edges of the radially outwardly extending flanges of the bars 29, are pairs of longitudinally extending angle-bars 35, which, when the cradle is in vertical position, one of said pairs is in alignment with the angle-bars 18 of the table, so that the lower, inwardly extending flanges 35' of the bars 35, constitute the bottom of the uppermost compartment C and with the flanges 18', form a substantially continuous slideway for a crate supporting slide D as will appear more fully hereinafter. Transverse angle-bars 36 are secured to the outer ends of the bars 35 and constitute stops for the slide D. At the side of the cradle adjacent the table B an additional transverse bar 37 is secured under the ends of the slideways to maintain the end of said slideways in position to assure registry with the table slideway when brought into alignment therewith.

Two slides D are provided, which are adapted to rest respectively on the bottom of the uppermost compartment C as they are brought alternately into alignment with the table. Each slide D comprises a pair of longitudinally disposed angle-bars 40 and a pair of transverse bars 41 and 42, said bars being spaced to conveniently receive the bottom of a crate E. The bar 41 is preferably at the outer ends of the bars 40, and the bar 41 is spaced inwardly from the opposite ends thereof providing extension ends 43 for a purpose hereinafter described.

A spring projected latch 45 is provided at each side of the cradle C to engage a stop 46 arranged under the table, thereby stopping the rotation of the cradle as each compartment C' is brought into juxtaposition with the table.

Secured to the outer bars 28 of the cradle C, are plates 38 which constitute the outer wall or top of the compartments C'. These are spaced from the bottoms of the compartments so as to clear the tops of the bottles when a bottle-filled crate is being moved into the compartment. Spacing blocks 39 between the tops 38 and the bars 28 provide means whereby the tops may be adjusted according to the height of the bottles being used.

The operation of the device is as follows. The cradle C being in vertical position, a slide D is placed upon the table slides 18', and an empty crate E placed therein. The inspector then fills the crate with bottles from the usual inspection table (not shown). It will be noted that at this time the ends 43 of the slide bars 40 extend over the slideways 35' of the upper compartment to maintain the cradle in fixed position to receive the crate, as the slide is moved into the compartment, when the crate is filled the slide D and crate E are slid into the cradle, and the cradle is turned by hand until stopped by a latch 45. At this time the bottles are inverted with their tops resting on the top 38 of the cradle compartment and the slide D resting on the bottom of the crate as illustrated in full lines in Fig. 4 of the drawings. Another slide D is placed upon the table and the process repeated. While the succeeding crate is being filled from the table by the inspector, the ingredients in the inverted bottles are mixed by gravitational action; and any defective caps will be detected by the escape of fluid from the bottle while inverted. After the succeeding crate is filled with bottles which have been inspected as to quantity content, the slide with the crate resting thereon is slid into the cradle, and the cradle again turned to invert the same and to bring the preceding crate into alignment with the table. This second turn of the cradle is sufficient to complete the mixing of the contents of the bottle. When the slide with the filled crate is raised into alignment with the table, the slide is moved outwardly onto the table and should any defectively capped bottle be detected, it is removed from the crate and replaced by a perfectly capped bottle. The crate is then removed from the slide, and the cycle repeated.

I claim:

1. In a device of the class described, a table having a slideway, a cradle rotatably mounted on an axis parallel to said slideway, said cradle having a pair of slideways adapted to be brought alternately into alignment with said table slideway upon rotation of said cradle, a slide for hold-

ing a bottle filled crate and adapted to be moved on said slideways from the table to said cradle and from the cradle to said table and projections on said slide adapted to extend over the ends of the slideways on said cradle when said slide is in fully retracted position.

2. In a device of the class described, a table including a stationary slideway, a cradle mounted adjacent one end of said slideway on an axis parallel thereto, said cradle having a pair of chambers each comprising a bottom slideway adjacent the axis of rotation and a fixed outer plate parallel thereto, said cradle slideways being adapted to be brought alternately into alignment with said stationary slideway upon rotation of said cradle, a slide for holding a bottle-filled crate and adapted to be moved on said slideways from the stationary slideway to the cradle slideway and vice versa when said slideways are brought into alignment said slide having forwardly projecting means for engaging over the ends of the adjacent slideways of said cradle when said slide is fully retracted.

3. In a device of the class described, a table including a pair of parallel angle-bars forming a stationary slideway, a transverse member at one end of said slideway constituting a stop, a shaft fixedly mounted below the level of said stationary slideway, a cradle rotatably mounted on said shaft and having a pair of chambers each comprising a pair of slideways adjacent said shaft and a fixed outer plate, the slideways on said cradle each comprising a pair of angle-bars adapted to be brought into alignment with said angle-bars on said table, and a removable slide for holding a bottle-filled crate, said slide comprising a pair of longitudinal angle-bars adapted to rest on said slideway angle-bars and transverse bars connecting the same, the outermost of said transverse bars extending above the bottoms of said longitudinal bars forming a stop for said crate, and the ends of said longitudinal bars adjacent said cradle adapted to project over the adjacent ends of the slideway angle-bars of said cradle when said slide is fully retracted into engagement with the transverse stop on said table.

4. In a device of the class described, a stationary slideway, a cradle mounted adjacent one end

of said slideway on an axis parallel thereto, said cradle comprising a frame including four corner posts, transverse bars connecting the outer ends of said posts in pairs, similar bars connecting said posts adjacent said axis, angle-bars supported on the last said bars and forming a pair of slideways, one upon each side of said axis, and adapted to be brought alternately into alignment with said stationary slideway upon rotation of said cradle, a slide for holding a bottle-filled crate and adapted to be moved on said slideway from the stationary slideway to a cradle slideway and vice versa when said slides are brought into alignment, a pair of plates fixedly secured to said transverse bars at the outer ends of said corner posts forming a rest for said bottles when in inverted position, and replaceable spacing block between said plates and said transverse bar.

5. A device of the class described comprising a portable frame, a table on said frame including stationary slideways comprising a pair of angle-bars, a shaft on said frame parallel with said slideway, a cradle rotatably mounted on said shaft and having a pair of slideways each comprising a pair of angle-bars adapted to be brought alternately into alignment with said angle-bars of said table slideways as the cradle is rotated, a slide for holding a bottle-filled crate and adapted to be moved on said slideway from the table to said cradle and vice versa, and projections on the crate holding slide adapted to extend over the slideway on the cradle which is in alignment with the table slideway when said slide is on the table slideway.

JAMES OSWALD ASH.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,376,273	Hansell	Apr. 26, 1921
1,433,128	Frampton	Oct. 24, 1922
1,623,958	Bauer	Apr. 12, 1927
1,967,719	Morgan	July 24, 1934
2,050,560	Chapman	Aug. 11, 1936
2,277,310	Engelhart	Mar. 24, 1942