

1,417,536.

F. L. LLOYD.
PACKAGING APPARATUS.
APPLICATION FILED JULY 20, 1918.

Patented May 30, 1922.

2 SHEETS—SHEET 1.

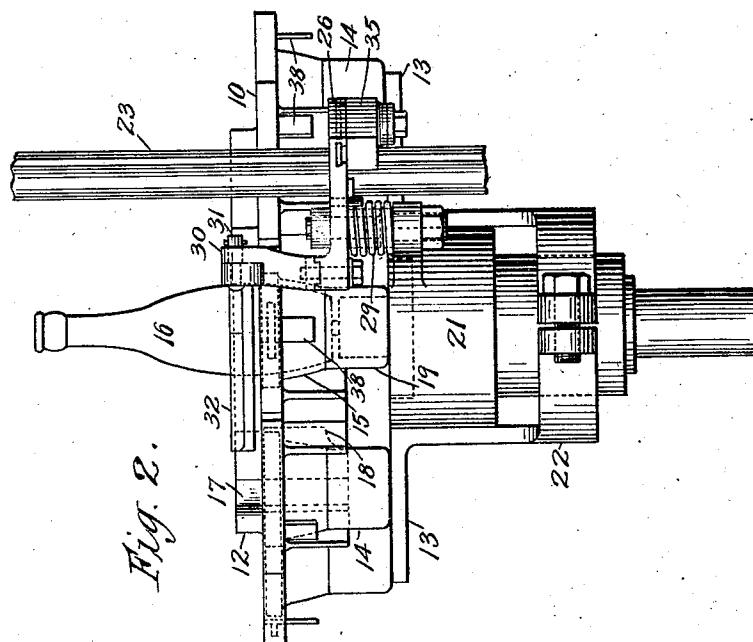
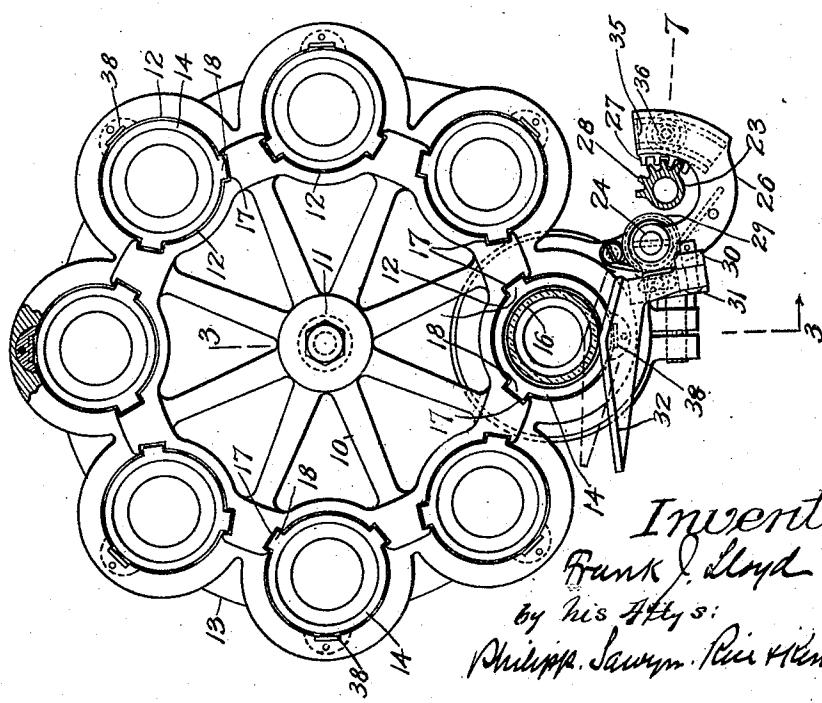


Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 3.

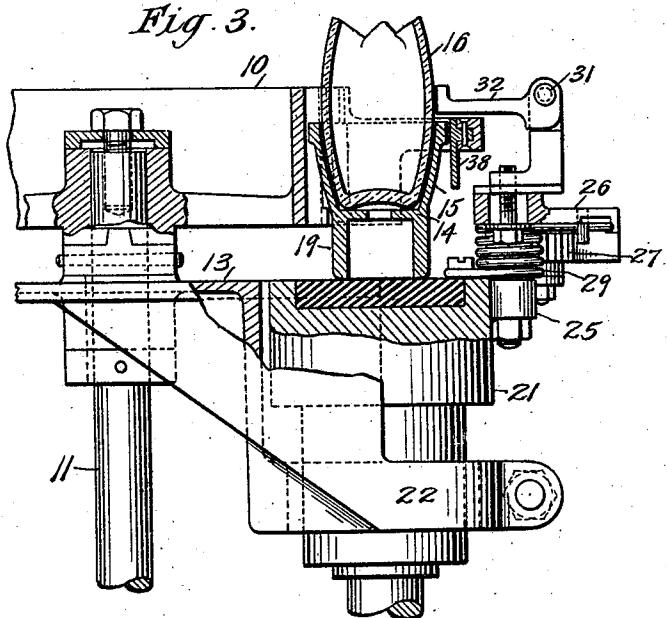


Fig. 5.

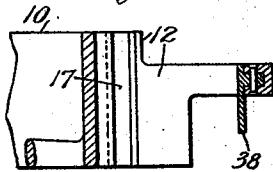


Fig. 6.

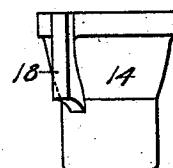


Fig. 4.

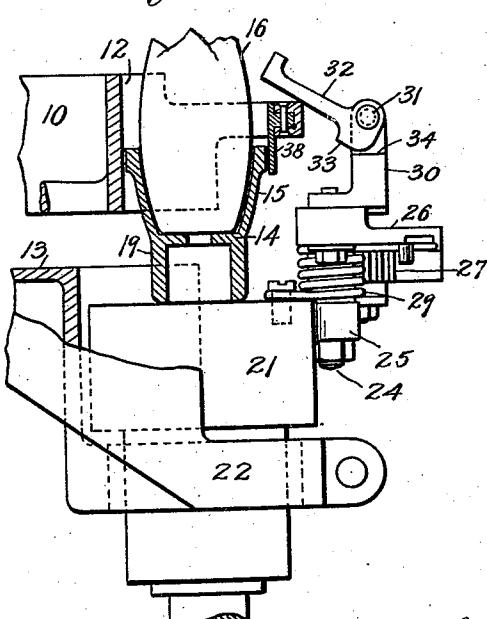
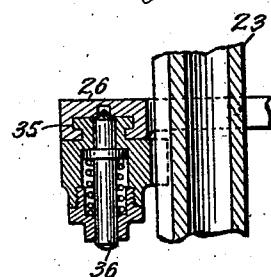


Fig. 7.



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UNITED STATES PATENT OFFICE.

FRANK L. LLOYD, OF BALTIMORE, MARYLAND, ASSIGNOR TO THE CROWN CORK AND SEAL COMPANY OF BALTIMORE CITY, A CORPORATION OF MARYLAND.

PACKAGING APPARATUS.

1,417,536.

Specification of Letters Patent. Patented May 30, 1922.

Application filed July 20, 1918. Serial No. 245,796.

To all whom it may concern:

Be it known that I, FRANK L. LLOYD, a citizen of the United States, residing at Baltimore, State of Maryland, have invented 5 certain new and useful Improvements in Packaging Apparatus, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

10 This invention relates to packaging apparatus.

The type of apparatus to which the invention particularly relates is that in which a rotatable dial having a number of bottle receiving pockets moves the bottles successively to a position beneath the packaging mechanism for filling or capping or both.

Bottle dials for such machines have been heretofore devised having provision whereby 20 the pockets may receive bottles of different diameters. But they are adaptable effectively only to bottles substantially standard in shape and varying in size only within restricted limits.

25 It has been found that bottles of an unusual shape, for example, the so-called "ten-pin" bottle, are not held as firmly and steadily as is desirable, when placed in the dial normally used for straight sided bottles.

30 This is especially so in machines of the type in which, to control certain mechanism by the presence of a bottle, the bottles are moved against a wiper in taking packaging position.

35 It is an object of the present invention to provide bottle feeding apparatus such that a standard dial may be used effectively with bottles of a wide variety of shape and sizes.

It is a further object of the invention to 40 provide apparatus of the type mentioned having a wiping member located in the path of the bottles themselves and capable of permitting relative movement of the parts during compensation.

45 The following specification describes, and the accompanying drawings illustrate packaging apparatus constructed in accordance with the invention, it being understood that changes may be made in the form, construction and arrangement of the parts without

departing from the invention, the form herein disclosed being a preferred embodiment thereof.

In the drawings:

Fig. 1 is a horizontal sectional view taken 55 above the feeding dial of packaging apparatus embodying the invention;

Fig. 2 is a view of the same in side elevation;

Fig. 3 is a cross sectional view taken on 60 the line 3—3 of Fig. 1 looking in the direction of the arrow;

Fig. 4 is a view partly in vertical section and partly in side elevation, showing a portion of Fig. 3 in a different position of the 65 parts;

Fig. 5 is a detail view showing in vertical section a portion of the feeding dial;

Fig. 6 is a detail view showing in side elevation one of the adapter cups removed; and 70

Fig. 7 is a sectional view taken on the line 7 of Fig. 1.

Referring to the drawings, a feeding dial 10 is mounted on a shaft 11 which is rotated 75 in any suitable manner. The dial is provided with a plurality of spaced pockets 12 each designed to hold a bottle. Beneath the dial is a stationary table 13 which serves directly or indirectly as a support for the bottles in the dial.

The invention includes an interchangeable adapter cup removably insertable in the dial pockets and having a body portion for receiving a bottle, the body portion in the best embodiments of the invention being shaped 85 in accordance with the shape of the bottle. As here shown as an example, an adapter cup 14 is provided having a body portion 15 shaped in accordance with a so-called ten-pin bottle 16. It will be seen from Fig. 3 that 90 the bottle fits into the cup and is thus firmly held in place.

In order that the adapter cup may be firmly held in the dial pocket and be capable of vertical movement therein, it is provided 95 with a portion having a sliding fit within the wall of the pocket. Although capable of various constructions, as here illustrated, the dial pockets are formed with a plurality of vertical grooves 17 and the adapter cup is pro- 100

vided with complementary tongues 18. These tongues are designed to fit in the grooves with a sliding fit. With this construction the adapter cups are readily inserted and removed, are firmly held in place, and are capable of vertical movement during the operation of the packaging mechanism as hereinafter referred to.

In order that the dial may be used with unusually short bottles the invention includes in connection with the adapter cup, an elevating portion arranged to rest on the supporting table and elevate the body portion the desired distance above the table.

15 As here shown as an example, formed as part of the adapter cup is an elevating portion in the form of a skirt 19, the bottom of which rests on the supporting table.

With the construction above described, packaging machines having what may be termed a standard dial may be used with bottles of various shapes and sizes with no change except in the set of adapter cups. Various sets of cups may be provided having body portions to suit the various bottle shapes and elevating portions to suit the various heights. When the bottles are changed it is only necessary to slip out one set of adapter cups and insert another set.

20 During the capping operation of a packaging mechanism there is a relative movement of the capping head and bottle and one or the other is caused to yield to compensate for variations in bottle heights.

25 As here illustrated, the bottle support is designed to yield downwardly to effect this compensation. To this end, the stationary table is cut away below the packaging mechanism to accommodate a supporting

30 cylinder or plunger 21. This plunger, as appears in Fig. 3, is in its normal position, flush with the stationary table so that the bottles or their adapter cups readily slide from one to the other as they are fed by

35 the dial. This plunger is slidable in a bracket 22 and forms part of a compensating mechanism designed to yield in case the capping pressure on the bottle exceeds a given amount. Such a device is known in

40 the art and no further description is here necessary.

It is sometimes desirable to control the delivery of liquid or some similar portion of the apparatus by the presence of a bottle in filling position. For example, the liquid delivery means may be operated by a sleeve which is normally in an inoperative position and is rotated into operative position by mechanism actuated by a bottle moving

45 into filling position. The present drawings illustrate such a sleeve 23. For the manner in which this sleeve operates the liquid delivery mechanism, reference may be had to Letsch Patent No. 1,227,807. The sleeve

50 may be given angular movement by a lever

actuated by a wiper located in the path of the bottles. As here shown, pivoted on a stud 24 mounted on a bracket 25, carried by the plunger 21, is a bent lever 26 of the form shown more particularly in Fig. 1. The lever carries a rack 27 meshing with teeth 28 formed on the sleeve 23. It will be seen that movement of the lever rotates the sleeve, the return movement thereof being effected by a spring 29.

75 The lever 26 is actuated by the displacement of a wiper which is located in the path of the bottles. Since the wiper must be above the dial rim in order to engage the bottles, and since the plunger carrying the 80 bracket 25 has a downward vertical movement with respect to the dial, means is provided for so connecting the wiper with the lever that it is movable both horizontally and vertically,—horizontally to actuate the 85 lever, and vertically to accommodate the relative movement of the parts. Although capable of various constructions, as here shown, secured to the lever is an upright connecting member 30. Pivoted on a pin 90 31, carried by this member 30 so as to swing in a vertical plane, is an angular wiper 32 located above the dial rim in the path of the bottles. When a bottle moves into packaging position the wiper is displaced horizontally from the dotted to the full line position of Fig. 1, and through the connecting member 30 its displacement actuates the lever 26 to rotate the sleeve 23. When compensation takes place and the cylinder 21 95 100 is lowered, the wiper by its engagement with the dial rim is swung upwardly as shown in Fig. 4. Upon the return of the plunger to normal position the wiper drops back by its own weight, movement in this direction 105 being limited by engagement of the wiper foot 33 with a stop shoulder 34 on the member 30.

To prevent breakage, should there be any obstruction to the movement of the sleeve, 110 the rack 27 is formed with a T-head 35 which takes into a guiding recess in the lever, the parts being held together by a spring bolt 36, as shown in Fig. 7. As the lever swings, should there be any obstruction 115 to the movement of the sleeve, the spring bolt 36 will be forced back, allowing the lever to move without moving the rack.

120 Means is provided for steadyng and for guiding the adapter cup in its vertical movements. As shown, the dial rim at the outside edge of each pocket has secured thereto a downward extending plate 38 which is flush with the pocket wall and forms in effect a continuation thereof at the point 125 where the dial is narrow. This plate guides the adapter cup in its downward movement and prevents it from catching on the rim as it moves upwardly.

130 It is to be understood that the term

"bottle" is used in its comprehensive sense to include any suitable form of container.

What is claimed is:

1. In a packaging apparatus, a bottle feeding dial having a pocket therein with a vertical wall, a support located beneath said dial, and an adapter cup for holding a bottle, having a dish-shaped bottle receiving portion, an elevating standard, and vertical members on said dish shaped portion for cooperation with the wall of said pocket.

2. In a packaging apparatus, a bottle feeding dial having a pocket therein, a bottle support having a compensating vertical movement with respect to said dial, an operating lever, a wiper located in the path of the feeding bottles and carried by said support, said wiper being mounted to move horizontally upon engagement with a bottle, means whereby said movement of the wiper ac-

tuates said lever, and a horizontal pivot for said wiper, whereby the wiper may swing in a vertical plane upon the compensating movement of the bottle support.

3. In packaging apparatus, a feeding dial 25 having a bottle receiving pocket therein, a support having vertical movement with respect to said dial, an operating lever, a connecting member for swinging said lever, and a wiper located above the dial rim and 30 in the path of the bottles, said wiper being pivotally mounted in said connecting member.

In testimony whereof, I have hereunto set my hand, in the presence of two subscribing 35 witnesses.

FRANK L. LLOYD.

Witnesses:

Wm. G. VANNER,
GEORGE F. LANG.