Dec. 5, 1939. W. K. BERTHOLD 2,182,166

GLASSWARE TAKEOUT AND FIRE FINISHING DEVICE

Filed Aug. 5, 1937

Fig. 1.

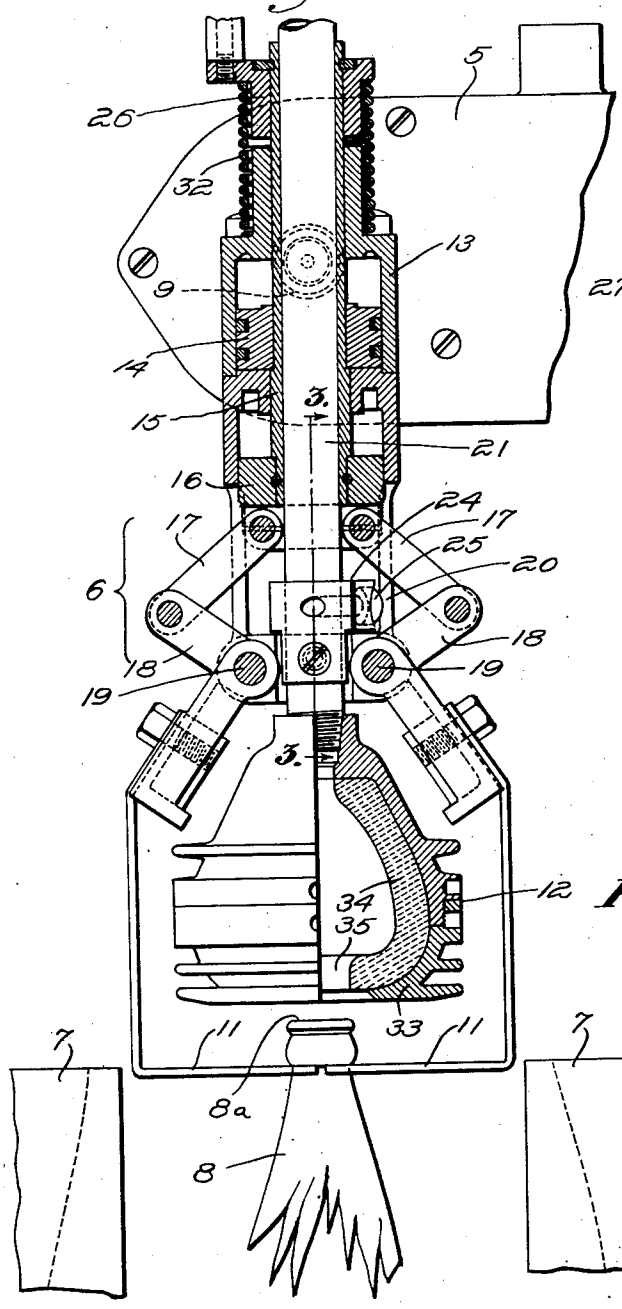


Fig. 2.

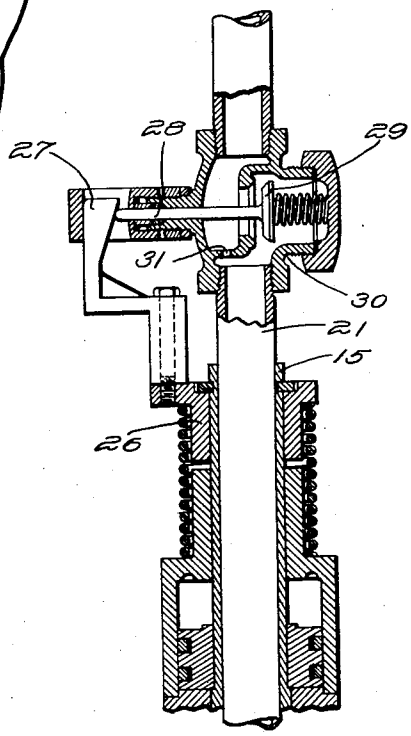
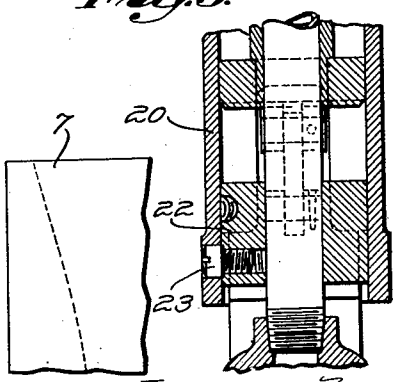


Fig. 3.



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GLASSWARE TAKEOUT AND FIRE-FINISHING DEVICE

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6 Claims. (Cl. 49—14)

This invention relates to apparatus for handling glassware and has particular relation to devices for removing finished articles of ware from the molds of a forming machine.

The object of this invention is to provide means of novel construction for removing glassware from a forming machine and for fire-finishing the ware during such removal.

A more specific object of the invention is to provide a novel unitary device for removing bottles from the molds of a forming machine and for fire-finishing the tops of the neck finishes of the bottles during such removal. This invention is of particular utility in the manufacture of bottles having what is known as a crown finish, that is, a finish adapted to have a crown cap or closure applied thereto, and which require an accurate and smoothly formed finish to insure that a perfect seal will be obtained.

By way of example, and not in limitation of the invention, I have illustrated the preferred embodiment of the invention in the accompanying drawing, wherein

Figure 1 is a view in central vertical sectional elevation partially showing a unitary takeout and fire-finishing device associated with the mold of a forming machine;

Fig. 2 is a similar fragmentary view showing the upper portion of the structure of Fig. 1, omitted from Fig. 1 for lack of space; and

Fig. 3 is a fragmentary detailed view in central vertical section, taken on the line 3—3 of Fig. 1.

The takeout mechanism shown is in general similar to that shown in the patent to Henry W. Ingle, No. 1,843,285, granted February 2, 1932, that is, it is of the parallel motion type. It comprises an arm 5 which may be oscillated in a vertical plane, by means not shown, to raise the take-out device indicated generally at 6 from alignment with the axis of a finishing mold, the sections of which are partly shown at 7—7, to a delivery position (not shown) where the bottle 8 is delivered. The device 6 is pivoted to the arm 5, as indicated at 9, to permit the device 6 and a bottle carried thereby to be maintained in vertical position at all stages of the takeout operation. The means for effecting this parallel motion may be similar to corresponding means shown in the Ingle patent mentioned above.

The device 6 comprises tongs 11—11 and a burner 12, which are supported and operated by or from the casing or cylinder 13 (which is pivoted at 9), as will now be described.

Cylinder 13 contains a piston 14 on sleeve 15, having collar 16 secured to its lower end. Connected to collar 16 are links 17—17 in turn connected to bell crank members 18—18 which carry tongs 11—11. Members 18—18 are pivoted at 19—19 in a cage 20 extending down from cylinder 13.

Extending through sleeve 15 is pipe or conduit 21 to the bottom end of which is screw threaded burner 12. Pipe 21 is held in fixed position relative to cylinder 13 by means of a collar 22 secured in the lower end of cage 20 by screw 23. Pipe 21 is held in collar 22 by a clamp 24 formed on the collar, the screw 25 of which may be loosened to loosen the clamp for the vertical adjustment of pipe 21 and burner 12.

Admission of air above piston 14 through pivot 9 made hollow for this purpose lowers sleeve 15 and collar 16, causing tongs 11—11 to close about the neck of bottle 8. At the same time, gas is supplied through pipe 21 to burner 12 to provide a flame of the desired character for fire-finishing the top 8a of bottle 8.

The lowering of piston 14 to close the tongs also serves to supply gas to burner 12. This is effected by the connection of the upper end of sleeve 15 with collar 26 which carries a cam 27 adapted to engage the stem 28 of a valve 29 in casing 30 on the upper end of pipe 21. A by-pass 31 in the casing provides sufficient gas to maintain a small flame in burner 12 at all times.

It will be apparent, therefore, that piston 14 serves both to close tongs 11—11 and to turn up burner 12, so that the top of a bottle carried by the tongs is fire-finished throughout the period that the bottle is being taken out of mold 7—7 (or some other mold, not shown) and transferred to the delivery point. This period will be short but of sufficient duration for proper fire-finishing.

The tongs are opened to release a bottle by exhausting air from above piston 14 through hollow pivot 9. This permits a spring 32 interposed between collar 26 and cylinder 13 to raise sleeve 15 and collar 16, which simultaneously opens tongs 11—11 and closes valve 29.

The burner 12 may be of any well known type. As shown, burner 12 is bulbous in form and comprises a metal casing 33 having a refractory lining 34. The burner opening 35 is of the desired size and shape to provide the desired size and shape of flame for fire-finishing the bottle which is to be manufactured. Burner 12 may be replaced by other similar burners of different sizes or shapes to suit varying types of ware.

Various changes in the details of construction and operation of the illustrated embodiment of

this invention may be made without departing from the scope of the claims.

What I claim is:

1. In a takeout device for removing articles from a glassware forming machine, the combination of means for transferring an article of glassware, a burner for fire-finishing said article, and means for mounting said burner for movement with said transferring means.

2. In a takeout device for removing articles from a glassware forming machine, the combination of means for transferring an article of glassware, a burner for fire-finishing said article, and means for maintaining a flame in said burner and for carrying said burner in operative relation to said article to fire-finish said article during the transfer period.

3. A takeout device for removing articles of glassware from a forming machine, comprising tongs for transferring said articles, a burner mounted for movement with said tongs, means for closing and opening said tongs, valve means for said burner, and means for opening said valve when the tongs are closed and for closing said valve when said tongs are opened.

4. A unitary takeout and fire-finishing device, comprising tongs for transferring articles of glassware, a burner for fire-finishing articles carried by said tongs, a valve for controlling the supply of gas to said burner, means for closing and opening said tongs, and means responsive to the operation of the last named means for opening and closing said valve.

5. A glassware handling and fire-finishing device comprising means for removing an article of glassware from the mold of a glassware forming machine, a burner, and means for maintaining a flame in said burner and for carrying said burner in operative relation to said article during removal thereof from said mold to fire-finish said article while it is being removed from said mold.

6. A glassware handling and fire-finishing device comprising means for removing an article having a neck from the mold of a glassware forming machine, a burner, and means for maintaining a flame in said burner and for carrying said burner in operative relation to the neck finish of said article during removal thereof from said mold to fire-finish the neck of said article while it is being removed from said mold.

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