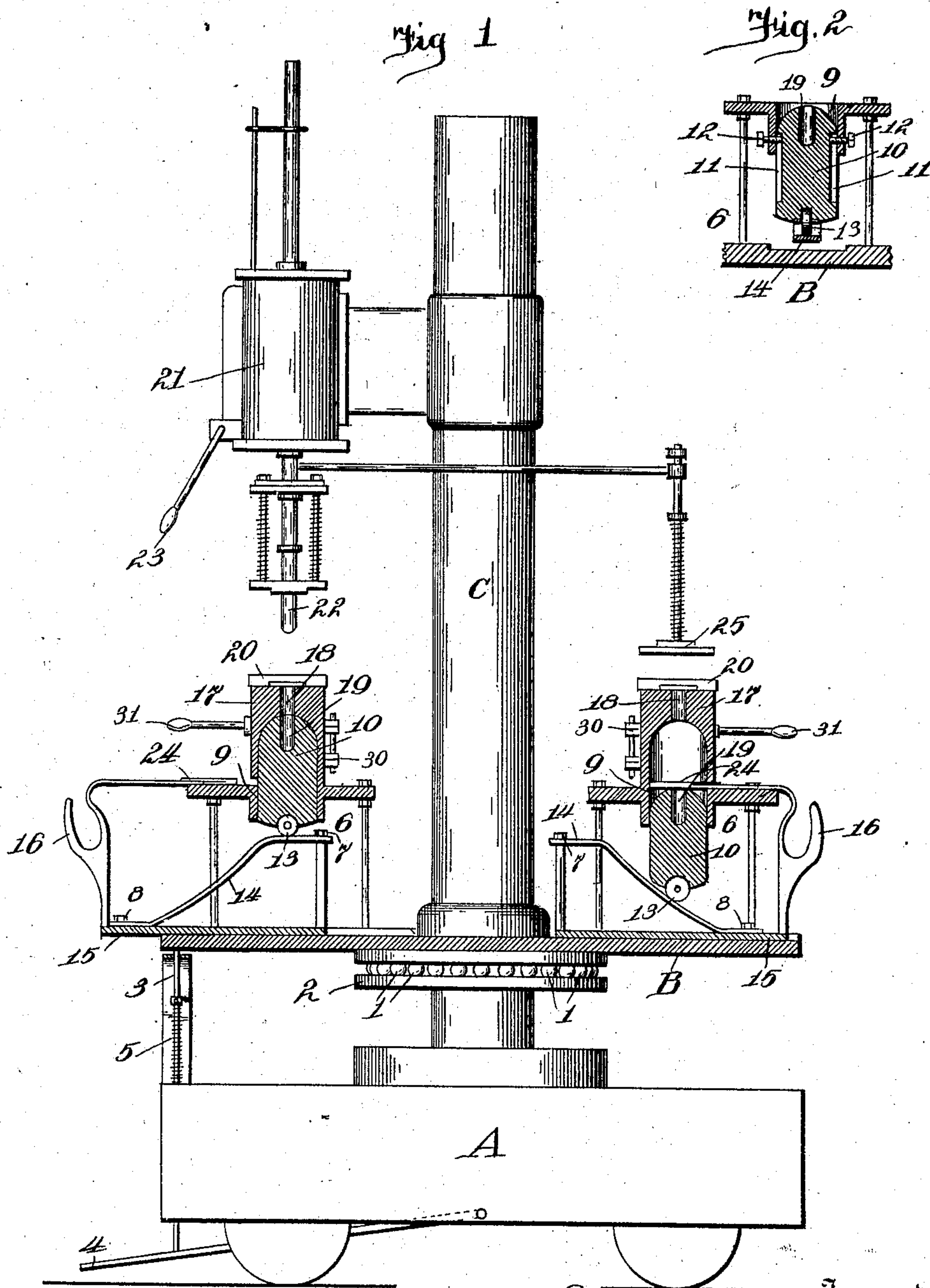


No. 806,119.

PATENTED DEC. 5, 1905.

J. D. DILWORTH.
 DEVICE FOR MANUFACTURING BOTTLES.
 APPLICATION FILED MAR. 9, 1905.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN DALE DILWORTH, OF SALEM, NEW JERSEY.

DEVICE FOR MANUFACTURING BOTTLES.

No. 806,119.

Specification of Letters Patent.

Patented Dec. 5, 1905.

Application filed March 9, 1905. Serial No. 249,288.

To all whom it may concern:

Be it known that I, JOHN DALE DILWORTH, a citizen of the United States, residing at Salem, in the county of Salem and State of New Jersey, have invented new and useful Improvements in Devices for Manufacturing Bottles, of which the following is a specification.

My invention relates to an improvement in machines for making glassware in which the glass in a molten state is dropped into a press-blank mold through the mouth of a blow-mold and pressed and blown into shape; and it consists in certain novel features of construction and combinations of parts which will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of my improved machine, parts being shown in section; and Fig. 2 is a cross-section through one of the press-blank molds at right angles to the sections of the same shown in Fig. 1.

A represents a truck, B a turn-table mounted around a central column C and adapted to turn on ball-bearings 1 1 in the ball-race 2, a spring-latch 3, connected with a treadle 4, being adapted to lock the turn-table in position, and the spring 5 being provided for normally raising said latch into position. Mounted on the turn-table are suitable frames or tables 6 6, having holes 9 in the center to receive the rigid bottom plate of the blow-mold, which has a central orifice extending below the plate and through the table and inside of which the press-blank molds 10 10 operate, the latter being adapted to be slid up and down therein, and for this purpose they may be provided, as a convenient expedient, with oppositely-located grooves 11 11, into which the set-screws 12 12 extend, as shown in Fig. 2. An antifriction-roller 13 at the bottom is placed in position to travel upon the cam-surface 14 of the sliding device 15, the latter being provided with a handle 16, by means of which it is slid in and out. This cam-surface or track 14 is preferably vertically adjustable, as shown, by means of the nuts 7 and 8 above and below, making it possible to either raise or lower the cam or track. As the sliding device is slid outward the press-blank mold is raised, and as it is forced inward the press-blank mold drops by gravity, the roller 13 following the cam-surface or track 14.

Immediately over the press-blank mold and cooperating therewith is the blow-mold 17. This blow-mold is provided with an orifice 18, adapted to receive the glass in a molten state, and the press-blank mold has an orifice 19 beneath orifice 18, which also receives the glass when the press-blank mold is in its elevated position, as shown at the left in Fig. 1. In the top of the blow-mold is formed a ring-head 20, into which some of the glass is forced to form the mouth of the bottle.

A compressed-air cylinder 21 is supported by the column C above the molds and a spring-cushioned plunger 22 depends therefrom, it being adapted to the size of the opening desired in the mouth of the bottle, and to be forced down into press-blank mold 10 by operating the lever 23, controlling the compressed-air or hand lever or other suitable pressing devices, thus forcing the glass up into ring-head 20 and leaving a hollow tube of molten glass hanging in the orifices 18 and 19 of the molds. This having been done, the plunger is removed, the sliding device 15 is pushed in, which lowers the press-blank mold and carries the bottom plate 24, which is preferably an integral part of the sliding device 15, into the lower end of the blow-mold 17, where it is adapted to form the bottom of the bottle.

With the construction shown and described the turn-table is turned to bring the blow-mold 17 beneath blow-head 25 and the other set of molds beneath plunger 22. The latter has received molten glass from the gatherer, the slide-plate 24 being drawn out, and as plunger 22 is brought down the same movement brings the head 25 down on top of the first blow-mold (shown at the right hand) and admits air into the center of the glass bulb hanging therein, thus blowing it out into the blow-mold, the bottle thereby being formed in the first set of molds, while plunger 22 is being forced into the press-blank mold at the left, forcing glass up in the ring-head 20 and forming a bulb. The operation continues in this way indefinitely, the turn-table being unlocked and turned to the left at the end of each operation, which brings the mold with molten glass in it beneath the plunger, whereupon the lock springs into position, holding it there. It also brings the blow-mold previously operated upon under the blow-head ready for the blowing operation. When the

plunger is raised, the blow-head rises in unison, leaving a finished bottle in the blow-mold. This operation being repeated brings the blow-mold with the finished bottle in it in the next position, where a boy can readily open it and remove the bottle by opening or swinging to one side the blow-mold 17, the same being provided with a hinge 30 and handles 31 for this purpose. After having removed the bottle and closed the mold the operator then pulls out the sliding device, which draws out the bottom plate and forces the press-mold up into position in blow-mold for the next operation.

While I have referred to the cam 14 as being adjustable, it may be mentioned that it might also be rigid, although when adjustable it may be raised more or less to operate upon shorter bottles or lowered to operate on longer bottles, thus making it unnecessary to use an entirely new sliding device when the mold is changed for a different-size bottle.

In the construction shown the parts are few and simple and comparatively light, the machinery being reduced in number of parts to a minimum. The sliding device 15, the handle 16, and the bottom plate 24 are preferably made integral, although not necessarily so, and the sliding device thus formed fits and is guided in its movements in a groove 26 in the turn-table or platform.

It is evident that slight changes might be resorted to in the form and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the exact construction herein set forth; but,

Having fully described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. In a machine for forming glassware, the combination with a table, a frame erected thereon and comprising a top and legs, said top having an orifice in its center and a groove in the table therebeneath, of a press-blank mold fitted to the orifice and provided with oppositely-located vertically-disposed grooves and set-screws extending into said groove, for guiding the press-blank mold in its upward and downward movements, said press-blank mold having an antifriction-roller, of a sliding device fitted to the groove and having a cam which operates upon the antifriction-roller to raise and lower the press-blank mold a blow-mold, a bottom therefor carried by the sliding device, a plunger, a blow-head, and means for supplying air for the operation of said parts.

2. In a machine for making glassware, the combination with a suitably-supported frame and a blow-mold mounted thereon, the frame provided with an aperture therethrough, of a press-blank mold receivable in the aperture in the frame, means for raising and lowering the press-blank mold, the press-blank mold provided with a plurality of external longitudinally-extending grooves, and adjustable means carried by the frame and receivable in the grooves to guide the press-blank mold in its movements.

In testimony whereof I affix my signature in presence of two subscribing witnesses.

JOHN DALE DILWORTH.

Witnesses:

E. WALTON BREWINGTON,
LOUIS N. FRANK.