

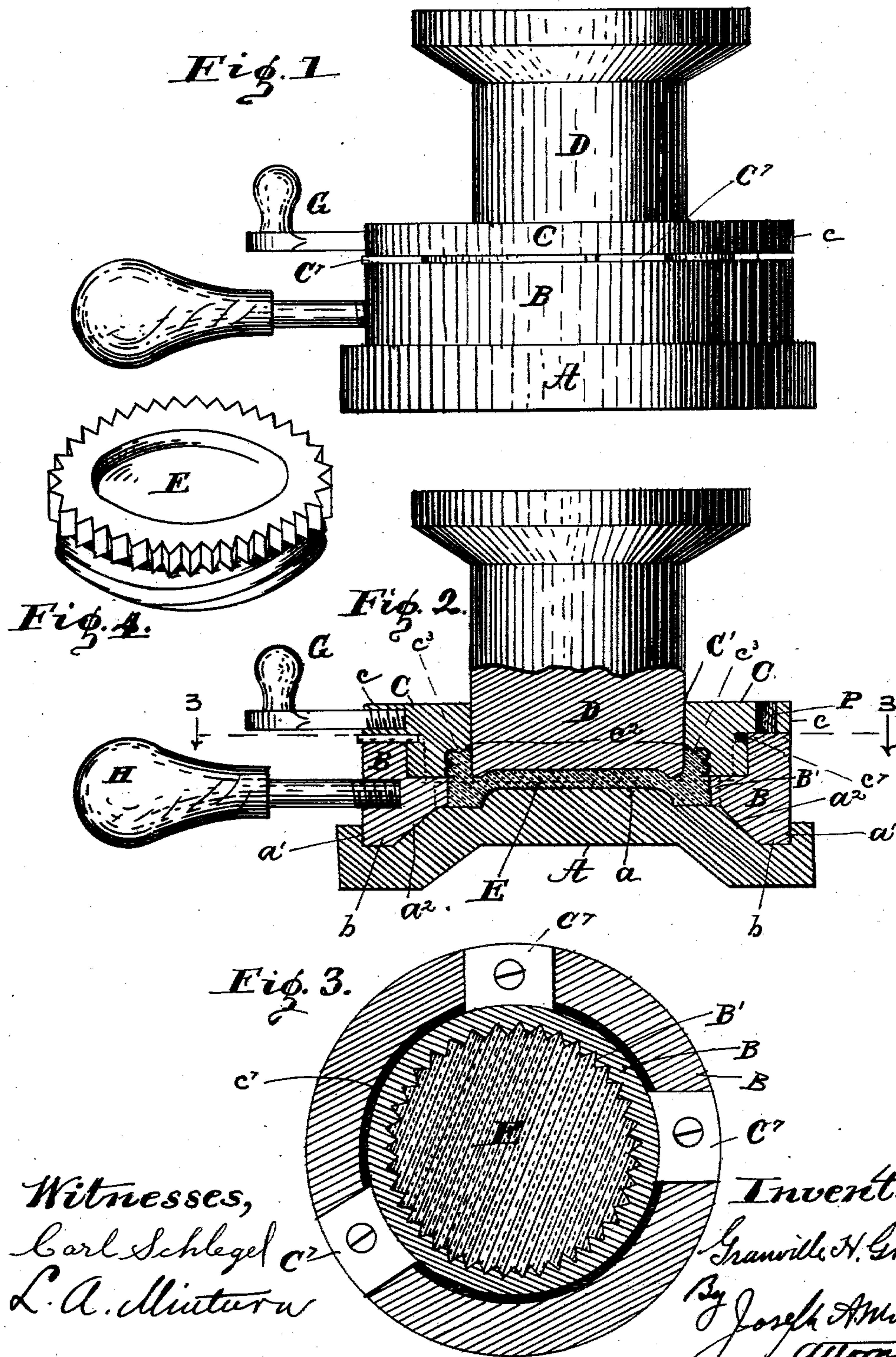
**No. 634,107.**

**Patented Oct. 3, 1899.**

**G. H. GRAY.**  
**MOLD FOR GLASSWARE.**

(Application filed Oct. 12, 1898.)

(No Model.)





# UNITED STATES PATENT OFFICE.

GRANVILLE H. GRAY, OF MARION, INDIANA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE GOLDEN GATE FRUIT JAR COMPANY, OF CALIFORNIA.

## MOLD FOR GLASSWARE.

SPECIFICATION forming part of Letters Patent No. 634,107, dated October 3, 1899.

Application filed October 12, 1898. Serial No. 693,289. (No model.)

*To all whom it may concern:*

Be it known that I, GRANVILLE H. GRAY, a citizen of the United States, residing at Marion, in the county of Grant and State of Indiana, have invented certain new and useful Improvements in Molds for Glassware, of which the following is a specification.

This invention relates to improvements in molds for making externally-screw-threaded glass caps for fruit-cans and the like, the object being to provide means whereby the thread-forming part of the mold is removed by screwing it off of the cap in order to produce a more perfect thread than can be produced in a two-part hinged mold which opens to release the product.

The object of the invention is to produce a simple, efficient, and quick-acting mechanism whereby the caps can be made rapidly, and consequently at small cost.

I accomplish the object of the invention by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a view in side elevation of my improved mold with the several parts in place after the article of glassware has been pressed therein; Fig. 2, a vertical cross-section through the axis of the mold of Fig. 1; Fig. 3, a horizontal section on the dotted line 3 3 of Fig. 2, and Fig. 4 a view in perspective of the finished article of glassware externally screw-threaded as it comes from the mold shown in the preceding figures.

Similar letters of reference indicate like parts throughout the several views of the drawings.

My mold consists of four operative parts—viz., the base of the mold A, the internally-corrugated mold-ring B, the screw-ring C, and the plunger D.

The base-piece A is adapted to be set upon the glass-molding press, so as to be readily removed therefrom. It has the central protuberance *a* to fashion the concavity in the top of the glass cap, and at a suitable distance outside of said protuberance it is provided with the annular groove *a'*, preferably with sloping inner wall *a''*.

The mold-ring B has a central opening, with vertical corrugations *B'*, the counterpart of

the corrugations to be formed on the outside of the top flange of the glass cap E. It is also provided with the marginal under side flange *b*, shaped to fit the groove *a'* of the base A, where it is placed without being attached thereto. Above the corrugated opening through the mold-ring a cavity is formed large enough to receive the screw-ring C.

The screw-ring C has a flange *c*, which extends over or onto the top of the mold-ring B. It has a central cavity or bore *C'*, which is cylindrical and of such diameter as to receive the cylindrical plunger D. The under side of the plunger D may be a plain surface or may have any pattern or letters (formed either in cameo or intaglio) that may be desired to be impressed in the inner surface of the glass screw-cap. The collar of the glass cap is formed by increasing the diameter of the central cavity or bore of the screw-ring C at its inner end an amount equal to the desired thickness of the said collar. The side wall of this enlarged bore is provided with screw-threads, the counterpart of the screw-threads to be formed on the outside of the collar of the glass cap E. The shoulder formed by the increased bore is shown at *c''*, Fig. 2, and has an annular flange *c'''*, which produces a recess or groove in the under face of the collar of the glass cap. The outside diameter of the threaded collar made by the mold is just small enough to pass freely through the corrugated opening in the mold-ring B in discharging the finished article of glassware from said mold. Formed around the screw-ring C, immediately under the flange *c*, is a groove *c'''*, into which the ends of plates *C''* are projected. These plates *C''* are fastened by screws in recesses in the mold-ring B and are for the purpose of rendering the mold-ring and the screw-ring inseparable, while permitting the rotary adjustment or turning of the ring C in the ring B. By means of a handle H, connected with the mold-ring B, the rings B and C may be lifted off of the base A together, and the ring C is provided with a crank extension G, by which when the ring B is held by means of the handle H the screw-ring C can be rotated.

The operation of my improved glass-mold



is as follows: The base-piece A being set on the glass-press in the proper position, the mold-ring B, with attached screw-ring C, which latter is always in right operative position, is placed on the base-piece A, as above described. A suitable quantity of molten glass is dropped into the cavity of the mold through the screw-ring C, and then the plunger D is lowered, which causes the glass to fill the cavity of the mold. The screw-cap being thus formed is readily removed from the mold. The plunger D is first withdrawn. Then the rings B and C are lifted off of the base A, taking the newly-formed cap with them. The rings B and C are set down on any suitable level surface, as the table of the glass-press, and while the mold-ring B is held stationary by means of its handle the screw-ring C is rotated by means of its crank. The glass cap E cannot rotate, because of the corrugations of its rim. Consequently it is forced down by the action of the rotating screw-ring on its threaded part and will be dropped onto the table as soon as the threads on the cap are released from the screw-ring. The operation being complete, the parts are replaced by simply setting the mold-ring back in place on the base A, when the mold is ready for a repetition of the operation.

The advantages are apparent. There is no screwing of the parts together, the base remains in place under the plunger to insure a register of the plunger with the openings through the removable rings, and the operation of removing the glass cap from the mold is simple and quick.

What I claim as new, and wish to secure by Letters Patent of the United States, is—

1. In a glass-mold, the combination of the mold-base, the mold-ring seated thereon and having a central hole with means to prevent rotation of the glass article therein and means to be grasped by the hand to prevent the rotation of the mold-ring, and the screw-ring revolubly mounted in the mold-ring and having a central opening of two diameters, the larger being inside and forming a shoulder with the smaller outside part of said opening and the walls of the inside portion being screw-threaded, substantially as described.

2. In a glass-mold, the combination of the mold-base, the mold-ring seated thereon hav-

ing a central hole with indents or means for preventing rotation of the glass article therein and a handle by which the mold-ring may be held against rotation, the screw-ring mounted in the mold-ring and having a central opening the lower or inner portion of which is screw-threaded, and means for connecting the screw-ring to the mold-ring to permit rotation but not separation, substantially as described.

3. In a glass-mold, the combination of the stationary mold-base, the mold-ring seated thereon said mold-ring having a vertical bore with indents or the like to prevent rotation of the glass article therein, the screw-ring mounted in the mold-ring and having a central hole or bore screw-threaded at its lower or inner portion, means for lifting the two rings off of the base together and for rotating the screw-ring while holding the mold-ring against rotation, and a plunger arranged to reciprocate through the hole in the screw-ring, substantially as described.

4. In a glass-mold, the combination of the mold-base having an annular groove near the edge of its upper surface, a mold-ring having a flange to fit in the grooved base and having a corrugated central opening and a larger circular opening concentric with and above the corrugated opening said ring having a handle, a screw-ring fitting in the larger upper opening of the mold-ring, the central opening of said screw-ring having approximately its lower half enlarged in diameter and having the walls of said larger part screw-threaded said screw-ring having a flange to rest on the top of the mold-ring and said screw-ring having a circumferential groove under the said flange and said ring having a crank-handle, a locking plate or plates secured to the mold-ring and entering the groove in the screw-ring and a plunger arranged to reciprocate through the hole in the screw-ring, substantially as described.

In witness whereof I have hereunto set my hand and seal, at Marion, Indiana, this 20th day of September, A. D. 1898.

GRANVILLE H. GRAY. [L. S.]

Witnesses:

CHAS. BOHN,  
T. J. TROWL.