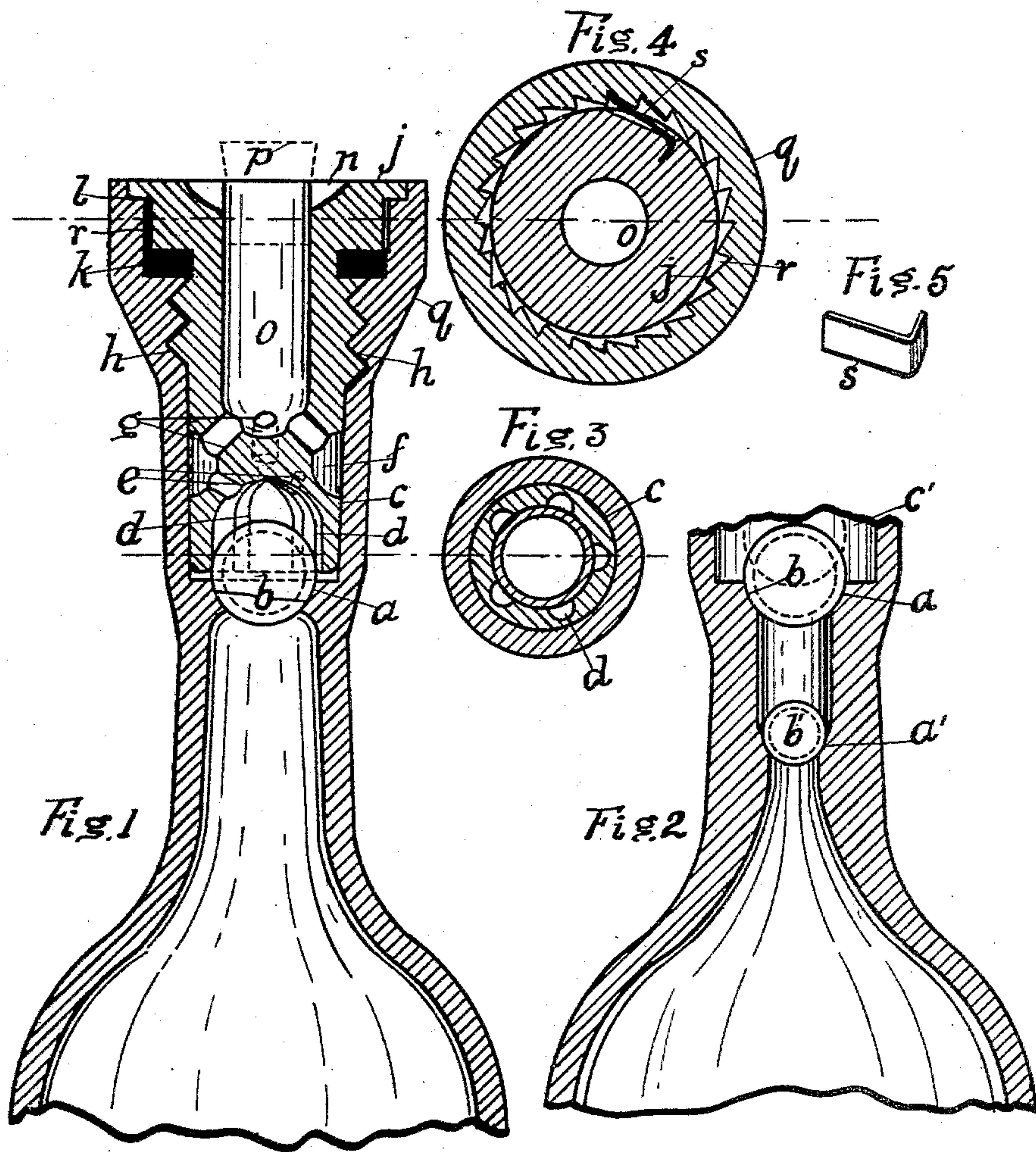


(No Model.)

A. FRIEDMAN.
NON-REFILLABLE BOTTLE.

No. 563,713.

Patented July 7, 1896.



Witnesses
R. B. Cochrane
Lionel V. Stanger

Inventor
Aron Friedman
By his Attorney Wm. Zimmerman.

UNITED STATES PATENT OFFICE.

ARON FRIEDMAN, OF CHICAGO, ILLINOIS.

NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 563,713, dated July 7, 1896.

Application filed May 5, 1896. Serial No. 590,278. (No model.)

To all whom it may concern:

Be it known that I, ARON FRIEDMAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Non-Refillable Bottles, which are fully set forth in the following specification, reference being had to the accompanying drawings, forming a part hereof, in which—
Figure 1 shows a central vertical section of my improved non-refillable bottle. Fig. 2 shows a modification of the same. Fig. 3 shows a transverse section of Fig. 1 on a plane indicated by the broken line through the center of Fig. 2. Fig. 4 is a transverse section of Fig. 1 on the plane indicated by the broken line through the center of Fig. 1. Fig. 5 shows the ratchet-spring *s* in perspective.

Like letters of reference show like parts in each figure.

The object of my invention is to produce a bottle which may be filled and closed but once and can never be refilled under the same condition, although my bottle may be emptied in the same manner as any ordinary bottle, without any injury to it. To attain said desirable ends, I construct my said new bottle in substantially the following manner, namely:

I use the form of an ordinary bottle but change the construction of the neck to suit my purpose. To that end I reduce the channel of the neck by forming an annular valve-seat *a*, for a ball-valve *b*, near the top of the body. Above said valve-seat the channel is enlarged and cylindrical, and at a suitable height provided with one or two or more sunken screw-threads *h*. Above said threads is a shoulder sunk still deeper into the material of the neck, thus necessitating an enlargement of the neck into an expanded part *q*. From said shoulder the neck is again cylindrical to near the top thereof, where there is a square or other-formed shoulder *l*, and between said shoulders is a ratchet-chamber with ratchet-teeth *r*.

The bottle is closed by a single closing-piece *j*, extending from or near the valve-seat to the top of the neck, provided with the following elements of construction, namely: A valve-chamber *c*, provided with a cylindrical space of slightly larger diameter than the ball-valve *b*, is spherically arched and high enough to

admit of sufficient motion of the valve along the axis of its cage to discharge sufficiently. From the bottom of the cage rise grooves *d*, which pass through the dome in diagonal directions in the form of holes *e*, entering into the lower side of an annular channel *f*, formed above the dome, on said closing-piece. On the upper side of said channel are similarly-slanting holes *g*, set alternately, or staggering, with the holes *e*. The holes *g* enter a central discharging-chamber *o*, which extends to the top of the closing-piece, which is, preferably, flush with the top of the neck. Two opposite slots *n* are adapted to receive the end of a screw-driver, and a cork *p* (shown in broken lines) closes the discharging-chamber *o*, and thus closes the bottle completely against any accidental discharge. Said closing-piece is also cylindrical from its lower end to the screw-threads, which fit into the threads *h*. Said cylindrical part may fit closely to prevent the escape of liquids outside of the proper discharge, which is through the chamber *o*, and the parts may be ground, if desired, for such purpose. Above the threads is an annular groove and shoulder holding a packing-ring *k* for the purpose of preventing the passage of fluid or moisture into the ratchet-chamber, formed in the head *q*, with ratchet-teeth *r*. In said ratchet-chamber operates a right-angled spring-pawl *s*, set into a slot in the closing-piece, so arranged that said spring will play over the teeth *r* when the closing-plug is screwed home, but which will resist and lock said piece against a reverse motion, as shown. The flange which fits into the shoulder *l* closes said chamber against any interference with the spring *s*. By means of the gasket or packing *k* the spring is kept from moisture and rust, but said end may be effected equally well by the ground joints before mentioned. The ball-valve is here shown hollow, but it may as well be solid. By means of this construction this bottle must be filled before the piece *j* is inserted, but it can never be refilled, as said closing-piece can never be removed without breaking the bottle, and the valve cannot be reached through said tortuous channels by any mechanism to lift the valve from its seat, and still less can the second valve *b'* be reached, which may be used if an additional safeguard should be required.

The valve *b* is also shown in its open position, in Fig. 2, where it is indicated in broken outlines.

What I claim is—

- 5 The combination with a bottle with a ball-valve seat in its neck, said neck diametrically expanded above said valve-seat into a cylindrical bore terminating in sunken screw-threads, a shoulder above said screw-threads,
10 a cylindrical bore enlarged to said last shoulder with ratchet-teeth terminating at a shoulder and an enlarged bore at the top of said ratchet-teeth, of a ball-valve, a closing-piece

having valve-chamber with longitudinal grooves, and a discharge-chamber, an annular 15 groove between said valve-chamber and discharge-chamber, and alternating, or staggering, openings into said annular groove from both of said chambers, screw-threads and a spring-ratchet in said ratchet-chamber, and 20 closing-flange for said ratchet-chamber, substantially as specified.

ARON FRIEDMAN.

Witnesses:

LIONEL I. SANGER,

WM. ZIMMERMAN.