

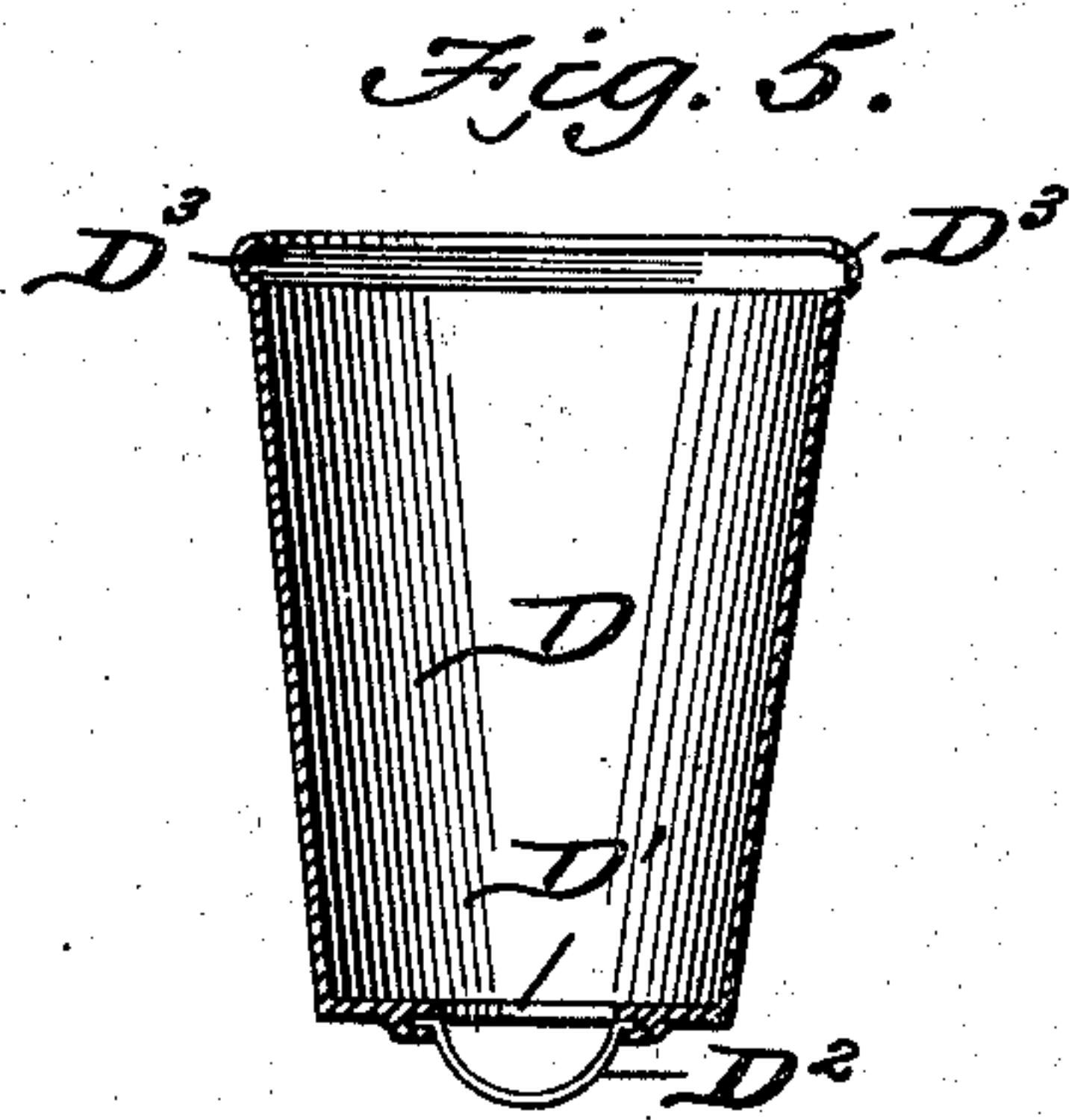
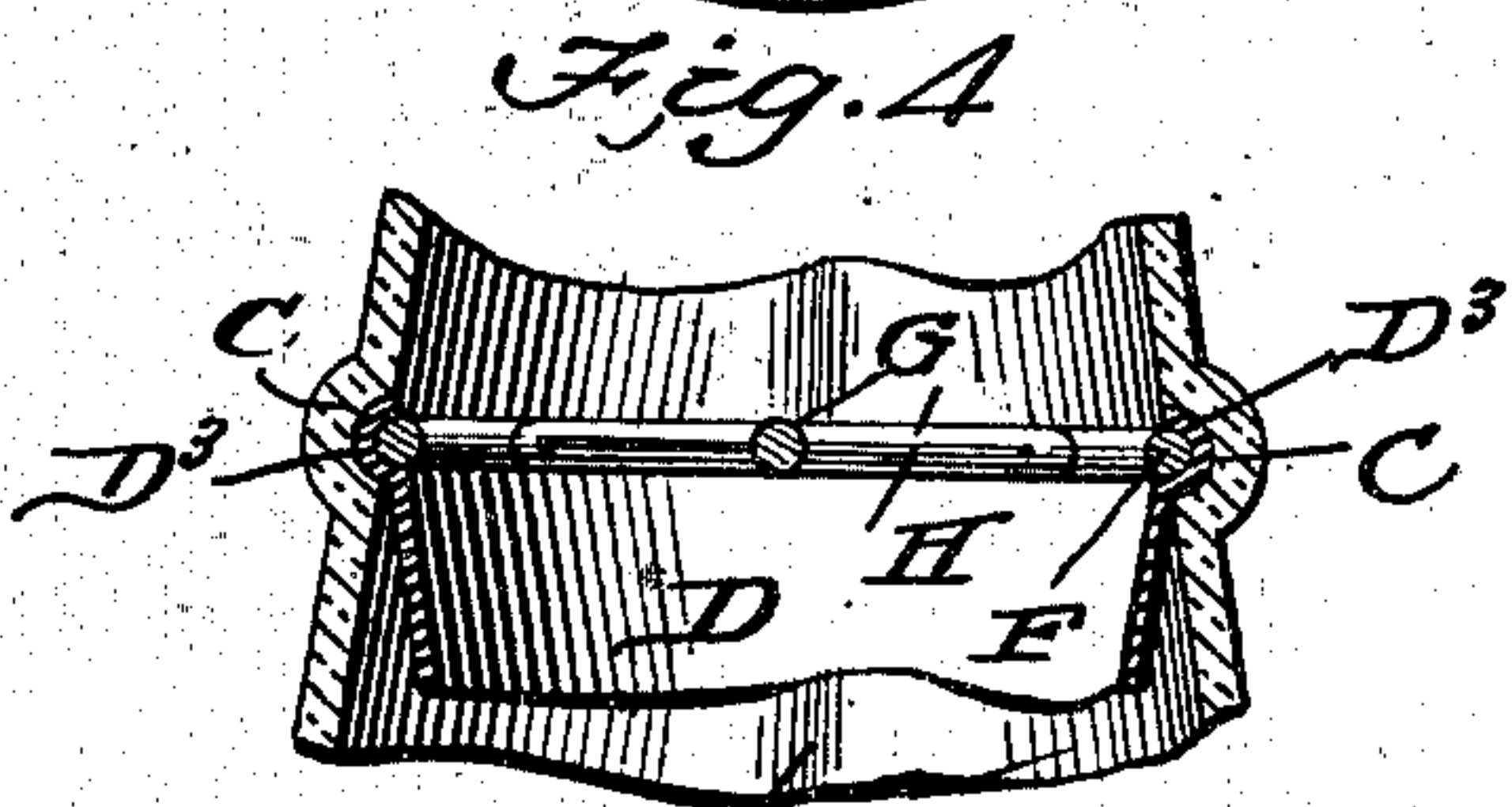
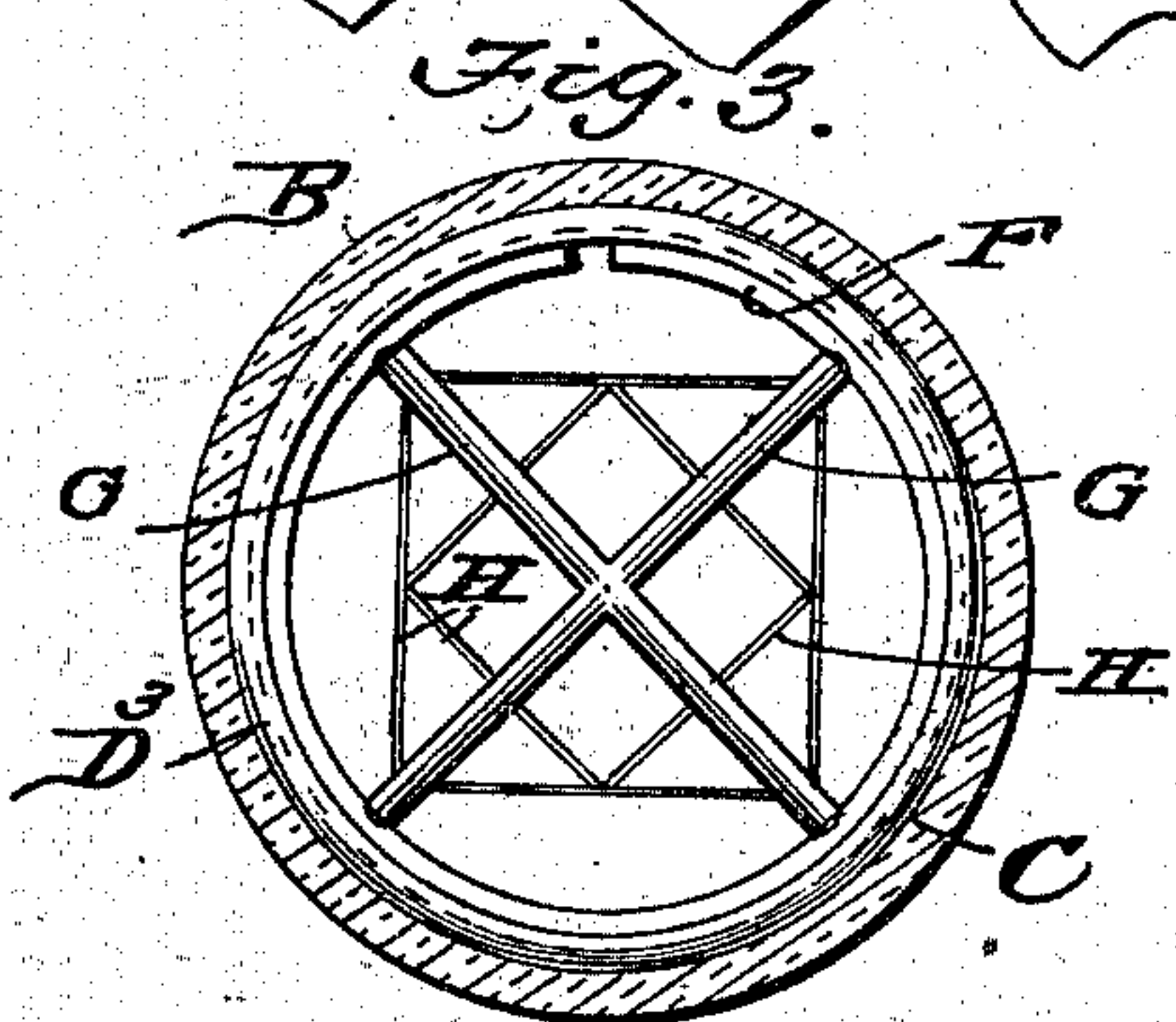
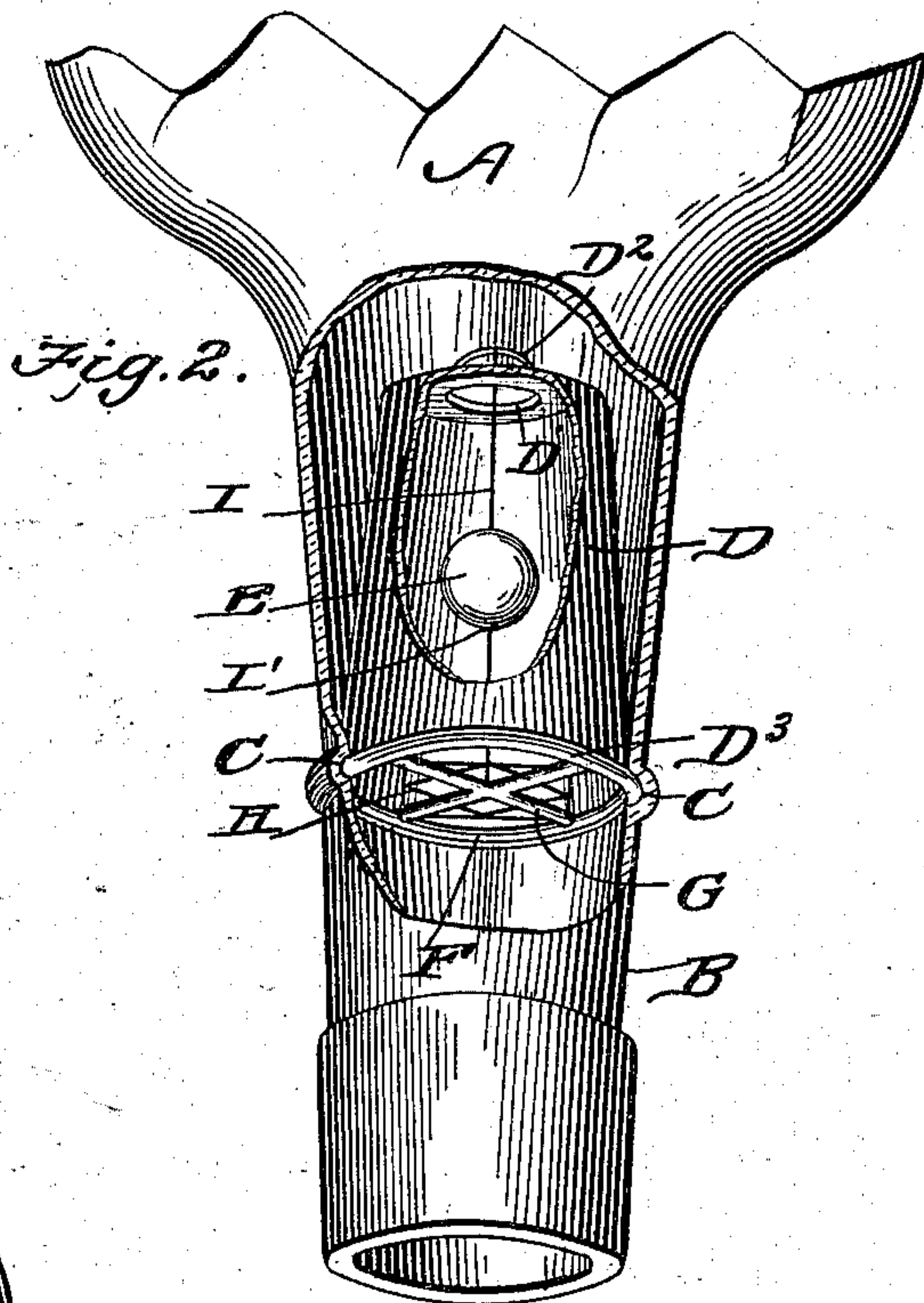
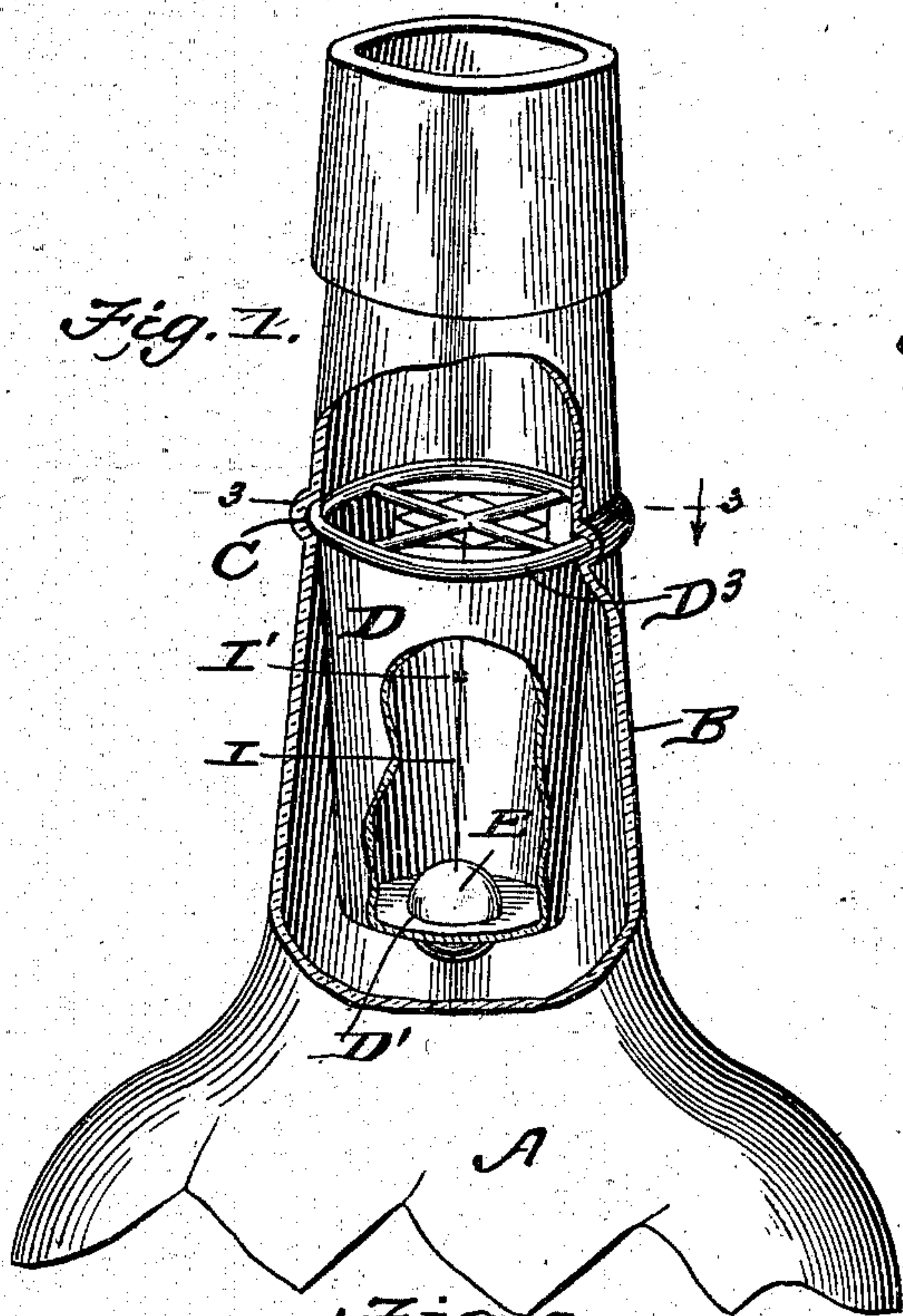
No. 681,178.

Patented Aug. 27, 1901.

W. V. K. AYRES.
NON-REFILLABLE BOTTLE.

(Application filed June 1, 1901.)

(No Model.)



Witnesses
M. S. Blondel,
Charles Shaw

Inventor
W. V. K. Ayres.

By *Marshall*
Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM V. K. AYRES, OF NEWARK, NEW JERSEY.

NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 681,178, dated August 27, 1901.

Application filed June 1, 1901. Serial No. 62,759. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM V. K. AYRES, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented a new and useful Non-Refillable Bottle, of which the following is a specification.

This invention is an improved construction of non-refillable bottle, one object being to provide a cheap and simple device which can be applied to bottles for the purpose of preventing the said bottles being refilled and used a second time.

Another object of the invention is to provide a non-refillable bottle which shall be nearly as cheap in construction as the ordinary bottle devoid of such an attachment.

With these objects in view the invention consists, essentially, in forming the neck of the bottle with a groove or seat for the purpose of supporting the upper end of a rubber funnel, the lower end of said funnel having a circular opening upon which is seated a ball-valve, the said valve being arranged upon a wire suspended from a framework arranged in the upper end of the rubber funnel.

The invention consists also in certain details of construction and novelties of combination, all of which will be fully described hereinafter and pointed out in the claims.

In the drawings forming a part of this specification, Figure 1 is a sectional perspective view illustrating the position of the various parts when the bottle is in its normal or upright position. Fig. 2 is a similar view illustrating the position of the parts when liquid is being poured from the bottle. Fig. 3 is a section on the line 3 3 of Fig. 1. Fig. 4 is a detail sectional view, and Fig. 5 is a detail section of the rubber funnel.

Referring to the drawings, A indicates the bottle, and B the neck thereof, said neck having an annular groove or seat C produced about midway its height upon the interior.

D indicates a rubber funnel having an opening D' produced in the lower end thereof and also having a curved wire D² attached to the bottom of the funnel directly beneath the circular opening D' and adapted to support the ball-valve E in the circular opening D'. The rubber funnel D is arranged in the neck of the bottle and has an annular grooved beaded

edge D³ at its upper end, which is adapted to be projected into the annular groove or seat C. In order to firmly hold the beaded edge D³ into the groove or seat C, I employ an open spring-ring F, which is adapted to fit into the said beaded groove D³ and by its inherent elasticity force the said beaded edge D³ into the seat.

Two cross-strips G are connected to the ring F, and small guard-wires H are connected to the said cross-strips and to each other, the purpose being to prevent anything being inserted into the neck of the bottle for the purpose of interfering with the action of the valve. This ball-valve E slides upon the wire I, which extends from the cross-strips G to the curved wire D², and a suitable stop I' is arranged upon the said wire to limit the outward movement of the ball-valve.

In operation the funnel containing the ball-valve at its lower end and an expansible frame at its upper end is forced into the neck of the bottle and secured by having its annular grooved beaded edge forced into the annular groove or seat in the neck of the bottle. When it is desired to remove the contents of the bottle, the mouth of the bottle is turned down the same as usual, and the valve is unseated by gravity and permits the liquid to pass through the central opening out through the mouth of the bottle. As soon, however, as the bottle is righted the valve will immediately reseat itself, and thereby prevent any liquid being introduced into the bottle a second time.

It will thus be seen that I provide an exceedingly cheap, simple, and efficient construction of non-refillable bottle.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a non-refillable bottle, the combination with the bottle-neck having an annular groove, of an expansible funnel having an opening at its lower end, a ball-valve adapted to seat in the said opening, an expansible frame arranged in the upper end of the funnel, and a wire depending from said frame and upon which the valve slides, substantially as described.

2. In a non-refillable bottle, the combination with the bottle-neck having an annular

groove, of a rubber funnel having a circular opening at its lower end, and a curved wire arranged beneath the said opening, the upper end of the said funnel having an annular grooved bead, an open spring-ring located in the said grooved bead, the cross-strips, the wire connecting the cross-strips, a curved wire beneath the central opening and the ball-

valve adapted to seat in the said central opening and slide upon the depending wire, substantially as described.

WILLIAM V. K. AYRES.

Witnesses:

CHAS. STEWART,
H. E. AYRES.