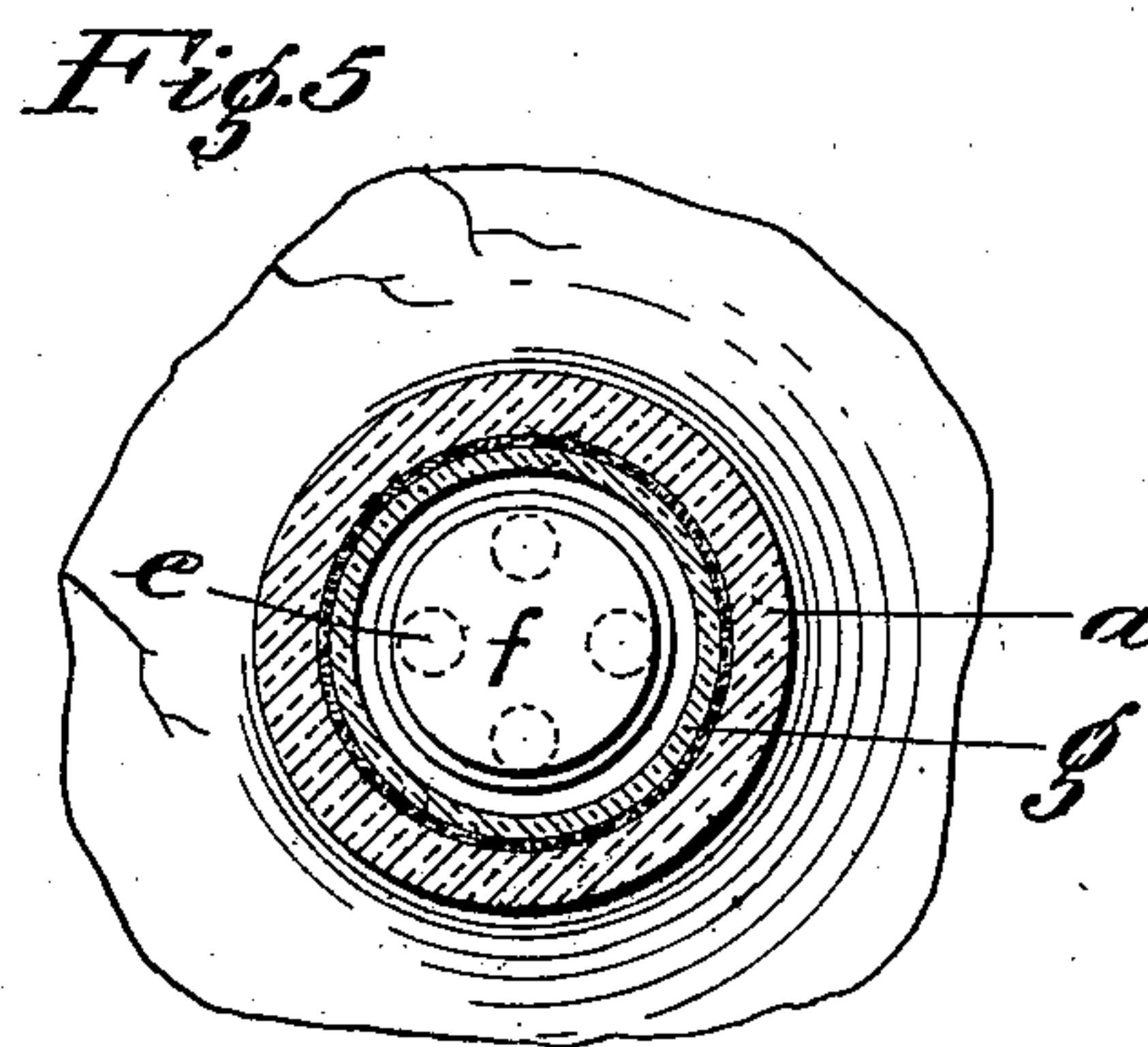
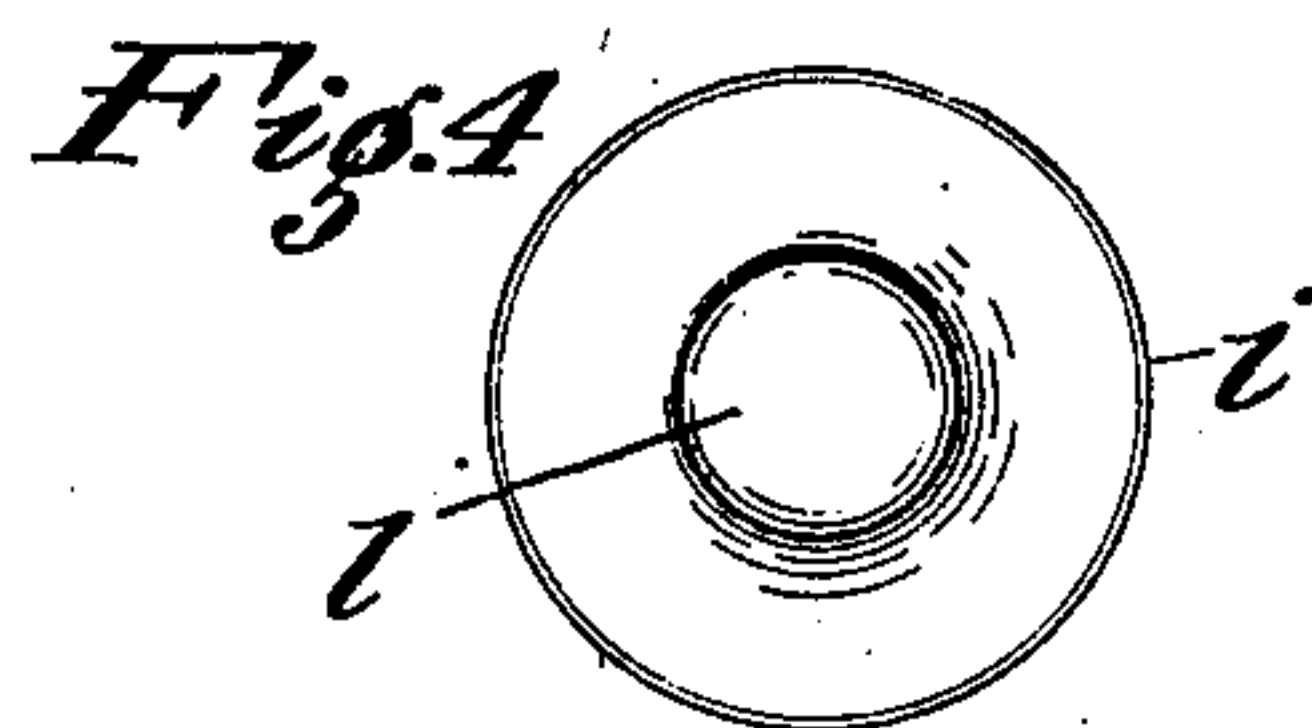
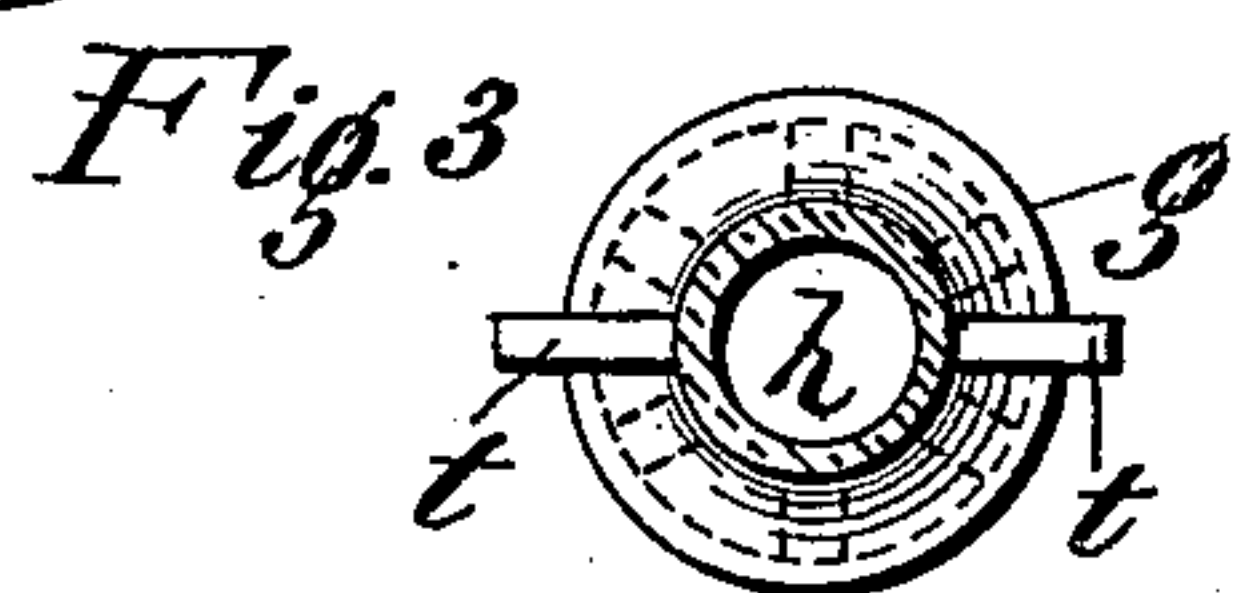
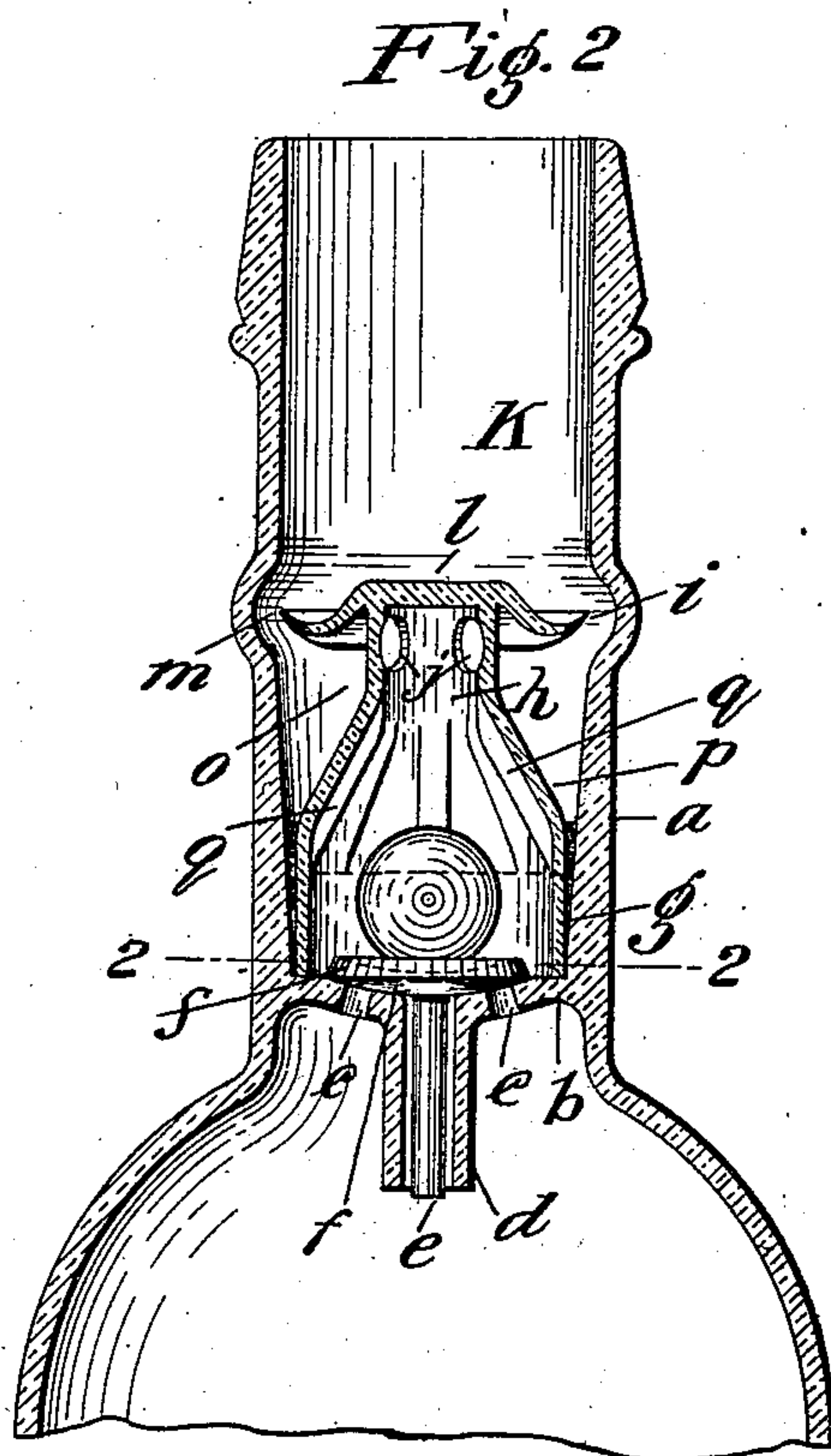
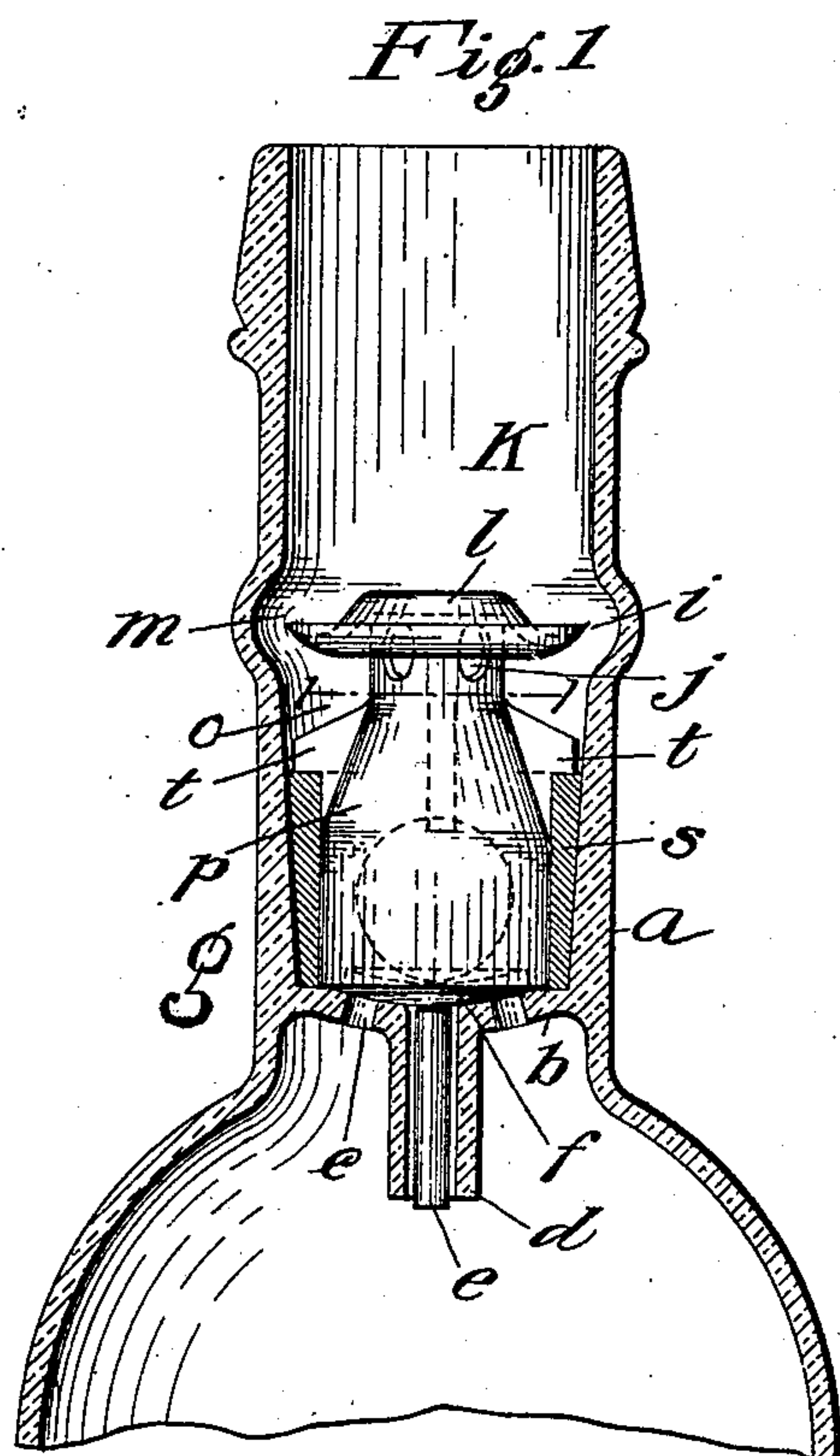


J. A. LAHN.
NON-REFILLABLE BOTTLE.
APPLICATION FILED APR. 9, 1902.

NO MODEL.



WITNESSES:
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UNITED STATES PATENT OFFICE.

JOHN ALBIN LAHN, OF NEW YORK, N. Y.

NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 723,536, dated March 24, 1903.

Application filed April 9, 1902. Serial No. 102,006. (No model.)

To all whom it may concern:

Be it known that I, JOHN ALBIN LAHN, a subject of the King of Sweden and Norway, and a resident of New York city, county and State of New York, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

My invention consists of valve-controlled passages in the base of the neck of the bottle adapted to close the inlet into the bottle, provided with a gravitating ball to facilitate the closing of the valve, which is specially constructed for effective operation of the ball, and covered by a cage or crib, in which are passages allowing free escape of the liquid around the ball when the bottle is upturned into a space above the ball, from the upper part of which escape-passages are provided under a cover-flange coequal in breadth with the cross-section of the inner space of the neck of the bottle above the flange, said flange being for a guard to prevent inserting instruments to open the valve, the inner space of the neck being slightly enlarged in the plane of the flange for escape of the liquid around the flange, and the edge of the flange is made thin and slight for being easily breakable and is conspicuously marked in some distinguishing color to show breakages likely to occur in case instruments are used to hold the valve open for refilling, and thus serve as a means of detection, all as hereinafter described, reference being made to the accompanying drawings, in which—

Figure 1 represents a vertical section of the bottle, valve-seat, and the packing of the valve and guard apparatus, said valve and guard apparatus being represented in side view. Fig. 2 is a vertical section of the bottle and guard apparatus with the valve proper in side view. Fig. 3 is a detail in horizontal section on line 1 1 of Fig. 1. Fig. 4 is a top view of the guard apparatus. Fig. 5 is a horizontal section on line 2 2 of Fig. 2.

At the base of the neck *a* of the bottle is an integral or it may be an otherwise fixedly-secured valve-seat *b*, having suitable passages *c* for the escape of the liquid and a tubular guide *d* for the stem *e* of a valve *f* to control said passages. On the valve, which has a concave upper surface, is a ball, which

centers on the top of said valve when the bottle is at rest.

A crib or cage having a base-ring *g* for securing it in the base of the neck of the bottle, a chamber *h* for receiving the liquid after passing the valve and the ball, and a top *l* and guard-flange *i* for protection against opening the valve with instruments are placed over the valve and the ball for their protection. From said chamber *h* the liquor escapes through passages *j* under the protective flange *i* and around the edge of said flange into the nozzle *k* and thence out of the bottle for use.

The neck *a* is inwardly grooved at *m* in the plane of the cover-flange to provide space for the escape of the liquid around the edge of the flange, thus enabling the flange to be made of equal diameter, or thereabout, as the diameter of the nozzle above for obstructing the use of instruments past the edge of the flange for opening the valve or holding it open for refilling.

The cage or the flange is to be made of glass or other easily-breakable material and also to be thin and slender at the edge for the purpose of being easily broken by the use of instruments as a means of detecting such use, and said edge may be conspicuously colored, as indicated by the black parts of the flange-section in Fig. 2, as further means of detection by more readily catching the eye of the observer peering into the nozzle.

Between the base-rim *g* of the cage and the upper chamber *h* the body of the case is considerably contracted to afford annular space *o* under the flange *i* for the outflowing liquor to spread out in a broad thin stream to pass through the narrow annular passage *m*, and the taper intermediate part *p* of the cage is internally grooved vertically, as at *q*, for free passage of the liquor when the bottle is upturned and the ball is lodged in said taper part. The ball, being movable independently of the valve and more sensitive to the motions of the bottle, recoils against and shocks the valve and closes it more promptly than if the valve were increased in weight by an amount equal to the weight of the ball, the ball not being used, and such increase of weight in the valve would make it top-heavy and more obstructive to closing by the cramping of the

stem in the stem-guide *e* when open and the bottle partly upturned in an attempt at refilling. The concave shape of the valve tending to center the ball on it materially facilitates sensitive action of the valve in closing by reducing the tendency of the stem to cramp in the guide *d*.

In Fig. 1 the ring of the cage is represented as secured in its place by an elastic packing-ring *s*, of any suitable material, and the cage is represented with a couple of laterally-projecting lugs *t*, reaching over the upper edge of the packing-ring, as a means of forcing the packing along with the cage into the inner taper part of the neck of the bottle, both the cage and the packing being inserted together and the cage being forced down by any suitable instrument applied to the top of the cage.

In Fig. 2 the ring *g* is represented as more closely fitting the said taper part of the neck and secured with cement.

The parts may be fitted by a ground joint, with or without cement, and various other

means of securing the cage may be employed, as preferred.

What I claim as my invention is—

The combination with the bottle, of the valve-seat *b* located at the base of the neck *a*, and having passages *c* and the central tubular valve-stem guide *d*, of the valve *f* having the guide-stem arranged in said guide, a ball which centers on the top of the valve, a crib or cage having a base-ring *g* resting on the valve-seat and secured in the base of the neck, said crib containing the receiving-chamber, said chamber being closed at the top, and the guard-flange *i*, said guard-flange being of attenuated, frangible and conspicuously-visible construction, and all constructed and arranged substantially as described.

Signed at New York this 24th day of March, 1902.

JOHN ALBIN LAHN.

Witnesses:

C. SEDGWICK,
J. M. HOWARD.