

No. 756,770.

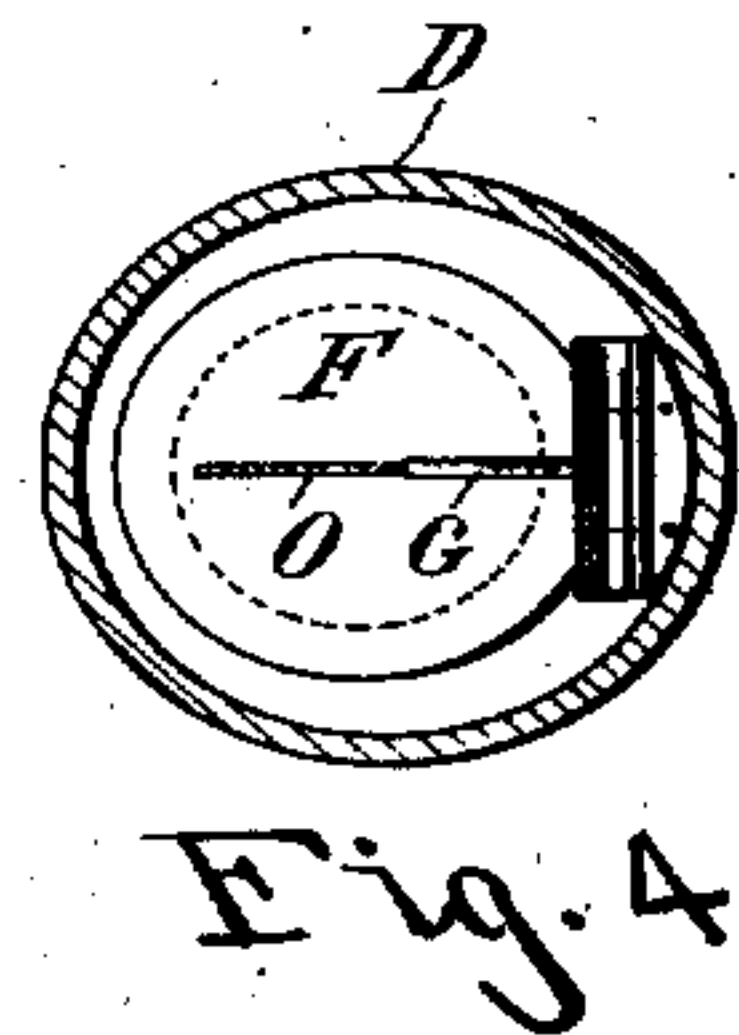
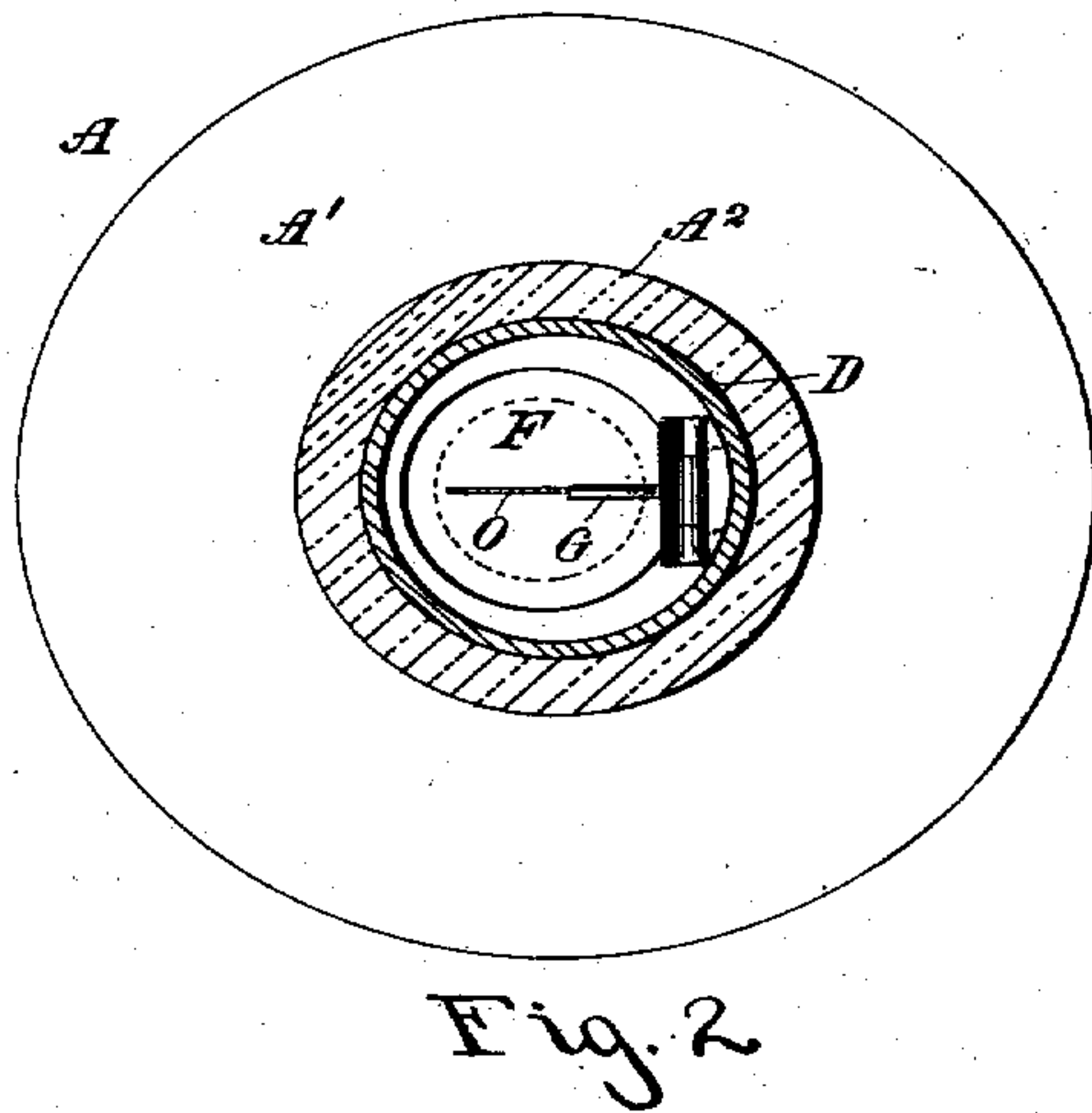
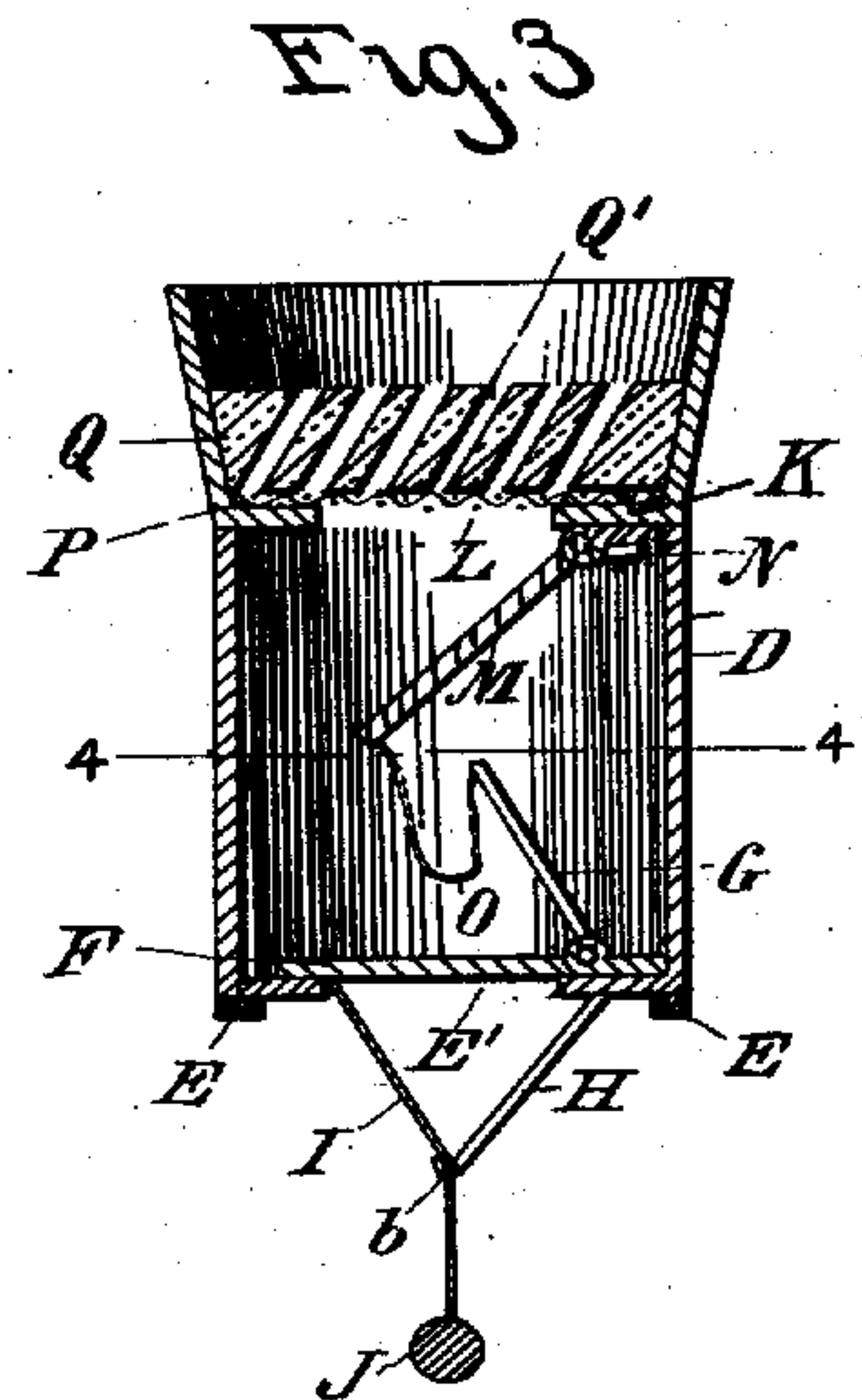
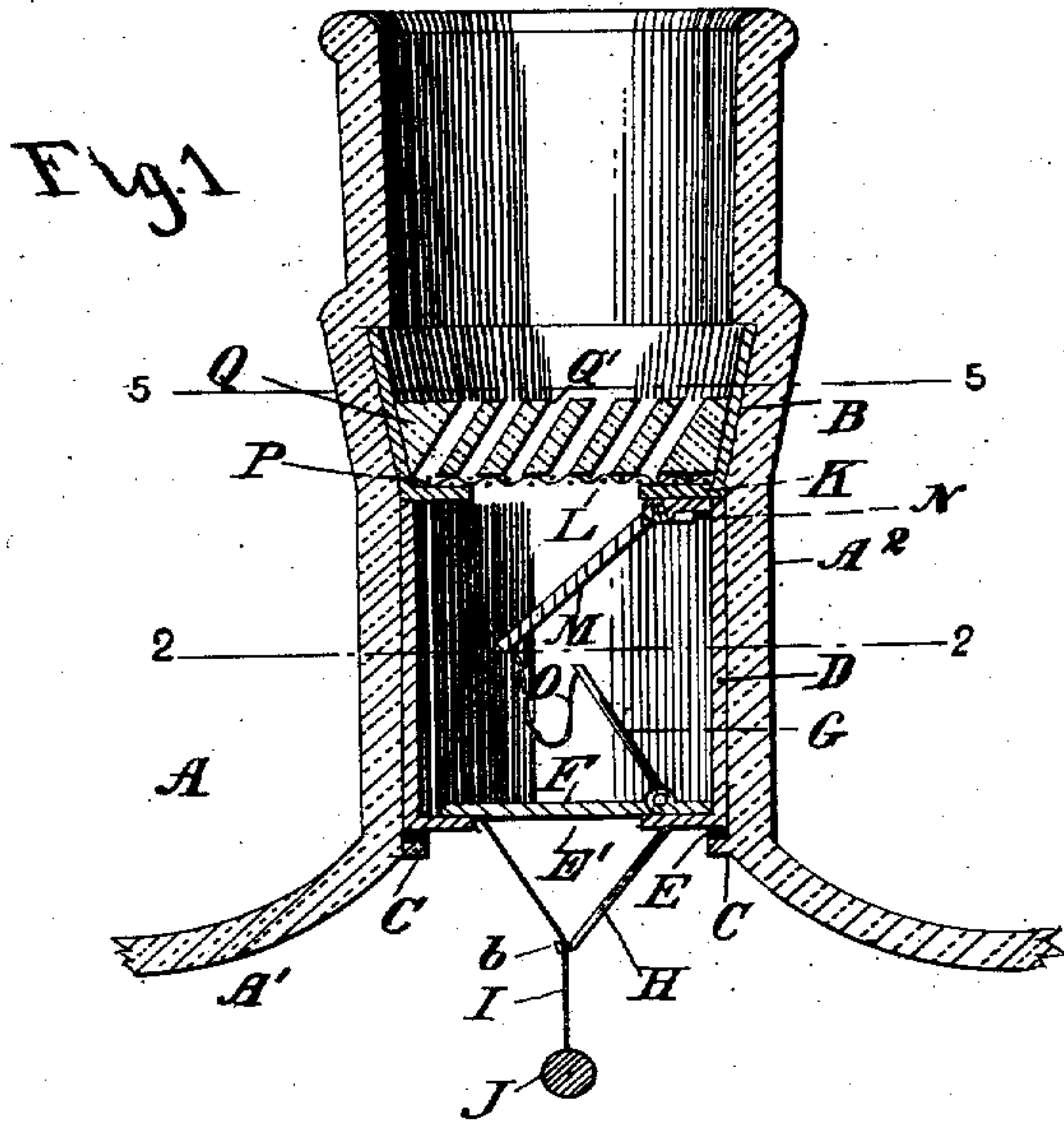
PATENTED APR. 5, 1904.

E. E. ADAMS.  
BOTTLE CLOSURE.

APPLICATION FILED AUG. 5, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:

Joseph G. Quinn, Jr.  
Leon A. Carley

INVENTOR

Edward E. Adams

BY

Shaly, Hasbrouck & Schroeder  
his ATTORNEYS

No. 756,770.

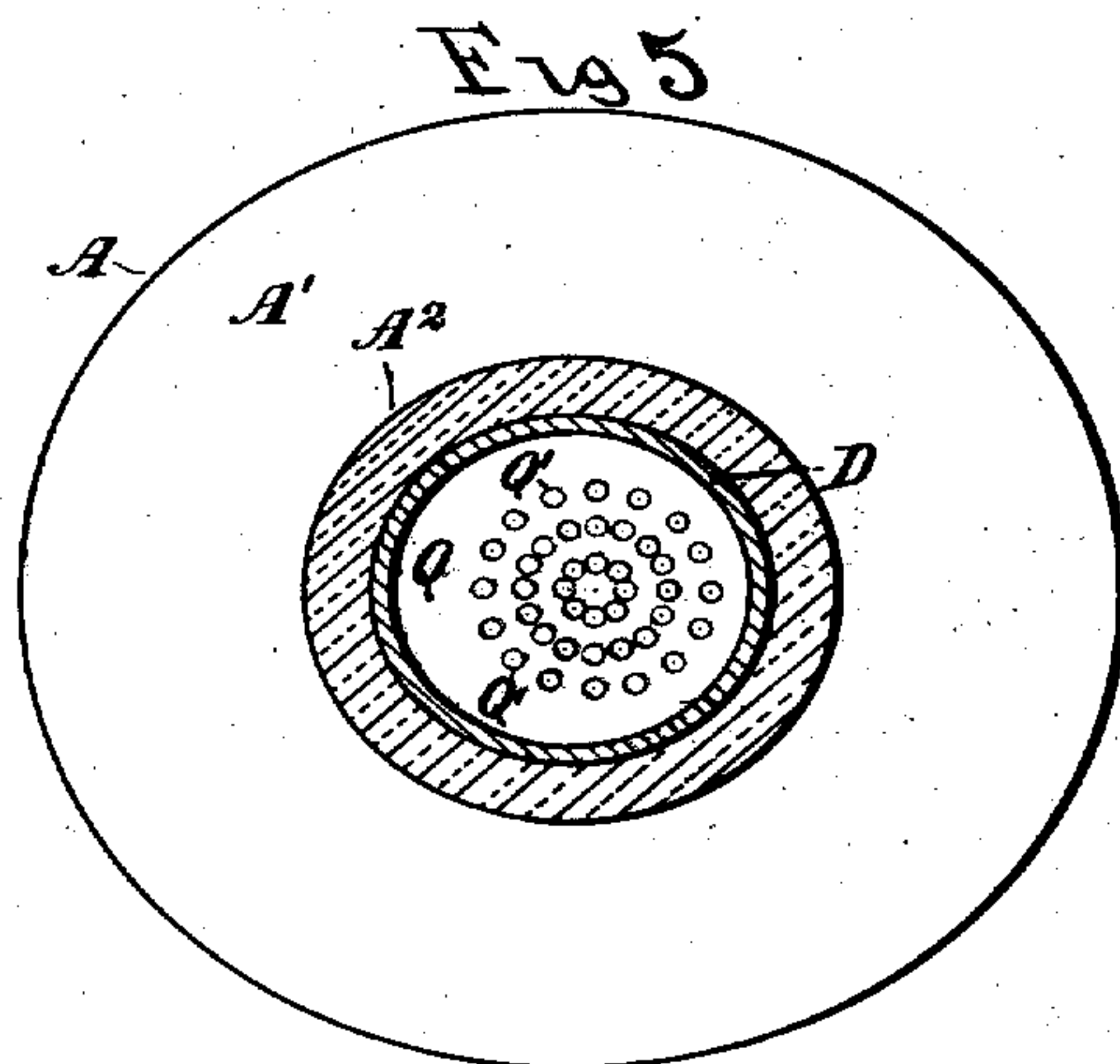
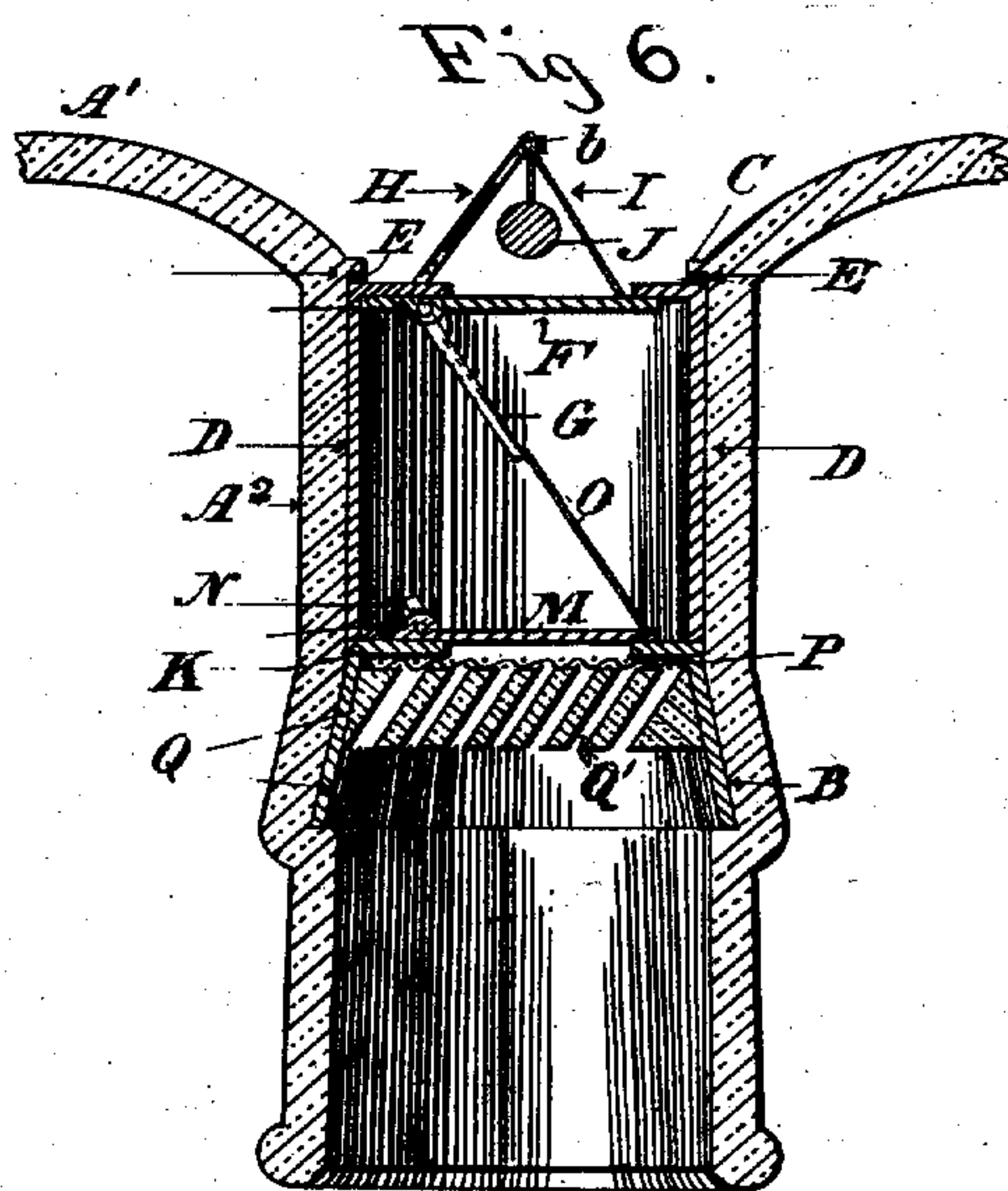
PATENTED APR. 5, 1904.

E. E. ADAMS.  
BOTTLE CLOSURE.

APPLICATION FILED AUG. 6, 1903.

NO MODEL.

2 SHEETS—SHEET 2.



WITNESSES:

Joseph E. Quinn Jr.  
Leon A. Carley

INVENTOR

Edward E. Adams

BY

Shaly, Hasbrouck & Schveden  
his ATTORNEYS



## UNITED STATES PATENT OFFICE.

EDUARD E. ADAMS, OF NEW YORK, N. Y.

## BOTTLE-CLOSURE.

SPECIFICATION forming part of Letters Patent No. 756,770, dated April 5, 1904.

Application filed August 5, 1903. Serial No. 168,249. (No model.)

*To all whom it may concern:*

Be it known that I, EDUARD E. ADAMS, a citizen of the United States, residing at the city of New York, borough of Brooklyn, Kings county, in the State of New York, have invented certain new and useful Improvements in Bottle-Closures, of which the following is a full, clear, and exact specification.

My invention relates to closures for bottles and analogous receptacles; and the same has for its object more particularly to provide a simple, efficient, and inexpensive valve adapted for securement in the neck of a bottle or receptacle, which valve will permit of the liquid within the bottle or receptacle being readily removed therefrom in the usual manner and when the contents or part of the contents has been discharged from the bottle or receptacle effectually prevent the replenishing or refilling of the same in any manner.

To these ends my invention consists in the novel details of construction and in the combination, connection, and arrangement of parts hereinafter more fully described and then pointed out in the claims.

In the accompanying drawings, forming part of this specification, wherein like letters of reference indicate like parts, Figure 1 is a central vertical section of the upper part of a bottle with a closure made according to and embodying my invention arranged therein. Fig. 2 is a transverse section on the line 2 2 of Fig. 1. Fig. 3 is a central vertical section of the closure detached from the bottle. Fig. 4 is a transverse section on the line 4 4 of Fig. 3. Fig. 5 is a transverse section on the line 5 5 of Fig. 1; and Fig. 6 is a view similar to Fig. 1, showing the bottle inverted.

In said drawings, A designates the upper portion of a bottle of usual general construction comprising a body portion A' and a neck A<sup>2</sup>. Upon the inner surface of the neck A<sup>2</sup> about midway of its height is provided an annular recess B, which tapers inward and downward, and below said recess B at the junction of the neck A<sup>2</sup> with the body portion A' is an inwardly-extending flange or shoulder C. Within said bottle-neck A<sup>2</sup> is arranged a cylindrical casing D, which fits snugly therein and is supported at its lower edge upon the

annular shoulder C, while its upper edge is expanded into the tapering recess B of the neck in order to hold said casing firmly in place therein, and E denotes an annular packing or gasket disposed intermediate the shoulder C and the bottom of the casing D in order to produce a tight closure of the parts at this point.

In the base of the casing D is an inlet-aperture E', provided with an inwardly and upwardly opening valve F, which is hinged to said base upon its upper surface and provided with an upwardly and inwardly extending arm G, which is secured at its lower end to the pivoted end of said valve and forms a stop to limit the movement of said valve. H denotes an arm or guide secured at one end to the under side of the bottom of the casing below the valve F, having its free end extending inwardly and downwardly to a point directly below the center of the inlet-aperture E' and provided with an eye b, and I denotes a flexible connection having one end secured to the under side of the valve F opposite to its hinged end or side and its other end passed through the eye b of the arm H and provided at said end with a buoyant counterweight J, which is sufficiently heavy to counterbalance the weight of the valve F when the bottle is inverted.

Within the casing D at about the point of junction of its cylindrical portion with its outwardly-flaring portion is secured a top K, provided with an outlet-aperture L, which corresponds in size with and registers with the inlet-aperture E' in the base of said cylinder D, and M denotes a valve for said aperture L, which is pivoted upon the under side of the top K directly above the pivoted end or edge of the valve F, said valve M being provided at its pivoted end with a stop N, adapted to normally maintain said valve unseated and at an angle of about forty-five degrees to its seat, and O denotes a flexible connection, having one end secured to the under side of the valve M opposite to its pivoted end and its other end secured to the free end of the arm G, whereby to hold said valve open to permit of the passage of the fluid there-through when the valve F is unseated.



P denotes a piece of wire fabric disposed upon the upper surface of the top K, and Q denotes a top secured in the flaring portion of the casing, provided with inclined or diagonal circular apertures Q' to prevent the insertion of a wire or other instrument for the purpose of interfering with the operation of the valves.

The mouth of the bottle-neck may be sealed with a cork or stopper in the usual manner.

The operation of the apparatus is as follows: As soon as the bottle has been filled the cylinder D, containing the closure, is inserted within the bottle-neck A<sup>2</sup> and its upper edge expanded into the annular recess therein in order to hold said cylinder D duly in position and the usual cork or stopper then inserted therein above the same. To withdraw the liquid from the bottle, the cork or stopper must first be removed, and thereupon the liquid may be poured from the bottle in the usual manner. As soon as the bottle is tilted or inclined to pour out the liquid contained therein the same will unseat the valve F and elevate the free end of the arm G, and this in turn by means of the flexible connection O raises the valve M (which had assumed a vertical position when the bottle was tilted) and permits of the flow of the fluid therethrough and the wire fabric P and the diagonal apertures Q' in the top Q and issue from the mouth of the bottle in the usual manner. This operation may be repeated until the entire contents of the bottle has been discharged. When the bottle has been thus emptied or partly emptied, an attempt to refill or replenish the same will result in failure if the attempt be made with the bottle in the position with its neck up, since the pressure of the fluid within the casing D, bearing upon the valve F, will tend to hold the same firmly pressed against its seat, and any attempt to refill the bottle in an inverted position, as shown at Fig. 6, will also result in failure, since the valve M will, owing to gravity, be caused to seal its opening, and at the same time through the flexible connection O and arm G of the valve F hold said latter valve pressed against its seat, this being further insured by the action of the counterweight J and connection L in being caused to assume the positions illustrated at Fig. 6.

Without limiting myself to the precise details of construction, which may be varied within the scope of the invention, what I claim, and desire to secure by Letters Patent, is—

1. A closure for bottles and other receptacles, comprising a casing, a guard therefor, inlet and outlet ports in said casing, valves for said inlet and outlet ports, a flexible connection uniting said valves, and a counterpoise for one of said valves, substantially as specified.

2. A closure for bottles and other receptacles comprising a casing, a guard therefor,

inlet and outlet ports arranged in said casing, valves for sealing said inlet and outlet ports, a member composed of flexible and rigid sections connecting said valves, a counterpoise, and a flexible member connecting said counterpoise with one of said valves, substantially as specified.

3. A closure for bottles and other receptacles comprising a casing, a guard therefor, inlet and outlet ports arranged in said casing, valves for sealing said ports, a member extending from one of said valves, a flexible section connecting said member with the other of said valves, an arm depending from the base of the casing provided with an eye at its free end, a counterpoise and a flexible member having one end secured to said counterpoise and its other end extending through the eye of the depending arm and secured to the valve located directly above said depending arm, substantially as specified.

4. A closure for bottles and other receptacles comprising a casing, a guard therefor, inlet and outlet ports arranged in said casing, a normally seated valve and a normally unseated valve adapted to seal said ports, a member uniting said valves, and a counterpoise connected to the normally seated valve, substantially as specified.

5. A closure for bottles and other receptacles comprising a casing, a guard therefor, inlet and outlet ports arranged in said casing, oppositely-opening valves for said ports arranged within said casing, a member connecting said valves consisting of a flexible and a rigid section, a counterpoise, and a flexible member connecting said counterpoise with one of said valves, substantially as specified.

6. A closure for bottles and other receptacles comprising a casing, a guard therefor, inlet and outlet ports in said casing, a valve arranged within said casing below said outlet-port, and a valve arranged within said casing above the inlet-port, a connecting member uniting said valves comprising a rigid section secured to the inlet-valve, and a flexible section secured to the outlet-valve and to the end of said rigid section, a counterpoise, a flexible member connecting said counterpoise with said inlet-valve, and a guide for said flexible member, substantially as specified.

7. A closure adapted for securement within a bottle or other receptacle comprising a casing, a perforated top therefor, inlet and outlet ports in said casing, a valve hinged in said casing below the outlet-port, opening inwardly and held normally unseated, a stop for limiting the inward movement of said valve, a valve hinged in said casing over the inlet-port therein adapted to normally seal the same and to open in a direction opposite to that of the outlet-valve, an arm extending upwardly from the hinged end of said inlet-valve and adapted to limit the movement of said inlet-valve, a flexible member connecting the free end of



the arm of inlet-valve with the outlet-valve, an arm depending from the base of the casing having an eye or loop at its free end, a counterpoise for said inlet-valve and a flexible member secured to said counterpoise and extending through said eye or loop and secured to the inlet-valve at a point opposite its hinged portion, substantially as specified.

8. A closure adapted for securement within a bottle or other receptacle comprising a casing, a top therefor having diagonal perforations therein, an outlet-port in the upper end of said casing, a valve hinged upon the under side of said end, held normally open, and adapted to seal said outlet-port, a stop to limit the inward movement of said valve, an inlet-port arranged in the bottom of the casing, a valve hinged upon the upper side thereof adapted to normally seal said inlet-port, an arm extending upwardly and inwardly from the hinged end of said valve, and adapted to limit the movement of said valve, a flexible connection having one end secured to said arm and its other end to the edge of the outlet-valve at a point opposite to its hinged portion, an arm depending from the bottom of the casing and extending inwardly, a loop or eye at the free end of said arm, a counterpoise for said inlet-valve, and a flexible member having one end secured to said counterpoise, and its other end extending through the eye or loop of the de-

pending arm, and secured to the inlet-valve opposite to its hinged portion, substantially as specified.

9. A bottle or analogous receptacle, having a neck, a shoulder at the base thereof and an annular tapering recess intermediate its mouth and base, combined with a casing adapted for securement within said neck having a projecting edge at its top adapted to be expanded into the tapering recess of the neck, an outlet-port in the upper end of said casing, a guard therefor comprising a piece of wire fabric, and a top disposed above the same having inclined apertures therein, a normally open valve arranged upon the under side of said top adapted to seal said outlet-port, an inlet-port in the base of said casing, a valve adapted to normally seal said inlet-port, a member uniting said valves, and a buoyant counterpoise arranged without the casing below its base, and a flexible member connecting said buoyant counterpoise with said inlet-valve, substantially as specified.

Signed at the city of New York, in the county and State of New York, this 3d day of August, 1903.

EDUARD E. ADAMS.

Witnesses:

C. AUGUSTUS DIETERICH,  
G. H. O'DONNELL.

Correction in Letters Patent No. 756,770.

It is hereby certified that the name of the patentee in Letters Patent No. 756,770, granted April 5, 1904, for an improvement in "Bottle-Closures," was erroneously written and printed "Eduard E. Adams," whereas the said name should have been written and printed *Edward E. Adams*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 3d day of May, A. D., 1904.

[SEAL.]

E. B. MOORE,

Acting Commissioner of Patents.

the arm of inlet-valve with the outlet-valve, an arm depending from the base of the casing having an eye or loop at its free end, a counterpoise for said inlet-valve and a flexible member secured to said counterpoise and extending through said eye or loop and secured to the inlet-valve at a point opposite its hinged portion, substantially as specified.

8. A closure adapted for securement within a bottle or other receptacle comprising a casing, a top therefor having diagonal perforations therein, an outlet-port in the upper end of said casing, a valve hinged upon the under side of said end, held normally open, and adapted to seal said outlet-port, a stop to limit the inward movement of said valve, an inlet-port arranged in the bottom of the casing, a valve hinged upon the upper side thereof adapted to normally seal said inlet-port, an arm extending upwardly and inwardly from the hinged end of said valve, and adapted to limit the movement of said valve, a flexible connection having one end secured to said arm and its other end to the edge of the outlet-valve at a point opposite to its hinged portion, an arm depending from the bottom of the casing and extending inwardly, a loop or eye at the free end of said arm, a counterpoise for said inlet-valve, and a flexible member having one end secured to said counterpoise, and its other end extending through the eye or loop of the de-

pending arm, and secured to the inlet-valve opposite to its hinged portion, substantially as specified.

9. A bottle or analogous receptacle, having a neck, a shoulder at the base thereof and an annular tapering recess intermediate its mouth and base, combined with a casing adapted for securement within said neck having a projecting edge at its top adapted to be expanded into the tapering recess of the neck, an outlet-port in the upper end of said casing, a guard therefor comprising a piece of wire fabric, and a top disposed above the same having inclined apertures therein, a normally open valve arranged upon the under side of said top adapted to seal said outlet-port, an inlet-port in the base of said casing, a valve adapted to normally seal said inlet-port, a member uniting said valves, and a buoyant counterpoise arranged without the casing below its base, and a flexible member connecting said buoyant counterpoise with said inlet-valve, substantially as specified.

Signed at the city of New York, in the county and State of New York, this 3d day of August, 1903.

EDUARD E. ADAMS.

Witnesses:

C. AUGUSTUS DIETERICH,  
G. H. O'DONNELL.

Correction in Letters Patent No. 756,770.

It is hereby certified that the name of the patentee in Letters Patent No. 756,770, granted April 5, 1904, for an improvement in "Bottle-Closures," was erroneously written and printed "Eduard E. Adams," whereas the said name should have been written and printed *Edward E. Adams*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 3d day of May, A. D., 1904.

[SEAL.]

E. B. MOORE,

Acting Commissioner of Patents.



It is hereby certified that the name of the patentee in Letters Patent No. 756,770, granted April 5, 1904, for an improvement in "Bottle-Closures," was erroneously written and printed "Eduard E. Adams," whereas the said name should have been written and printed *Edward E. Adams*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 3d day of May, A. D., 1904.

[SEAL.]

E. B. MOORE,  
*Acting Commissioner of Patents.*