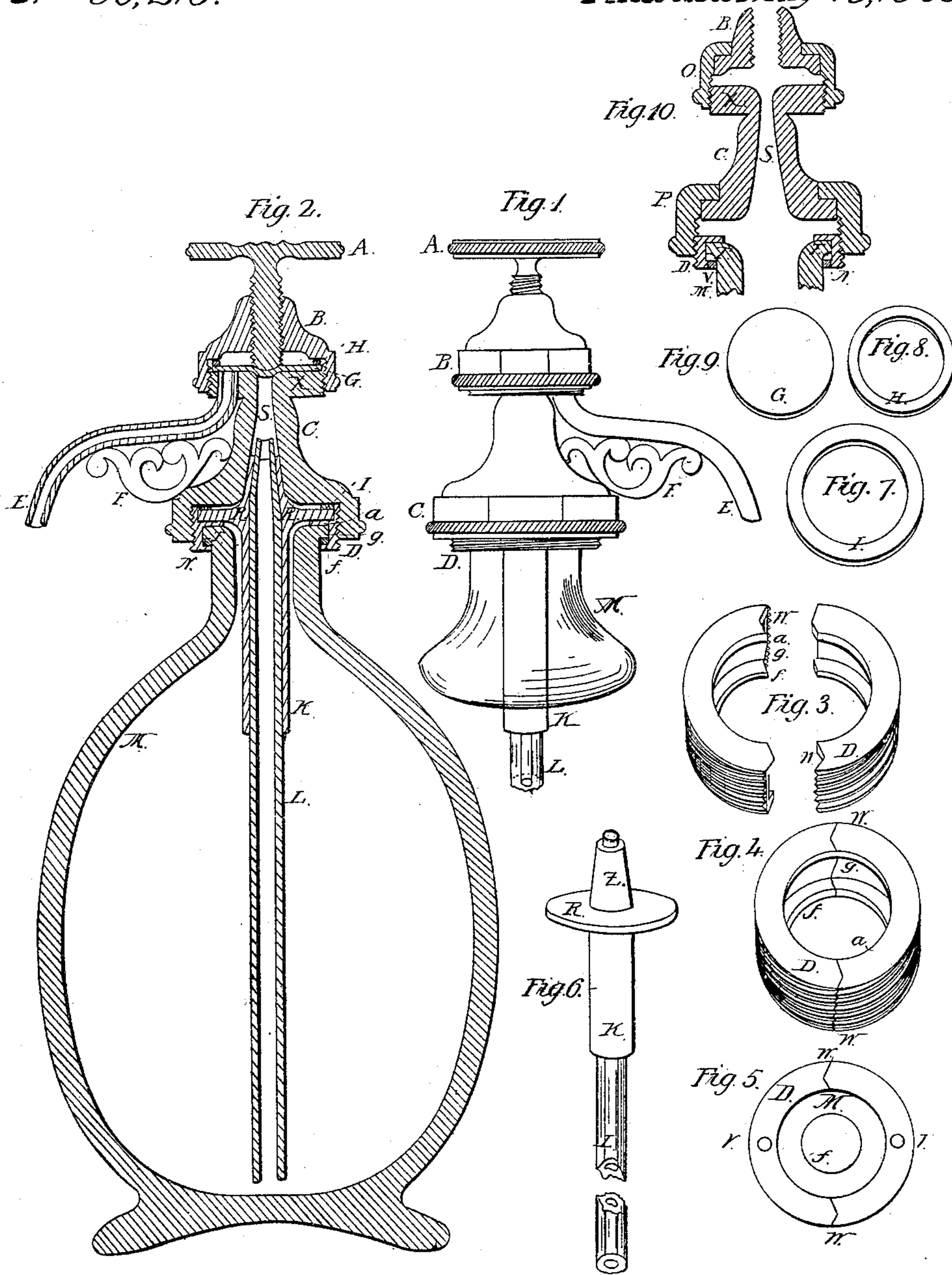


*J. B. Alexander*

*Siphon Bottle.*

*N<sup>o</sup> 90,215.*

*Patented May 18, 1869.*



*Witnesses:*

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# United States Patent Office.

JOSEPH BELL ALEXANDER, OF WASHINGTON, DISTRICT OF COLUMBIA.

Letters Patent No. 90,215, dated May 18, 1869.

## IMPROVEMENT IN SIPHON-BOTTLE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JOSEPH BELL ALEXANDER, of the city of Washington, in the county of Washington, and District of Columbia, have invented a new and useful Improvement in Siphon-Bottles; and I do hereby declare the following, when taken in connection with the accompanying drawings, and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent in—

Figure 1 a side view, in perspective, of the metallic head-piece;

Figure 2, a vertical section of the whole apparatus;

Figure 3, a full view, in perspective, of the collar D, divided in halves;

Figure 4, a full view, in perspective, of the collar D, with its halves joined;

Figure 5, a view of the lower flanch of the collar D, as inverted, and enclosing the head of the bottle;

Figure 6, a side view, in perspective, of the glass siphon-tube, mounted with its India-rubber head-piece;

Figure 7, a full view, in perspective, of a metallic washer, to go upon the rubber disk R;

Figure 8, a full view, in perspective, of a metallic washer, to go upon the rubber disk G;

Figure 9, a full view, in perspective, of a sheet-rubber disk, forming the valve G; and in

Figure 10, a vertical section of a second arrangement of the parts composing the metallic head-piece.

Similar letters of reference denote like parts.

A is a thumb-screw.

B is a crown-piece.

C is a cap-piece.

D is a double-flanch collar, in two pieces.

E is a draught-tube.

F is a support for the draught-tube E.

G is a sheet-rubber disk, as a valve.

H is a metallic washer, to press down the edge of valve G.

I is a metallic washer, to press down the edge of rubber disk R.

K is a rubber tube, an extension of the disk R, slipped upon the conical head of the glass siphon-tube.

L is a glass siphon-tube.

M is the body of the glass bottle.

N is a ring, of plaster or cement, injected into the groove of the collar D, for the purpose of attaching it to the neck of the bottle.

O is the lower part of the crown-piece B, when made in two parts, as in fig. 10.

P is the lower part of the cap-piece C, when made in two parts, as in fig. 10.

R is a rubber disk, forming part of the head-piece of the glass tube L.

S is the conical throat, through the cap-piece C.

T is a lip, formed on the mouth of the bottle.

V V are holes in the lower flanch of the collar D, to admit the injection of cement into its groove.

W W are the zigzag partings of the collar D.

My invention relates to an improvement in that class of bottles called "siphon-bottles," which is used for the purpose of dispensing aerated or carbonated liquids, and consists of such a construction and arrangement of the parts as will insure simplicity, ease, and quickness in the filling with liquids and the charging with gas, and also in dispensing the contents when charged; also a certain security against that loss of gas which occurs in all the siphon-bottles in present use, from a constant oozing through imperfect and badly-constructed joints.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

I make, after the usual manner in which such things are made, and of such metal or metals as resist the action of carbonic-acid gas, a collar, D, figs. 1, 2, 3, 4, 5, and 10, parted in halves, as seen at W W, and having an internal groove formed by an upper and a lower flanch.

Upon the outer circumference of this collar, I cut a strong male-screw thread, and at two or more points on the face of the lower flanch, I cut the holes V V, to admit the injection of plaster through them.

I then make a strong bottle, with a small, thick neck, and form at the top a lip, T, which fits loosely in the groove of the collar D.

I then put on the collar D, first the one half, and then the other, joining them accurately around the lip T of the bottle, and then turn the bottle upside down, and with a small syringe, inject soft plaster or cement through the holes V V in the collar, until all the space of the groove, not occupied by the lip T of the bottle, is filled, and the collar thus made fast to the head of the bottle in such a manner that it would be impossible to blow it off.

I next take a glass tube, of proper size, and make one end slightly conical.

To fit, by slight stretching upon the conical end of this glass tube, I make a vulcanized India-rubber disk, R, with tube K projecting above and below, from its centre.

This rubber disk R and tube K is moulded in one and the same piece, as seen in fig. 6, and when slipped

on the glass tube L, and properly adjusted, it is put into the neck of the bottle, the disk R resting on the upper flanch of the collar D, and the glass tube L descending not quite to the bottom of the cavity of the bottle.

I then make a metallic washer, I, figs. 2 and 7, which I impose upon the disk R, the object being to make a tight joint, and prevent the rubber disk from rucking up by the screwing of the cap C.

I then make the cap-piece C with a conical throat, S, through its centre. The lower part of this cap I bore out sufficiently deep and wide, and cut in it a female-screw thread to match the thread upon the collar D, upon which I then screw the cap tightly, so as to compress the outer edge of the rubber disk R, hermetically upon the upper flanch of the collar D.

The cap-piece C is made to rise, cone-shaped, from above a number of facets cut on it, for the adaptation of a wrench, (see fig. 1,) and the upper part X, fig. 2, is spread out into a disk of sufficient diameter and thickness to admit of a male-screw thread being cut on its outer edge, and of a hole being made vertically through it, outside of the central throat S, for the admission of the upper end of the crooked draught-pipe E, which I make, and solder into it.

The pipe E, I support, if necessary, by soldering, between it and the cap C, the ornamental scroll-piece F.

I then make a disk, of thin sheet-rubber, G, figs. 9 and 2, for a valve, which is laid on the top X of the cap C, so as to cover the central orifice of the throat S, and the upper orifice of the pipe E.

Upon this rubber disk I lay a metallic washer, H, figs. 8 and 2, so as to press hermetically the outer edge of the rubber disk upon the head X, of the cap C.

I then make the conical crown-piece B with facets, for a wrench, upon the outside of its base, which base I bore out, and cut upon its inner circle, a female-screw thread, to match the male thread on the head X.

I then bore a vertical hole through its centre, larger in diameter than the upper orifice of the throat S, and cut through it a female-screw thread. The crown-piece B is now screwed down firmly upon the head X.

I then make the thumb-piece A, figs. 1 and 2, with a round shank, extending downward, upon which I cut a male-screw thread, to match the female thread in the central orifice of the crown B.

I then screw the piece A into the piece B, until its lower end comes in contact with the rubber disk G, when the apparatus is complete.

If I prefer not to use the washers H and I, figs. 7, 8, and 2, I make the crown-piece into parts B and O, fig. 10; O adapted to B by a shoulder on its upper part, so as to turn, while B remains stationary. I

also make the cap-piece into parts, P and C, fig. 10; P adapted to C by a shoulder on its upper part, so as to turn, while C remains stationary.

To operate this apparatus, I take off the whole metallic head by unscrewing it from the collar D. I take out the rubber piece R, with the glass tube L, and fill the bottle not quite full of the liquid to be charged with gas, and then return the rubber piece R and glass tube L to their place, and also screw the metallic head again upon the collar D, first adjusting the washer I.

If the lower end of the draught-pipe E be now connected with a gas-generator, and the thumb-piece A be unscrewed enough to raise the lower end of its shank entirely from contact with the rubber disk G, then the rubber disk G will rise sufficiently to allow the gas to flow freely upward, through the pipe E, under the disk G, into the throat S, and downward through the glass tube L, dispersing itself throughout the body of the liquid.

When the charge of gas is sufficient, the thumb-piece A is turned down until the lower end of its shank presses the centre of the rubber disk G upon the mouth of the throat S, closing it tightly.

The apparatus may now be removed from connection with the gas-generator, and being fully charged, its gaseous liquid contents may be dispensed with certainty and ease, by simply working the thumb-screw A.

Having described my invention and its application, What I claim as new, and as my invention, and desire to secure by Letters Patent, is—

The India-rubber piece, represented in fig. 6, with its lower tube K, its flanch or disk R, and its upper conical tube Z, in combination with the glass tube L, having its upper end conical, substantially as described, and for the purpose set forth.

Also, the combination of the two-part collar D, and its upper flanch *a*, and its groove *g*, and its lower flanch *f*, and its holes V V, with the lip T, on the neck of the bottle M, and the cement filling N, substantially as described, and for the purpose set forth.

Also, the combination of the cap C with its conical throat S, and the draught-pipe E, and the India-rubber disk G, and the pipe-support F, and the washer H, and the crown B, and the thumb-screw A, in combination with the washer I, rubber piece K R Z, glass tube L, collar D, lip T, on the mouth of bottle M, and cement filling N, substantially as described, and for the purpose set forth.

J. B. ALEXANDER.

Witnesses:

A. M. STOUT,  
CHAS. H. FLETCHER.