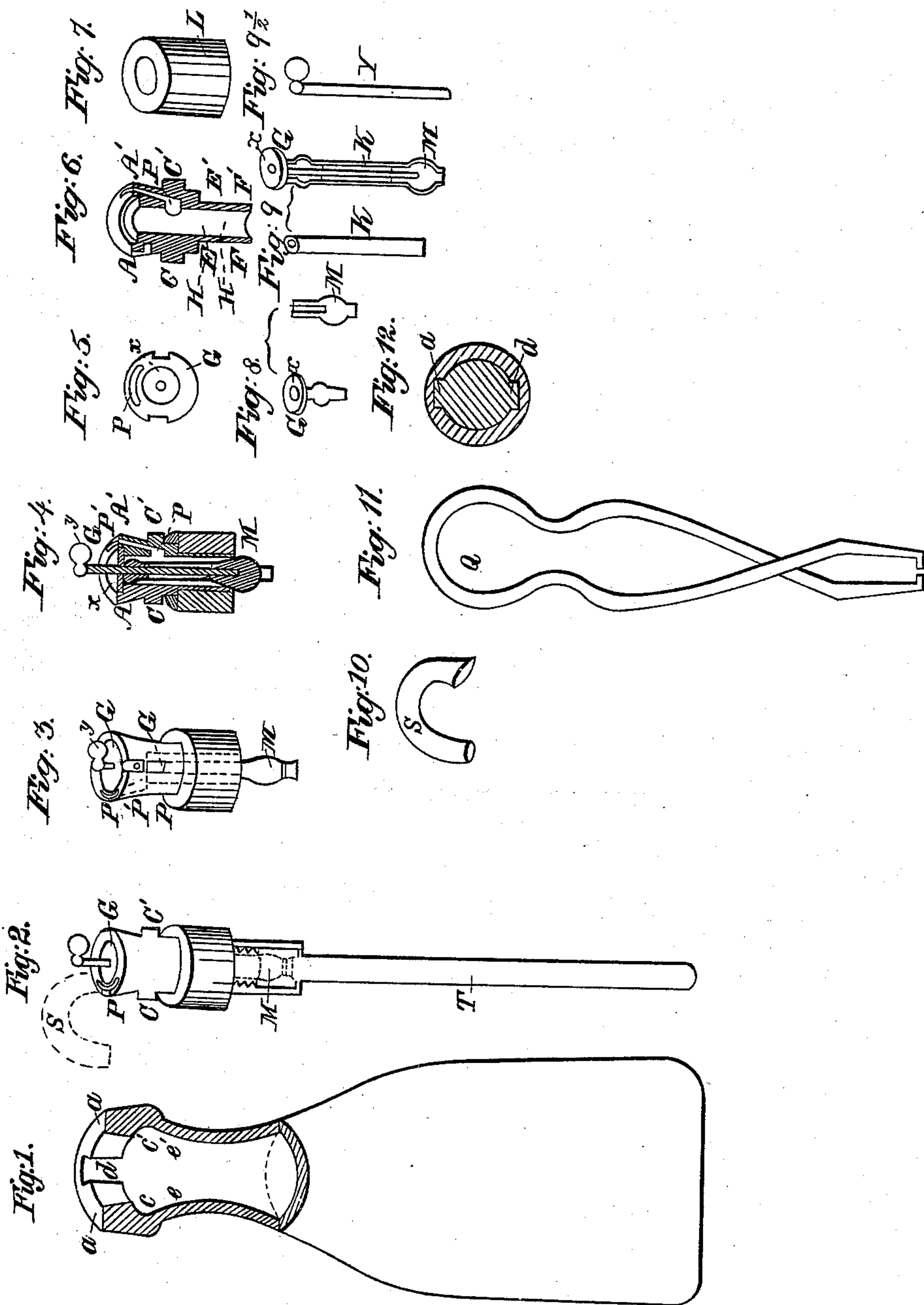


A. QUANTIN.

Bottle Stopper.

No. 11,385.

Patented July 25, 1854.





# UNITED STATES PATENT OFFICE.

ALPHONSE QUANTIN, OF PHILADELPHIA, PENNSYLVANIA.

## MODE OF STOPPING MINERAL-WATER BOTTLES.

Specification forming part of Letters Patent No. 11,385, dated July 25, 1854.

*To all whom it may concern:*

Be it known that I, ALPHONSE QUANTIN, of the city of Philadelphia and State of Pennsylvania, have invented a new and Improved Mode of Stopping Mineral-Water Bottles; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, in which the same letters refer to similar parts in each.

Figure 1 represents a mineral-water bottle cut so as to show a vertical section of its neck; Fig. 2, a perspective view of my improved stopper furnished with a tube for drawing off the liquid from below; Fig. 3, a perspective view of my stopper turned partially around; Fig. 4, a vertical section of my stopper; Fig. 5, a view of the top of the stopper; Fig. 6, a vertical sectional view of the metallic portion of the stopper; Fig. 7, a perspective view of the cork-zone forming a part of my stopper; Figs. 8 and 9, detached views of internal parts shown in Fig. 4; Fig. 10, a curved spout to be attached to bottles when used with the tube shown in Fig. 2; Fig. 11, a pair of pinchers to remove the cork when the bottle is to be re-filled; Fig. 12, a horizontal section of the top of the bottle.

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

The bottle is constructed of glass in the ordinary manner, except that a horizontal groove, *c c*, Fig. 1, extends around the inner surface of the top of the bottle, about half an inch below the top of the bottle, and two vertical grooves on diametrically-opposite sides of the bottle extend from the top down to the horizontal groove *c c*'. The vertical grooves are shown in horizontal section at Fig. 12, and one of them is shown in vertical section at Fig. 1.

My improved stopper consists of a metallic center-piece or core, shown in section in Fig. 6. It is molded or cast in the following manner: From *A A'* to *C C'* it is shaped like the frustum of a cone. *A A'* is of a section corresponding with the section of the inner part of the head of the bottle *a a'*, Fig. 1. From *C C'* to *E E'* the metallic core is cylindrical. At *C C'* two small projections or lugs are formed corresponding in size to the grooves

*d d'*, Figs. 1 and 12, in the top of the bottle-neck. From *E E'* to *F F'* the metallic core is cylindrical, but of a diminished section. The interior of the upper part of the metallic core *A' A* is cut out, so as to permit the insertion of the head of the small knob *G*. (Shown in Fig. 4 as inserted and in Fig. 8 as detached.) Around the lower portion of the metallic core *E E' F F'* a piece of perforated cork, *L*, Fig. 7, is tightly fitted. This cork is of a diameter to fit very tightly within the narrowest part of the bottle *e e'*. A cylindrical-shaped aperture or hole, *H H'*, extends vertically through the whole length of the metallic core. This hole is intended to receive an elastic spring-stopper constructed in the following manner: A small metallic knob, *G*, is formed, as shown at Fig. 8, and a bulb or pear-shaped metallic piece, *M*, as shown in same figure. A short piece of gum-elastic tube, *K*, Fig. 10, is attached by a very fine wire at its upper extremity around the narrowest part of *G*. The lower extremity of the gum-elastic tube is then inserted through the central aperture *H H'* and brought out below *H'*. The bulb or pear-shaped piece *M* is then inserted into the lower end of the gum-elastic tube, and the gum-elastic is permanently fastened to the stem on the lower part of the piece *M* by fine wire.

The manner of securing the india-rubber tube both above and below is shown in Fig. 9 and in Fig. 4. The length of the gum-elastic tube is such as to draw the bulb-piece *M* tight against the lower end of the passage *H'*, and thus close that passage. A small hole, *x*, is left through the knob *G*, and when it is desired to draw the liquid a stem, *y*, Fig. 9½, is to be passed through the hole *x* and pressed down against the pear-shaped piece *M*, so as to distend the gum-elastic tube or spring *K* and remove the piece *M* from *H*, and thus open a passage around the gum-elastic tube for the liquid to escape. A small passage, *P P'*, Figs. 3 and 6, is formed in the upper part of the metallic core, by which the liquid passes through the metallic core whenever the bulb-piece *M* is depressed.

The metallic core shown in Fig. 6 may be made of pewter or similar metal and cast in a mold.

Fig. 2 represents a tube, *T*, attached to the lower part of the cork, and extending down nearly to the bottom of the bottle. A small



curved tube or spout, S, is also inserted into P, and through this spout the fluid is drawn off as from a fountain.

This arrangement of tube is intended to be attached to bottles of a large size for family use.

Having thus described the construction of the bottle and cork, I proceed to describe the manner of inserting it, using it, and withdrawing it. The bottle having been molded with the horizontal groove C C' and vertical grooves d and d', as above described, and as shown in Fig. 1, is first filled with mineral water. The compound stopper, having been formed as above described, and shown in section at Figs. 2, 3, and 4, is then inserted in the following manner: The projections C C' are placed so as to slide into the grooves d and d', and then the stopper is to be forced down by hand or by any other ordinary means until the projections C C' reach the horizontal groove c c', and then the stopper is to be turned in the bottle, so that the projections C C' will catch in the groove c c' and retain the cork against the expansive force of the gas contained within. When it is desired to pour the contents of the bottle out, the purchaser will insert the key y at x and press down the piece M. The liquid, urged by the compressed gas, will flow out through the passages H H' and P P' as long as the piece M is kept depressed. When the bottles are thus emptied, the manufacturer of the mineral water will remove the cork by taking a pair of pinchers

shown at Q, Fig. 11, and inserting their points into two small holes left on the sides of the stopper, and then turning the stopper until the lugs or projections C C' are opposite to d and d', when the stopper can be readily pulled out.

This improved stopper possesses the following advantages: It can be manufactured at a small expense; it dispenses with the use of twine and the ordinary labor of securing corks in bottles; it preserves the inside of the bottle clean, as the stopper is only removed at the manufactory where the bottle is refilled. It also possesses another advantage—viz., a mineral-water bottle may be made of large dimensions for family use, and just as much of the liquid drawn off at a time as is desired without impairing the strength of the residue.

My improved stopper is especially intended for mineral-water bottles, but it may also be used with any gaseous or fermented liquids which it is desired to preserve in bottles.

What I claim as my invention, and desire to secure by Letters Patent, is—

The compound stopper composed of the metallic core, the cork zone, and the india-rubber spring, constructed and operating substantially as hereinbefore described.

A. QUANTIN.

Witnesses:

STEPHEN F. SIMMONS,  
I. E. SHAW.