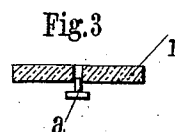
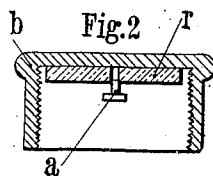
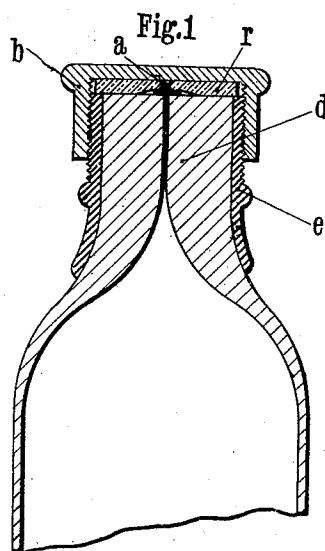


J. BENGUÉ.
STOPPERING FOR BOTTLES INTENDED TO CONTAIN VOLATILE LIQUIDS.
APPLICATION FILED MAY 4, 1909.

944,765.

Patented Dec. 28, 1909.



WITNESSES

A. H. Davis
Alfred Martin

INVENTOR

Jules Bengué

BY *Munroe & Co*

ATTORNEYS

UNITED STATES PATENT OFFICE.

JULES BENGUÉ, OF PARIS, FRANCE.

STOPPERING FOR BOTTLES INTENDED TO CONTAIN VOLATILE LIQUIDS.

944,765.

Specification of Letters Patent.

Patented Dec. 28, 1909.

Application filed May 4, 1909. Serial No. 493,864.

To all whom it may concern:

Be it known that I, JULES BENGUÉ, of 47 Rue Blanche, Paris, France, have invented certain new and useful Improvements in and
5 Relating to Stoppering for Bottles Intended to Contain Volatile Liquids, of which the following is a specification.

Ethyl chlorid was placed upon the market in 1890 in tubes with a tapering capillary
10 spout soldered to them. In order to use it the tapered spout was broken and the tube could only be used once. In 1891 the inventor utilized tubes with a metal stoppering permitting of the fractional employment
15 of the ethyl chlorid and hitherto this has been the only model employed. These bottles however present a considerable defect. The hermetic joint is obtained by compressing an indiarubber washer against the capillary orifice. Now this washer may block
20 the capillary orifice either by the sulfur powder that it gives off or owing to the decomposition of the indiarubber under the influence of the liquid or again owing to the
25 penetration of the indiarubber into the capillary orifice under the influence of vigorous compression. The cutting edges of the orifice act as a punch and cut out a piece of the washer which blocks the orifice. The
30 result is considerable loss and much trouble to purchasers and operators. A doctor may have everything ready for an operation and at the moment of opening the bottle may find it not ready for use and be obliged to
35 operate without an anesthetic or postpone the operation. In the case of bottles sold abroad the disadvantage referred to above is still greater because it is increased by freight and customs charges. Up to the present at
40 tempts have constantly been made to obviate these defects but without success.

The device which forms the object of the present invention obviates this grave defect and is extremely simple.

45 In the accompanying drawing: Figure 1 shows the bottle stoppered with a device according to the invention. Fig. 2 shows the stoppering device separately, and Fig. 3 is a detail view of a washer forming a joint.

50 The indiarubber washer *r* is perforated

for the reception of a metal part *a* composed of a small cylindrical rod shorter than the thickness of the indiarubber washer and of a thin circular plate about $1\frac{1}{2}$ millimeters in diameter for example. The point is lodged
55 in the central hole formed in the indiarubber washer *r* and the latter is fixed to the bottom of the metal cap *b*. When the cap *b* is placed upon the ring *e* of the bottle *d* the disk of the part *a* covers the capillary orifice. 60 The various causes of blockage are eliminated because the indiarubber does not come into contact with the small capillary orifice. A perfect hermetic joint is formed because the rod of the part *a* being shorter than the
65 thickness of the indiarubber the disk is compressed under the influence of the pressure and the indiarubber washer presses strongly by means of its parts which are not covered by this plate upon the upper edge of the
70 glass rod compressing the capillary hole and insuring a perfectly tight joint.

This stoppering device enables a capillary orifice of larger diameter than the capillary orifice employed for delivering ethyl chlorid
75 in medical practice to be stoppered. It may be utilized for ethyl chlorid or other volatile products either mixed or not with medicinal substances or with perfumery essences.

What I claim is:

80 1. In a stoppering device for bottles intended to contain volatile liquids, an elastic packing of india-rubber having a hole in the center thereof, a rod guided in said hole, and a disk at the end of the rod, closing the orifice of the bottle. 85

2. A stoppering device for bottles intended to contain volatile liquids, comprising a stopper with an elastic packing of india-rubber, said packing having a hole in the center
90 of the same, a rod guided in said hole, and a disk at the end of the rod, closing the orifice of the bottle.

In testimony whereof I have hereunto placed my hand, at Paris, France, this 21st
95 day of April, 1909.

JULES BENGUÉ.

In the presence of two witnesses:

DEAN B. MASON,
HENRY SCHWAB.