No. 621,454. Patented Mar. 21, 1899.

L. L. J. GODARD.

STOPPING OF FLASKS, BOTTLES, OR OTHER RECEPTACLES FOR LIQUIDS OR PULVERULENT MATTER.

(Application filed June 18, 1898.)

(No Model.)

FIG. 1.

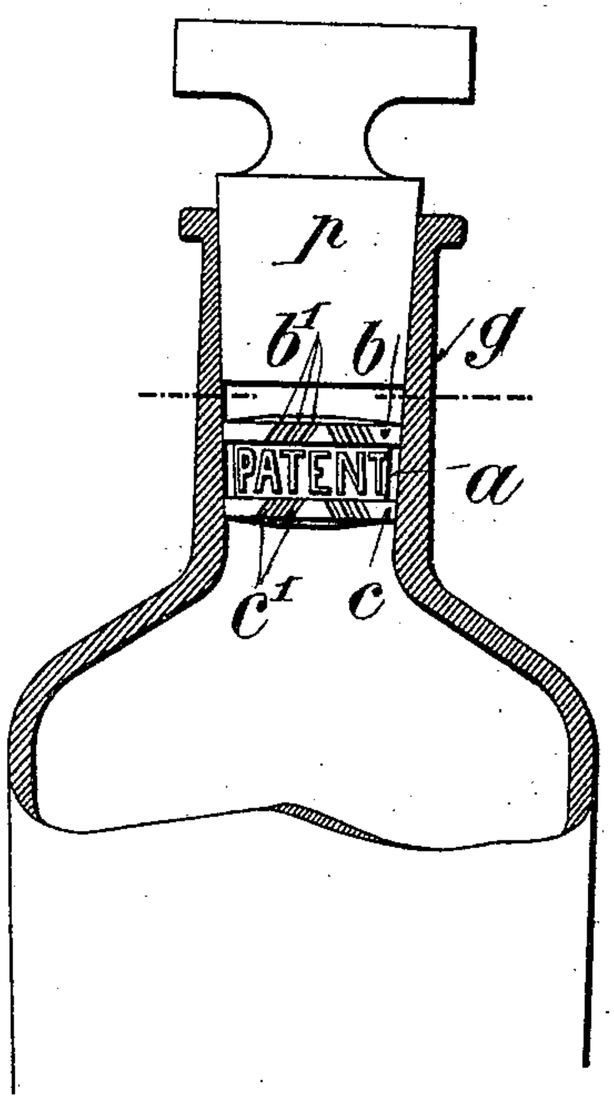


FIG. 3.

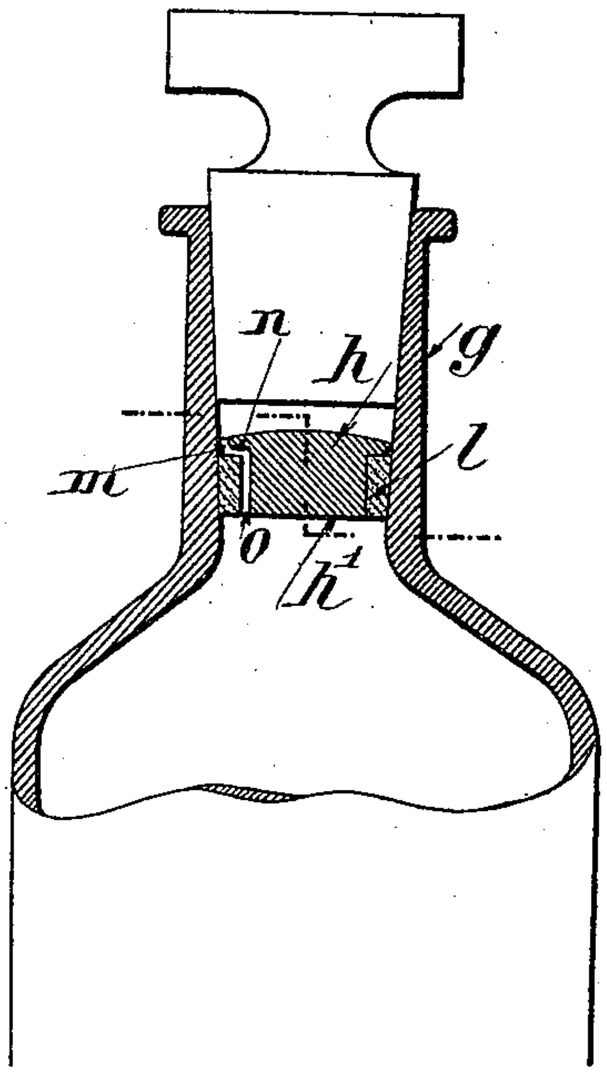


FIG. 2.

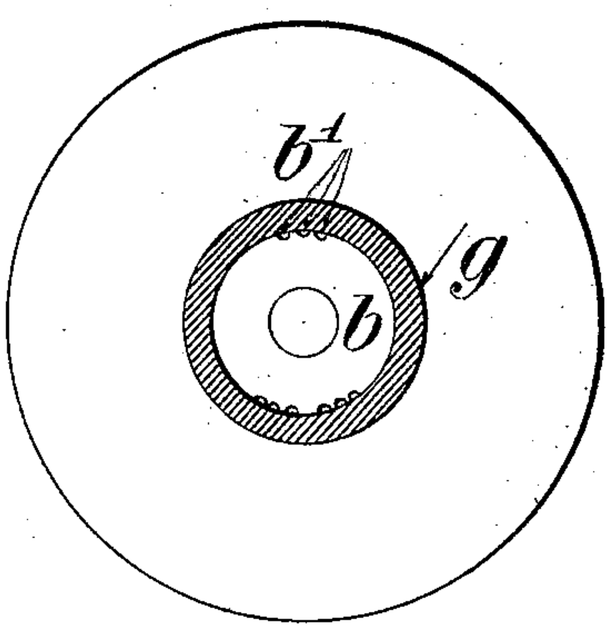
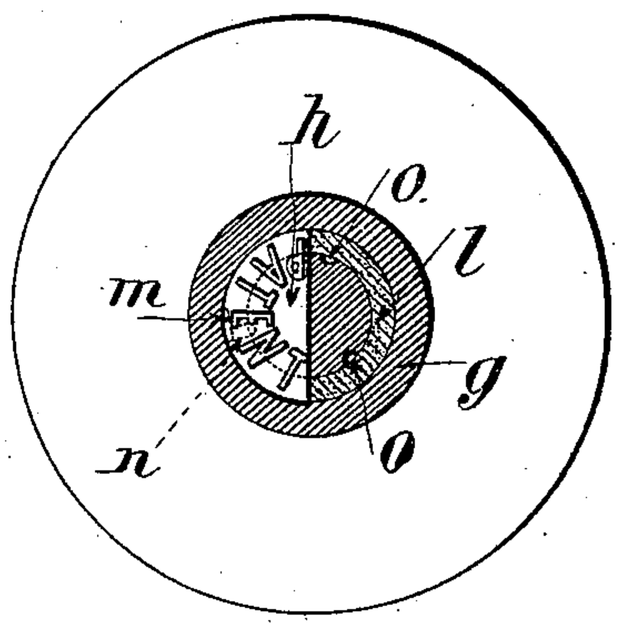


FIG. 4.



Witnesses:-
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UNITED STATES PATENT OFFICE.

LOUIS LÉON JULES GODARD, OF PARIS, FRANCE.

STOPPING OF FLASKS, BOTTLES, OR OTHER RECEPTACLES FOR LIQUIDS OR PULVERULENT MATTER.

SPECIFICATION forming part of Letters Patent No. 621,454, dated March 21, 1899.

Application filed June 18, 1898. Serial No. 683,791. (No model.)

To all whom it may concern:

Be it known that I, LOUIS LÉON JULES GODARD, glass-maker, of 5 Quai aux Fleurs, Paris, in the Republic of France, have invented certain new and useful Improvements in the Stopping of Flasks, Bottles, or other Receptacles for Liquids or Pulverulent Matter, (patented in France, February 25, 1898, No. 272,131,) of which the following is a specification.

My invention relates to an improved system of stopping flasks, bottles, and other receptacles for liquids or pulverulent matter or material, the essential feature of the system being the use of a permanent stopper or obturator placed in the neck of the receptacle after the filling of the latter and which becomes locked in position without offering any means for pulling out the same and which is provided with capillary zigzag holes or with helical or baffled notches or grooves, so as to form, when thus put in place in the neck, capillary channels or passages, through which can issue drop by drop or in intermittent jets the liquid or in small quantities the powder contained in the receptacle. The arrangement on the passage of the liquid of the said capillary channels formed by the combination of the neck and the obturator realizes one of the characteristic points of my invention, which is to obtain a drop-by-drop and besprinkling outflow of the liquid from the receptacle. As to the fraudulent introduction of a liquid or of a powder of less value, that is rendered most difficult by the capillarity of the holes, so that the commercial value of such a receptacle is superior to that of an ordinary receptacle, which does not offer such a security.

In the accompanying drawings I have shown two examples of my invention as applied to a glass bottle or flask.

Figures 1 and 2 represent, respectively, a sectional elevation and a horizontal section of a glass flask into the neck of which is thrust an obturator made entirely of glass. Figs. 3 and 4 are respectively a vertical section and a partial horizontal section of a glass obturator provided with a cork ring.

Referring to Figs. 1 and 2, the tapering obturator is provided with an outer circular groove *a* about half-way up its side and in which may appear in relief and molded the letters forming the name of the inventor or the commercial designation of the article. The two parts *b* and *c* of the obturator, forming projections on either side of the said groove, are preferably roughened and fit against correspondingly-roughened parts of the wall of the neck *g*, making a water-tight joint. Each of the parts *b* and *c* is provided from top to bottom with holes or has recesses or notches cut into its outer surface, the recesses of one part not registering with those of the other part. For example, the recesses or notches *b'* of the part *b* and the recesses or notches *c'* of the part *c* will be inclined, as shown in the drawings. The said notches form, with the wall of the neck of the flask, capillary passages, which enable the liquid to run out drop by drop or in intermittent jets or the pulverulent materials—such as rice-powder, powdered soap, and the like—to issue in small quantities, but which render it very difficult to fraudently introduce some other liquid or powder, on account of the capillarity of the channels, which prevents the simultaneous entry of the liquid and the issue of the air save under pressure. The letters made in projection in the groove *a* also serve to form oblique channels, which prevent the introduction of a funnel for the filling of the bottle or flask or of a tool to draw out the obturator. As the upper surface of the obturator is smooth and uniform, it offers no facilities for drawing out the obturator. The roughened parts produce a very strong adherence and prevent the obturator from coming or from being drawn out.

In Figs. 3 and 4 the body of the obturator *h* is made of glass, in the form of a mushroom, the stalk of which is encircled by a cork or other suitable plastic or elastic ring *l*. Before being introduced the elastic ring is of somewhat larger diameter than that of the head *h*, which may be roughened at its periphery. When the obturator is put in position, the elastic ring becomes pressed against the walls of the neck and forms an air-tight joint. Its adherence, together with that of

the head *h*, which fits the wall of the neck, makes it impossible to draw the obturator out. Oblique or helical recesses or notches *m*, provided in the periphery of the head *h*, are connected by grooves *n*, which are more or less radial with respect to the vertical or oblique recesses or notches *o*, cut from top to bottom in the stalk *h'*. These baffled or zigzag recesses or notches form, with the inner wall of the ring *l* and that of the neck, capillary channels which allow of the liquid running out drop by drop or in intermittent jets, or of small quantities of the powder coming out, but render any fraudulent introduction very difficult.

The receptacle will in each case be closed by a stopper *p*, put in above the obturator.

I reserve to myself the right of using a full obturator having a smooth outer surface and of providing in the inner wall of the neck zigzag or preferably helical grooves of less or greater pitch.

I claim—

1. The combination with a bottle having a neck, *g*, the top of which is adapted to receive a stopper, of a permanent obturator below such stopper and consisting of an integral device having end flanges tightly fitting in the bottle-neck, and a body between the flanges of less diameter, small passages being formed in the flanges outside of the intermediate body.

2. The combination with a bottle having a neck, *g*, the top of which is adapted to receive a stopper, of a permanent obturator below such stopper and consisting of an integral device having end flanges tightly fitting in the bottle-neck, and a body between the flanges of less diameter, small inclined and non-registering passages through the flanges only outside of the intermediate body.

3. A permanent obturator for bottles consisting of a single device with end flanges and intermediate body of smaller diameter, and small passages in the flanges outside of the circumference of the body.

4. A permanent stopper or obturator for bottles having a circumferential groove *a* letters in relief in said groove subdividing the groove from top to bottom, and flanges *b*, *c* having grooves *b' c'*.

Signed at Paris, in the Republic of France, this 7th day of June, 1898.

LOUIS LÉON JULES GODARD.

Witnesses:

CONSTANT BLÉTRY,

EUGENE WATTIER.