

(No Model.)

L. L. FUNK.
ELASTIC BOTTLE.

No. 560,984.

Patented May 26, 1896.

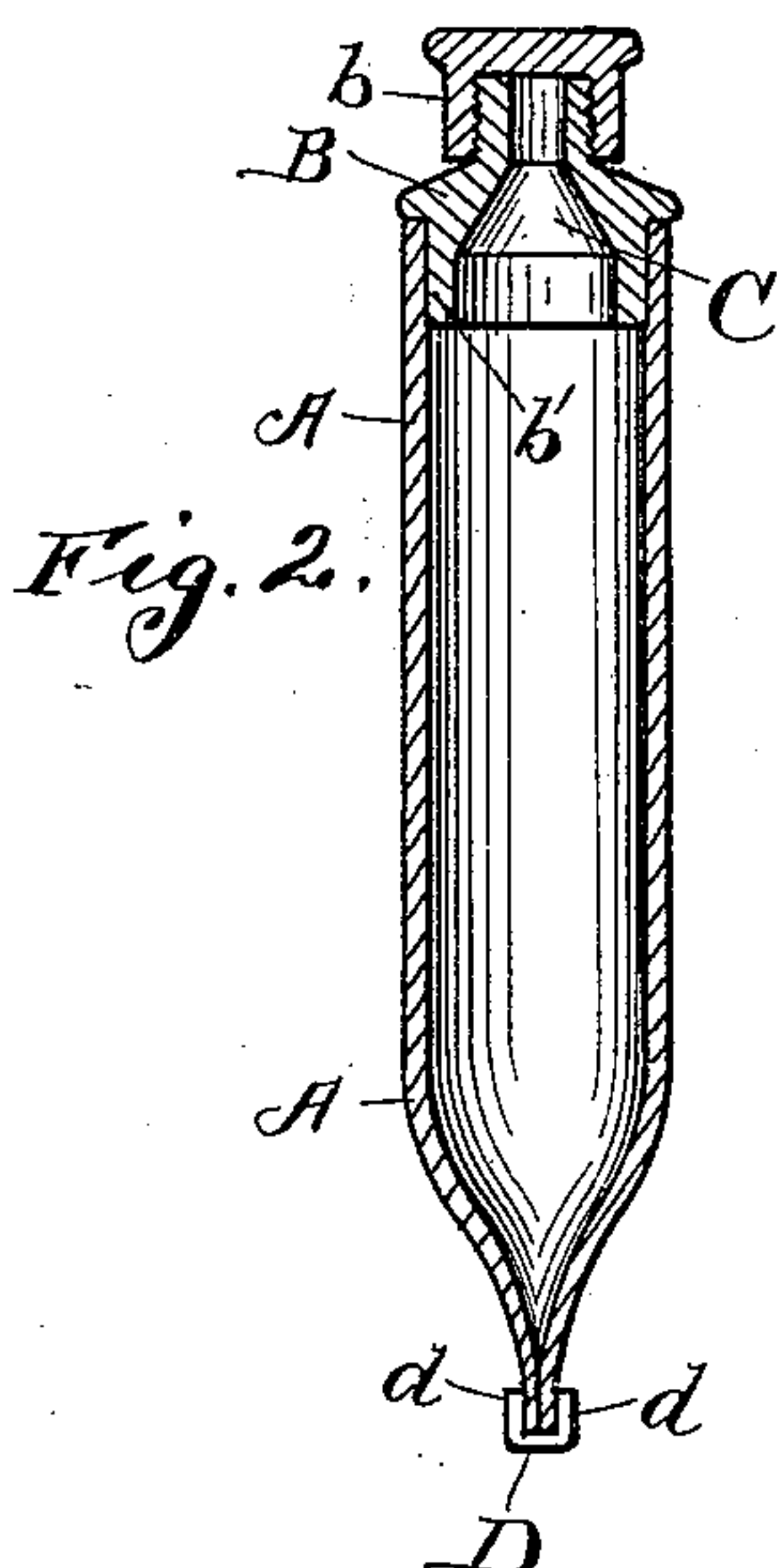
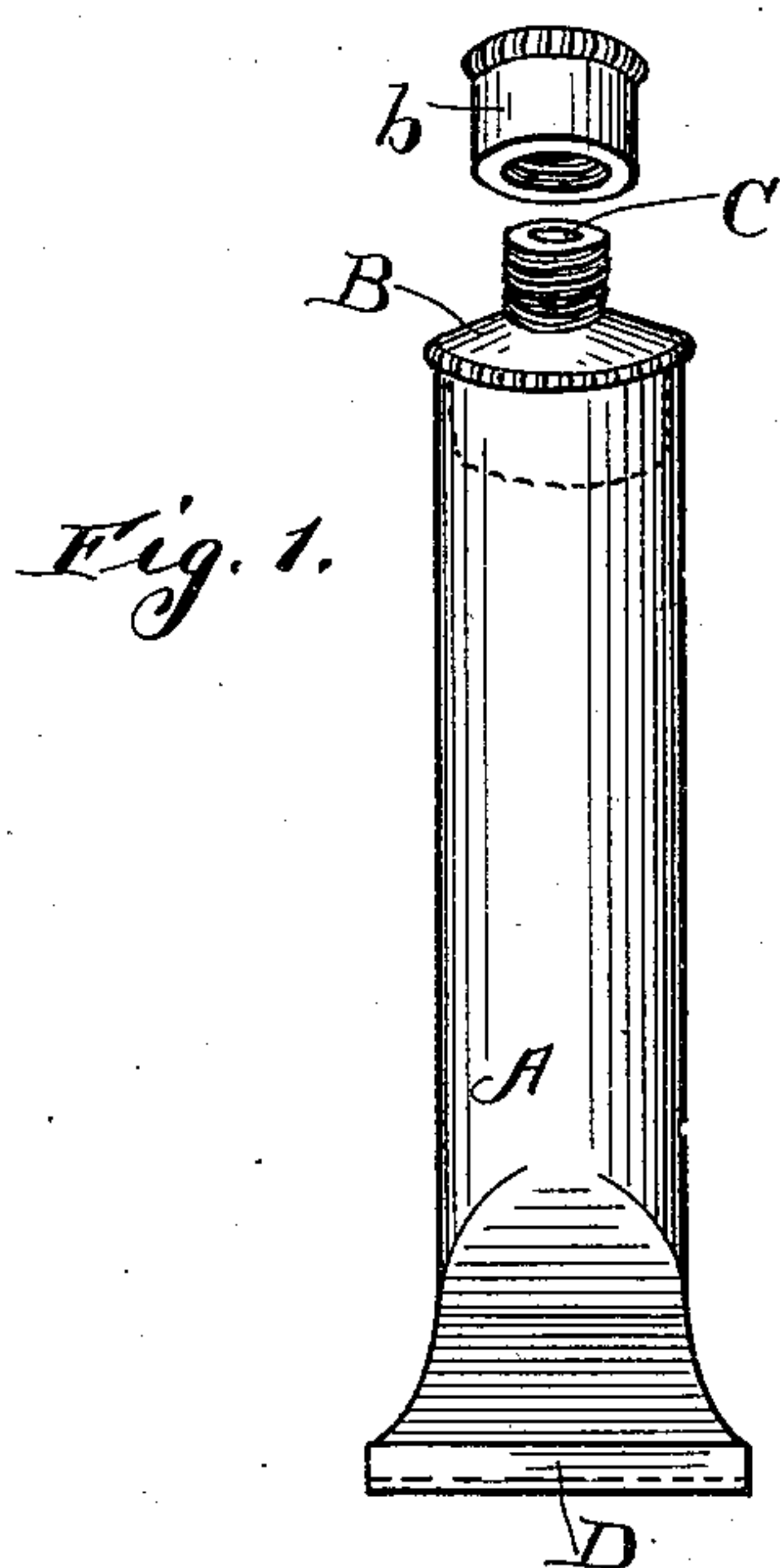


Fig. 3.

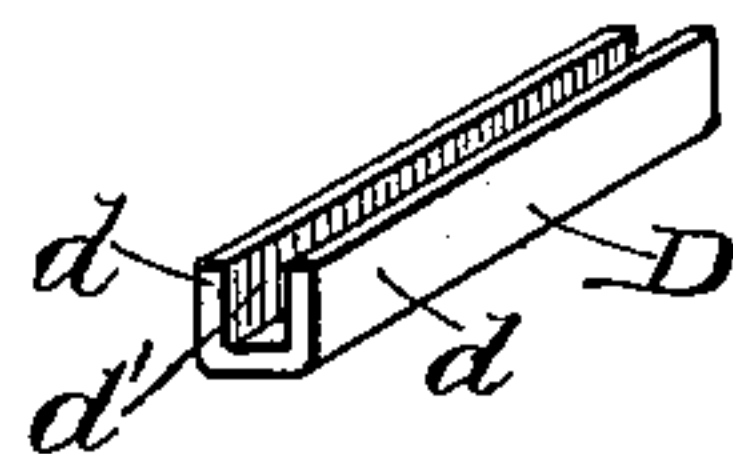


Fig. 4.

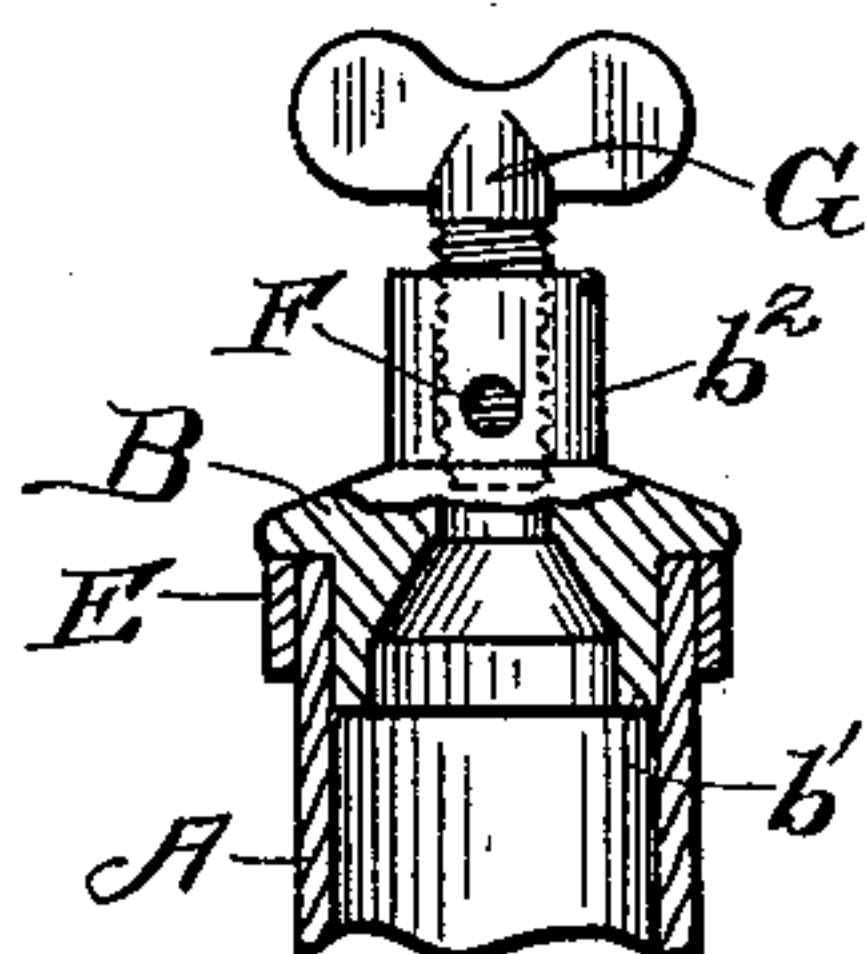


Fig. 5. Fig. 6.

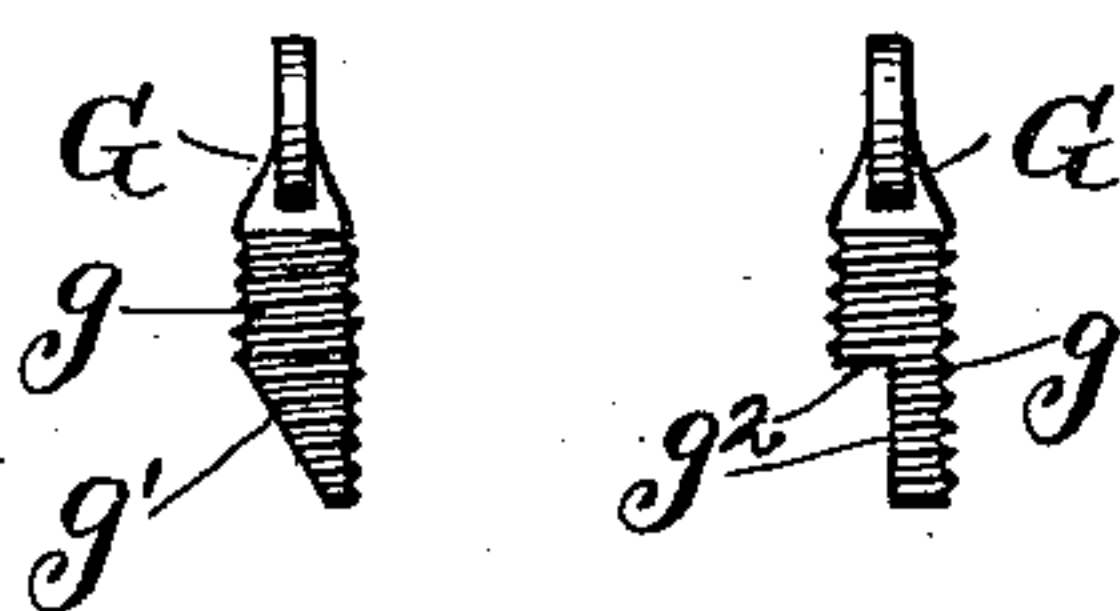


Fig. 7.

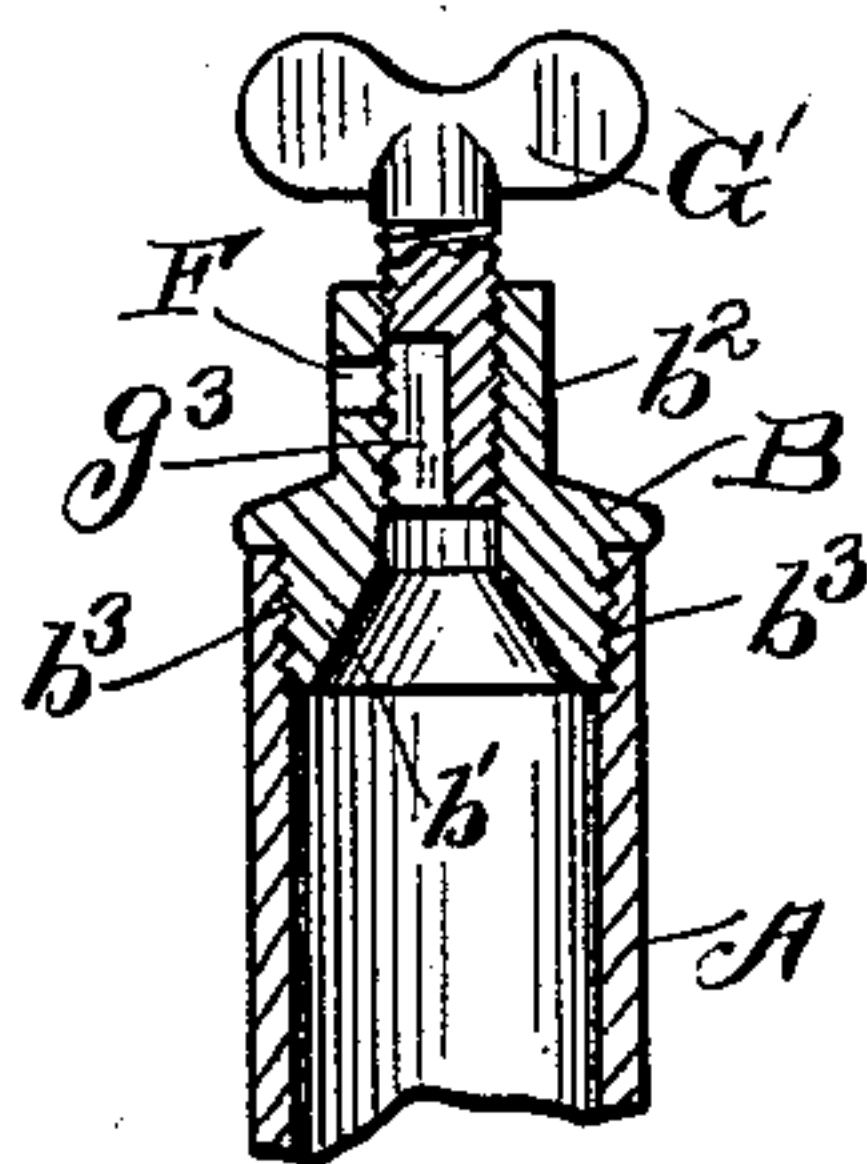


Fig. 8.



Fig. 10.

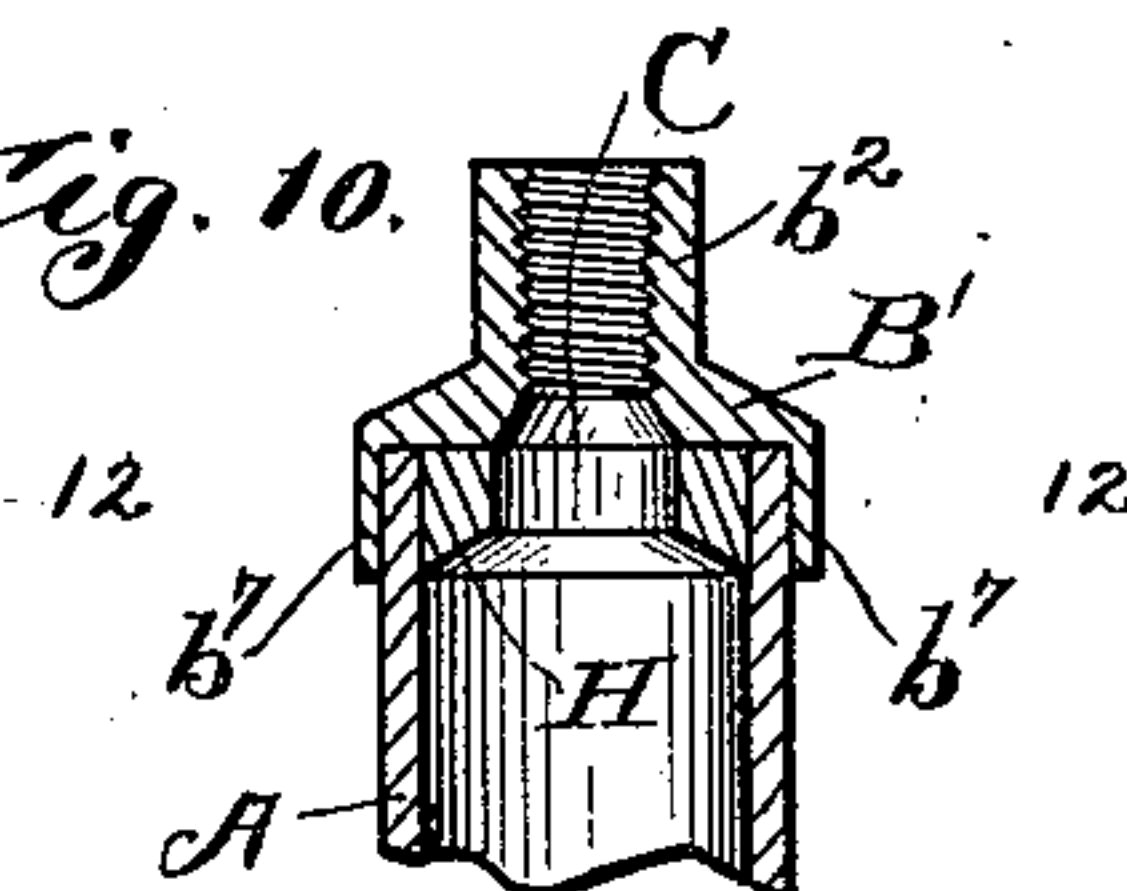


Fig. 9.

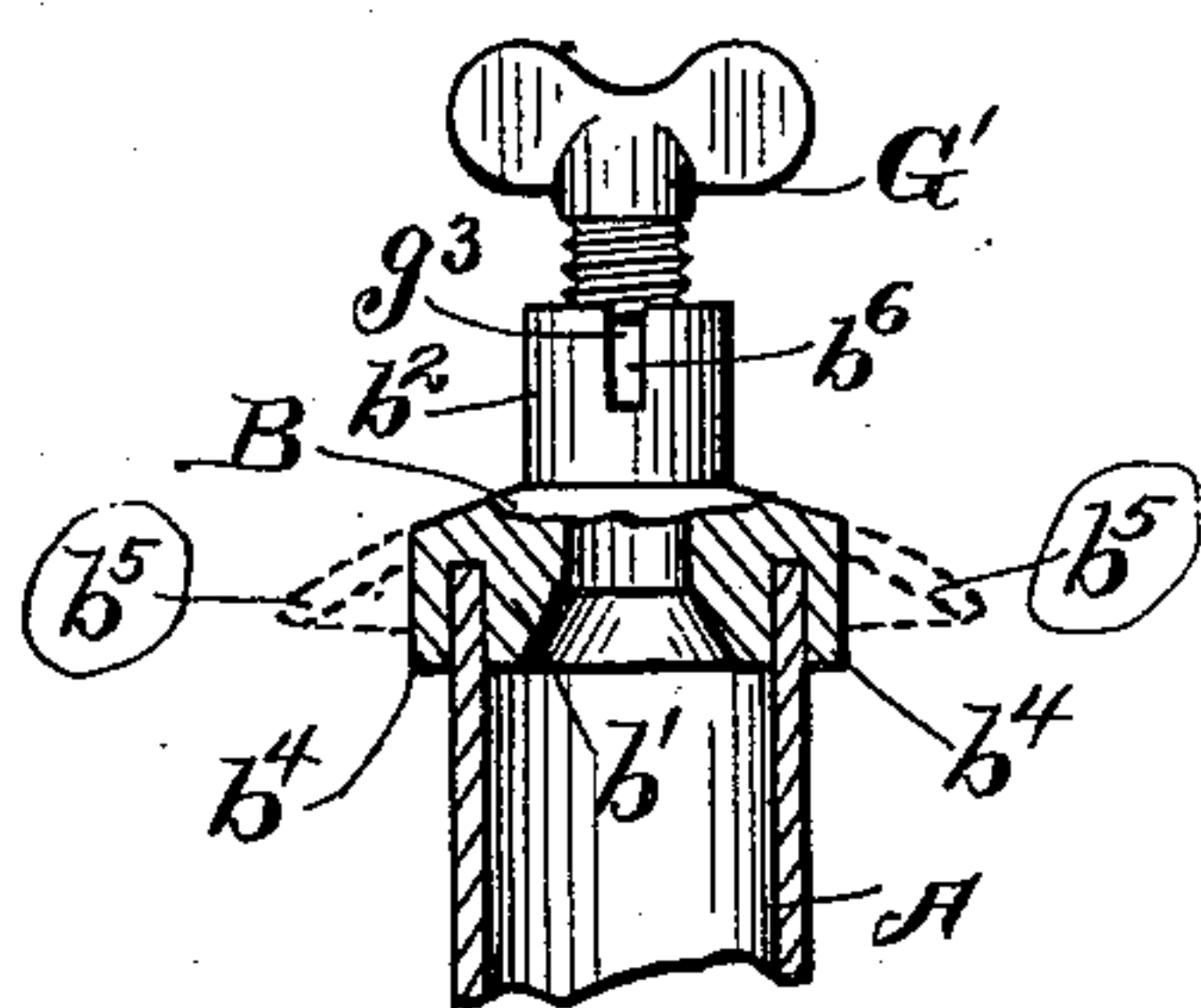


Fig. 11.

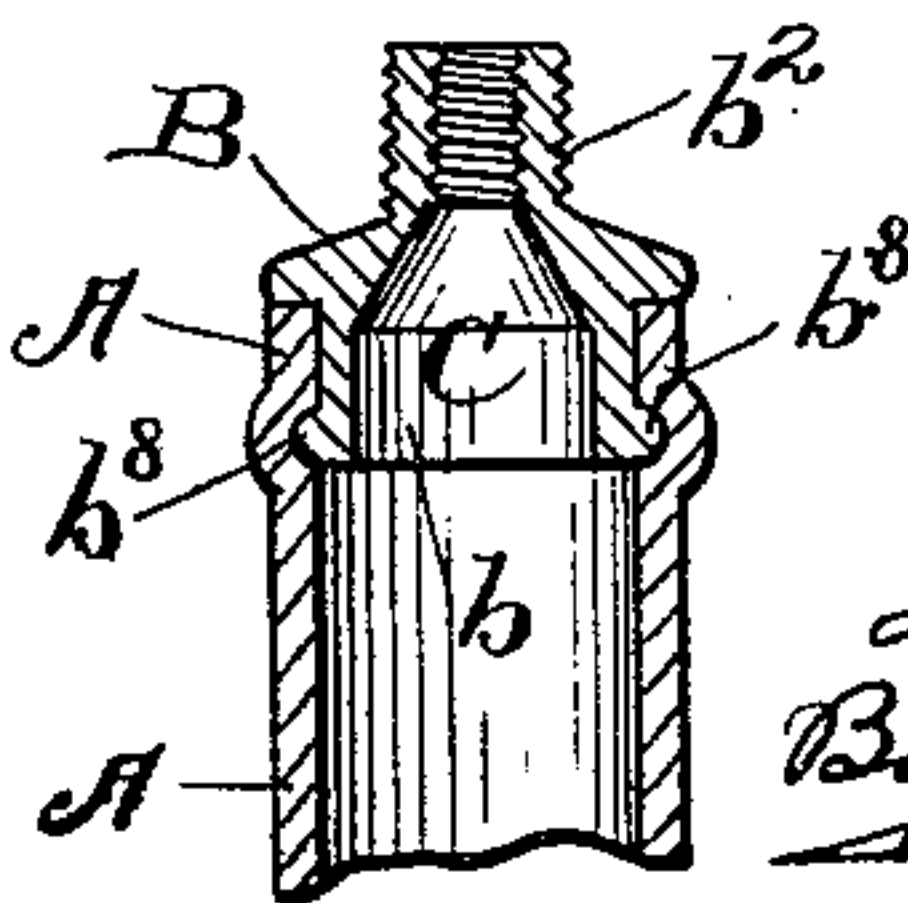
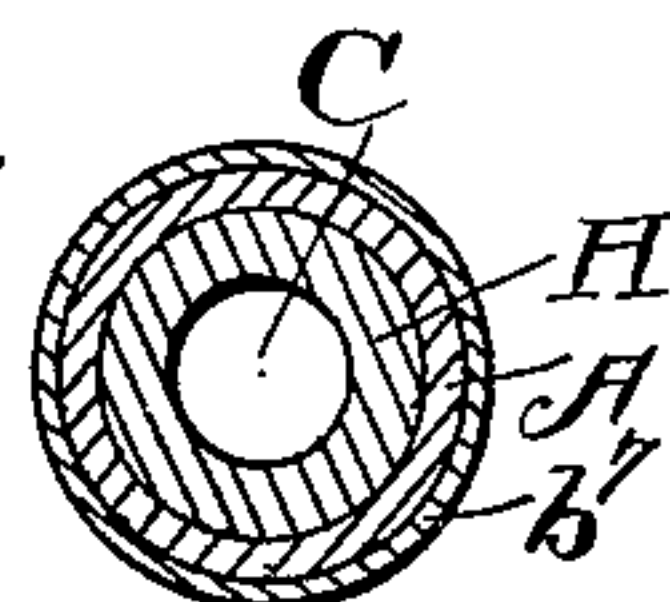


Fig. 12.



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UNITED STATES PATENT OFFICE.

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ELASTIC BOTTLE.

SPECIFICATION forming part of Letters Patent No. 560,984, dated May 26, 1896.

Application filed November 21, 1895. Serial No. 569,614. (No model.)

To all whom it may concern:

Be it known that I, LEVI L. FUNK, a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Elastic Bottles, of which the following, when taken in connection with the drawings accompanying and forming a part hereof, is a full and complete description, sufficient to enable those skilled in the art to which it pertains to understand, make, and use the same.

The object of my invention is to obtain an elastic bottle whereof a portion of the contents can be expelled by compressing the bottle, and when the compression thereof is released will automatically reassume its initial position and thereby draw or suck back into the bottle so much of the contents thereof as have been expelled and not removed from off the neck of the bottle, when such contents consist of a pasty material adapted to be thus drawn or sucked back, as described.

Another object of the invention is to obtain an elastic bottle which can be refilled after the contents thereof have once been expelled therefrom by compression thereof.

A further object of the invention is to obtain suitable means for attaching an elastic body part of a bottle to an inelastic neck part and to an inelastic bottom or clamp.

I am aware that bottles have heretofore been made of flexible or ductile material, as foil, such bottles being compressible and the contents being expelled therefrom by compression of the bottle.

In the drawings referred to as forming a part of this specification, Figure 1 is an elevation of an elastic bottle embodying my invention; Fig. 2, a vertical sectional view thereof; and Fig. 3, a perspective view of a clamp used by me for closing the lower end of the elastic bottle embodying my invention when such bottle is constructed in part of an elastic tube, as rubber. Fig. 4 is a vertical sectional view of a modified construction of the neck of a bottle embodying my invention and of the upper end of the elastic body part of the bottle; Fig. 5, a vertical sectional view of a stopper used in the construction illustrated in Fig. 4, viewed at right angles to the view thereof in such Fig. 4; and Fig. 6, a vertical sectional view of a stopper which is a

slight modification in construction of the stopper illustrated in Fig. 5. Fig. 7 is a vertical sectional view of another modification of the neck of an elastic bottle embodying my invention, and Fig. 8 a horizontal sectional view of the stopper thereof. The stoppers in Figs. 7 and 8 may be used in the neck illustrated in Fig. 4 as a substitute for the stopper therein shown. Fig. 9 is a vertical sectional view of another modification of the neck of an elastic bottle embodying my invention; Fig. 10, a further modification shown in vertical section; Fig. 11, another modification of the bottle-neck and manner of attaching the elastic body part of the bottle thereto, and Fig. 12 a horizontal sectional view of the bottle-neck illustrated in Fig. 10.

A letter of reference applied to a given part is used to designate such part throughout the several figures of the drawings wherever the same appears.

A is the elastic body part of the elastic bottle embodying my invention, and may well be constructed of a section of rubber tube or hose of suitable length.

B is the neck of the elastic bottle, and is constructed of non-elastic material, as hard rubber or metal.

b is a cap fitting over the upper end of the neck and forming a stopper thereto.

b' is the part of the neck B extending into the elastic body part A.

C is the aperture extending longitudinally through neck B, and through which the contents of the bottle are discharged.

D is a clamp used for fastening together the walls of the tube forming the elastic body part A when such body part is constructed of a rubber pipe or hose. Fastener D preferably consists of ductile metal—as sheet-brass, German silver, and the like—but it may be constructed of vulcanized rubber. When clamp D is made of ductile metal, it is fitted over the end of the rubber pipe or tube, as illustrated in Figs. 1 and 2, and the upturned edges *d d* are pressed together on the tube, thus pinching the walls thereof together.

When the clamp D is made of vulcanized rubber, the inner surfaces *d' d'* of the upturned edges *d d* should have properly distributed thereon rubber cement, after which it may be put in place on the lower end of

the tube or pipe forming the elastic body part A, as is illustrated in Figs. 1 and 2. If such clamp D is a proper fit over the end of the pipe or tube, it will hold the walls thereof closely together, so that such elastic body part will be sealed thereby and such clamp will be held in place by the cement. The opening or groove formed in clamp D by the upturned edges d d should be slightly dovetailed when such clamp is made of hard vulcanized rubber. When the clamp is made of ductile metal, in fastening the clamp in place on the end of the pipe or the tube forming the elastic body part A, as hereinbefore described, the act of clamping it or fastening it in place serves to dovetail the groove formed by the upturned edges d d . The upper end of the body part A is stretched over the part b' of the neck B, and will thereby, in the construction of such part b' illustrated in Fig. 2, be held with sufficient firmness to permit the use of the bottle embodying my invention for many semiliquid compositions; but such elastic body part will not be thereby held with sufficient firmness, unless such neck be made of hard vulcanized rubber and the elastic body part be cemented thereto, for containing many pasty compositions for which the bottle is well adapted, as in such case considerable pressure is exerted in compressing the elastic body part A, and hence I have devised the several modifications of the neck D shown in Figs. 4, 7, 9, 10, 11, and 12 of the drawings, which modified constructions I will now proceed to describe.

In Fig. 4, E is a ring fitting tightly over the rubber tube surrounding part b' of the neck B. Such ring E holds the upper end of the elastic body part A tightly in place between the inner face of such ring E and the outer face of part b' of neck B. F is an aperture through the wall of part b^2 of neck B, communicating with the passage-way C. In this construction the upper end of the passage-way is closed by stopper G, having screw-threads g thereon fitting into corresponding screw-threads in passage-way C.

g' , Fig. 5, indicates that a portion of the stopper G has been cut away, so that such stopper can be turned into position closing the opening F, or into position opening such aperture, and thereby forming a passage-way by the stopper and through passage-way C and aperture F without removing the stopper from the neck of the bottle.

g^2 , Fig. 6, indicates a different manner of removing a portion of the stopper G.

In Fig. 7 a construction of the neck B is shown wherein the part b' has threads b^3 b^3 b^3 thereon, and such neck B in this construction is screwed into the end of the elastic body part A, such elastic body part being slightly stretched thereby. Part b^2 of neck B is retained in this construction with aperture F therein.

G' , Figs. 7 and 8, is a stopper having slot g^3 therein, such slot being brought opposite

aperture F by turning stopper G' into the position thereof illustrated in Fig. 7.

In the construction of the neck illustrated in Fig. 9 I prefer to use ductile metal—such as copper, brass, pewter, and the like—as in such case the part b^4 , holding the elastic body part A firmly in place on part b' of the stopper, can be cast or formed as an annular flange, as is indicated by the dotted lines lettered b^5 , and then spun or pressed down over the elastic body part A and so made to form part b^4 , firmly holding such body part to the part b' of the neck B. In this construction the slot b^6 is shown in part b^2 of the neck B, and the slot g^3 of stopper G' is shown as in position opposite such slot, or adjacent thereto, whereby an open passage-way from the bottle is obtained. Where hard vulcanized rubber is used for this construction, elastic body part A is put into place between annular rings b' and b^4 and cemented.

In the construction illustrated in Figs. 10 and 12 neck B has the ring part b^7 arranged to surround the upper end of the elastic body part A, and the ring II is made to fit into such elastic body part and hold it firmly in place against the inner surface of the ring b^7 . Ring II, as well as the ring B' , may be of ductile metal or hard rubber, or, if preferred, of material which is expanded by the contents of the bottle—as, say, wood or ivory. Where the neck B' in this construction is made of ductile metal, the ring part b^7 is spun down onto the elastic body part, so as to slightly compress it, and thus hold it firmly in place in substantially the same manner as in the construction illustrated in Fig. 9.

In the construction illustrated in Fig. 11 the part b' of the neck has the annular flange b^8 thereon, over which the elastic body part A is stretched, and thereby a somewhat firmer connection between the elastic body part and the neck is obtained than is secured in the construction illustrated in Fig. 2. In this construction, (illustrated in Fig. 11,) as well as in all the several constructions illustrated and described, cement can be used for more firmly connecting and uniting such parts together than where no cement is used, if desired; but in most instances the form of construction will be used wherein sufficient strength in the union of the parts is obtained without the use of cement.

When the bottle constructed as hereinbefore described is once emptied of its contents, it can be again refilled in the same manner as can an ordinary bottle, whereas in flexible bottles as heretofore constructed a single filling is all that can be obtained.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A bottle consisting of a neck composed of non-elastic material, a body composed of rubber, and a bottom of non-elastic material, one end of the rubber body part being stretched over the non-elastic neck and clamped thereto

and the other end pinched within a groove in the bottom; substantially as described.

5 2. A bottle consisting of a neck of non-elastic material, a rubber tube forming the elastic body part, and a clamp fitting over the bottom in which the end of the rubber tube is pinched and closing the tube, with a ring extending around the portion of the elastic body part which is attached to the neck, such

ring being formed by spinning or pressing an annular flange on the neck down into contact with the elastic body part; substantially as described.

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Witnesses:

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