

(No Model.)

2 Sheets—Sheet 1.

G. W. MAYTHAM.
NON-REFILLABLE BOTTLE.

No. 594,116.

Patented Nov. 23, 1897.

Fig. 1.

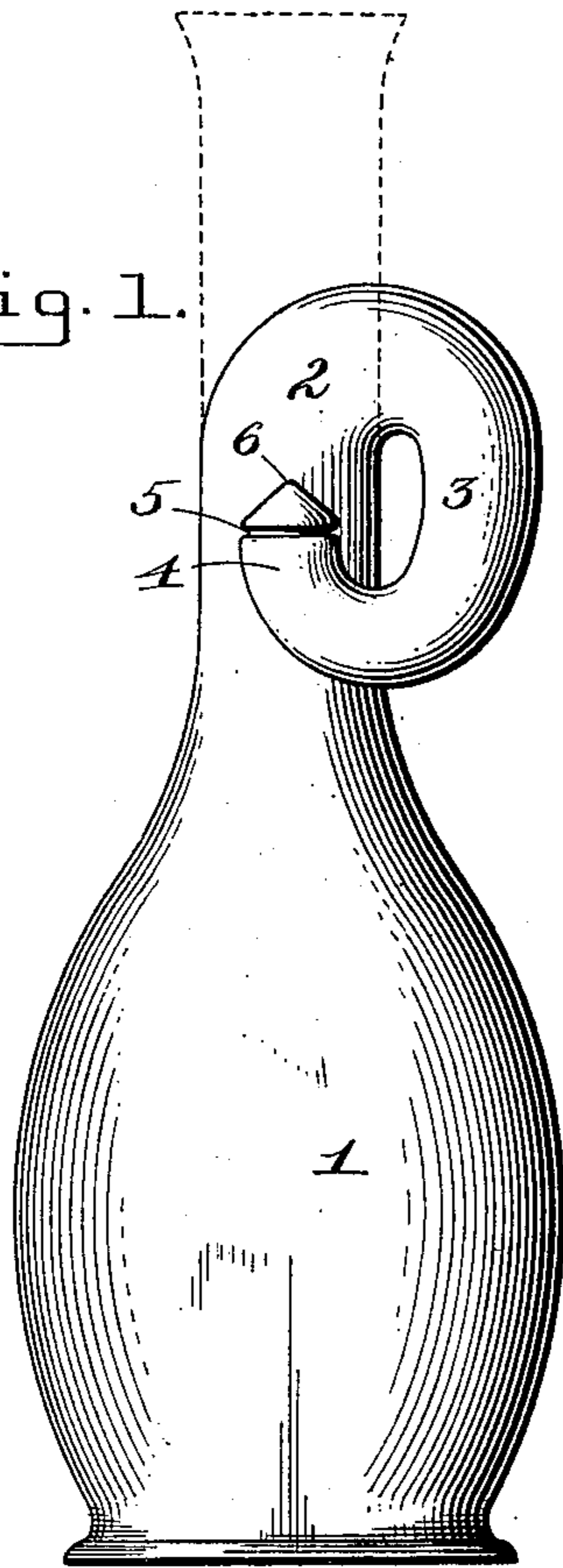


Fig. 2.

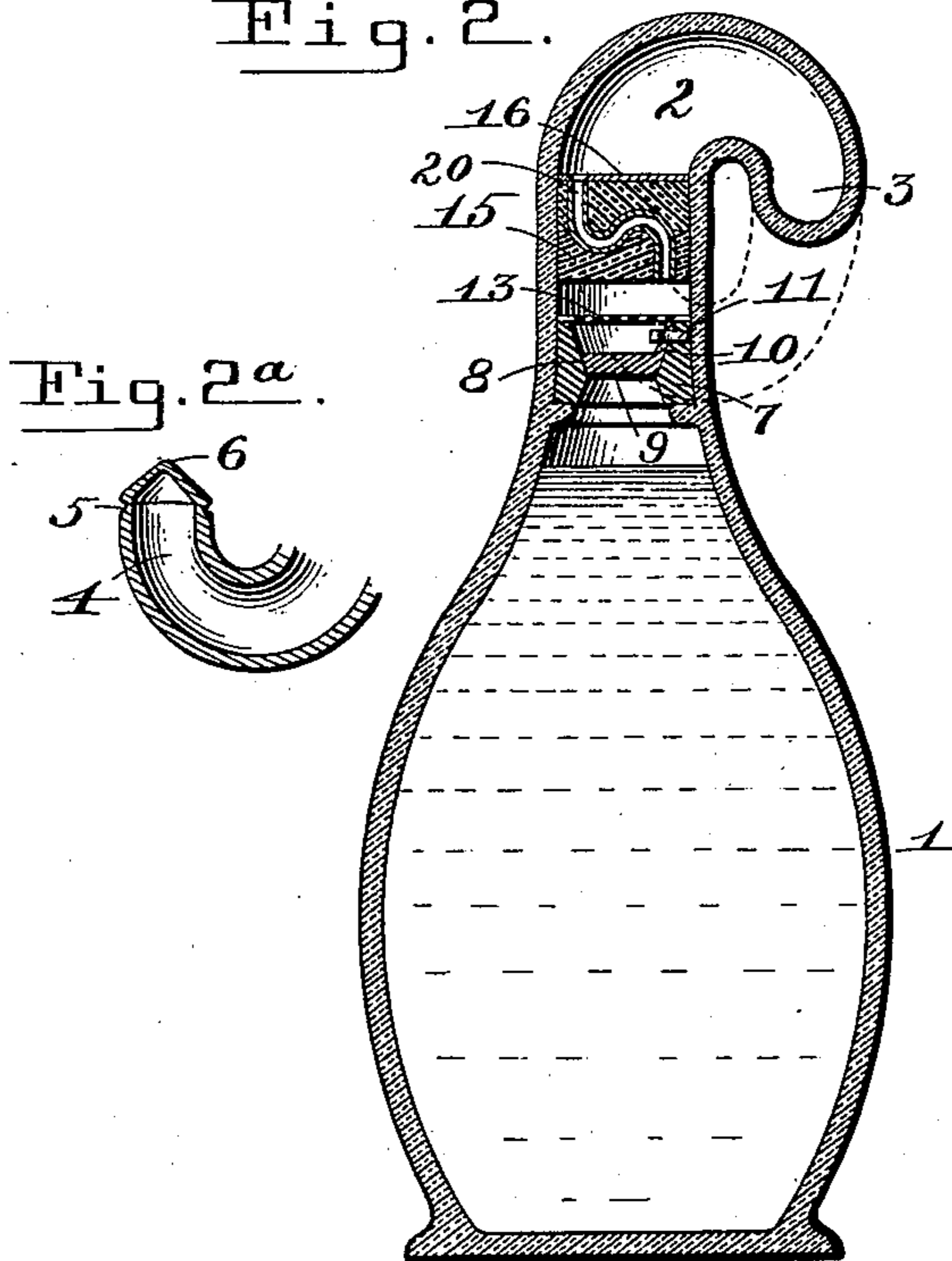


Fig. 2a.

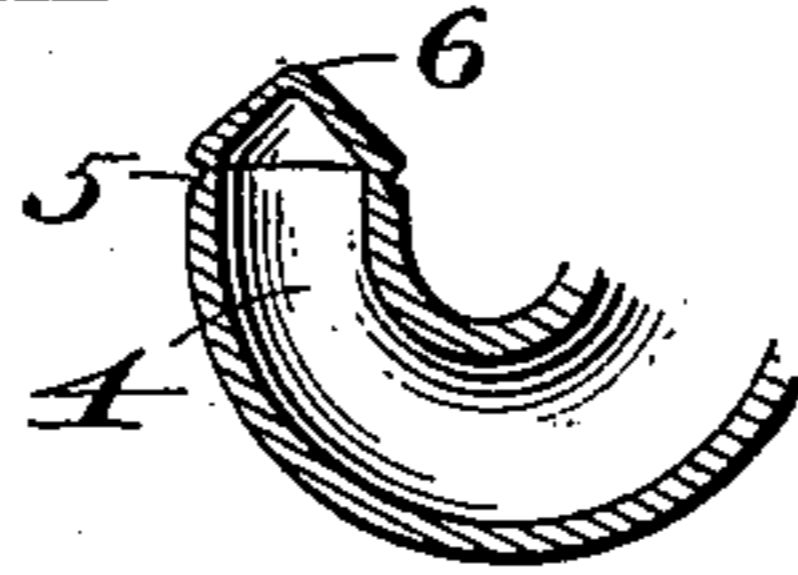


Fig. 3.

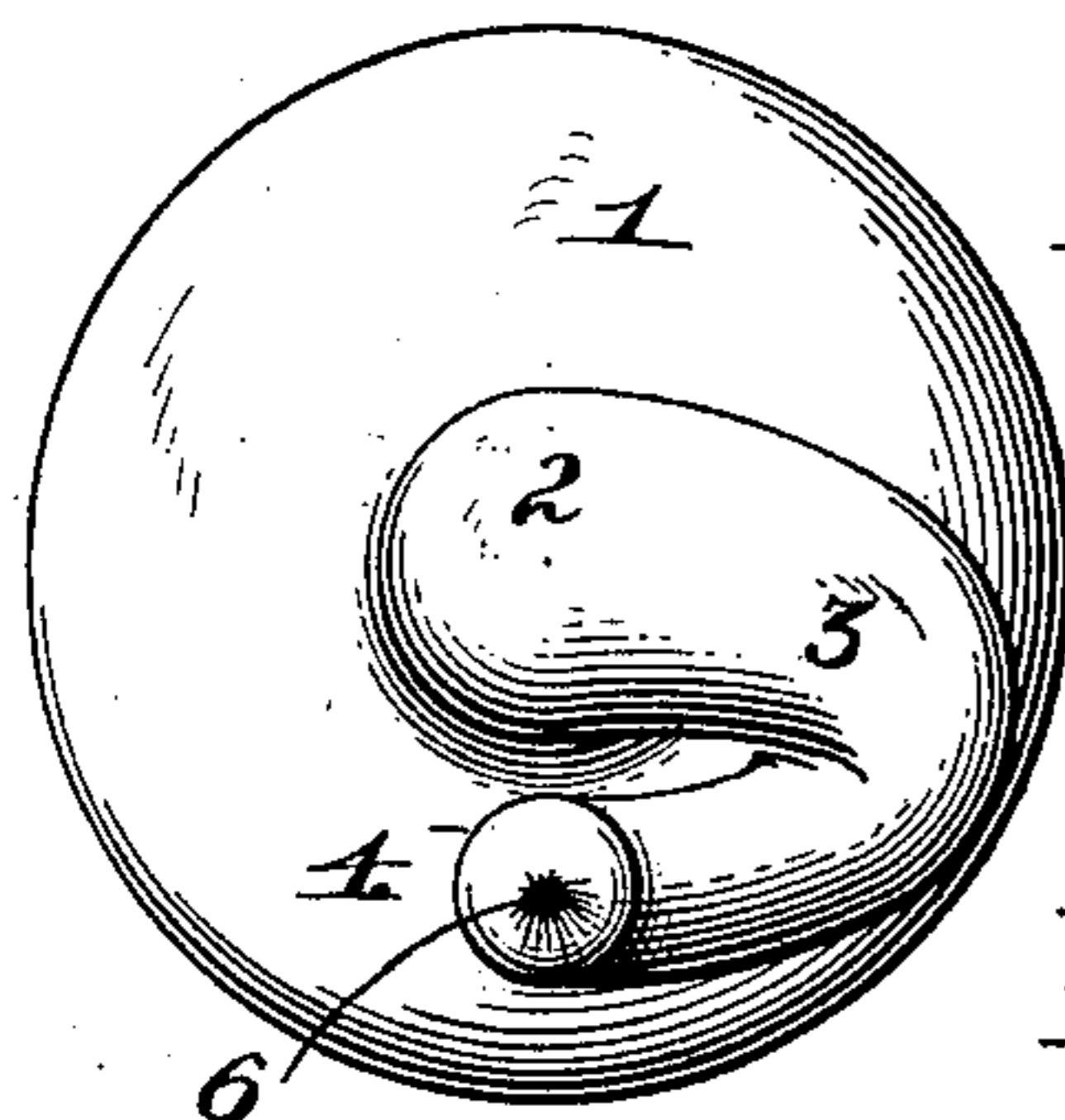


Fig. 4.

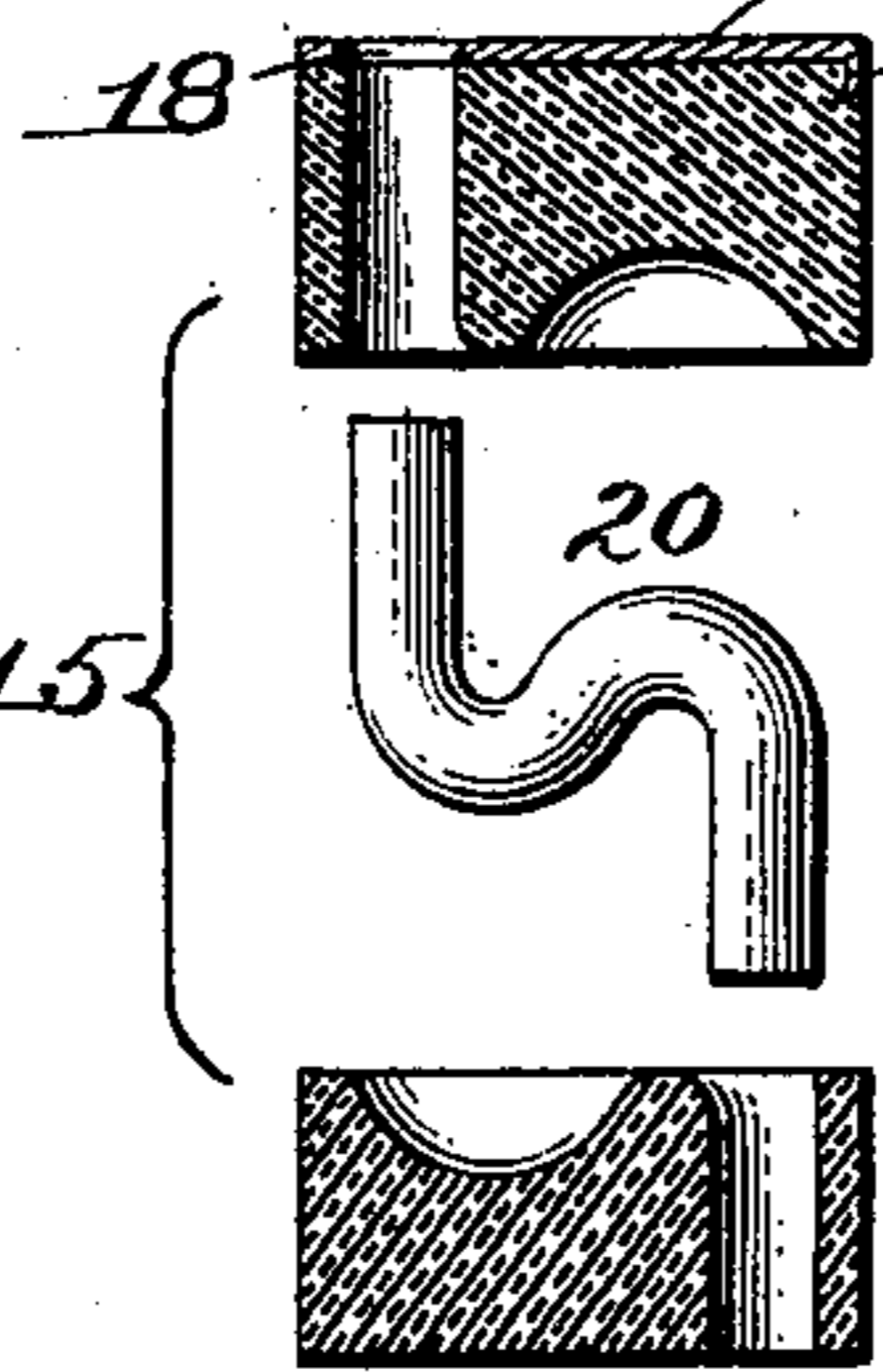


Fig. 6.

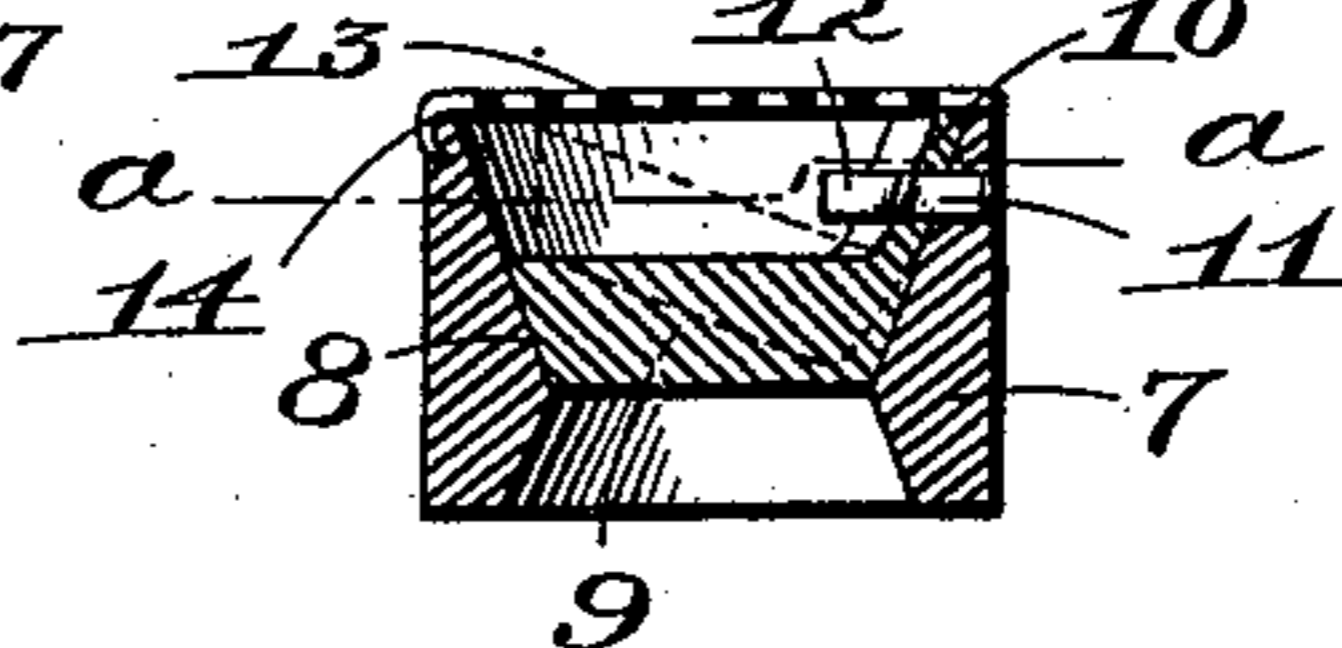


Fig. 7.

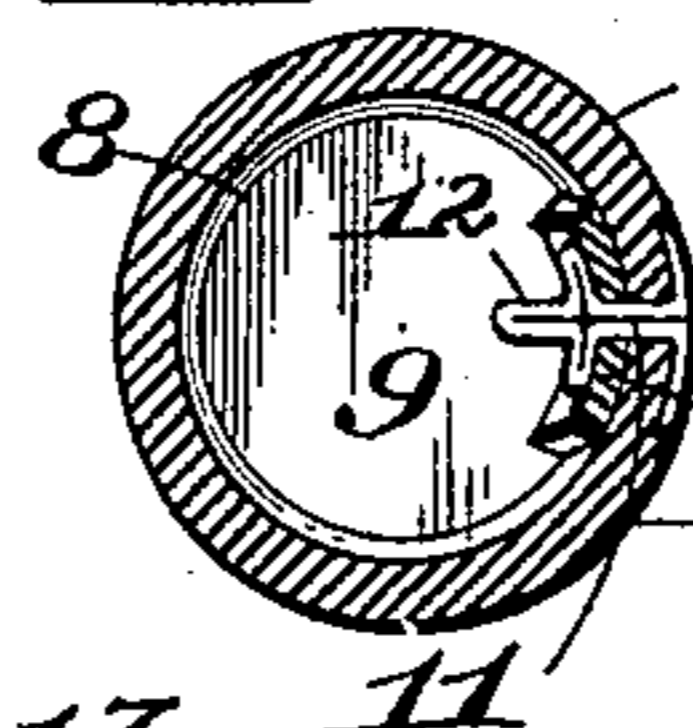


Fig. 8.

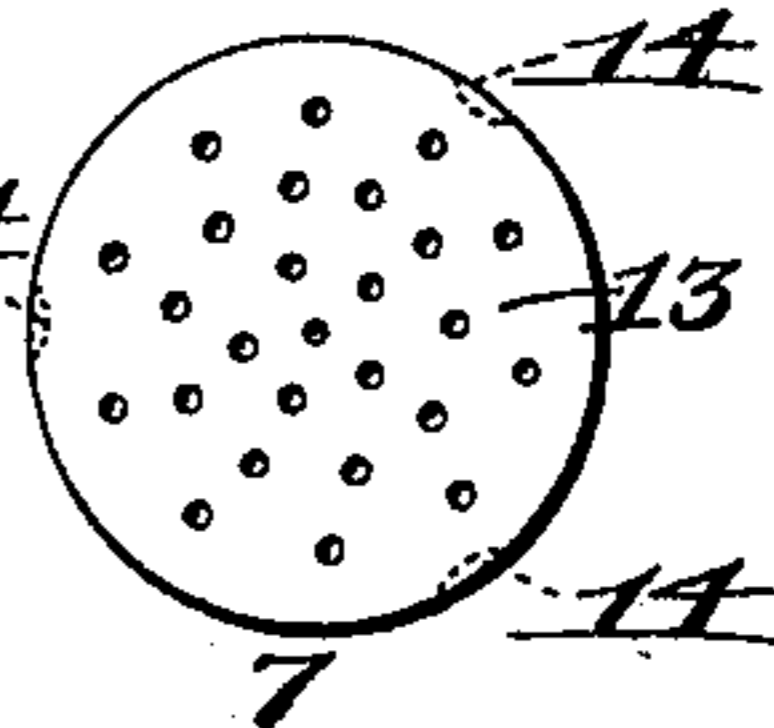
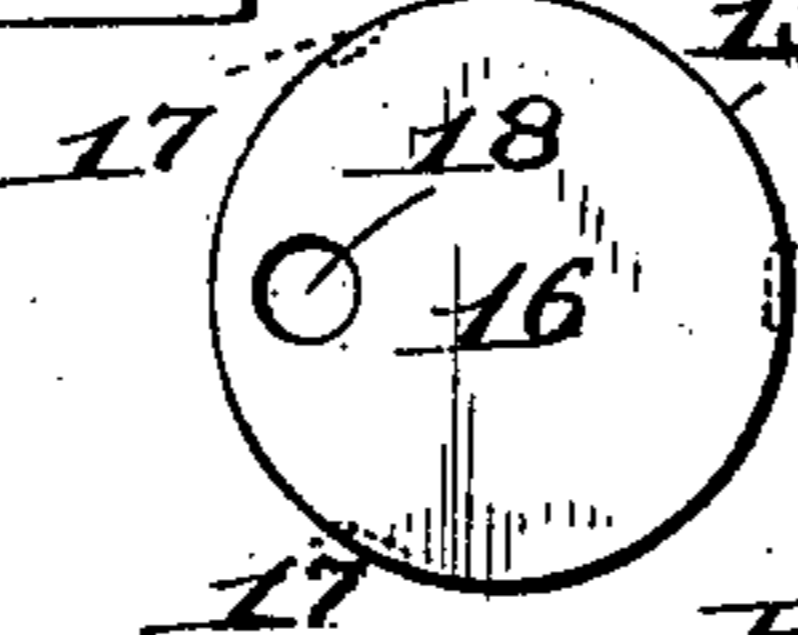


Fig. 5.



Witnesses:
John Newhart
Edwards Oberkircher

George W. Maytham
Inventor.

By Emil Newhart.
Attorney

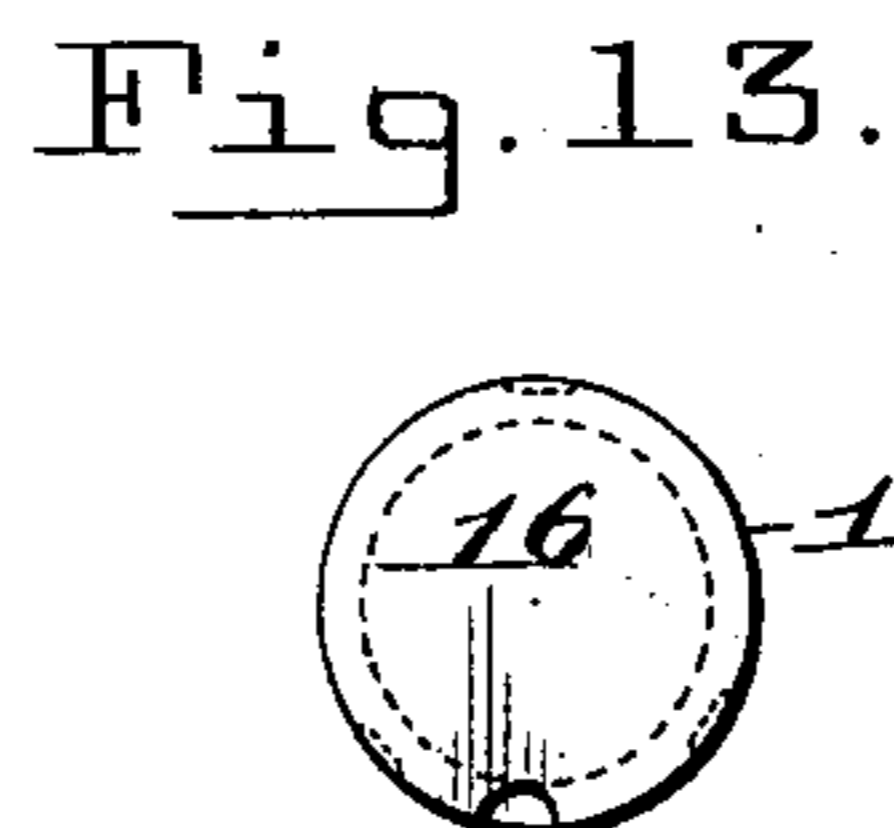
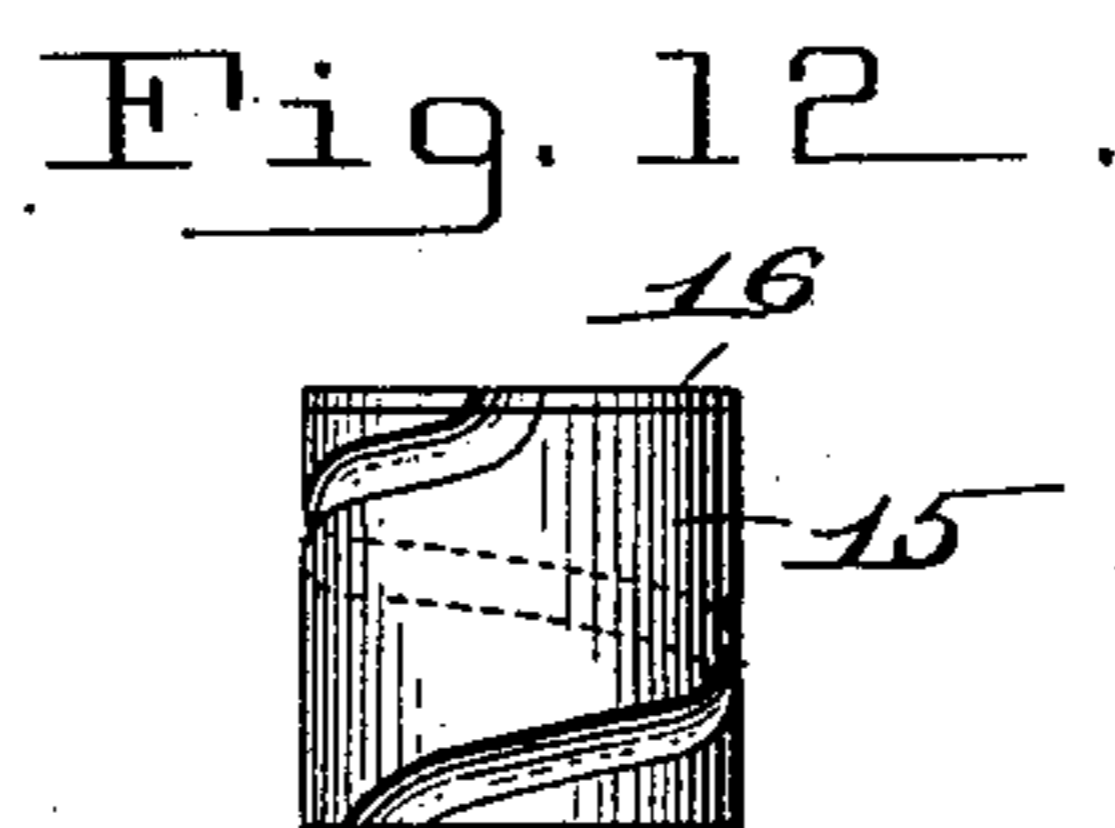
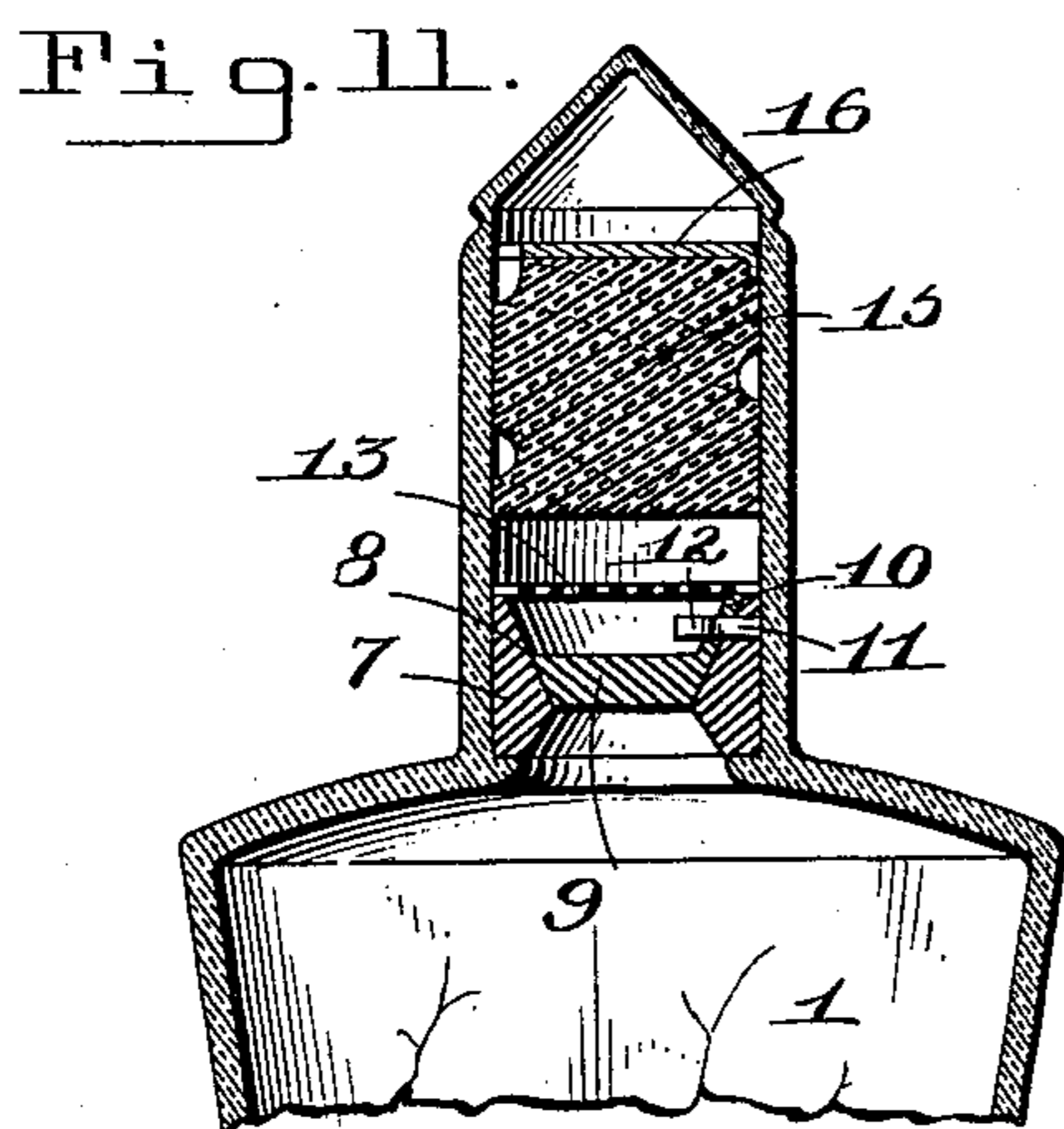
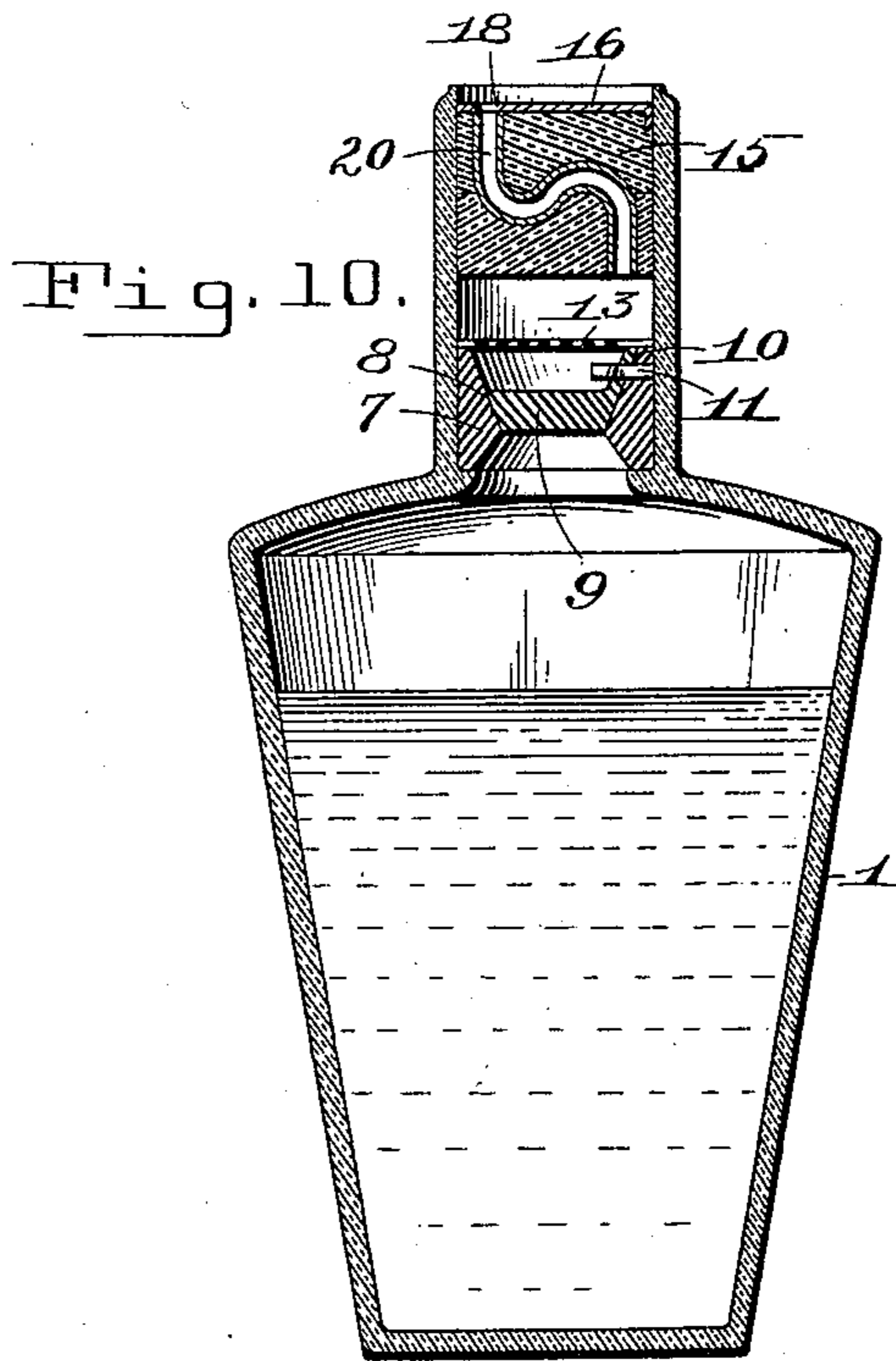
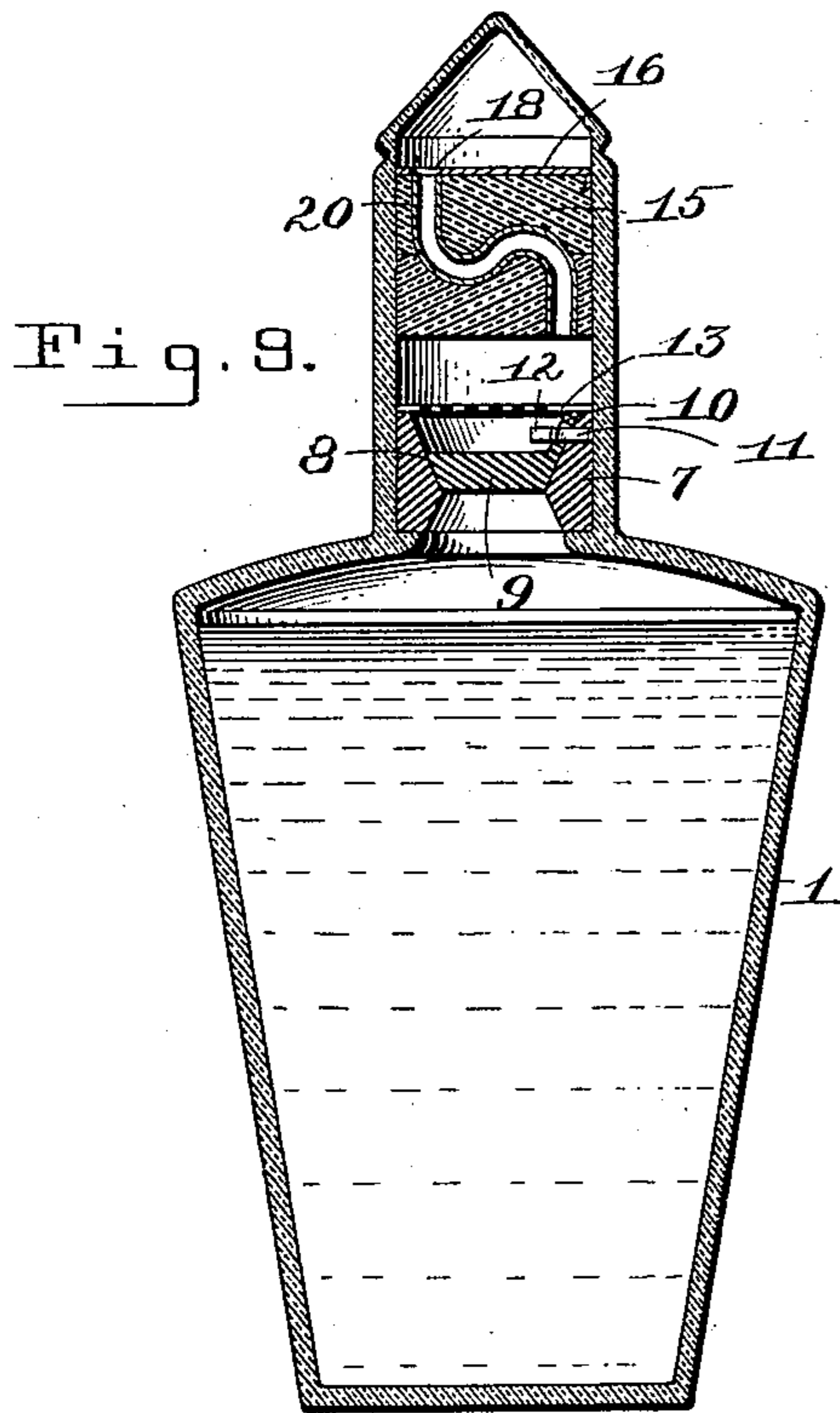
(No Model.)

2 Sheets—Sheet 2.

G. W. MAYTHAM.
NON-REFILLABLE BOTTLE.

No. 594,116

Patented Nov. 23, 1897.



Witnesses:
John Neuhart
Edward Obidichur

George W. Maytham Inventor.
By Emil Neuhart
Attorney.

UNITED STATES PATENT OFFICE.

GEORGE W. MAYTHAM, OF BUFFALO, NEW YORK.

NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 594,116, dated November 23, 1897.

Application filed October 22, 1896. Serial No. 609,698. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. MAYTHAM, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

This invention relates to improvements in non-refillable bottles, whereby a bottle after having been partially or entirely emptied cannot be refilled.

The invention consists of a bottle having its neck crooked or bent upon itself, so as to prevent the filling of the same, but to allow the fluid to pass therefrom; also in the valve and protector, which prevent the forcing of liquid into the bottle.

The object of my invention is to provide a simple and inexpensive bottle, constructed so as to avoid the introduction of any tool for the purpose of holding the valve from its seat or damaging the same in order to fill the bottle.

In the accompanying drawings, consisting of two sheets, Figure 1 is a side elevation of a bottle provided with my improvements. Fig. 2 is a vertical section of the same. Fig. 2^a is a central vertical section of the upwardly-bent portion of the bottle-neck. Fig. 3 is a top plan view of the bottle. Fig. 4 is a vertical section of the protector, the parts thereof being separated and the gooseneck-tube being shown in elevation. Fig. 5 is a top plan view of the same. Fig. 6 is a vertical section of the valve and valve-plug, which are set into the neck of the bottle. Fig. 7 is a horizontal section of the same on line *a a*, Fig. 6, showing the manner of securing the valve to the valve-plug. Fig. 8 is a top plan view thereof. Fig. 9 is a vertical section of a modified form of bottle, showing my valve and protector applied thereto, the upper end of the neck being drawn to a point and thereby sealed. Fig. 10 is a similar section showing the bottle as in use, the sealed portion of the neck being broken away. Fig. 11 is a fragmentary vertical section of a bottle, showing a modified form of protector applied thereto. Fig. 12 is a side elevation of the modified

form of protector. Fig. 13 is a top plan view thereof.

Like numerals of reference refer to like parts in the several figures.

The numeral 1 represents the body of the bottle, and 2 the neck, which is crooked or bent upon itself in such a manner so as to avoid the filling of the bottle, but to allow the liquid to pass therefrom. This is done by crooking the neck and forming a downwardly-bent portion 3 and then an upwardly-bent portion 4, the end of said upwardly-bent portion being about midway of the length of the downwardly-bent portion 3, thereby preventing the filling of the bottle, as the liquid in the attempt to fill the same would find its own level only, which would about half fill the downwardly-bent portion of the neck. Therefore it would not raise to a sufficient height to pass the first bend or crook.

Near the outer end of the upwardly-bent portion 4 an annular recess 5 is formed by reducing the thickness of the glass, as shown in Fig. 2^a, thereby presenting a breaking-line. The end of said upwardly-bent portion is heated and drawn to a point, as at 6, for the purpose of sealing the bottle. If desired to empty or partially empty the bottle, the drawn or sealed point is broken away, the break being made on the annular recess or breaking-line. A cork is then used, as is well known.

The bottle having the neck bent upon itself, as described, will prevent the refilling thereof; but to avoid the refilling of the same under pressure a valve-plug 7 is forced into the neck thereof. This valve-plug is preferably made of rubber or other elastic material. The plug 7 is provided with a valve-seat 8, against which the valve 9 is adapted to set, said valve being provided with an ear or extension 10, which is adapted to be secured to the valve-plug by a fastening 11. This fastening is provided with a head or extension 12 for the purpose of controlling the outward movement of the valve, as shown by dotted lines in Fig. 6. The valve, which seats itself against its seat inwardly, opens when the bottle is reversed, the ear or extension 10 of the same being thin and flexible, therefore giving no resistance to this ac-

tion. The valve readily seats itself against its seat when the bottle is righted. If desired, the ear or extension 10 of the valve may be secured to the valve-plug by means
5 of cement or in any other manner. An annular shoulder is provided near the lower end of the neck, against which the valve-plug is adapted to set. By this construction it is impossible to force the protector and valve-plug
10 into the bottle.

13 is a metal cap perforated for the purpose of allowing the liquid to pass out through the neck. This cap is secured to the valve-plug by prongs 14 or in any other manner.

15 A protector 15 is provided to prevent the introduction of a hot needle or other tool through the neck for the purpose of burning a hole in the valve or valve-plug or otherwise damaging the same.

20 16 is a metal cap which is secured to the upper face of the protector by prongs 17 or in any other manner and is provided with a hole 18, which registers with the gooseneck tube 20. This tube forms a winding liquid passage or outlet and is preferably made of glass and is embedded in the protector for the purpose of further winding or crooking the course
25 a tool would have to take in the attempt to raise the valve from its seat or damage the same. The protector, as shown, is separable to facilitate the embedding of the gooseneck tube therein. The valve-plug and protector are set in the neck of the bottle before bending or crooking the same.

35 If it is found that the valve-plug and protector may be damaged in heating the glass for the purpose of bending the neck, they may be made of asbestos or other incombustible material.

40 It is obvious that this bottle may be used without the valve or protector; but to avoid the introduction of liquid under force the valve is applied as a safeguard. If desired, the valve may be used without the protector
45 in the type of bottle as above described, as the course a tool would have to take may be sufficiently winding to prevent the same from being directed through the perforated cap 13 of the valve-plug.

50 When using the bottle without the valve-plug and protector, the neck thereof will be bent or crooked at the time of making the same; but if desired to use the valve-plug and protector the bottle is made with a straight
55 neck, as shown in dotted lines in Fig. 1, the valve-plug and protector being forced into the neck after filling the bottle, but before bending or crooking the neck of the same.

60 The manner of filling the bottle is as follows: The bottle is first filled and the valve-plug and protector forced into the neck thereof. The neck, which is straight, as shown in dotted lines, is then heated and bent, as shown, and the end thereof drawn to a point
65 and sealed.

In Figs. 9 and 10 my valve-plug and protector are shown applied to a bottle having a straight neck, it being sealed in like manner to the bottle above described.

In Figs. 11, 12, and 13 a modified form of
70 protector is shown, the passage for the liquid to pass through being formed spirally on the periphery of the same.

From the foregoing the use, arrangement, and construction of my device can be readily
75 understood.

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

1. In a non-refillable bottle, the neck thereof having a downwardly-bent portion, which at its outer end is bent upwardly, said upwardly-bent portion being provided with an annular recess near its outer end, caused by reducing the thickness of the glass, and having its outer end sealed by drawing the glass
80 to a point, substantially as set forth. 85

2. In a non-refillable bottle, a valve-plug having a tapering valve-seat, a valve which is provided with an ear or extension set thereon, a fastening adapted to pass through said ear or extension and valve-plug and hold the valve to its seat, said fastening having a head or extension extending over the valve and adapted to control the movement thereof, and
90 a perforated cap secured to the valve-plug, substantially as set forth. 95

3. The combination with a bottle, having its neck bent or crooked upon itself, of a valve-plug set in said neck, said valve-plug being
100 provided with a valve-seat, a valve having an ear or extension whereby it is secured to the valve-plug, a perforated cap secured to the upper face of the valve-plug, and a protector placed in the neck above the latter, said protector having a glass tube embedded therein,
105 and a metal cap secured to its upper face, said cap being provided with a hole which is adapted to register with the glass tube, substantially as set forth. 110

4. The combination with the bottle-neck crooked or bent upon itself, of a valve-plug carrying a valve, situated in said neck, said valve-plug being provided with a perforated metal cap on its upper face, a protector having a gooseneck-tube embedded therein, said protector being situated in the neck above the valve-plug and being separable for the purpose of readily embedding the gooseneck-tube therein, substantially as set forth. 115 120

5. The combination with a bottle, the neck thereof having a downwardly-bent portion which at its outer end is bent upwardly, the end of said upwardly-bent portion being about midway of the length of the downwardly-bent
125 portion, of a valve-plug provided with a valve-seat located in said neck, a valve seated against said valve-seat, a fastener adapted to secure the valve to the valve-plug, said fastener being also adapted to control the move- 130

ment of the valve, a perforated metal cap secured to the upper face of the valve-plug, and a protector having a winding liquid passage or outlet located in the neck above the valve, substantially as set forth.

5 6. In a non-refillable bottle, the combination with the bottle-neck, of a valve set in said neck, a protector located in the neck above the valve, said protector being separable and

having a gooseneck-tube embedded therein 10 and a metal cap secured to the upper face thereof, said cap being provided with a hole which is adapted to register with the gooseneck-tube, substantially as set forth.

GEORGE W. MAYTHAM.

Witnesses:

JOHN NEUHART,
EDWARD OBUKIRCHER.