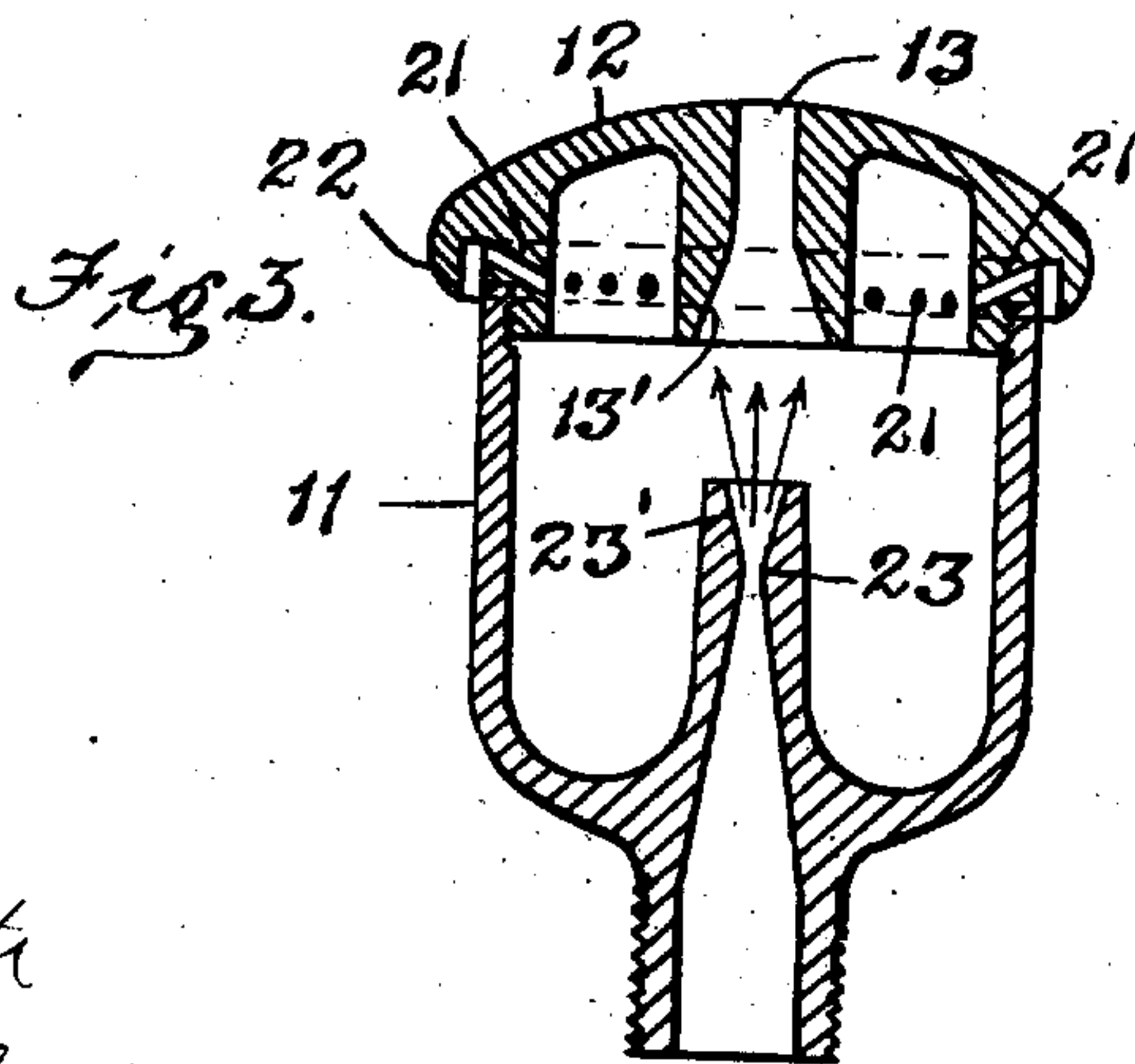
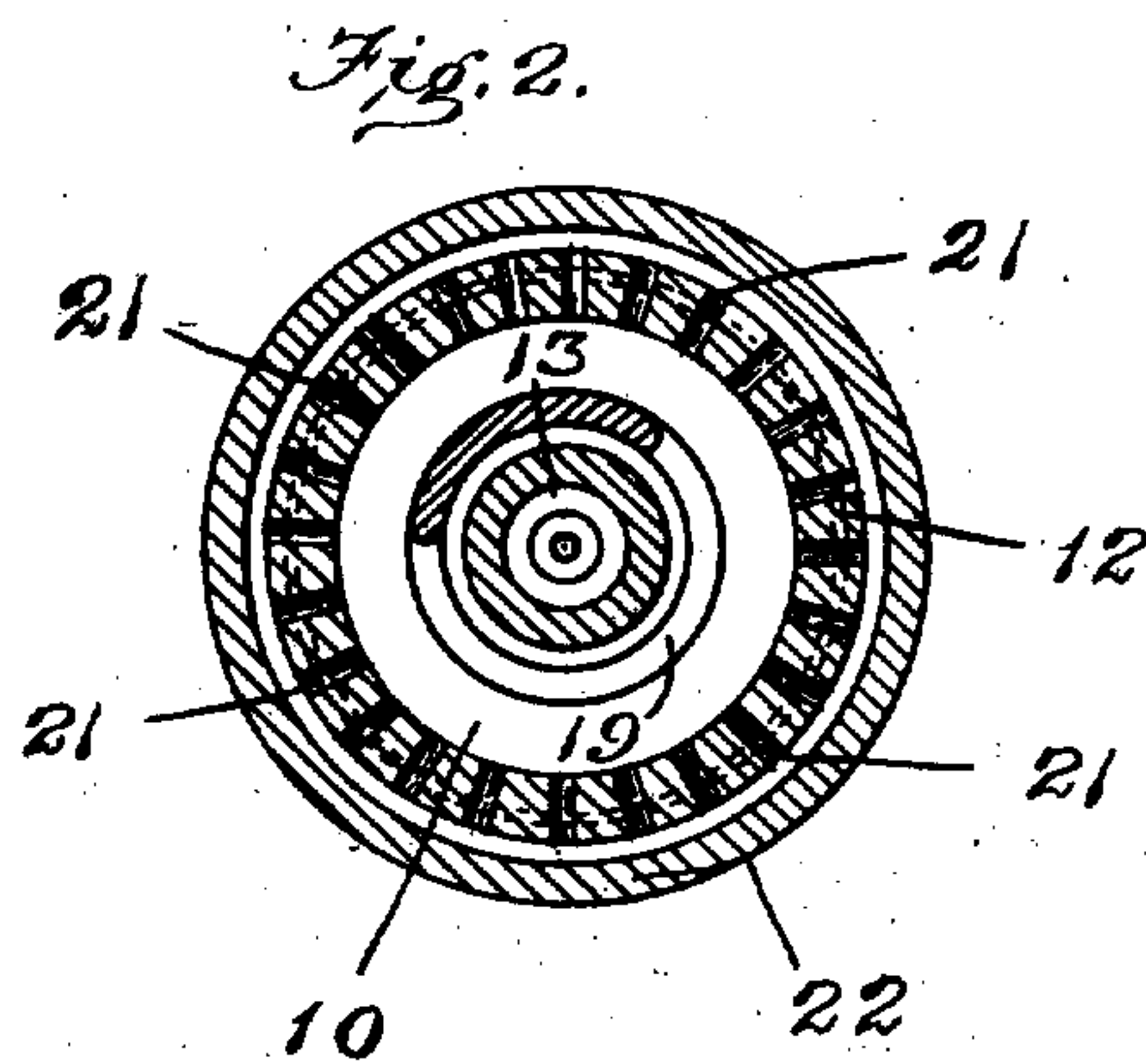
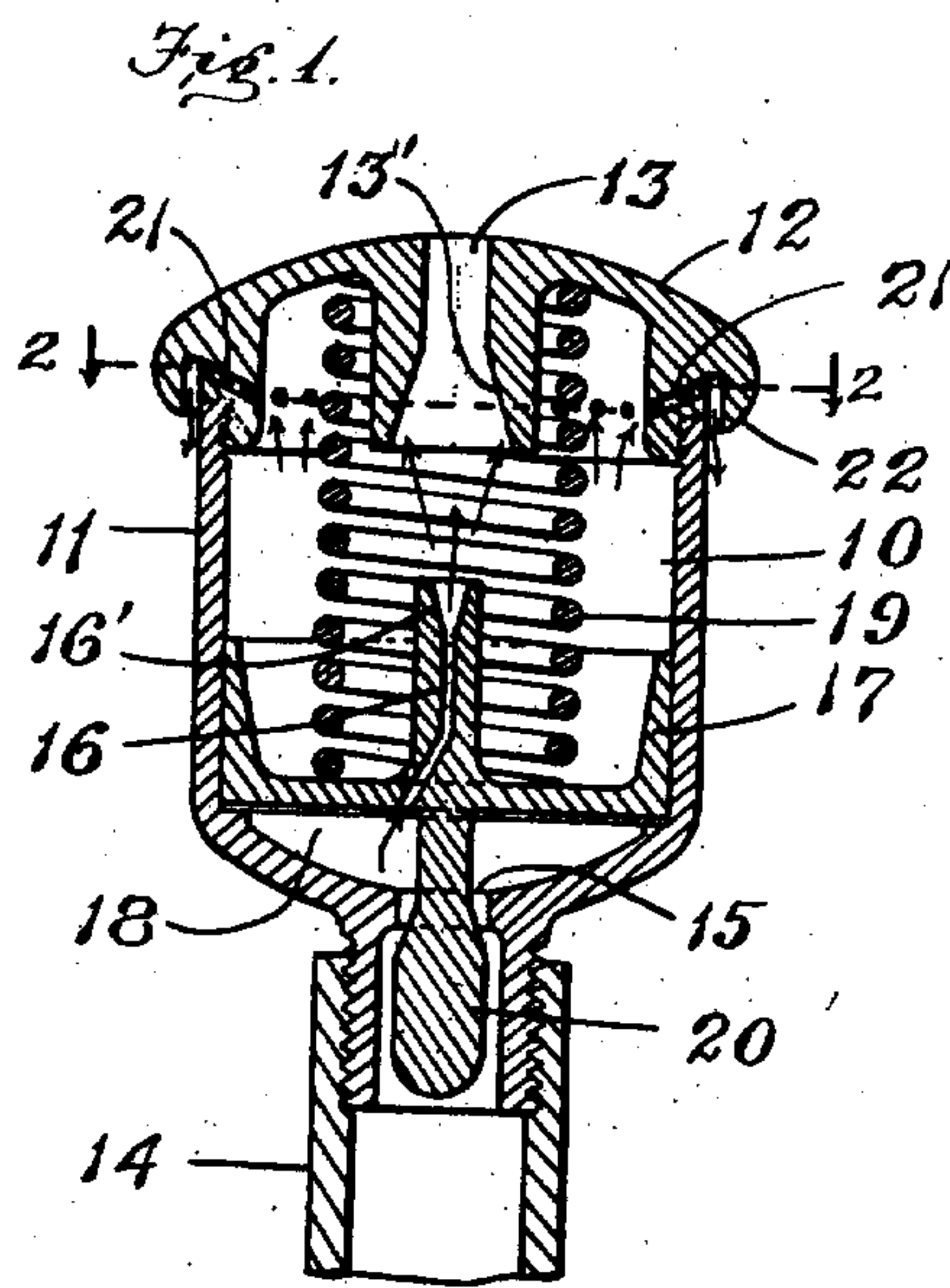


S. C. KEITH, JR.  
BUBBLING DRINKING FOUNTAIN.  
APPLICATION FILED MAR. 23, 1910.

973,790.

Patented Oct. 25, 1910.



Witnesses:  
P. H. Dwyer  
H. R. Roubert

Inventor  
Simeon C. Keith Jr.  
By *Wright & Son, Inc.*  
Attys.



# UNITED STATES PATENT OFFICE.

SIMEON C. KEITH, JR., OF SOMERVILLE, MASSACHUSETTS.

## BUBBLING DRINKING-FOUNTAIN.

973,790.

Specification of Letters Patent.

Patented Oct. 25, 1910.

Application filed March 23, 1910. Serial No. 551,187.

*To all whom it may concern:*

Be it known that I, SIMEON C. KEITH, Jr., of Somerville, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Bubbling Drinking-Fountains, of which the following is a specification.

This invention relates to fountains, particularly those known as bubbling drinking fountains, by which a jet or bubble of water of convenient size is directed upwardly so that a person placing his mouth over the fountain may drink from the jet without touching the nozzle. Fountains of this type are now more or less generally in use in public places, such as parks, school buildings, and public highways. But hitherto such fountains have been provided with but a single outlet so that a person placing a finger over the outlet may cause the stream of water to spurt laterally with relatively great velocity, depending upon the pressure of the water. The practice of misusing these fountains in this way is extensive, especially in the school buildings and other places where they are exposed to mischievous persons.

The object of the present invention is to provide a fountain of the type stated, which cannot be misused to cause the water to spurt laterally.

The desired result is obtained by providing a supplemental outlet in addition to the usual outlet, the supplemental outlet being arranged to direct the water downwardly when, and only when, the main outlet is obstructed. The supplemental outlet is so formed as to be difficult of obstruction, especially by the hand, and the aforesaid misuse of the fountain is avoided. In my fountain, the lateral outlets are so located with respect to the outlet port that the bubble or jet does not draw air therethrough, and the stream of water is directed by a nozzle into an elongated duct which terminates in the said outlet.

Referring now to the drawings which illustrate the invention,—Figure 1 is a vertical section illustrating the preferred form. Fig. 2 is a cross section on the line 2—2 of Fig. 1. Fig. 3 is a vertical section of another form of the invention.

The same reference characters indicate the same parts wherever they occur.

Referring to Figs. 1 and 2, 10 indicates

a chamber formed by casing 11, having a cap or cover 12. Water is delivered into the chamber 10 under pressure to be discharged therefrom through a main outlet 13, opening upwardly and formed by an inwardly projecting annular flange on the cap, said flange being imperforate as shown. The jet of water which escapes through the outlet 13 is intended for drinking, and it rises vertically to a short distance above the cover 12. As here shown, water under pressure is conducted to the casing 11 by a service pipe 14, from which the water flows into the lower part of the casing through the inlet 15. The water, which enters the lower part of the casing, may pass into the chamber 10 through a nozzle formed by a port 16 extending through a central stem formed on a piston 17. The piston divides the space in the casing into two chambers, namely, the chamber 10 previously mentioned and the chamber 18. The piston is subject to the tension of a spring 19 which tends to move the piston toward the inlet 15. The piston is provided with a pressure-regulating valve 20 which controls the inlet 15 so as to admit a uniform quantity of water however the pressure in the service pipe 14 may vary. The capacity of the port 16 is less than that of the inlet 15, and consequently the chamber 18 becomes a pressure chamber when water is forced through the inlet 15. When the volume of water admitted by the inlet 15 is greater than that which may escape through the port 16, pressure is developed in the chamber 18 forcing the piston upwardly. The valve 20 is thus caused to obstruct the inlet 15 to a greater extent, thus maintaining a uniform flow of water into the chamber 18. In this way, the piston and valve automatically compensate for variations of the pressure in the service pipe, the result being that a uniform volume of water is discharged through the main outlet 13. The regulating means just referred to forms the subject-matter of my co-pending application, Serial No. 539,965, filed January 25, 1910.

The port 16 is formed in a central up-standing nozzle on the piston and the upper end of the port 16 is in the line of the main outlet 13, said upper end being flared as indicated at 16'. The effect of flaring the port is to reduce the velocity of the water and



increase the diameter of the jet to substantially the diameter of the main outlet 13, which is also flared as indicated at 13'. The water, which is thus introduced into the outlet 13, loses a greater proportion of its force and it bubbles very gently above the cap 12 in a jet which is convenient for drinking.

The chamber 10 is provided with one or more supplemental outlets through which the water does not normally pass, but through which it may pass when the main outlet 13 is obstructed. In the form shown by Figs. 1 and 2, the supplemental outlets for the chamber 10 are formed in the cover 12 which forms a part of the casing 11. These outlets are shown in the form of ports indicated at 21. The outer ends of the ports 21 are covered by an annular flange 22 which overhangs the ports and extends downwardly below the same. When the main outlet 13 is obstructed, the water issuing from the port 16 fills the chamber 10 and overflows through the supplemental outlets 21. It is deflected by the downwardly extending flange 22 so that it is caused to run down the exterior of the casing 11. The level of the water in the chamber stands normally below said outlets and above the lower end of the flange surrounding the port 13, whereby air is not drawn through said port 13 with the jet or bubble delivered there-through by the nozzle 16. The casing is preferably cylindrical and the arrangement of the supplemental outlet or outlets is such that it is practically impossible to deflect the water issuing therefrom so as to cause the water to spurt in a horizontal direction.

After the chamber 10 has become filled by obstructing the main outlet 13 and said outlet is again opened, the jet of water passing from the nozzle 16 to the outlet 13 forces out the water contained in the chamber until its level drops to a plane below said outlets 21 and above the lower end of the flange surrounding the port 13.

The form illustrated by Fig. 3 is like that shown by Figs. 1 and 2, with the exception of the omission of the automatic regulating means. In Fig. 3, the chamber 10 is not a pressure chamber because the area of the nozzle 23 is less than the outlets. In this form, like that of Figs. 1 and 2, the nozzle extends upwardly into the chamber 10 in the line of the main outlet 13, the nozzle being flared as indicated at 23' to form a hollow cone of water. This form is provided with supplemental outlets 21 and the overhanging flange 22, whose function is precisely the same as in the form first described.

Each of the fountains illustrated is adapted to prevent the jet which is emitted through the main outlet from spurting unduly when the water is suddenly supplied to the chamber 10. In both the forms shown, this spurting is prevented by the relief af-

forded by the supplemental outlet or outlets, and at the same time the inlet ports for the upper chamber deliver the bubble without permitting the entrance of air into the bubble.

Having thus explained the nature of my said invention and described a way of making and using the same, although without attempting to set forth all of the forms in which it may be made or all of the modes of its use, what I claim is:

1. A bubbling fountain, comprising a casing forming a chamber and having at its upper end an outlet port surrounded by a depending imperforate annular flange extending into the chamber, an inlet for delivering water into the outlet port, and a separate outlet through the casing located above the lower end of said flange, through which water is emitted only when the said outlet port is obstructed.

2. A bubbling fountain, comprising a casing forming a chamber and having at its upper end an outlet port surrounded by an imperforate flange depending into said chamber, and an inlet for said chamber located in alinement with said outlet port to deliver a jet of water thereto, said casing having one or more supplemental outlets for water in said chamber, said outlets being located above the depending end of said flange.

3. A bubbling fountain, comprising a casing forming a chamber and having a cap formed with a depending imperforate annular flange to constitute a main outlet for the emission of a jet, said casing having an inlet for the water, and a spring-tensioned piston in the chamber having a pressure-regulating valve controlling said inlet, and having a water passage alined with the outlet port, said casing having supplemental outlets located in a plane above the lower end of said flange whereby the main outlet is normally sealed against the entrance of air from the supplemental outlets.

4. A bubbling drinking fountain, comprising a casing forming a chamber and having lateral supplemental outlets, a nozzle extending into the lower portion of said chamber, an outlet port at the upper end of said chamber alined with the nozzle, and means for sealing said outlet port against the passage of air therethrough from said supplemental outlets.

5. A bubbling drinking fountain, comprising a casing forming a chamber to receive a body of water, a nozzle extending upwardly into said chamber, a cap forming the upper end of the casing and having an annular flange depending into said chamber which forms an outlet port alined with the nozzle, said nozzle and said flange being oppositely flaring.

6. A bubbling drinking fountain, com-



prising a casing forming a chamber to receive a body of water, a nozzle extending upwardly into said chamber, a cap forming the upper end of the casing and having an  
5 annular flange depending into said chamber which forms an outlet port alined with the nozzle, said casing having supplemental outlets located above the lower end of the depending flange through which water is dis-

charged only when the said outlet port is closed.

In testimony whereof I have affixed my signature, in presence of two witnesses.

SIMEON C. KEITH, JR.

Witnesses:

W. P. ABELL,

P. W. PEZZETTI.