

No. 816,345.

PATENTED MAR. 27, 1906.

R. G. LOCKWOOD.
FOUNTAIN PEN FILLING DEVICE.

APPLICATION FILED APR. 26, 1905.

2 SHEETS—SHEET 1.

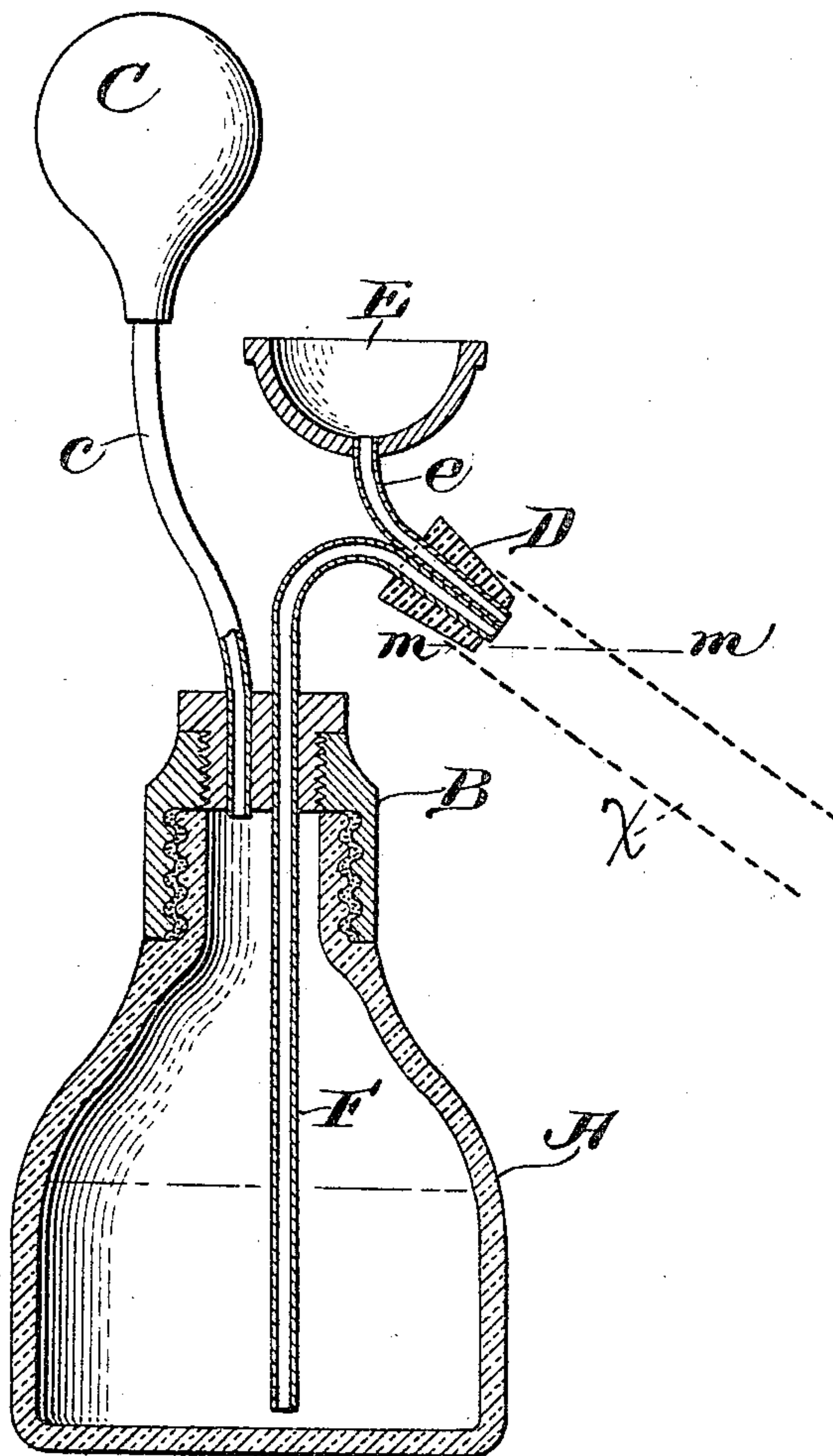


Fig. 1.

Witnesses:
Joseph T. Brennan.
Margaret A. Daniker.

Inventor:
Rhodes G. Lockwood
by Roberts & Mitchell,
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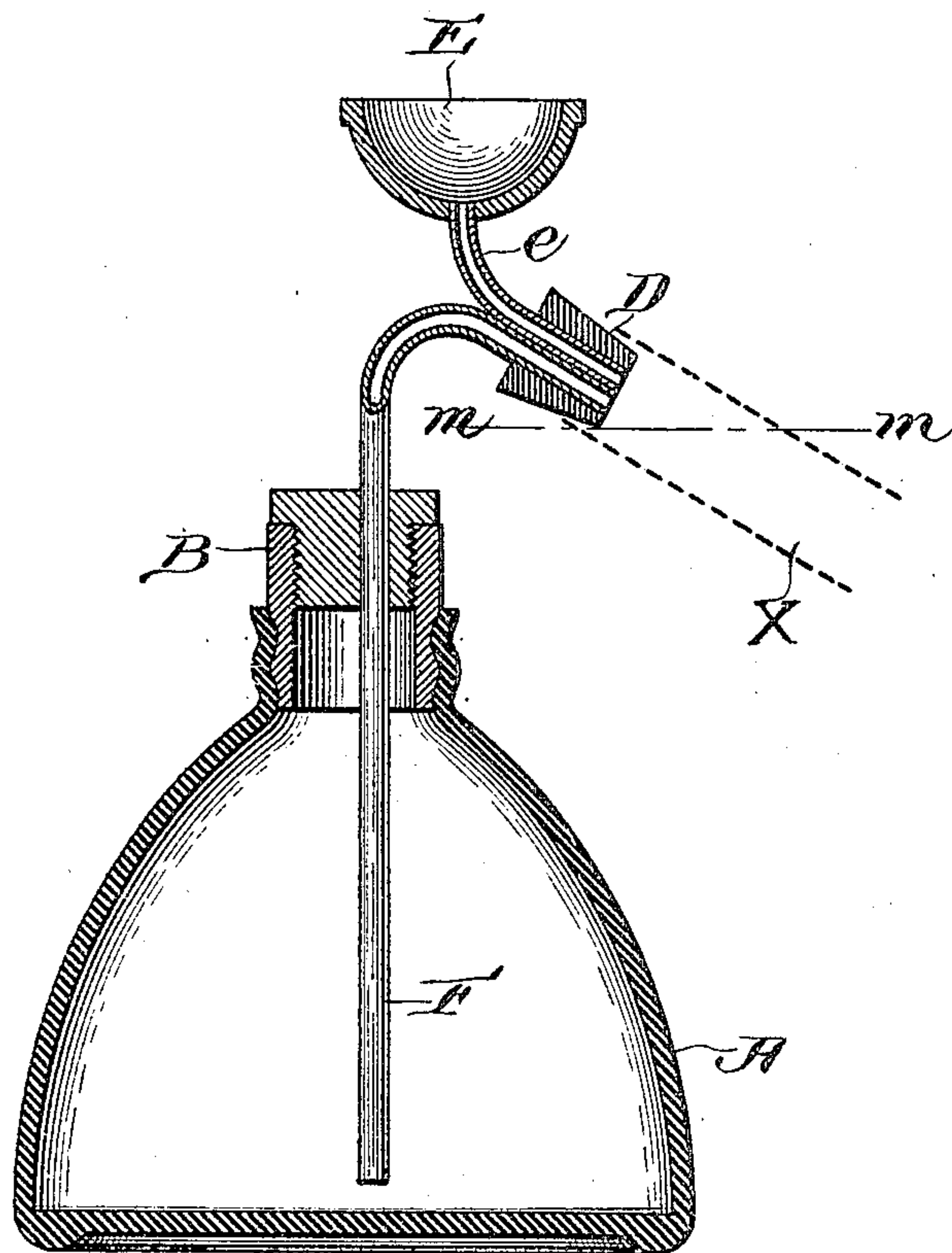


Fig. 2.

Witnesses:
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UNITED STATES PATENT OFFICE.

RHODES G. LOCKWOOD, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO
DAVIDSON RUBBER COMPANY, OF BOSTON, MASSACHUSETTS, A
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FOUNTAIN-PEN-FILLING DEVICE.

No. 816,345.

Specification of Letters Patent.

Patented March 27, 1906.

Application filed April 26, 1905. Serial No. 257,550.

To all whom it may concern:

Be it known that I, RHODES G. LOCKWOOD, a citizen of the United States, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Fountain-Pen-Filling Devices, of which the following is a specification.

This invention relates to a device for filling fountain-pens; and its object is to provide means for filling such pens in a simple, quick, and cleanly manner, thus overcoming one objection to the use of this form of pen.

The most common method of filling fountain-pens as heretofore practiced has been to use an ordinary "medicine-dropper;" but in use this requires a certain amount of skill and the exercise of care to avoid spilling the ink during the filling operation, and when the filler was nearly discharged or empty there was and is a tendency to the formation of air-bubbles, rendering it difficult to know when the pen is actually filled and tending to form air-bubbles in the pen-barrel, greatly interfering with the efficiency of the feed or flow of ink, and, furthermore, when the pen was filled some ink was likely to remain in the filler, which would afterward leak out and soil other objects with which it came in contact. It also frequently happened that ink would be drawn up into the bulb and escape between it and the outside of the glass tube, thus soiling the fingers while using the filler. Such objections are overcome by the use of my new device.

In the drawings, Figure 1 represents a sectional elevation of my new device, and Fig. 2 a modification of the same.

Referring to the drawings, A represents a reservoir partially filled with ink; B, a cap fitting the mouth of the same air-tight and shown in the drawings as screw-threaded.

C is an elastic rubber bulb or pump having a tube *c* extending from it, which enters a hole in the cap B and communicates with the interior of the reservoir.

D is a nozzle upon which the barrel of the fountain-pen is tightly fitted during the filling operation.

E is a cup having a tube *e* extending from it to the nozzle D, and F is a tube extending from the reservoir to the nozzle D.

The operation of the device is as follows:

A fountain-pen barrel X (shown in dotted lines) is forced upon the nozzle D, which nozzle is preferably tapered and made of an elastic or yielding material, such as cork or rubber, so as to make a tight fit with the pen-barrel. The bulb C is compressed by the hand of the operator, and this compression causes air to rush into the reservoir through the tube *c*, and thus force ink through the tube F and into the pen-barrel, the air in the pen-barrel escaping through tube *e* and cup E. The bulb C is so proportioned and of such size as to cause enough ink to flow through the tube F to fill the ordinary pen-barrel and a slight overflow into cup E, and when the pressure on bulb C is released this overflow will pass back again through tubes *e* and F into the reservoir A. It is obvious, of course, that as soon as ink makes its appearance in the overflow-cup the operator will cease pumping, the overflow thus serving as a signal that the pen is filled. When the ink passes back from the cup, the pen-barrel will remain filled up to a point below the mouth of the tubes *e* and F or the end of the nozzle, because as soon as the ink in the pen-barrel has fallen to or near the level of the line *m m* the partial vacuum in the reservoir A is relieved by air through the overflow-tube and supply-tube and the siphoning of ink from the barrel ceases. In other words, when a surplus of ink is forced into the cup E it tends to return to the reservoir by gravity as soon as the pressure upon the ink in the reservoir is relieved.

As shown in the drawings, the nozzle is downwardly turned, and this is practically important in order that the siphoning action may not empty the barrel after it has been filled.

The device may be made of any suitable material, and the tubes, which are shown as permanently affixed to the parts with which they connect, may be constructed so as to be detachable for convenient packing or other reasons.

Instead of the cap B being screw-threaded, either a tapered or cylindrical one may be used, so as to fit the ordinary commercial ink-bottle, the only essential element in these constructions being that the cap will close air-tight the mouth of the reservoir when the device is in use.

Obviously the reservoir itself may be an ordinary ink-bottle, the other parts of the device being sold separately, if desired, and adapted to be applied to any suitable ink-bottle.

5 The tubes will never become clogged by reason of the ink drying in them, for, as above described, the siphoning caused by the expansion of bulb C will draw all surplus supply back to the reservoir and empty the tubes.

10 I have shown in Fig. 1 a flexible bulb or pump whose function is to compress the air in the reservoir. It is obvious, however, that this bulb or pump is not essential, since the same result might be attained by the operation of blowing through an aperture in the side or top of the reservoir. Furthermore, I have contemplated dispensing with the bulb or pump and achieving the desired air compression by making the reservoir flexible, as
20 shown in Fig. 2, which would permit the operator to compress the reservoir, decreasing its capacity, compressing the contained air, and forcing ink through the supply-pipe.

What I claim is—

25 1. A device for filling fountain-pens consisting of an air-tight reservoir; means to compress the air therein; a supply-pipe leading from the ink within the reservoir, having its outer end turned downwardly and connected with a nozzle; said nozzle; an overflow-cup connected with the nozzle to receive and return any overflow of ink to the supply-tube, all organized and operating substantially as described.

35 2. A device for filling fountain-pens consisting of an air-tight reservoir; a pump connected with the reservoir to compress the air therein; a supply-pipe leading from the ink-supply within the reservoir, having its outer
40 end turned downwardly and connected with a

nozzle; said nozzle; an overflow-cup connected with the nozzle to receive and return any overflow of ink to the supply-tube, all organized and operating substantially as described.

3. A device for filling fountain-pens consisting of an air-tight reservoir; a nozzle; two tubes extending from the nozzle, one of said tubes leading to the ink-supply within the reservoir and the other leading to an overflow-cup above the nozzle; said cup; a pump
50 having a tube extending therefrom to the reservoir; all organized and operating substantially as described.

4. A reservoir; a detachable cap therefor, closing said reservoir air-tight; an elastic bulb
55 connected to the reservoir through the cap; a tapered nozzle of elastic material for receiving the mouth of the barrel of a fountain-pen; a tube, one end of which extends from the nozzle to the ink-supply within the reservoir;
60 an overflow-cup connected to the nozzle, to receive and return any overflow to the supply-tube, substantially as shown and described.

5. A device for filling fountain-pens consisting of a flexible air-tight reservoir; a supply-pipe leading from the ink-supply within the reservoir, having its outer end turned downwardly and connected with a nozzle; said nozzle; an overflow-cup connected with
70 the nozzle to receive and return any overflow of ink to the supply-tube, all organized and operating substantially as described.

Signed by me at Boston, Massachusetts, this 21st day of March, 1905.

RHODES G. LOCKWOOD.

Witnesses:

JOSEPH T. BRENNAN,
CHARLES D. WOODBERRY.