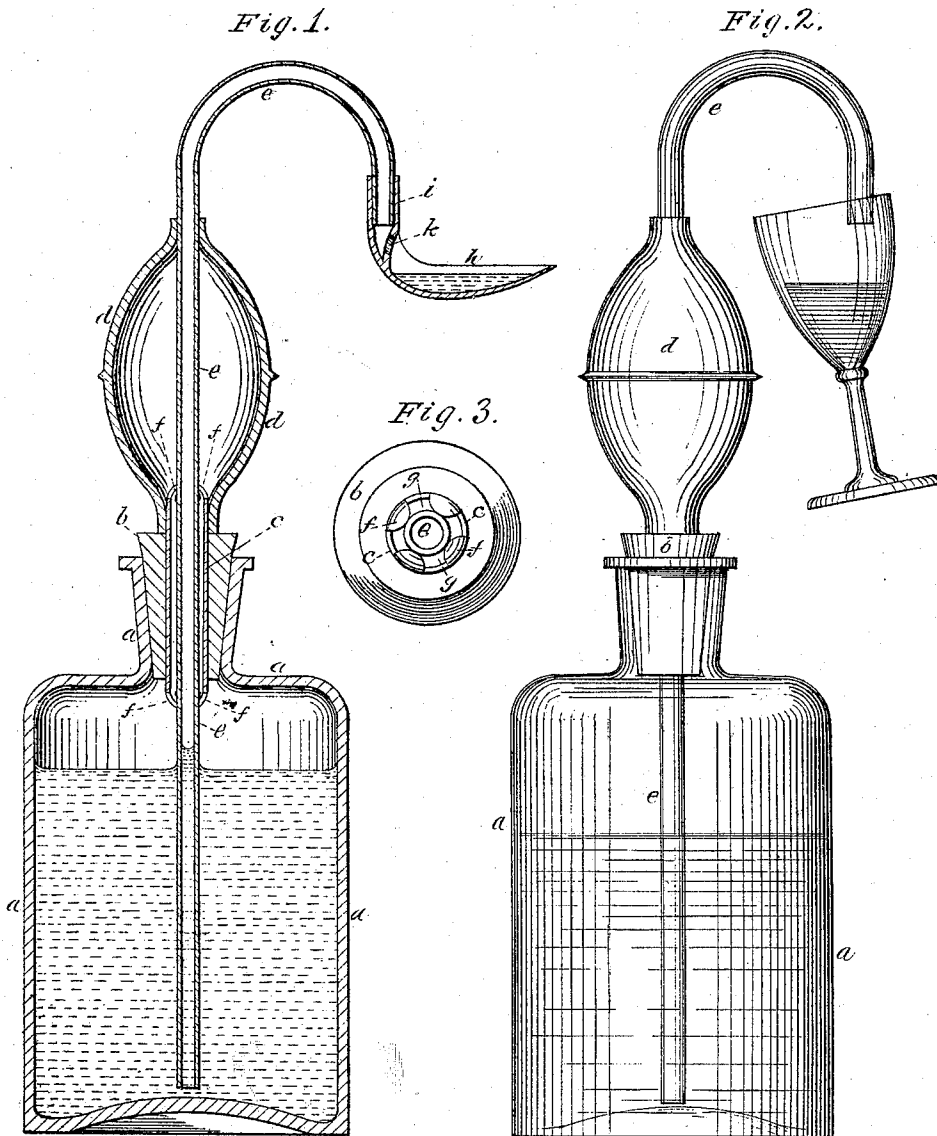


R. M. CURTISS.

Instruments for Administering Medicines.

No. 147,909.

Patented Feb. 24, 1874.



Witnesses:

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UNITED STATES PATENT OFFICE.

ROBERT M. CURTISS, OF LINDEN, NEW JERSEY.

IMPROVEMENT IN INSTRUMENTS FOR ADMINISTERING MEDICINES.

Specification forming part of Letters Patent No. 147,909, dated February 24, 1874; application filed February 5, 1874.

To all whom it may concern:

Be it known that I, ROBERT M. CURTISS, of Linden, in the county of Union and State of New Jersey, have invented an Improved Instrument for Administering Medicines in liquid form, and other similar purposes, of which the following is a specification:

It is the object of my invention to furnish an improved apparatus for discharging fluid medicines or other liquids in any desired quantity from bottles or other like vessels with ease and accuracy without removing the cork or inclining the bottle, and thereby obviate the liability of spilling, and effect a consequent saving of fluid; and it consists in an elastic compressible bulb, communicating, through a tight-fitting stopper, with the interior of a closed vessel above the surface of the fluid therein, in combination with a discharge-tube, arranged with one end below the surface of the fluid, and, preferably, near the bottom, and the other extending entirely through the bulb to the outside of the vessel, being free to slide vertically through the stopper and bulb, through which tube the liquid is forced by the compression of the bulb and injection of its contained air into the vessel. It consists, also, in a detachable spoon, or other suitable receptacle, applied to the end of the discharge-tube, to receive the medicinal or other fluid as it is discharged from the bottle, and from which it is administered to the patient. It further consists in the novel arrangement, with relation to each other, of the compressible bulb, tubular stopper, air and discharge tubes, and in the construction of the air-tube, as hereinafter set forth.

Figure 1 of the accompanying drawings is a vertical section of the apparatus applied to a bottle, and showing the administering-spoon attached to the discharge-tube. Fig. 2 is an elevation of the same with the spoon detached. Fig. 3 is a plan view of the under side of the tubular stopper, showing the form of the ends of the air-tube, which connects the interior of the bulb with the interior of the bottle, and the relative arrangement of the discharge-tube.

As shown in the drawings, *a* is the vessel, containing the medicinal fluid or other desired liquid, as represented. To the neck of this vessel my improved instrument for ejecting the

fluid is attached. *b* is a stopper fitting tightly within the neck, and to this all the other parts of the instrument are attached. Through the stopper the injecting air-tube *c* passes vertically, and opens at its lower end into the interior of the vessel, above the level of the fluid. To the upper end of this tube a hollow compressible bulb, *d*, is permanently secured, and the air-tube *c* opens into the interior of the bulb, as shown. This bulb is formed, preferably, of elastic vulcanized rubber; but other flexible material may be used, and its form may be either ovoid, spherical, or otherwise, as found desirable. *e* is the discharge-tube, which passes, by preference, centrally through the bulb *d*, and air-tube *c* enters the vessel *a*, and extends below the level of the fluid to the bottom of the vessel, or thereabout. The air-tube *c* is sufficiently larger in diameter than the discharge-tube *e* to allow the latter to pass through it, and leave a space between the tubes to allow the free passage of air, as seen in Fig. 1. Each end of the air-tube is formed with a series of projections, *f f*, (seen best in Fig. 3,) which are bent toward and embrace the discharge-tube *e*, as shown in Figs. 1 and 3, and are designed to steady the discharge-tube, and retain it in an upright and secure position. Between the projections *f f* is a similar series of openings, *g g*, to allow the passage of air. The upper and outer end of the discharge-tube is formed, preferably, with a downward curve, as shown, and to the lower end thereof is attached the receiving and administering spoon *h*. This is formed with a tubular shank, *i*, into which the end of the discharge-tube *e* enters, and on which it is retained by a screw-thread, thumb-screw, or by friction alone. A perforation, *k*, in the shank allows the liquid discharged through the tube to enter the bowl of the spoon.

The instrument is operated by compressing the bulb *d* with the hand or fingers, when the air within it is forced through the air-tube *c* into the bottle *a*, thus compressing the volume of air in the bottle, which, pressing upon the surface of the liquid, forces it up the tube *e* and into the spoon *h* in any quantity desired, and in proportion to the degree which the bulb is compressed. The medicine having entered the spoon, as shown in Fig. 1, it is adminis-

tered directly therefrom to the patient or invalid.

Various-sized spoons may be provided for attachment to the tube, according to the quantity of medicine required to be administered; and when not required, the spoon may be detached, and the medicine discharged directly from the tube into a glass, vial, or other vessel, from which it may afterward be taken, as represented in Fig. 2.

The discharge-tube, although embraced tightly by the bulb, is free to slide vertically, to adapt the instrument to vessels of different depth. This construction has also another advantage—that of enabling the bottle, when exhausted of its contents, to be refilled. This is accomplished by raising the discharge-tube to the upper part of the bottle, and allowing its upper and outer end to dip into the liquid to be injected. By then operating the bulb in the usual manner, the liquid is drawn into the bottle.

I have shown the discharge-tube as passing centrally through the bulb and air-tube, as this arrangement is preferable, owing to its compactness; but the air and discharge tubes may be arranged independent of each other, passing through the cork at different points, when preferred.

The apparatus is not confined to the purpose of administering medicines, but is applicable to the general purpose of discharging fluids in required quantities from bottles or other vessels to which it may be applied.

What I claim as my invention, and desire to secure by Letters Patent, is as follows:

1. In combination with the compressible bulb *d*, communicating through the stopper *b*, the tube *e*, passing entirely through the bulb *d*, and free to slide vertically through it, substantially as and for the purpose set forth.

2. In combination with the bulb *d*, tube *e*, and stopper *b*, the removable spoon *h*, formed with a tubular shank *i*, substantially as shown and described.

3. The relative arrangement of the bulb *d*, air-tube *c*, and discharge-tube *e*, substantially as herein shown and described.

4. The air-tube *c*, provided with the projections *f f*, embracing the tube *e e*, as and for the purpose set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ROBERT M. CURTISS.

Witnesses:

CHARLES M. HIGGINS,
ARTHUR C. FRASER.