

No. 650,617.

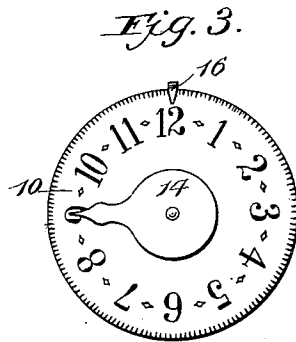
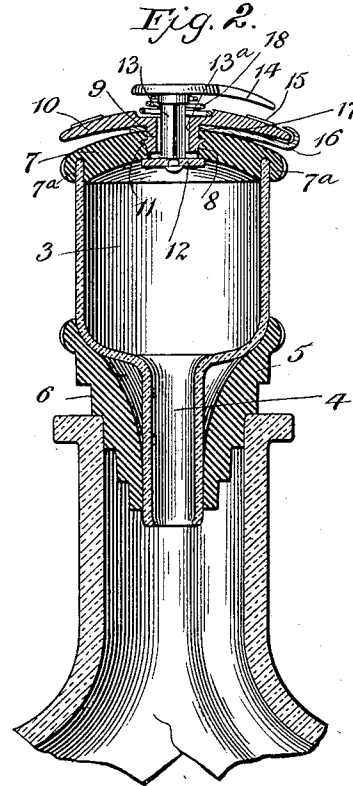
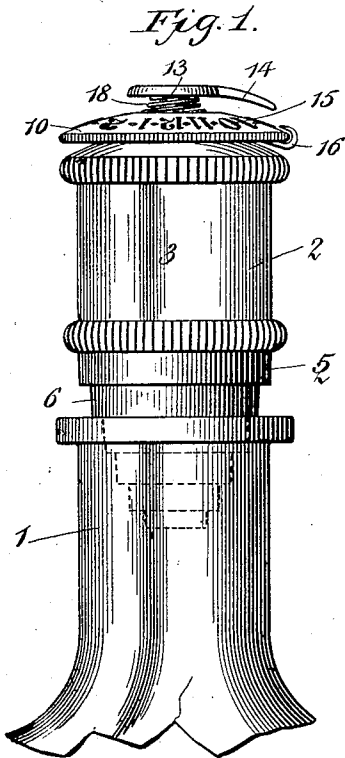
Patented May 29, 1900.

F. SALOMON.

COMBINED DROPPER AND LIQUID MEASURER, RECORDING DIAL, AND DOSE INDICATOR.

(Application filed June 26, 1899.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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COMBINED DROPPER AND LIQUID-MEASURER, RECORDING-DIAL, AND DOSE-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 650,617, dated May 29, 1900.

Application filed June 26, 1899. Serial No. 721,974. (No model.)

To all whom it may concern:

Be it known that I, FERNAND SALOMON, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and Improved Combined Dropper and Liquid-Measurer, Recording-Dial, and Dose-Indicator, of which the following is a specification.

My invention relates to an improved construction of automatic dropper and measure adapted for use in connection with bottles or vessels containing medicinal solutions or other liquids, the same being designed to receive therein a portion of the contents of the bottle in predetermined quantities and from which the said medicinal or other liquid solutions may be wholly discharged or expelled drop by drop at the will of the user.

One object of my invention is to provide in a simple and inexpensive manner a device of this character which will not only discharge the contents drop by drop, but measure each dose of the contents or a fraction thereof in an accurate manner, thus insuring the same quantity at each operation.

A further object of my invention is to provide in connection therewith a recording-dial to be used by the invalid or attendant to indicate the time at which the medicine is to be administered and the number of drops to be taken if the medicines are to be used in that way.

A still further object of my invention is to provide an improved construction of cork which is adapted to fit the neck of bottles of varying sizes ranging from those of a very small diameter to those of a comparatively large diameter.

My invention consists of a reservoir which in size may be capable of holding a tablespoonful or more, if desired, said reservoir having a flexible diaphragm or closure, a cap adjacent said diaphragm having an air-inlet leading into said reservoir and a closure therefor, and a dial for indicating the hour or fraction thereof at which the next dose is to be administered and for indicating the number of drops to be used if the medicines are to be taken in that way.

My invention further consists of the novel features of construction and arrangement of

parts, all of which will be hereinafter fully described, and particularly pointed out in the appended claims.

Figure 1 represents a side elevation of the neck of a bottle, showing my invention applied thereto. Fig. 2 represents a central vertical section thereof, and Fig. 3 represents a plan view.

Similar reference-numerals indicate corresponding parts in all the figures of the drawings.

Referring to said drawings, 1 designates the neck of an ordinary bottle, and 2 designates my improved combined automatic liquid dropper and measurer, time-dial, and dose-indicator, the same consisting of a reservoir 3, having a contracted neck or extension 4, which is shown of a lesser diameter than the diameter of the neck of the bottle.

5 designates a cork having a central bore which is adapted to the reduced neck or extension 4, the external surface of said cork being formed with a plurality of annular steps 6, each step from the uppermost to the lowermost being of reduced diameter, so that the same may be fitted to the necks of bottles whose diameters may vary.

The upper end of the reservoir 3 is provided with a flexible cap or diaphragm 7, having an annular recess 7^a, in which the upper edge of the reservoir fits, thus forming a closure for the same, said diaphragm being provided with a central opening 8 for the reception of a flange 9, which depends from and forms a part of a disk or plate 10. The exterior of said flange is provided with an annular bead 11, which when the same has been forced into the opening 8 of the diaphragm 7 and the walls of said opening have closed in around said annular bead 11 serves to retain said disk or plate securely in place, as clearly shown in Fig. 2.

The lower end of the opening 8 serves as a seat for a valve 12, the latter being secured to a stem 13, which projects up through the opening 13^a in the flange 9, the upper protruding end of said stem being provided with a finger 14, arranged adjacent to and adapted to register with a dial 15, formed on the upper face of the disk or plate 10.

As will be observed, the figures of the disk

or plate 10 represent the dial of a clock, the numbers running from "1" to "12," so that the finger 14 may be turned to register with any desired number to indicate the hour at which the medicine has been last taken or the hour at which the next dose is to be administered.

16 designates a finger provided with an opening 17, which is disposed upon the flange 9 between the dial-disk 10 and the flexible cap or diaphragm 7, the outer free end of said finger being turned up over the edge of said disk 10, the same being free to be moved so as to indicate the number of drops to be administered if the medicine is to be taken in that way.

18 designates a coil-spring which is disposed between the under side of the finger 14 and the upper face of the disk or plate 10, by means of which the valve-stem is normally pressed upwardly, so that the valve is held firmly against its seat, and whereby also the finger 14 is frictionally held against accidental rotative movement.

The operation of my invention is as follows: When the specific gravity of the contents of the bottle is comparatively low, the same will freely flow into the reservoir 3 through the neck 5 by inverting the bottle, said liquid being afterward held in the reservoir by atmospheric pressure. The reservoir after having been filled in this manner is removed from the neck of the bottle, and when it is desired that the contents or any portion thereof shall be discharged in drops the disk or plate 10 is pressed upon by the fingers, so as to compress the flexible diaphragm, whereupon a single drop will be expelled. A releasing of the pressure upon the disk or plate 10 will cause the diaphragm to assume its normal position ready for another depression. In this operation it will of course be understood that the valve 12 will remain on its seat, so as not to equalize the atmospheric pressure.

When it is desired that the whole contents shall be emptied, a pressure of the finger upon the protruding extremity of the valve-stem 13 will unseat the valve and allow the air to enter into the reservoir, thus equalizing the atmospheric pressure and allowing the contents to flow freely therefrom.

When the specific gravity of the liquid is exceptionally high, an operation of the diaphragm similar to that just described and while the bottle is in inverted position will create a suction in the reservoir and cause the contents of the bottle to enter therein through the neck 4 more rapidly.

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

1. A device of the character described, comprising a reservoir adapted to the neck of a bottle, said reservoir having a flexible diaphragm or closure, a cap adjacent said diaphragm and having an air-inlet leading into said reservoir, a closure for said air-inlet, and a dial for indicating the hour or fraction thereof at which the medicine is to be administered, and for indicating the number of drops to be used.

2. A device of the character described, comprising a reservoir adapted to the neck of a bottle, said reservoir having a flexible diaphragm or closure, a cap adjacent said diaphragm having an air-inlet leading into said reservoir, a valve adapted to keep said air-inlet normally closed, and a dial for indicating the hour or fraction thereof at which the next dose is to be administered, and for indicating the number of drops to be used.

3. A device of the character described, comprising a reservoir, adapted to the neck of a bottle, a flexible diaphragm forming a closure for said reservoir, said diaphragm having a central opening, a cap having numerals thereon to designate the hour or fraction thereof at which the medicine is to be administered, and for indicating the number of drops to be taken, said cap having a flange adapted to the opening of said flexible diaphragm, and forming an air-inlet into said reservoir, a valve for said air-inlet, and means for keeping said valve normally seated, and a plurality of fingers adapted to register with the figures on the cap.

4. A device of the character described, comprising a reservoir having a neck or extension thereon, a cork adapted to said neck or extension and provided with external annular steps of gradually decreasing diameters adaptable to the necks of bottles of varying sizes, a flexible diaphragm forming a closure for said reservoir, a cap adjacent said diaphragm, said diaphragm having an air-inlet leading into said reservoir, a valve adapted to keep said air-inlet normally closed, and a dial for indicating the hour or fraction thereof at which the medicine is to be administered, and for indicating the number of drops to be taken.

5. A device of the character described comprising a reservoir for containing liquid and adapted to the neck of a bottle, a flexible diaphragm or closure for said reservoir having an air-inlet therein, and means for keeping said air-inlet normally closed and for opening said air-inlet when desired.

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