F. C. DORMENT.

ATOMIZER.

APPLICATION FILED MAR. 9, 1908.

923,822. Patented June 8, 1909.

Fig. 1.

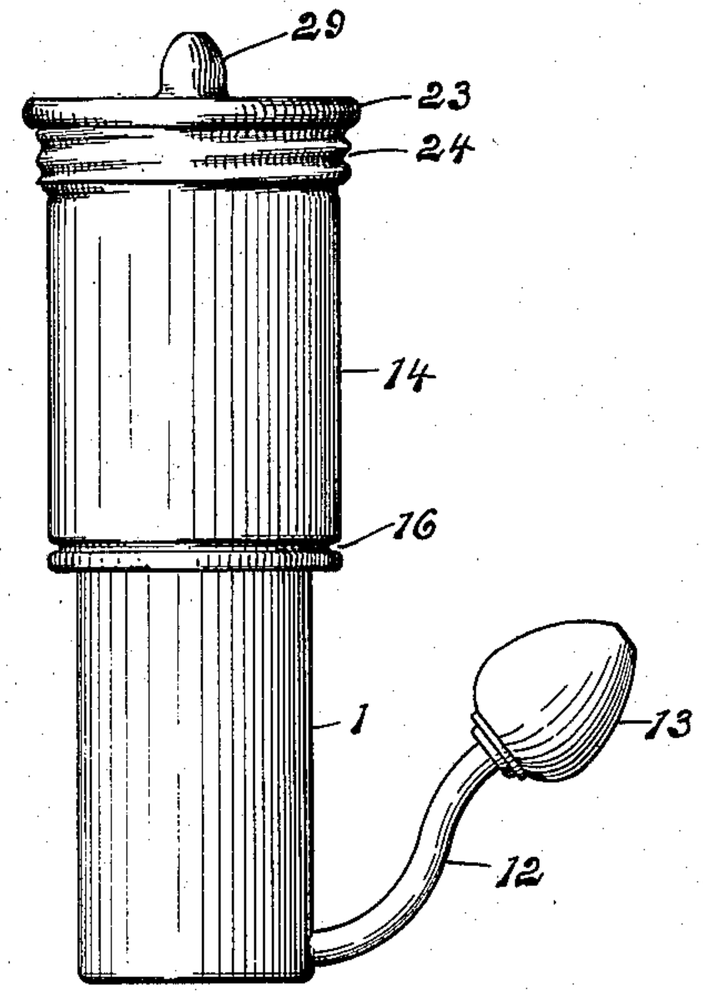


Fig. 3.

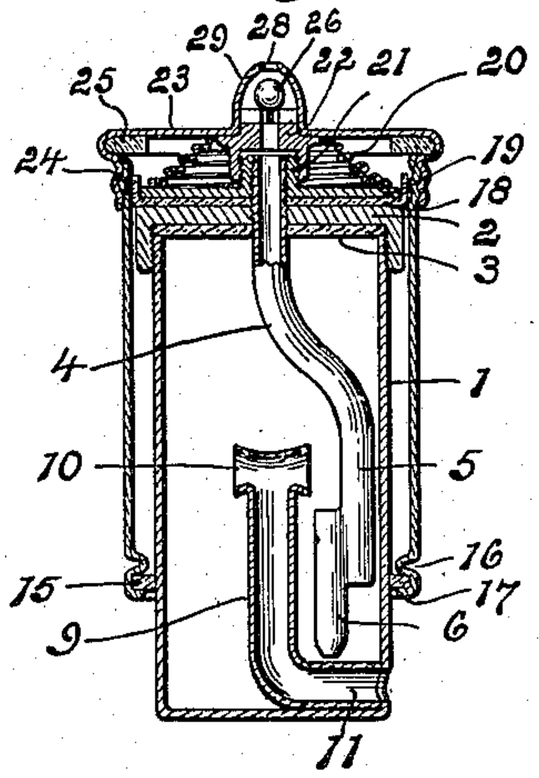
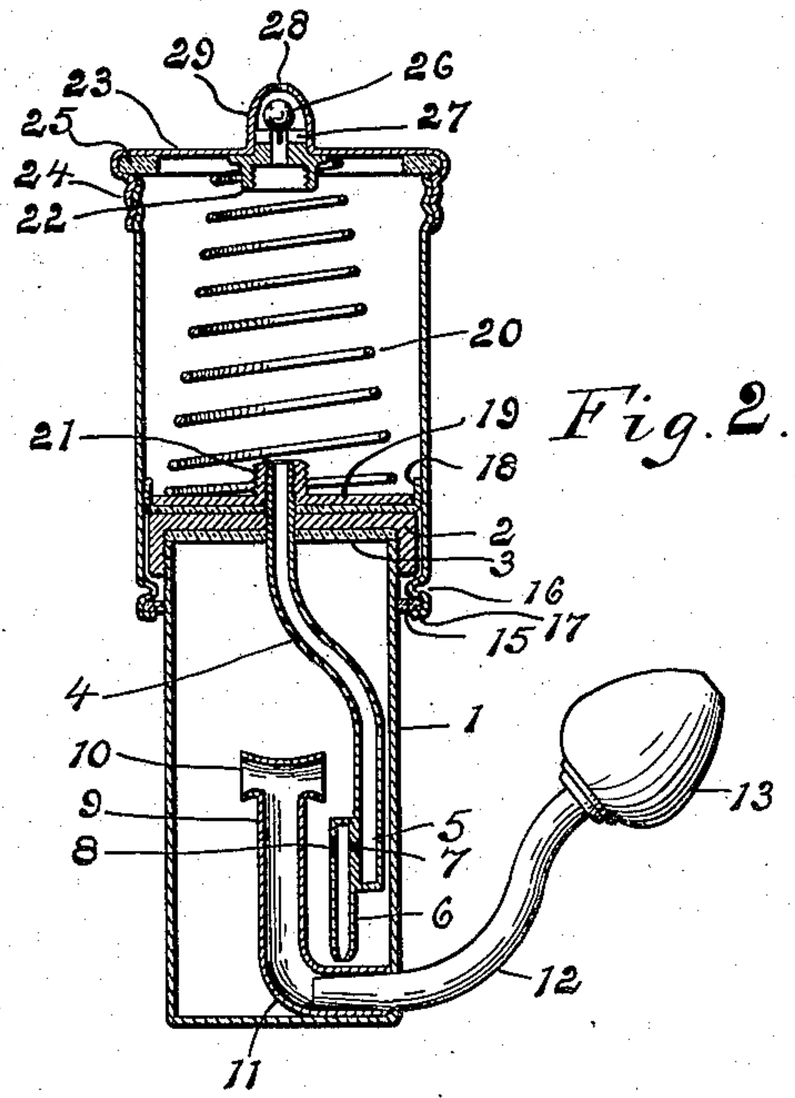


Fig. 2.



WITNESSES:

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ATOMIZER.

No. 923,822. Specification of Letters Patent. Patented June 8, 1909.

Application filed March 9, 1908. Serial No. 419,884.

To all whom it may concern:

Be it known that I, FRANK C. DORMENT, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Atomizers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to atomizers and especially to a very compact form of construction fitted for carrying in the pocket.

The invention consists in the matters hereinafter set forth, and more particularly pointed out in the appended claims.

In the drawings, Figure 1 is a view in elevation of an atomizer embodying features of the invention, Fig. 2 is a view in longitudinal section of the atomizer, as extended, and Fig. 3 is a view in longitudinal section of the atomizer in collapsed or compressed condition.

Referring to the drawings, 1 indicates a cylindrical medicament receptacle or liquid holder, preferably of sheet metal, with its lower end permanently closed. A flanged cap 2 is screw-threaded or otherwise detachably secured on the open upper end, over a packing disk 3 or like means to insure a tight joint. An atomizing tube 4 extends centrally through the cap to which it is secured, and its lower closed end 5 has a short closed length of piping 6 secured tangentially thereto, with a radial opening 7 through the contiguous walls opposite a larger discharge aperture 8, the latter being at an interval above the holder bottom. The atomizing tube is preferably offset as shown to clear a central discharge pipe 9 whose upper intake end, preferably a tee 10, is substantially at the center of the holder, the pipe being bent between its ends with its lateral arm 11 resting on the holder bottom and opening through its side wall as a socket for frictional engagement with the inner end of a nasal or douche tube 12 terminating in the usual tip 13 or nose piece. The mouths of the tee are preferably flared or belled out to prevent retention of drops of liquid therein. An outer casing 14, preferably of sheet metal, has telescoping engagement with the upper end of the holder 1. A packing ring 15 is secured between a stiffening bead 16 and end flange 17 closing against the holder body below the cap 2 which acts as a stop, and coacts with a flexible washer 18 clamped on the top of the cap by a disk 19 centrally screw-threaded or secured to the projecting end of the tube 4 to form a tight slide joint, the margin of the washer being outturned to insure a good fit. A spiral spring 20 holds the casing normally projected. A central boss 21 on the disk 19 is exteriorly screw-threaded to engage an interiorly threaded axially apertured nipple 22 on the underside of a cover 23 detachably secured as by screw-threads 24 in its flange to the casing over a packing ring 25. A check valve or ball closure 26 rests on the nipple, whose upper face has a cross groove 27 to allow passage of air around the ball, and is adapted to seal an aperture 28 in a projecting boss 29 formed on the cover 23.

To charge the atomizer, the cover of the casing is removed and the latter shoved down until the holder cap can be readily unscrewed and the medicament poured in, care being taken not to cover the spray apertures. The parts are then readily re-assembled.

The douche may be placed on the nostril, and kept there by holding the receptacle steady, and depressing the casing forms and forces spray through the douche without agitating or splashing the contents. The disposition of the tubes as shown prevents egress of liquid when the atomizer is lying on its side, or is inverted.

The casing may be pressed and given a part turn so that its nipple catches the cap boss, thus holding the atomizer compressed for carrying conveniently in the pocket, or for shipping, the douche likewise being removable to economize space. Furthermore, if the atomizing tube be screwed through the cap as in a preferred form of construction, the washer clamp disk threaded into its outer end acts as a lock nut, drawing it tight and compressing the washer around it thus forming a close joint, and at the same time, the parts may be readily assembled or taken apart for cleaning.

What I claim as my invention is:—

1. An atomizer comprising a cylindrical liquid holder, closed at its lower end, an apertured cap detachably secured on its upper end, an atomizing tube whose inlet end is secured in the cap aperture and whose jet mouth is a short distance above the holder bottom, a discharge pipe whose inlet end is substantially at the center of the holder, a nasal tube forming a continuation of the discharge pipe a cylindrical casing in rotatable and sliding engagement with the holder, a cover detachably secured on the upper end of the casing, a spring in compression between the cap and the cover, an air intake valve in the casing cover, and means on the cap adapted to detachably engage the holder cover when the spring is fully compressed, the holder, atomizing tube and discharge pipe being adapted to retain the contents of the holder in any position of the latter.

2. An atomizer comprising a cylindrical liquid holder closed at its lower end, an apertured cap detachably secured on its upper end, an atomizing tube whose inlet end is secured in the cap aperture and whose jet mouth is a short distance above the holder bottom, a discharge pipe whose inlet end is substantially at the center of the holder, a nasal tube forming a continuation of the discharge pipe a cylindrical casing in rotatable and sliding engagement with the holder, a cover detachably secured on the upper end of the casing, a spring in compression between the cap and the cover, an air intake valve in the casing cover, and an axial exteriorly screw-threaded boss on the cap adapted to engage an interiorly screw-threaded nipple on the cover, the holder being adapted to retain its contents when in any position.

3. An atomizer comprising a cylindrical liquid holder closed at its lower end, an apertured cap detachably secured on its upper end, an atomizing tube whose inlet end is secured in the cap aperture and whose jet mouth is a short distance above the holder bottom, a packing washer on the cap, a clamping disk over the washer screwed onto the end of the atomizing tube, a discharge pipe whose inlet end is substantially at the center of the holder, a nasal tube a cylindrical casing in rotatable and sliding engagement with the holder, a cover detachably secured on the upper end of the casing, a spring in compression between the cap and the cover, an air intake valve in the casing cover, and means on the cap adapted to detachably engage the casing cover when the spring is fully compressed, the holder, atomizing tube and discharge pipe being adapted to retain the contents of the holder in any position of the latter.

4. An atomizer comprising a cylindrical liquid holder closed at its lower end, an apertured cap detachably secured on its upper end, an atomizing tube whose inlet end is secured in the cap aperture and whose jet mouth is a short distance above the holder bottom, a packing washer on the cap, a clamping disk over the washer screwed onto the end of the atomizing tube, a discharge pipe whose inlet end is substantially at the center of the holder, a cylindrical casing in rotatable and sliding engagement with the holder, a cover detachably secured on the upper end of the casing, a spring in compression between the cap and the cover, an air intake valve in the casing cover, and means on the cap adapted to detachably engage the casing cover when the spring is fully compressed consisting of a boss on the washer disk adapted to screw into a nipple on the casing cover, the holder, atomizing tube and discharge pipe being adapted to retain the contents of the holder in any position of the latter.

5. An atomizer comprising a cylindrical liquid holder closed at its lower end, an apertured cap detachably secured on its upper end, an atomizing tube whose inlet end is secured in the cap aperture and whose jet mouth is a short distance above the holder bottom, a discharge pipe whose inlet end is substantially at the center of the holder, a cylindrical casing in rotatable and sliding engagement with the holder, a packing ring secured in the lower end of the casing contacting with the periphery of the holder and forming a stop adapted to engage the holder cap rim, a cover detachably secured on the upper end of the casing, a spring in compression between the cap and the cover, an air intake valve in the casing cover, and means on the cap adapted to detachably engage the casing cover when the spring is fully compressed, the holder, atomizing tube and discharge pipe being adapted to retain the contents of the holder in any position of the latter.

6. An atomizer comprising a cylindrical liquid holder closed at its lower end, an apertured cap detachably secured on its upper end, an atomizing tube whose inlet end is secured in the cap aperture and whose jet mouth is a short distance above the bottom of the holder, a discharge pipe bent between its ends with an upright arm extending axially of the holder to about its center, a tee inlet on the end thereof having flared mouths, and a horizontal arm on the bottom of the holder extending through the side thereof, a nasal tube forming a continuation of the discharge pipe, a packing washer on the cap of greater diameter than the cap, a disk screw-threaded onto the intake end of the atomizing tube clamping the washer, a cylindrical casing telescoping over the upper part of the holder, a packing ring in its end contacting with the holder periphery and forming a stop

adapted to engage the cap rim, a cover detachably secured on the upper end of the casing, a spring in compression between the cap and cover, an air intake valve in the cover, and a boss on the disk adapted to interlock with a nipple on the cover when the spring is compressed, the holder atomizing tube and discharge pipe being so disposed that the holder is adapted to retain its contents in any position.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK C. DORMENT.

Witnesses:

C. R. STICKNEY,

A. M. DORR.