Sept. 7, 1926. 1,599,348

S. L. RIESER

LIQUID DISPENSER

Filed Jan. 29, 1925

Fig. 1.

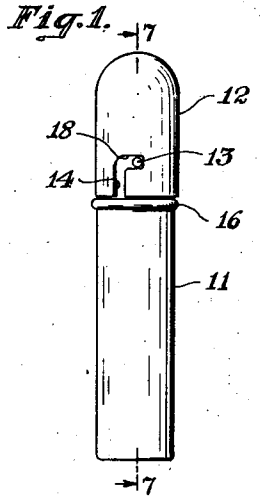


Fig. 2.

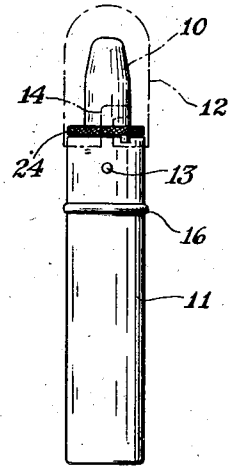


Fig. 4.

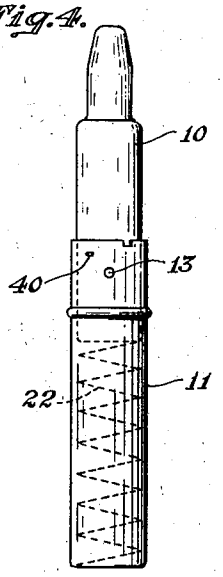


Fig. 3.

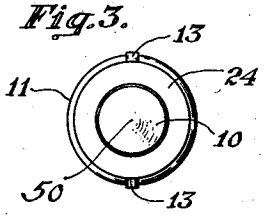


Fig. 5.

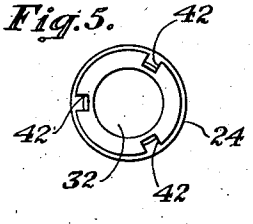


Fig. 6.

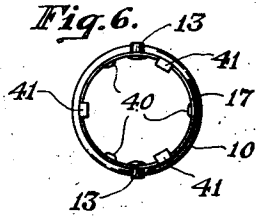


Fig. 7.

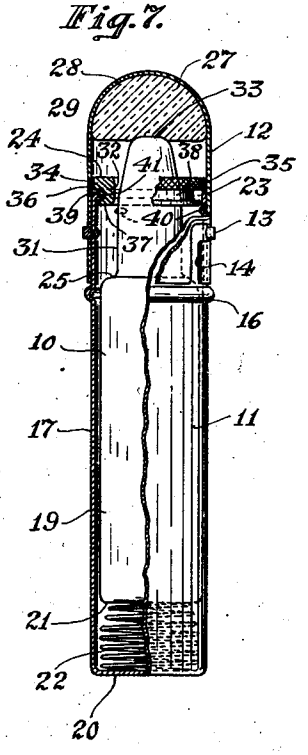


Fig. 8.

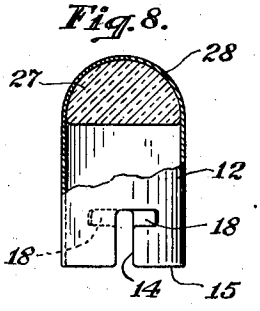
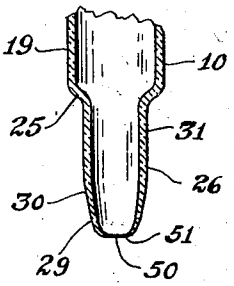


Fig. 9.



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UNITED STATES PATENT OFFICE.

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LIQUID DISPENSER.

Application filed January 29, 1925. Serial No. 5,471.

My invention relates to improvements in liquid dispensers, of the form that is adapted for use in holding perfumery and the like and having a vial proper for containing a supply in liquid form that is provided with a spout having a delivery opening after the manner of an opening in a plate, and the object of my improvement is to produce a combination comprising the vial proper and a closure therefor that is relatively simple and economical and that is convenient and in which the applicator is the vial itself.

In the accompanying drawing:—

Figure 1 is a side elevation of my improved toilet vial.

Figure 2 is a similar view of the same with the cover removed, the structure of the cover being shown in broken lines.

Figure 3 is a plan view of the parts that are shown in Fig. 2.

Figure 4 is a side elevation with both the cover and the annular retaining plug removed.

Figure 5 is a bottom view of the annular retaining plug.

Figure 6 is a plan view of the holder.

Figure 7 is a sectional view on an enlarged scale on the line 7—7 of Fig. 1.

Figure 8 is a side elevation, partially in section, of the cover.

Figure 9 is an enlarged fragmentary view in section of the delivery end portion of the container.

My improved toilet vial comprises a vial proper or container and applicator 10 and a holder 11 therefor that is provided with a cover 12, the latter being held in place by means of suitable bayonet joints that are composed of pins 13 on the holder 11 and suitable angular slots 14 that open along the bottom edge 15 of said cover 12.

An outwardly projecting rib 16 on the side wall 17 of the holder 11 serves to limit the inward movement of the cover 12 and to position the same for permitting the laterally directed branch 18 of the angular slot 14 to register with the cooperating pin 13.

Said side wall 17 of the holder 11 is of cylindrical form and fits over the body structure 19 of the container 10. The holder 11 has the lower end closed by the bottom 20 and intermediate said bottom 20 and bottom 21 of the container 10 is a spring 22 that tends to project said container 10 upwardly through the open upper end 23.

Such upward movement of the container 10 is limited by the cover 12 when the same is in place and the structure is fully closed and when the cover is removed and the structure is in condition for use there is provided retaining means 24 in the form of an annular plug or stop that overhangs the interior space of the holder 11 so as to cooperate with a shoulder 25 that is provided on the container.

The details for effecting the results above referred to may be carried out in various ways and one manner of so doing will be described.

Another detail involves closing the spout 26 on the container. In the structure that is shown a rubber body 27 housed in the upper end portion 28 of the cover 12 abuts against the tip end 29 of the spout 26 for effecting the closure of the delivery opening provided therein, and which opening is of capillary form.

Back of said tip end 29 the spout 26 is of flaring or conical form for the end part 30 and said conical part 30 is connected with the shoulder structure 25 by means of a cylindrical part 31 that is of suitable length for cooperating with the walls of the opening 32 in the plug 24 for effecting the guiding of the upper end portion of the container 10.

In the closed position the tip end 29 of the spout 26 is imbedded within a recess 33 in the structure of the rubber body 27.

The plug 24 comprises an upper part 34 that serves as a handle and may be knurled on the periphery 35, the diameter thereof being substantially the same as that of the side wall 17 of the holder 11 so that in the operative position said upper part 34 will be in abutment with the top edge or rim 36 of the holder 11. Fitting within the holder 11 is the lower part 37 of the plug 24. Between said upper part 34 and lower part 37 is a reduced connecting part or neck 38 that is defined at the outside by the circumferential groove 39.

The outward movement or position of the spring 22 relatively to the holder 11 may be determined also by suitable stops 40 that are formed by suitably indenting the material of the side wall 17 of the container 10.

The plug 24 is retained in place in opposition to the spring 22 by the cooperation of the lower part 37 with a set of lugs 41 that overhang the interior space of the holder 11.

Said lugs 41 enter within the circumferential groove 39 and thus engage with the upper face of the outer rim of the lower part 37 so as to prevent outward movement of the plug 24 and the container 10.

As shown, the lugs 41 are formed by suitably slitting the material of the side wall 17 of the holder 11 at the top edge or rim 36 and turning the material inwardly, there being in each case two slits side by side, the lug being in the form of a tongue and comprising the material between adjacent slits.

As shown, there are three lugs 41, spaced angularly at 120 degree intervals, and for permitting of engagement therewith the lower part 37 is provided with a set of cross-notches 42.

When in condition for use for the extraction of some of the contents of the container the latter is projected upwardly within the holder 11 so that the shoulder 25 abuts against the plug 24.

When closed the spout tip 29 is housed in a slight depression 33 in the rubber stop 27 that is caused by the pressure of the spring and the cover is held in place by the bayonet joints described, the container being pushed back inwardly so as to free the shoulder 25 from contact with the plug 24, the parts being constructed and arranged to effect this result. Thus in such closed position the spring 22 operates essentially positively to effect a closure for the container 10.

The container is made of glass and the holder and cover are made of metal.

In case the container were held in the hand alone and inverted the heat of the hand tends to force out the liquid. The holder serves to reduce this effect and serves as a convenient handle for manipulating the device.

Various changes may be made as regards the details that have been set forth.

Thus, in lieu of using a holder as regards the particular feature of protection against forcing the liquid out from the container by the heat of the hand a bottle of special form may be used, without such outside holder or the like. Such a special bottle or container could be of a form having corrugated side walls. As a means of providing for the closure, the bottle would be of relatively flat form for the body portion and the closure would be in the form of a cap that is locked on by pressure over the glass, two indentations on the opposite sides in the cap or cover coinciding with those of corresponding form in the bottle. The spring effect would be produced by means of a body of sponge rubber in back of a more solid rubber, the latter making contact with the end of the spout, so as to serve as the closure proper.

The recess 33 in the rubber body 27 is such as is formed by the pressure of the spring in forcing the tip end 29 of the spout 26 against said rubber body 27.

The details of the tip end 29 and the delivery opening 50 therein may receive further consideration. Said opening 50 is of capillary dimensions, but such diminutive opening or passage is of inappreciable length. Structurally, the border wall 51 of the opening 50 is relatively thin and with a flat end face, the effect being substantially such as would be provided by a diminutive opening or perforation in flat material.

Operatively, the result of such a structure as described is to prevent escape of liquid except by force of some kind or a wiping contact along the outer face of the border wall 51 of the opening 50. Such a wiping contact operates by contact with liquid that is exposed through the opening to bodily remove a few drops and outwardly flow ceases upon the interruption of such contact.

The holder is described as being made of metal. Other materials may be used for this part.

I claim as my invention:—

1. In a toilet vial combination, a container having a body and a reduced neck connected to one end thereof at a shoulder, a holder enclosing said body, an annular plug removably connected to one end of said holder, having a portion that abuts against the end face of said holder and another portion that extends within said holder, and said neck being projected through the opening in said plug, a spring operating to seat said shoulder against said plug.

2. A vial for dispensing perfumes and the like having a delivery spout that has an end wall that is positioned substantially in a radial plane relatively to the axis of the container and that has an axially positioned delivery opening in said end wall, said end wall being of thin material, and said opening as to its diameter being of capillary dimensions.

3. In a vial for dispensing perfumes, an end wall that is substantially plain and flat and that is made of thin material and that is provided with a delivery opening of capillary dimensions that is located in said end wall, whereby said end wall is adapted to ride smoothly over a sleeve or the like for effecting delivery through said opening.

SIDNEY LOEB RIESER.