

[54] SCENTED WRITING INSTRUMENT

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[22] Filed: May 6, 1974

[21] Appl. No.: 467,377

[52] U.S. Cl. 239/34; 239/60; 401/195

[51] Int. Cl. A24f 25/00; A61l 9/04

[58] Field of Search 239/34, 60; 401/195

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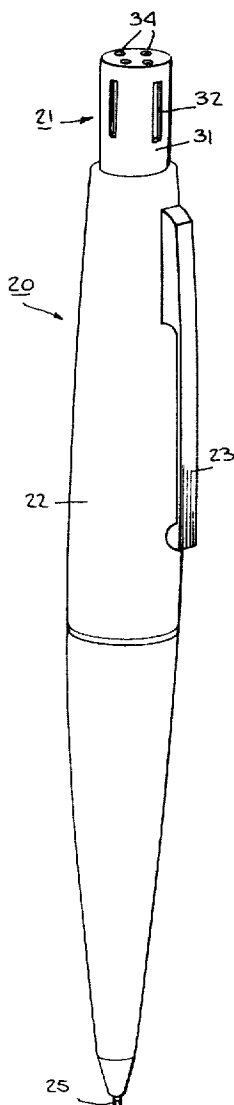
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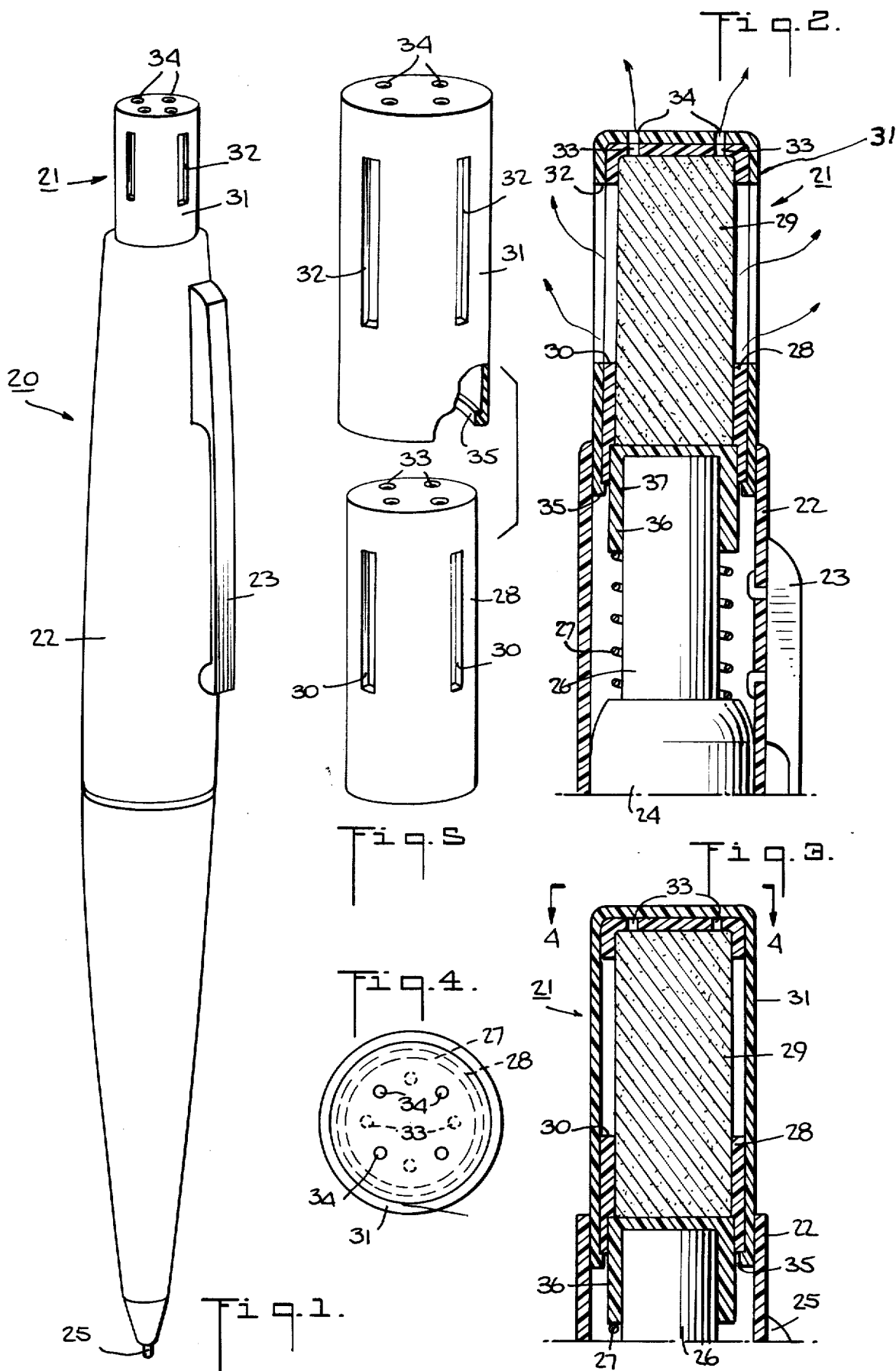
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ABSTRACT

A writing instrument of the retractable type is provided with an air freshener dispenser at the top. The dispenser is opened by rotating a cover to expose apertures in a container of vaporizable material mounted within the cover. In another embodiment, the housing of a writing instrument is provided with a container of a vaporizable material mounted directly therein. A rotatable cap is used to expose the contents of the container to the exterior of the housing via openings in the container and housing.

19 Claims, 15 Drawing Figures





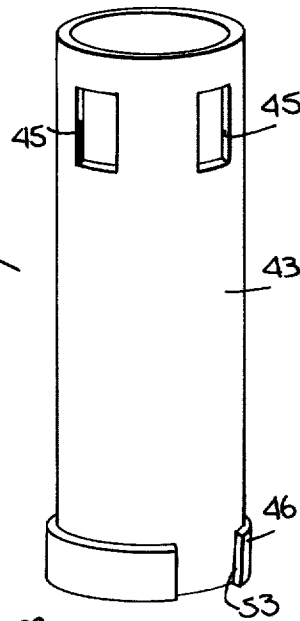
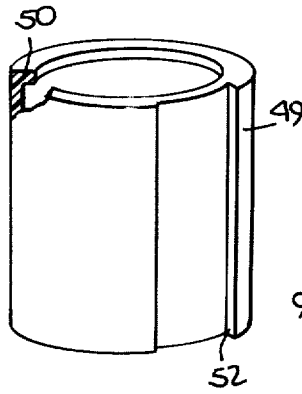
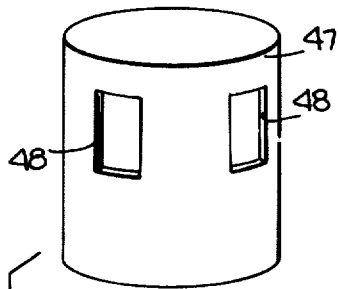
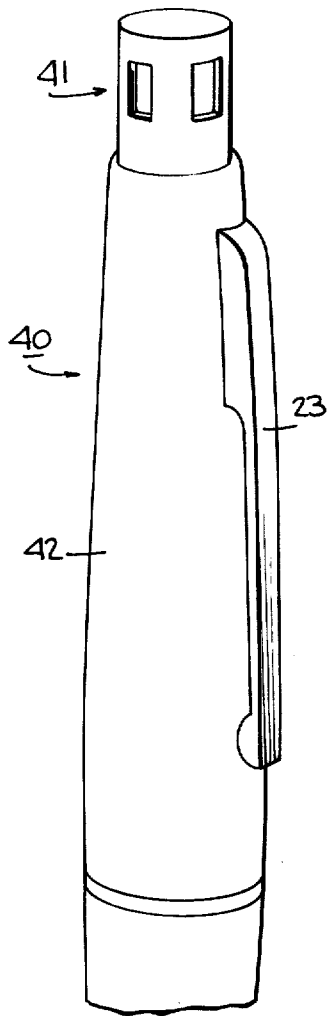


Fig. 2.

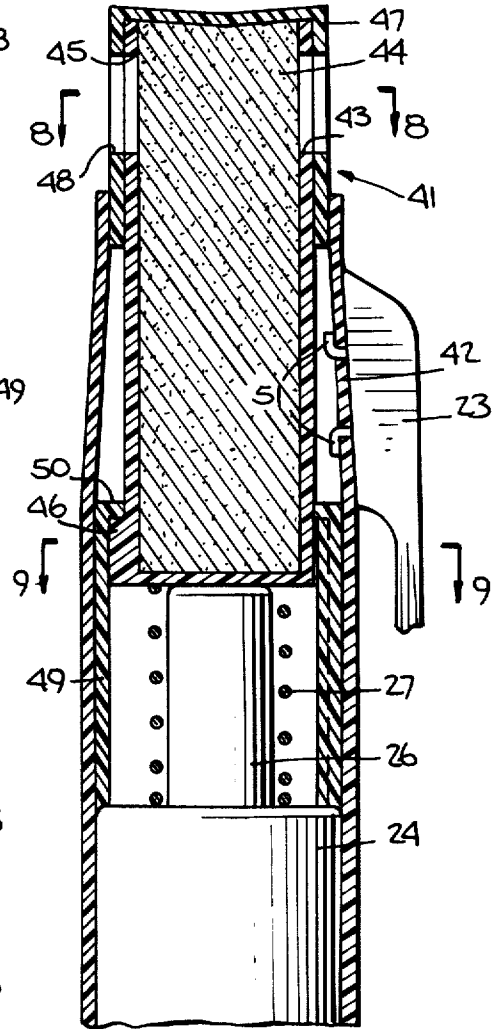


Fig. 6.

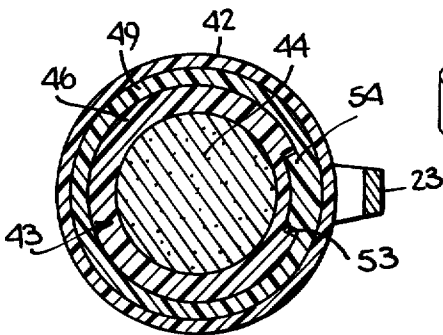


Fig. 10.

Fig. 8.

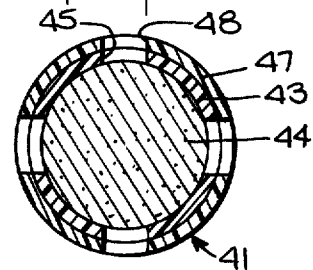
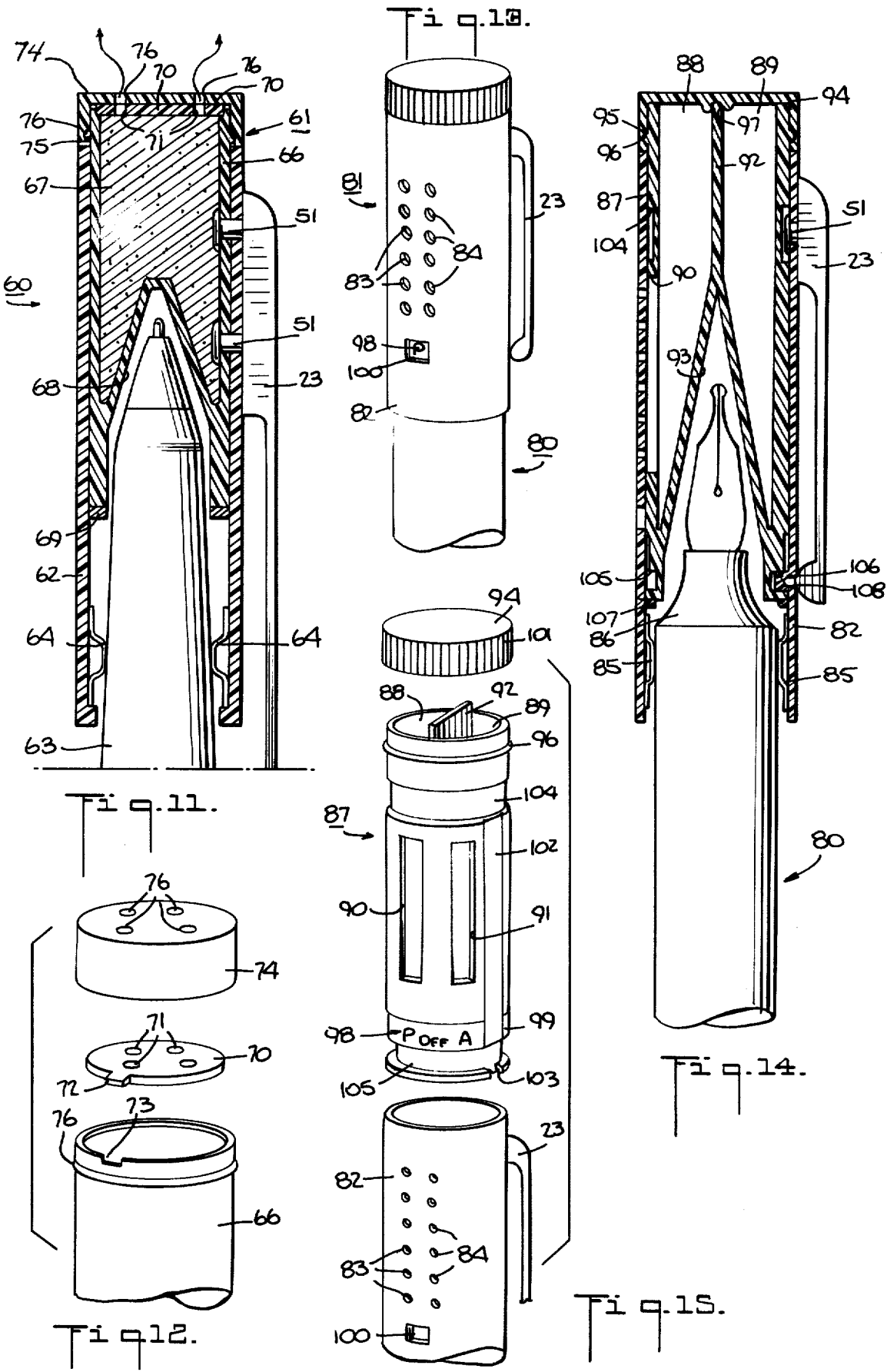


Fig. 9.



SCENTED WRITING INSTRUMENT

This invention relates to a scented writing instrument. More particularly, this invention relates to a writing instrument which is used in combination with an air freshener dispenser. Still more particularly, this invention relates to an air freshener dispenser for a writing instrument.

As is known, annoying situations frequently arise due to various odors in the air. Additionally, situations may also arise in which bacteria or viruses can be transmitted from person to person in various environments such as in hospitals and in crowded situations on public conveyances. These situations may not only effect the mood of an individual but also create a harmful effect on the efficiency of an individual while performing work. In order to overcome such unpleasant situations, use has frequently been made of perfumes, flower essences or other air fresheners. In the case of odors caused, for example, by body odors, use has also been made of various compositions such as mouthwashes and chewing gum. However, the beneficial effects of these means have frequently been inclined to vanish or vaporize within a very short time span.

It has also been known that the general health of the public can be threatened by air pollution. In some cases, this danger has been counteracted by the use of air freshening substances and utensils in homes, offices and hospitals in order to clean the air. However, these devices have generally been used indoors and have been inconvenient for personal use outdoors.

Accordingly, it is an object of the invention to provide an air freshening device which is capable of personal use out-of-doors.

It is another object of this invention to provide an air freshening device which is capable of personal use within a crowded environment.

It is another object of the invention to provide an air freshening device which is of simple construction.

It is another object of the invention to provide an air freshening device which can be incorporated in a writing instrument.

It is another object of the invention to provide an air freshening device which can be incorporated in a simple manner into a writing instrument.

Briefly, the invention provides an air freshener dispenser for mounting on a writing instrument. In one embodiment, the dispenser includes a container for holding a supply of vaporizable material or other air freshening material which container is provided with at least one opening to allow a flow of vapor therethrough. In addition, the dispenser includes a cover which is rotatably mounted about the container and has at least one opening for registering with the opening in the container upon rotation of the cover into predetermined positions relative to the container. The cover also includes a means for rotatably securing the container therein. In addition, the dispenser includes a cap which is concentrically mounted within the cover and is secured to one end of the container to retain the supply of vaporizable material. The cap may also have a cup-shaped recess directed away from the container for enveloping a portion of the writing instrument so as to be mounted thereon.

The invention also provides a writing instrument of the retractable type which is provided with an air freshener dispenser. In this embodiment, the writing instru-

ment includes a housing, a retractable writing means at one end of the housing and a plunger at the opposite end for moving the writing means reciprocally within the housing. The dispenser is mounted on the plunger and extends from within the housing at the end adjacent the plunger. This dispenser includes a container for a supply of vaporizable material or other air freshening material and is provided with at least one opening to allow a flow of vapor therethrough. A cover is also rotatably mounted about the container and has at least one opening for registering with the opening in the container upon rotation of the cover into predetermined positions relative to the container.

The dispenser can be removably mounted on the plunger of the writing instrument in order to provide for replacement upon exhaustion of the supply of vaporizable material. Alternatively, a retainer can be secured within the housing for retaining the dispenser in place. In this latter case, the retainer includes a radially inwardly directed shoulder while the container is disposed within the retainer and includes an outwardly directed shoulder for abutting the shoulder of the retainer.

During use, the plunger for retracting or expelling the writing means can be activated via the dispenser by merely pushing down on the dispenser. If need arises for freshening the air about the user, the cover of the dispenser is rotated to expose the openings of the container of vaporizable material. Vapors of the material are then allowed to emanate from the dispenser into the environment surrounding the immediate person of the user.

In another embodiment, the dispenser can be mounted directly in a housing for a writing instrument. In such a case, the dispenser includes a container within the housing of the writing instrument for holding a supply of vaporizable material, a cover on one end of the container having at least one opening to allow a flow of vapor to pass from the container and a cap which is rotatably mounted on the container over the cover. This cap has at least one opening for registering with the opening in the cover upon rotation of the cap into predetermined positions relative to the cover. The cap may also have an outer peripheral surface forming a continuation of a peripheral surface of the housing. In this way, the dispenser forms an integral part of the housing and appears as a continuation of the housing. The cap may also be removably mounted on the container to permit replenishment of the supply of vaporizable material in the container.

In still another embodiment, the housing of a writing means can be provided with at least one opening, for example in a side wall, while a container for holding the supply of vaporizable material is rotatably mounted within the housing and is provided with at least one opening for registering with the opening in the housing upon rotation of the container into predetermined positions relative to the housing. Also, a cap is secured in the container and is mounted on the housing for rotating the container within the housing. In this embodiment, the housing may be provided with a conically shaped recess on the inside for receiving the writing end of the writing instrument. Also, the container may be provided with at least two compartments, each of which holds a different supply of air freshening material therein. In this embodiment, each compartment is provided with an opening for selectively registering

with an opening in the housing to dispense one or the other of the air freshener materials. In addition, the container is provided with a means to rotate the housing to align only one of the openings in the container with an opening in the housing. A means for indicating the selected position of the container may also be provided. Such a means may constitute a window in the housing and indicia on the container for viewing through the window.

It is to be noted that previous writing instruments have been provided with various compartments and attachments for housing various materials such as smelling salts and pills. For example, as described in U.S. Pat. No. 1,307,359, a fountain pen has been provided with a receptacle for smelling salts or perfumes at one end of a sleeve. The receptacle is described as being covered over by a cap which is threaded onto a sleeve about the receptacle. Such a device is, however, cumbersome and cannot be readily used without unscrewing and removing the cap before dispensing the contents of the receptacle. Other structures have also been known which can be mounted on the top of a pen or pencil to house various items such as pills, coins and the like. However, such attachments are unsightly and may interfere with the proper functioning of the writing instrument. For example, in the case of a retractable ballpoint type pen, the attachment may interfere with the movement of the usual plunger used for retraction. In the case of a fountain pen, the attachment may interfere with the mounting of the pen cap over the barrel of the writing means when the pen is in use.

An instrument constructed in accordance with the invention is simple to use not only for writing purposes but also for air freshening purposes. In this respect, the construction of the air freshener dispenser does not interfere with the appearance or the use of the writing instrument. Because of the simplicity of the device and the fact that the appearance of the pen is not significantly changed by incorporating the dispenser therein, the writing instrument can be produced at relatively low costs.

These and other objects and advantages of the invention will become more apparent from the following detailed description and appended claims taken in conjunction with the accompanying drawings in which:

FIG. 1 illustrates a writing instrument of the retractable type utilizing a dispenser according to the invention;

FIG. 2 illustrates a partial cross-sectional view of the writing instrument housing and the dispenser of FIG. 1 according to the invention;

FIG. 3 illustrates a view similar to FIG. 2 of the dispenser in a closed position;

FIG. 4 illustrates a view taken on line 4—4 of FIG. 3;

FIG. 5 illustrates an exploded view of the dispenser of FIG. 2;

FIG. 6 illustrates a further modified retractable pen utilizing an air freshener dispenser according to the invention;

FIG. 7 illustrates a partial cross-sectional view of the pen of FIG. 6 and the dispenser;

FIG. 8 illustrates a view taken on line 8—8 of FIG. 7;

FIG. 9 illustrates a view taken on line 9—9 of FIG. 8;

FIG. 10 illustrates an exploded view of the dispenser of FIG. 7;

FIG. 11 illustrates a further modified writing instrument having an air freshener dispenser in a pen housing according to the invention;

FIG. 12 illustrates an exploded view of the dispenser components of FIG. 11;

FIG. 13 illustrates a further modified writing instrument utilizing an air freshening dispenser according to the invention;

FIG. 14 illustrates a partial cross-sectional view of the pen and the dispenser of FIG. 13; and

FIG. 15 illustrates an exploded view of the writing instrument housing and air freshening dispenser according to the invention.

Referring to FIG. 1, a writing instrument 20 of the retractable type such as a ball point pen which is of generally conventional structure has an air freshening dispenser 21 mounted in an upper end as viewed.

Referring to FIG. 2, the writing instrument 20 includes a barrel-type housing 22 on which a clip 23 is mounted in known manner, a cap 24 within the housing 22 which communicates with a writing means 25 at the lower end of the instrument, a plunger 26 and a spring 27. The spring 27 encircles the plunger 26 and is located between the cap 24 and the bottom of the dispenser 21. The plunger 26 is reciprocally mounted within the cap 24 in a known manner.

Referring to FIGS. 2 and 5, the air freshening dispenser 21 which is slidably mounted axially within the housing 22 includes a container 28 which is sized to hold a supply of vaporizable material 29 or any other known air freshener material. The container 28 has a plurality of openings 30 such as elongated slots, for example four, which are spaced about the periphery of the container side wall. These openings 30 allow the passage of vapors from the vaporizable material 29.

The dispenser 21 also includes a cover 31 which is rotatably mounted about the container 28 and has openings 32 therein for registering therein with the openings 30 in the container 28 upon rotation of the cover 31 into various predetermined positions relative to the container 28. The openings 32 are also of elongated shape and conform to the size of the openings 30 in the container 28.

Additional openings 33, 34 are provided in the upper flat surfaces of the container 28 and cover 31 to permit further outlets for a flow of vapor. These openings 33, 34 may be of a circular or similar shape.

The lower end of the cover 31 is provided with a means for rotatably securing the container 28 therein. As shown, this means is in the form of an inwardly directed annular shoulder or lip 35 which envelopes the lower end of the container 28. Where the cover 31 is made of a flexible material such as a plastic, the container 28 may be snapped in place past the shoulder 35. Any other suitable fastening means may also be used to secure the container 28 in place either permanently or temporarily.

Referring to FIG. 2, the dispenser 21 also includes a cap 36 which is located concentrically within the cover 31 and is secured to one end of the container 28 in order to retain the material 29 in place. The cap 36 includes a cup-shaped recess 37 which is directed away from the container 28 in order to envelope the plunger 26. For purposes of replacement, the cap 36 is removably mounted on the plunger 26. This can be accom-

plished by frictionally engaging the cap 36 on the plunger 26. In addition, the cap 36 is removably secured to the container 28 in order to be able to replenish the vaporizable material 29. To this end, the material 29 can be supplied in the form of a plug which can be dropped into place within the container 28.

Referring to FIGS. 3 and 4, the cover 31 is rotatable on the container 28 to close over the elongated openings 30 in the sides and the openings 33 in the top. In this way, the air freshener dispenser 21 can be taken out of use. However, since the freshener dispenser 21 is axially slidably mounted within the housing 22, the writing instrument may still function for writing purposes. That is, in order to retract or expel the writing means 25 at the end of the housing 22, the dispenser 21 is depressed manually so as to, in turn, depress the plunger 26 to carry out the needed operations to expose or retract the writing means 25.

It is to be noted that the frictional forces between the cap 36, plunger 26 and container 28 are sufficient to retain the dispenser 21 in place during use of the writing instrument 20.

Referring to FIG. 6, wherein like reference characters indicate like parts as above, a writing instrument 40 of the retractable type is provided with an air freshener dispenser 41 which is fixedly retained in place from within the writing instrument 40.

As shown in FIG. 7, the writing instrument 40 includes a housing 42 which has a tapered upper end to enclose the dispenser 41. The dispenser 41 includes a container 43 for holding a supply of vaporizable or air freshening material 44. The container 43, as above, has a plurality of elongated openings 45 in the side wall for passage of vapors from the supply 44. In addition, the container 43 is open ended at the top while the lower end has an annular shoulder 46 about the outer periphery. The dispenser 41 also includes a cover 47 which is rotatably mounted about the upper end of the container 43 to close over the openings 45. As shown in FIG. 10, the cover 47 also has a plurality of openings 48 to be registered with the openings 45 in the container 43 or to be positioned out of registry with the openings 45. The cover 47 is sized to project downwardly into the tapered housing 42.

A retainer 49 is disposed within the housing 42 and is mounted on the cap 24 concentrically about the plunger 26. The retainer 49 has an annular lip portion 50 directed radially inwardly into the plane of the shoulder 46 of the container 43 in order to abut against the shoulder 46. The retainer 49 is sized to be of an outer diameter less than the inner diameter of the tapered housing 42 above the shoulder 46. In this way, the housing 49 is retained in place and is prevented from moving out of the upper end of the housing 42 while, in turn, preventing the container 43 of the dispenser 41 from moving upwardly out of the housing 42.

In order to mount the dispenser 41 in place, the cover 47, container 43 and retainer 49 are inserted from the lower end of the housing 42 as viewed in FIG. 7. Thereafter, the remainder of the writing instrument including the cap 24, plunger 26 and spring 27 are inserted in place. Once in place, depression of the cover 47 by a manually applied means, forces the plunger 26 downwardly while compressing the spring 27. The retainer 49, however, remains in place due to a slight frictional fit. The retainer 49 could, of course, also move downwardly; however, upward motion of the retainer 49 out

of the narrowed portion of the housing 42 is prevented.

In order to close off the openings 45 in the container 43, the cover 47 is rotated.

Referring to FIGS. 9 and 10, in order to permit passage of the dispenser container 47 and retainer 49 past a securing means such as rivets 51 for the clip 23, slots 52, 53 are provided in the outer wall of the retainer 49 and in the shoulder 46 of the container 43. These slots 52, 53 are sized to permit alignment of the dispenser 41 in the housing 42.

In order to prevent rotation of the container 43 in the housing 42, the retainer 49 has an offset portion 54 (FIG. 9) on the inside wall which is sized to fit into the slot 52 in the outside wall of the container 43. When the retainer 49 is fixed in place in the housing 42, the container 43 is prevented from rotating.

Referring to FIGS. 11 and 12, a writing instrument 60 may also be provided with an air freshener dispenser 61 mounted directly in the housing of the writing instrument. To this end, as shown in FIG. 11, the writing instrument 60 such as a fountain pen includes a housing 62 for enveloping the writing means end 63 of the writing instrument. The housing 62 is secured to the writing end 63 by means of spring clips 64 in known manner while the clip 23 is secured in place by a pair of rivets 51 to the housing 62.

The housing 62 houses an open-ended container 66 which, in turn, houses a supply of vaporizable material 67. The container 66 has an internal recess 68 of conical shape to receive the writing end 63 and abuts against a suitable shoulder 69 within the housing 62. In addition, a cover 70 of disc-like shape is mounted over the open end of the container 66 to hold the material 67 in place. This disc-like cover 70 has a plurality of openings 71 for passage of vapor and, as shown in FIG. 12, includes an elongated tab 72 which is adapted to fit within a slot 73 in the upper edge of the container 66. In this way, the cover 70 is prevented from rotating on the container 66. The dispenser 61 also includes a cap 74 which is fitted over the cover 69 and container 66. To this end, the cap 74 is provided with an annular groove 75 which receives an annular bead 76 on the container 66. In this way, the cap 74 is locked in place on the container 66. However, the cap 74 is free to rotate relative to the container 66. The cap 74 also includes a number of openings 76 which correspond in number to the openings 71 in the cover 70. In this way, the openings 71 in the cover 70 can be exposed upon registry with the cap openings 76.

As shown in FIG. 11, the container 66 is fixed in place against rotation by passage of the rivets 51 of the clip 23 therethrough.

Referring to FIGS. 13 to 15, a writing instrument 80 such as a fountain pen can also be provided with a dispenser 81 which is removably mounted within a housing 82 of the instrument and which is able to dispense more than one type of air freshener material. In this case, the housing 82 is provided with two sets of openings 83, 84. The housing 82 also includes a number of spring clips 85 for holding the writing end 86 of the writing instrument 80 in place.

The dispenser 81 includes a container 87 which is mounted within the housing 82 and is provided with two compartments 88, 89, each of which is adapted to contain different vaporizable materials. Each of these compartments 88, 89 has an opening 90, 91 (FIG. 15) which is sized to register with a respective set of open-

ings 83, 84 in the housing 82. These compartments 88, 89 are divided by a wall 92 which extends to and out of an open end of the container 87. The housing 87 is also provided with a conically shaped recess 93 to receive the writing end of the instrument 80.

A cap 94 is rotatably mounted over the open end of the container 87. To this end, the cap 94 includes an annular recess 95 which engages an annular bead 96 on the container 87. In addition, the cap 94 includes a U-shaped recess 97 for enveloping the upper end of the wall 92. In this way, rotation of the cap 94 causes rotation of the container 87. This allows a different compartment 88, 89 to be registered with one or the other of the openings 83, 84 in the housing 82. In addition, the elongated openings 90, 91 of the container 87 are sized so that only one opening 90, 91 can be aligned with a set of openings 83, 84 in the housing 82.

The dispenser 81 further includes a means, such as indicia 98 on a shouldered surface 99 of the container 87 to indicate which compartment 88, 89 is exposed to the exterior of the housing 82. This shouldered surface 99 is recessed to avoid frictional wear of the indicia. The housing 82 is also provided with a window 100 or like opening which is sized so as to allow viewing of one or more indicia 98 on the container 87.

In order to facilitate rotation of the cap 94, knurling 101 may be provided on the outer peripheral surface.

The clip 23 on the housing 82 is secured in place by a suitable rivet 51 which passes through the housing 82. To provide sliding of the container 87 past the rivet 50, a suitable flat surface 102 is provided on the main portion of the container 87 while an opening 103 is formed in a shouldered portion 99 at the lower end of the container 87.

The container 87 also has an annular groove 104 near the upper end which provides a space for the rivets 51 during rotation of the container 87. A similar annular groove 105 is provided near the lower end to act as a stabilizer with a square block 106 formed on the inside wall of the housing 82. In addition, the opening 103 communicates with the annular groove 105 and is made slightly narrower than the block 106 where the container 87 is made of plastic. Thus, when the container 87 is pushed into the housing 82 from the top, the opening 103 expands about the block 106 while the block 106 passes into the groove 105. A metal ring 107 (FIG. 14) may also be provided on the inside wall of the housing to strengthen the stabilizing groove 105.

As shown in FIG. 14, the end of the clip 23 fits over a recess 108 of the housing 82 which recess 108 is used to form the block 106. This allows the appearance of the writing instrument to be more attractive.

In any of the above embodiments, it is only necessary to carry out a simple rotation in order to open the dispenser. Thus, vapors or any other air freshening material can be readily and rapidly dispensed for the personal comfort of the user.

Since the air freshener dispenser is utilized in a writing instrument, the user can have a direct effect of the air freshener material if the writing instrument is located in a pocket of the user's clothing close to the user's face or if the user is in the process of writing.

In the various embodiments, the components of the air freshener such as the container and cap can be made of relatively inexpensive materials such as plastics or can be made of more durable material such as metals. In any event, the materials utilized can be com-

patible with the materials used in the remainder of the writing instrument.

The invention thus provides a simple device which can be readily utilized for air freshening purposes and which can be conveniently housed within a writing instrument. In this latter respect, the external appearances of the writing instrument need not be effected.

What is claimed is:

1. In combination,

a writing instrument including a housing, a retractable writing means at one end of said housing and a plunger at an opposite end of said housing for moving said writing means within said housing; and a vapor dispenser mounted on said plunger and extending from within said housing at said opposite end, said dispenser including a container for holding a supply of vaporizable material, said container having at least one opening therein to allow a flow of vapor therethrough, and a cover rotatably mounted about said container and having at least one opening therein for registering with said opening in said container upon rotation of said cover into predetermined positions relative to said container.

2. The combination as set forth in claim 1 wherein said dispenser is removably mounted on said plunger.

3. The combination as set forth in claim 1 wherein said dispenser further includes a cap frictionally engaged over said plunger to mount said dispenser thereon and secured to one end of said container to retain a supply of vaporizable material therein.

4. The combination as set forth in claim 1 wherein said openings include elongated slots in each of said container and cover.

5. The combination as set forth in claim 1 wherein said dispenser is axially slidably mounted in said housing and projects from said housing.

6. The combination as set forth in claim 1 which further includes a retainer secured in said housing for retaining said dispenser therein.

7. The combination as set forth in claim 6 wherein said retainer includes a radially inwardly directed shoulder at one end and said container is disposed within said retainer and includes an outwardly directed shoulder for abutting said shoulder of said retainer to retain said container in said housing.

8. The combination as set forth in claim 6 wherein said housing is tapered to hold said retainer against movement out of said opposite end of said housing.

9. An air freshener dispenser for mounting on a writing instrument, said dispenser including

a container for holding a supply of vaporizable material, said container having at least one opening therein to allow a flow of vapor therethrough, a cover rotatably mounted about said container and having at least one opening therein for registering with said opening in said container upon rotation of said cover into predetermined positions relative to said container, said cover having means thereon for rotatably securing said container therein, and a cap concentrically within said cover and secured to one end of said container to retain a supply of vaporizable material therein, said cap having a cup-shaped recess directed away from said container for enveloping a portion of a writing instrument.

10. An air freshener dispenser as set forth in claim 9 wherein said means is an annular lip on said cover disposed in the plane of said container.

11. In combination with a housing of a writing instrument for housing a writing means therein;

a container within said housing for holding a supply of vaporizable material,

a cover on one end of said container having at least one opening therein to allow a flow of vapor there-through from said container, and

a cap rotatably mounted on said container over said cover, said cap having at least one opening therein for registering with said opening in said cover upon rotation of said cap into predetermined positions relative to said cover, said cap having an outer peripheral surface forming a continuation of a peripheral surface of said housing.

12. The combination as set forth in claim 11 wherein said cover is removably mounted on said container.

13. In combination with a housing of a writing instrument for housing a writing means therein, said housing having at least one opening therein;

a container rotatably mounted within said housing for holding a supply of vaporizable material therein and having at least one opening therein for registering with said opening in said housing upon rotation of said container into predetermined positions relative to said housing, and

a cap secured to said container and mounted on said housing for rotating said container within said housing.

14. The combination as set forth in claim 13 wherein said housing has a conically shaped recess therein for receiving a writing instrument therein.

15. The combination as set forth in claim 13 wherein said container includes at least two compartments for respectively holding a supply of vaporizable material therein, each said compartment having a respective opening therein for selectively registering with said opening in said housing.

16. The combination as set forth in claim 15 wherein said container includes a wall separating said compartments and said cap includes a recess receiving an end of said wall therein for rotation of said container upon rotation of said cap.

17. The combination as set forth in claim 15 wherein said cap has an outer peripheral surface forming a continuation of a peripheral surface of said housing.

18. The combination as set forth in claim 15 which further comprises a means for indicating a selected position of said container relative to said housing, said means including a window in said housing and indicia on said container for viewing through said window.

19. The combination as set forth in claim 13 wherein said container is removably mounted in said housing.

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