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Caruso

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(54) **FLIP-TOP BUSHING FOR AEROSOL CANISTER WITH MOLDED ACTUATOR SPRING**

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B65D 83/40 (2006.01)

(52) **U.S. Cl.**
CPC ***B65D 83/205*** (2013.01); ***B65D 83/40*** (2013.01)

(58) **Field of Classification Search**
CPC B65D 83/206; B65D 83/205; B65D 83/40
USPC 222/301.13, 401.11, 153.02, 402.13, 222/402.11, 402.1, 402.15
See application file for complete search history.

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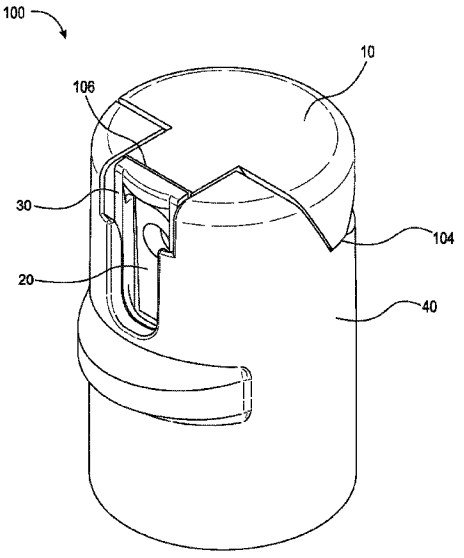
(57) **ABSTRACT**

A pivot-spring assembly for dispersing contents from an aerosol canister, comprising a cover having an opening, a lid having at least one arm, a pivot-spring operatively arranged in the cover to rotatably secure the lid to the cover, and an actuator having a nozzle and non-rotatably secured on the pivot-spring. The actuator operatively arranged to engage a stem of the aerosol canister and disperse contents from the aerosol canister. The pivot-spring comprises a flexible tongue having an elongated slot, at least one lid tab operatively arranged to at least partially enclose the at least one arm, at least one dowel, and at least one guide, wherein the flexible tongue, the at least one lid tab, the at least one dowel, and the at least one guide are vertically arranged on a flange.

12 Claims, 9 Drawing Sheets



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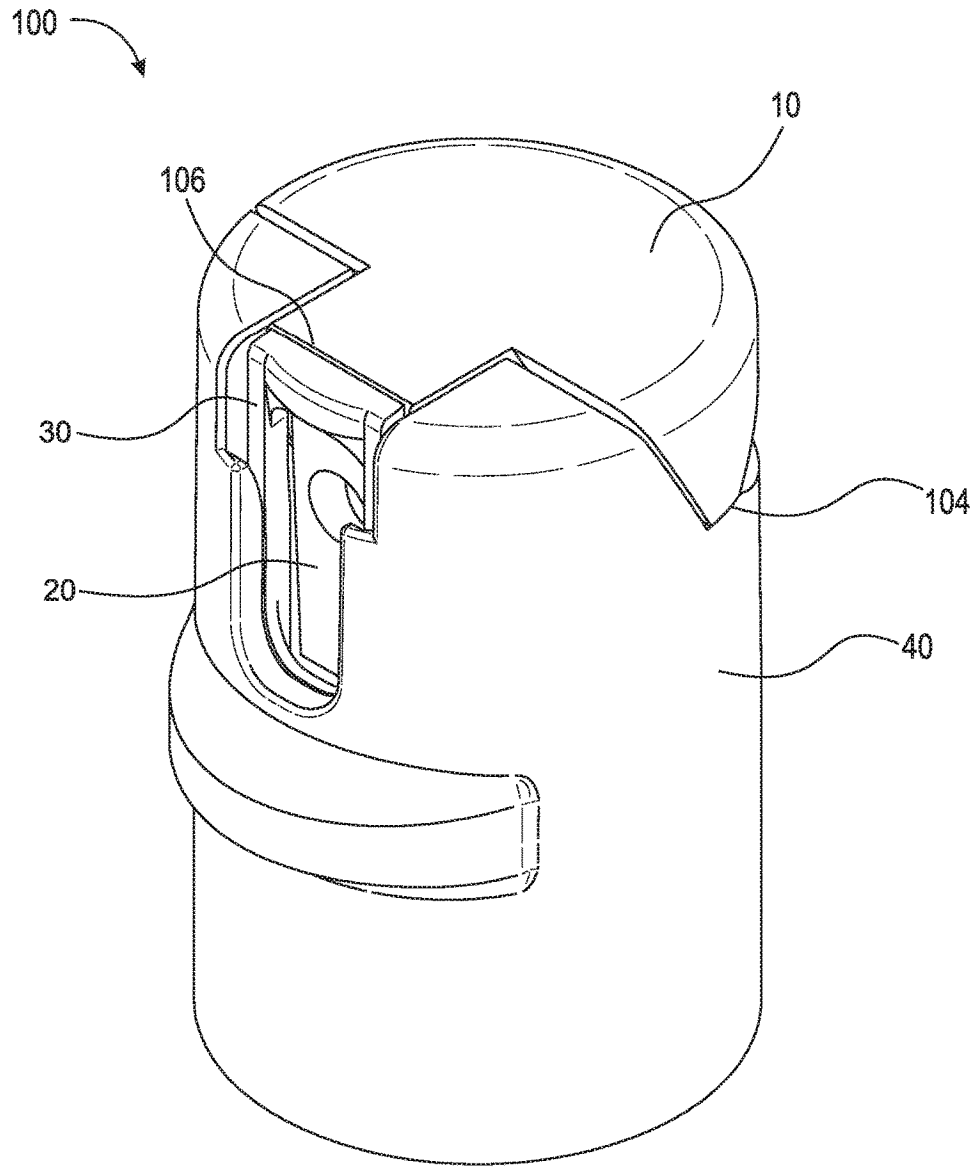


Fig. 1A

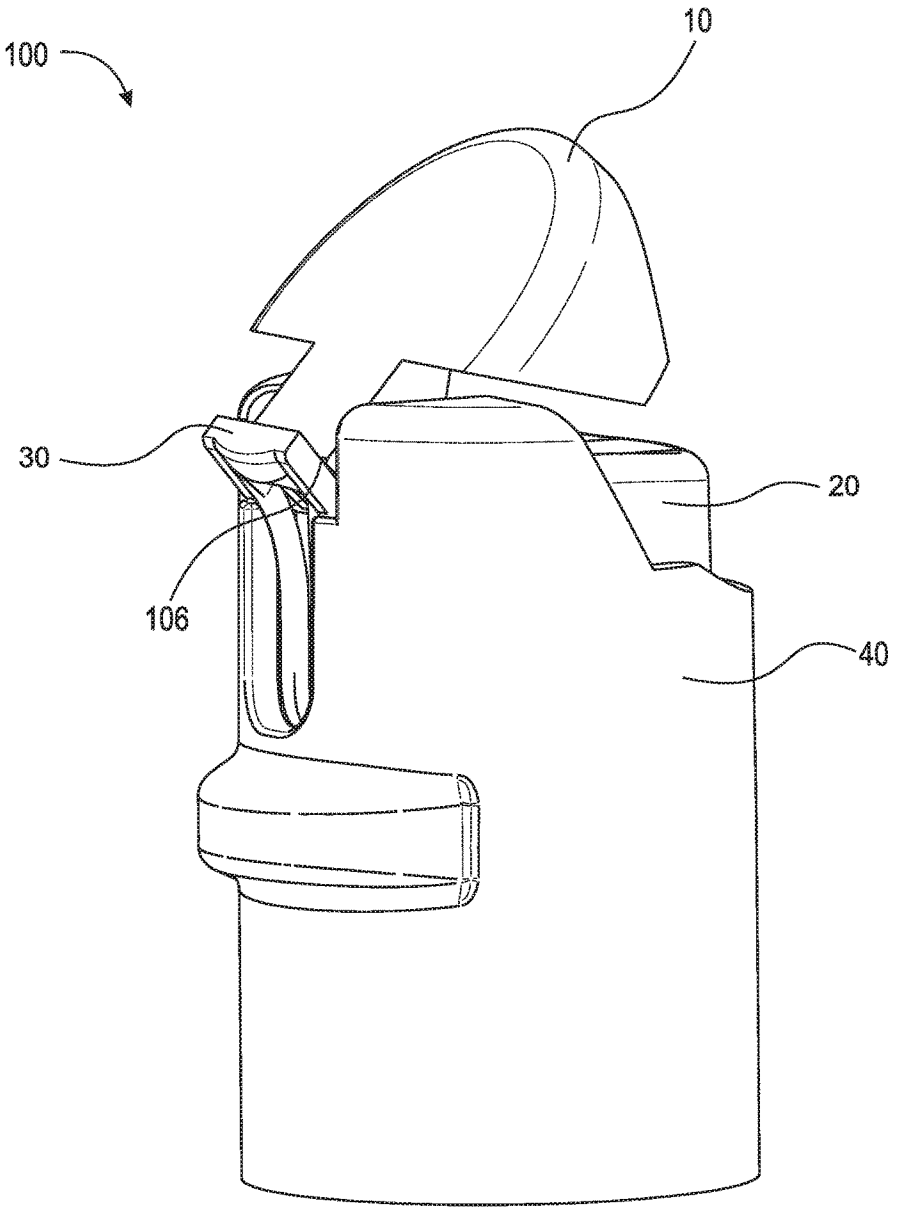


Fig. 1B

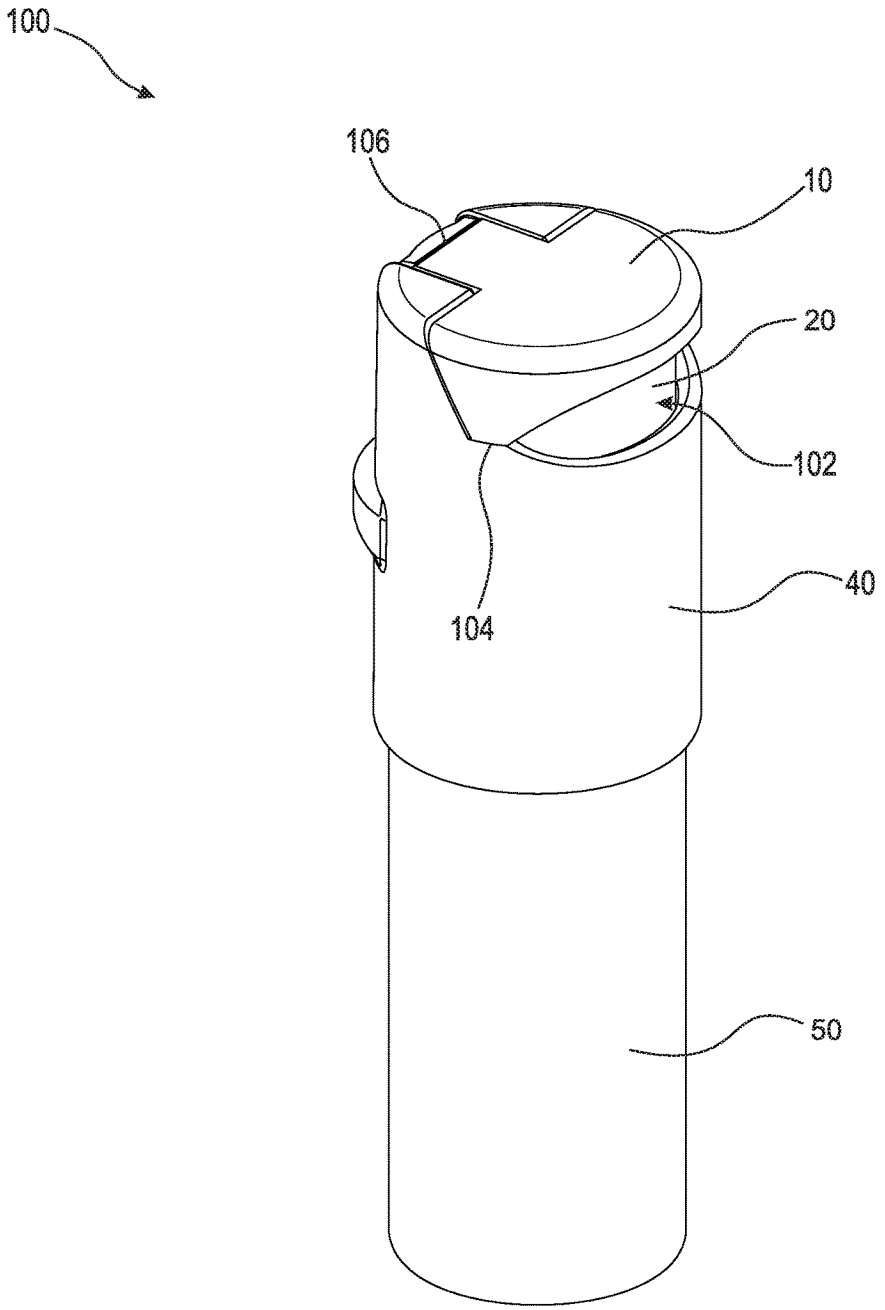


Fig. 2

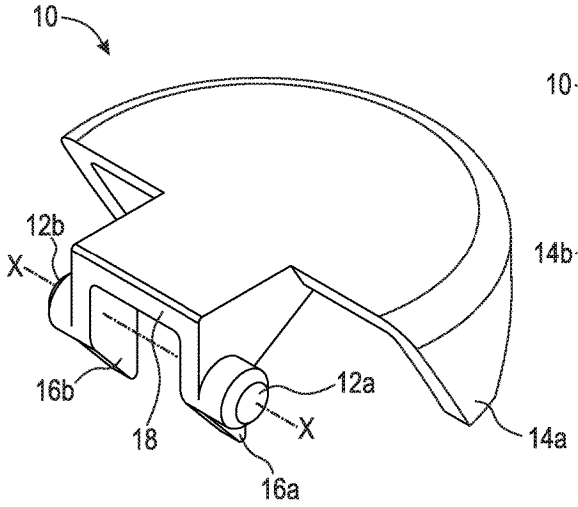


Fig. 3A

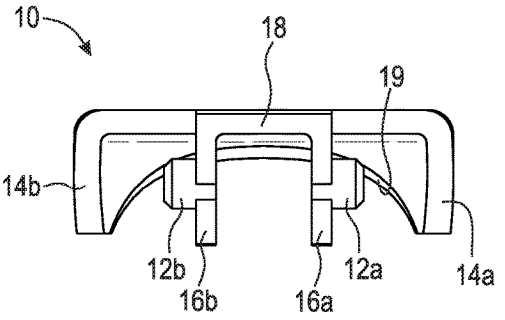


Fig. 3B

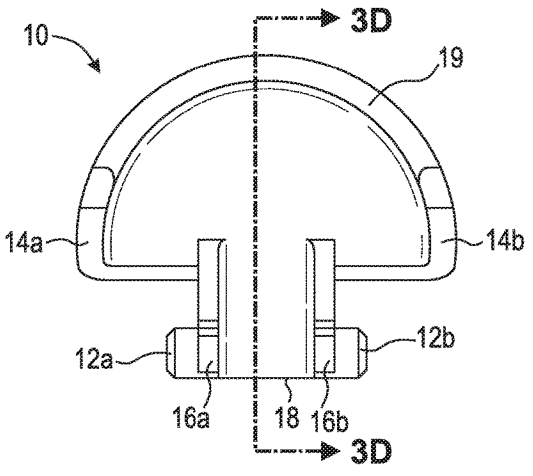


Fig. 3C

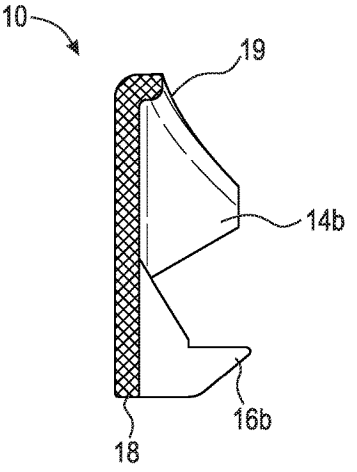


Fig. 3D

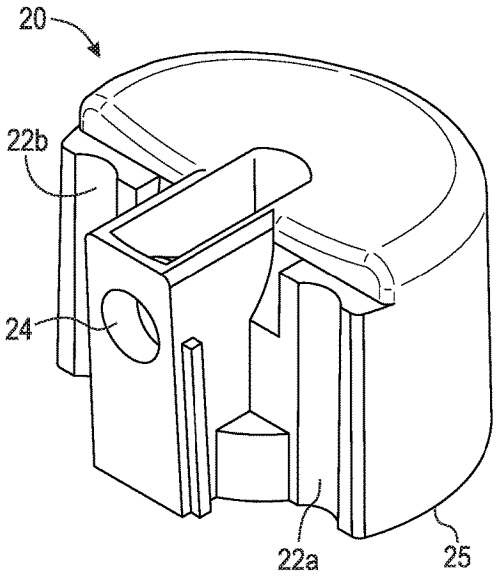


Fig. 4A

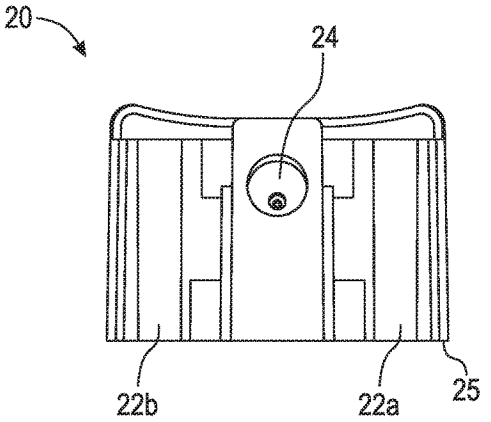


Fig. 4B

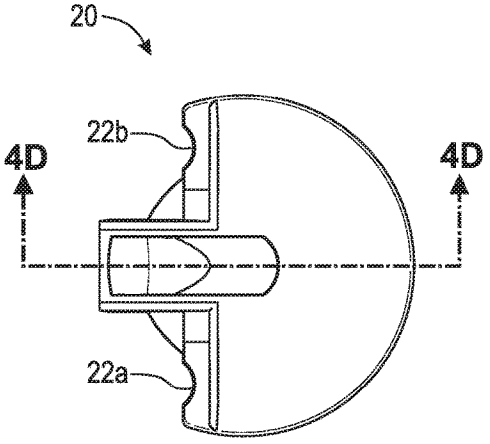


Fig. 4C

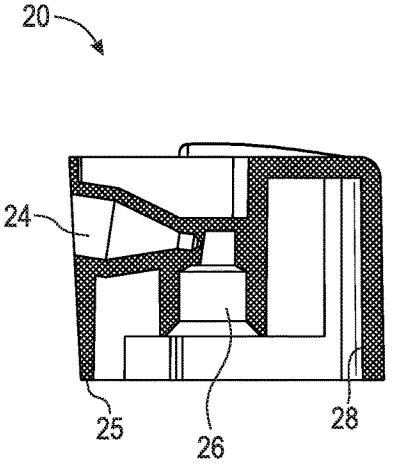


Fig. 4D

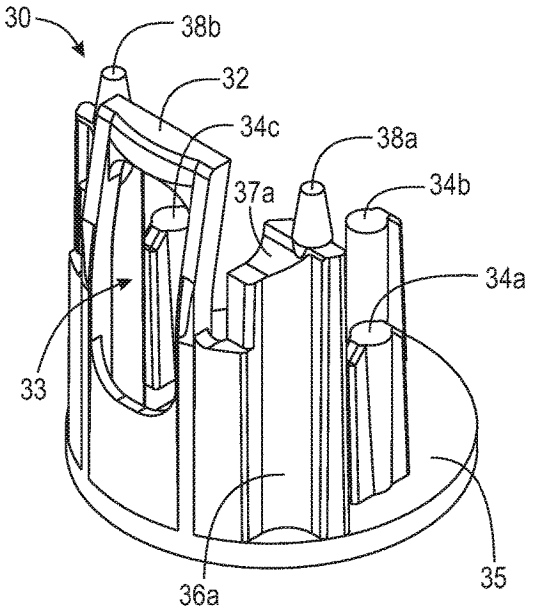


Fig. 5A

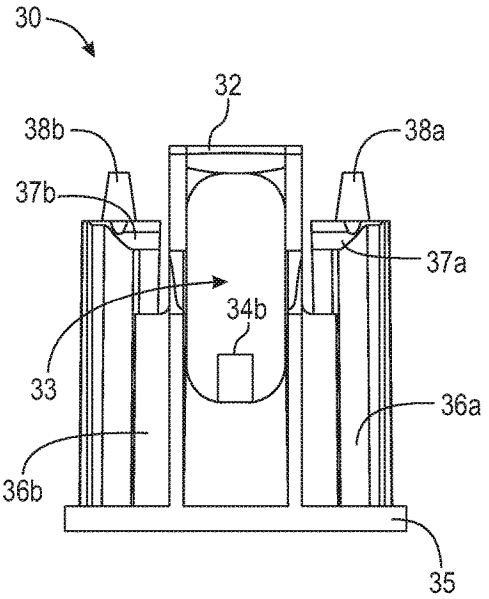


Fig. 5B

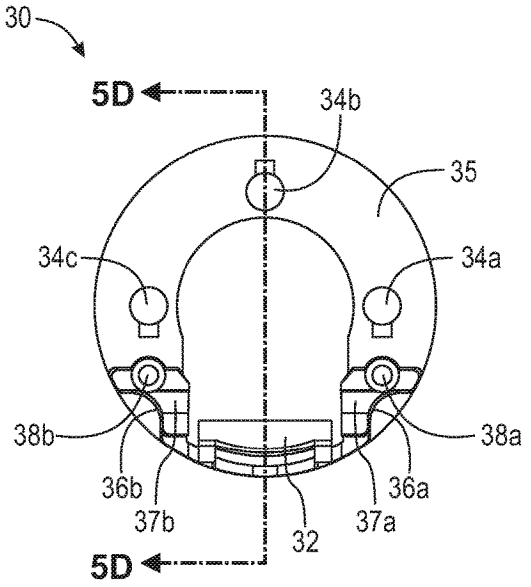


Fig. 5C

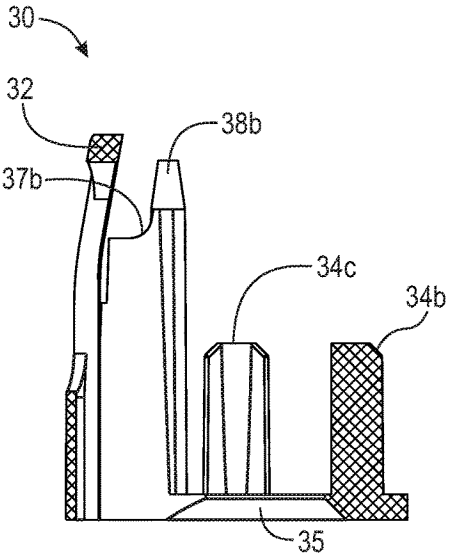


Fig.5D

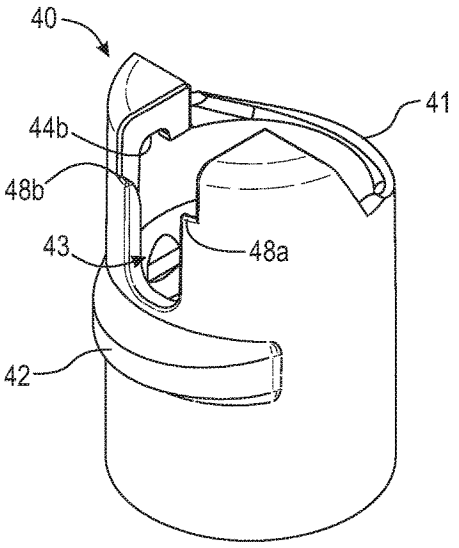


Fig. 6A

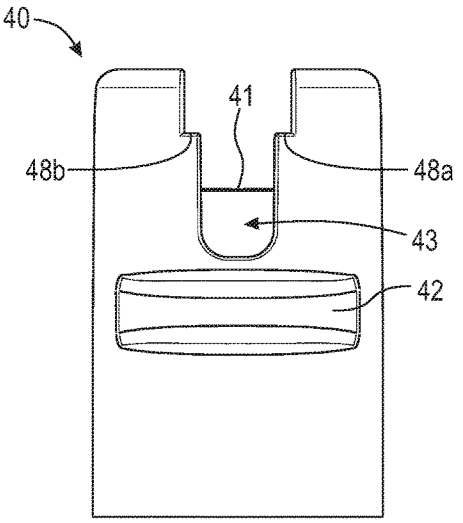


Fig. 6B

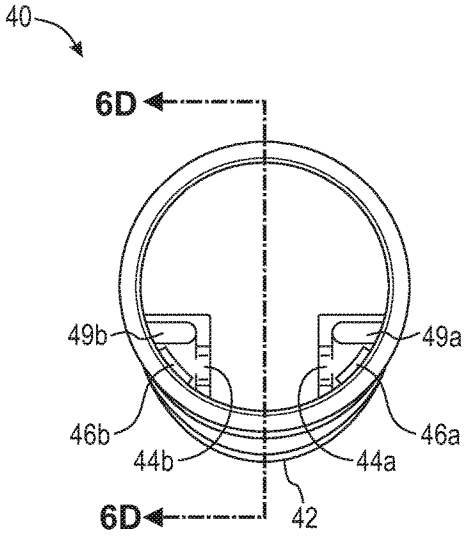


Fig. 6C

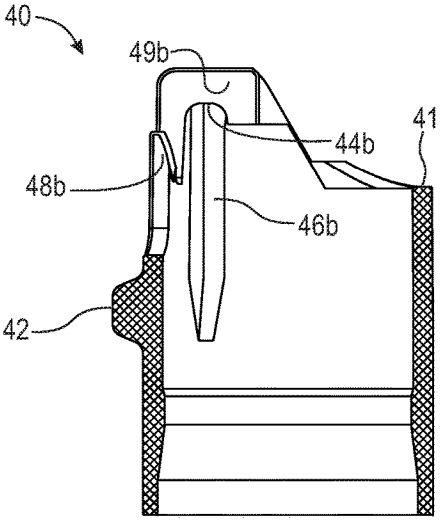
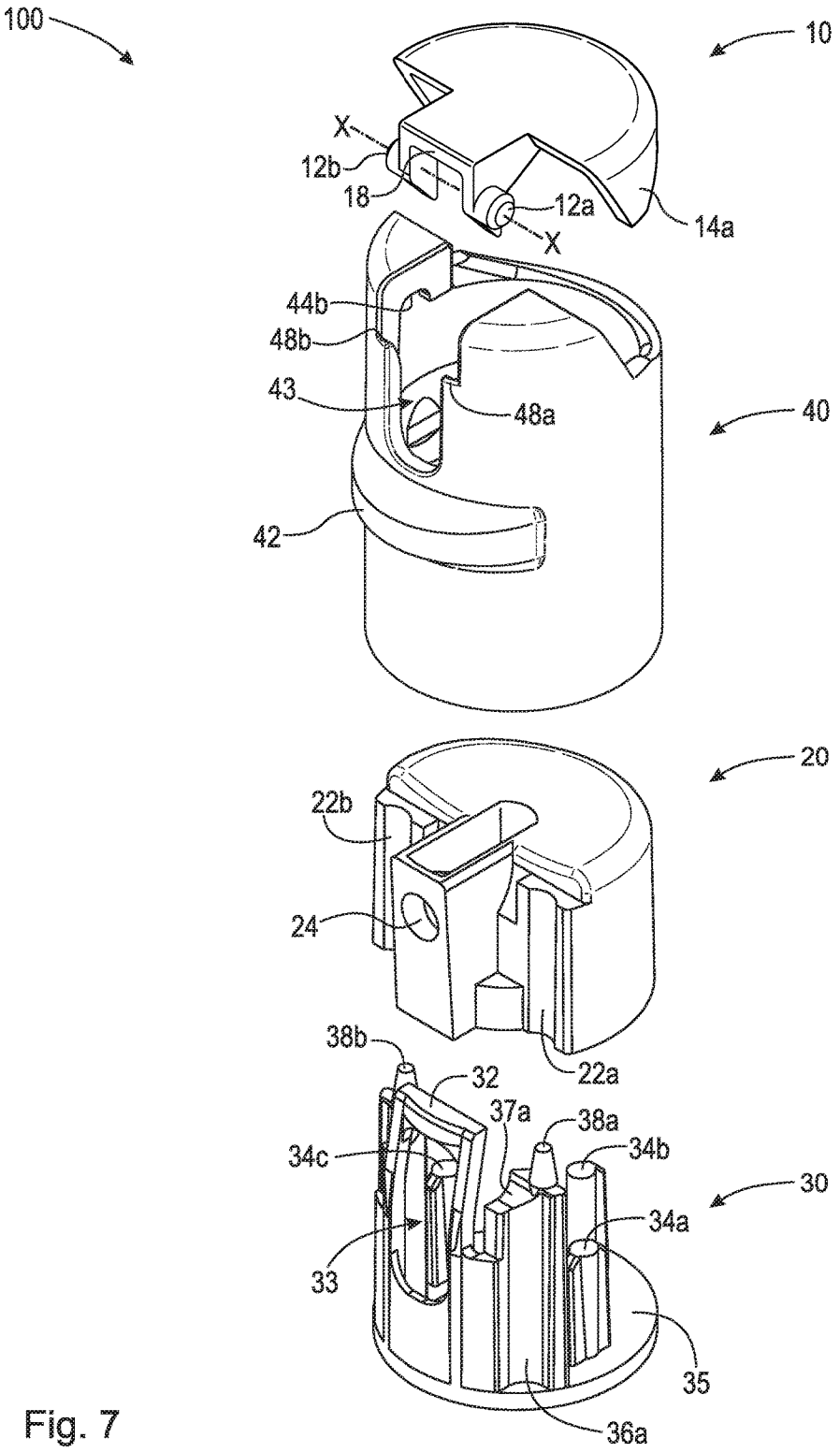


Fig. 6D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35
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Fig. 7

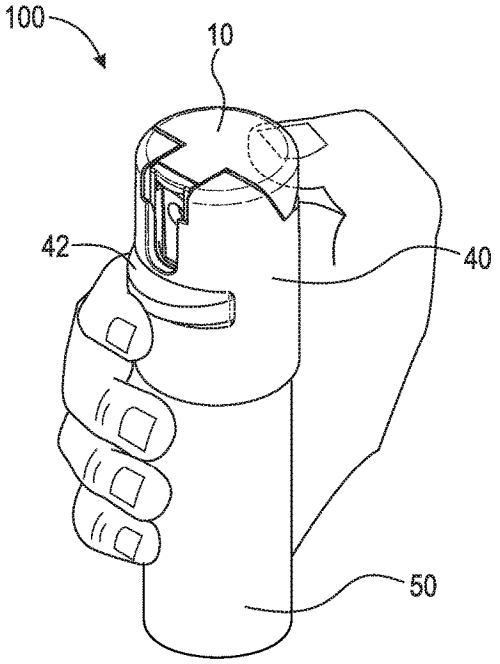

Fig. 8A

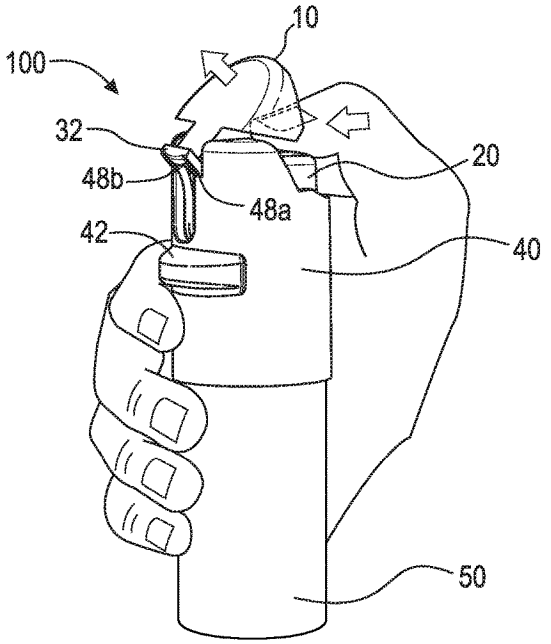

Fig. 8B

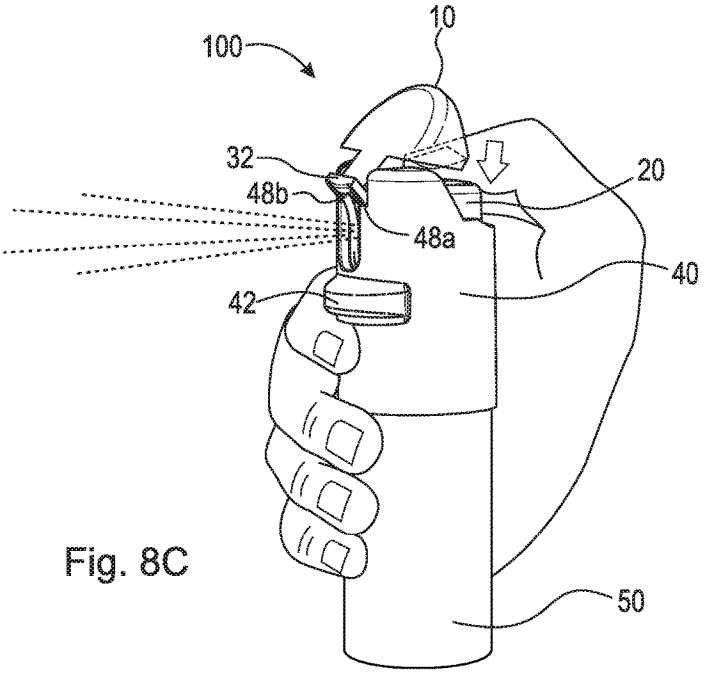

Fig. 8C

FLIP-TOP BUSHING FOR AEROSOL CANISTER WITH MOLDED ACTUATOR SPRING

TECHNICAL FIELD

The invention relates generally to a case for an aerosol canister, and, more specifically, to a flip-top bushing for an aerosol canister and, even more specifically, to a molded actuator spring mechanism for a flip-top bushing for an aerosol canister.

BACKGROUND

Cases for aerosol or spray canisters typically include an actuator to engage the stem of the canister in order to dispel the canister's contents. There are a variety of aerosol dispensers that are used in many applications which include dispensing perfume, air fresheners, personal hygiene products, covering an article with a coat of paint, and dispensing cleaning products, amongst others. One specific application for an aerosol dispenser is as a personal defense device that, for example, directs a chemical repellant spray towards a potential human or animal threat.

Typical lids for dispensing actuators or cases for aerosol and spray canisters are intended to either prevent accidental discharge or provide easy dispensing. With respect to personal defense devices, easy dispensing is crucial to ensure the safety of the user when a threat presents itself. However, the reason personal defense devices are effective is because their chemical contents are indiscriminately extremely painful to anyone who comes into contact with it.

U.S. Patent Application Publication No. 2010/0206246 discloses a retractable animal leash combined with a pepper spray dispenser. The pepper spray dispenser includes a tube that provides a path for spray from the canister to pass through the housing and into the atmosphere. A trigger activates the spray canister, which has a safety cover. The publication discloses a dispensing nozzle mechanism that releasably attaches to the canister and connects the dispenser region through the trigger to a dispensing tube, which leads through the housing to a dispensing spout to direct the pepper spray forward when the trigger is actuated. The application does not disclose the four-piece activation system of the present invention, specifically the pivot-spring. In addition, this dispensing actuator requires various movements by the user to spray the contents of the container and return the dispensing actuator to its original position. Opening the lid, accurately positioning the user's finger over the actuator, depressing the actuator, and then manually closing the lid is cumbersome, time consuming, and possibly dangerous in that the potential victim might not activate the device in time to thwart the threat.

Therefore, there is a long-felt need for an improved case for an aerosol or spray canister that minimizes the number of movements to dispel the canister's contents under pressure. There is also a long-felt need for a case that is simple to reassemble if it breaks. Further, there is also a long-felt need for a spring mechanism used in a flip top case that can be made of plastic in order to minimize manufacturing costs.

SUMMARY

The present invention comprises a pivot-spring assembly for dispersing contents from an aerosol canister, comprising a cover having an opening, a lid having at least one arm, a pivot-spring operatively arranged in the cover to rotatably secure the lid to the cover, and an actuator having a nozzle and non-rotatably secured on the pivot-spring. The actuator operatively arranged to engage a stem of the aerosol canister and disperse contents from the aerosol canister. The pivot-spring comprises a flexible tongue having an elongated slot, at least one lid tab operatively arranged to at least partially enclose the at least one arm, at least one dowel, and at least one guide, wherein the flexible tongue, the at least one lid tab, the at least one dowel, and the at least one guide are vertically arranged on a flange.

The present invention comprises a case for a canister capable of dispelling material, comprising a main body to house the canister, the main body having a front aperture, a top lid to cover the main body, a spring non-rotatably secured to the main body and rotatably secured to the top lid. The spring comprising a flexible tongue having an elongated slot, at least one lid tab operatively arranged to at least partially enclose the at least one arm, at least one dowel, and at least one guide, wherein the flexible tongue, the at least one lid tab, the at least one dowel, and the at least one guide are vertically arranged on a flange, and an actuator to direct dispelled material from the canister out of the main body through the front aperture.

These and other objects, advantages and features of the present invention will be better appreciated by those having ordinary skill in the art in view of the following detailed description of the invention in view of the drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

The nature and mode of operation of the present invention will now be more fully described in the following detailed description of the invention taken with the accompanying figures, in which:

FIG. **1**A is a front perspective view of a flip-top assembly, with the lid closed, in accordance with an embodiment of the present invention;

FIG. **1**B is a front perspective view of a flip-top assembly, with the lid open, in accordance with an embodiment of the present invention;

FIG. **2** is a rear perspective view of a flip-top assembly arranged on an aerosol canister, in accordance with an embodiment of the present invention;

FIG. **3**A is a front perspective view of a lid of the flip-top assembly shown in FIG. **1**A, in accordance with an embodiment of the present invention;

FIG. **3**B is a front planar view of the lid shown in FIG. **3**A, in accordance with an embodiment of the present invention;

FIG. **3**C is a bottom planar view of the lid shown in FIG. **3**A, in accordance with an embodiment of the present invention;

FIG. **3**D is a cross-sectional view of the lid shown in FIG. **3**A taken generally along line **3**D-**3**D in FIG. **3**C, in accordance with an embodiment of the present invention;

FIG. **4**A is a front perspective view of an actuator of the flip-top assembly shown in FIG. **1**A, in accordance with an embodiment of the present invention;

FIG. **4**B is a front planar view of the actuator shown in FIG. **4**A, in accordance with an embodiment of the present invention;

FIG. **4**C is a top planar view of the actuator shown in FIG. **4**A, in accordance with an embodiment of the present invention;

FIG. **4**D is a cross-sectional view of the actuator shown in FIG. **4**A taken generally along line **4**D-**4**D in FIG. **4**C, in accordance with an embodiment of the present invention;

FIG. **5**A is a front perspective view of a pivot-spring of the flip-top assembly shown in FIG. **1**A, in accordance with an embodiment of the present invention;

FIG. **5**B is a front planar view of the pivot-spring shown in FIG. **5**A, in accordance with an embodiment of the present invention;

FIG. **5**C is a top planar view of the pivot-spring shown in FIG. **5**A, in accordance with an embodiment of the present invention;

FIG. **5**D is a cross-sectional view of the pivot-spring shown in FIG. **5**A taken generally along line **5**D-**5**D for FIG. **5**C, in accordance with an embodiment of the present invention;

FIG. **6**A is a front perspective view of a cover of the flip-top assembly shown in FIG. **1**A, in accordance with an embodiment of the present invention;

FIG. **6**B is a front planar view of the cover shown in FIG. **6**A, in accordance with an embodiment of the present invention;

FIG. **6**C is a bottom planar view of the cover shown in FIG. **6**A, in accordance with an embodiment of the present invention;

FIG. **6**D is a cross-sectional view of the cover shown in FIG. **6**A taken generally along line **6**D-**6**D in FIG. **6**C, in accordance with an embodiment of the present invention;

FIG. **7** is an exploded view of the flip-top assembly shown in FIG. **1**A, in accordance with an embodiment of the present invention;

FIG. **8**A is a front perspective view of the flip-top assembly shown in FIG. **2** being used, with a thumb partially inserted into the rear opening, in accordance with an embodiment of the present invention;

FIG. **8**B is a front perspective view of the flip-top assembly shown in FIG. **2** being used, with a thumb fully inserted into the rear opening, in accordance with an embodiment of the present invention; and,

FIG. **8**C is a front perspective view of the flip-top assembly shown in FIG. **2** being used, with a thumb fully inserted into the rear opening and depressing the actuator, in accordance with an embodiment of the present invention.

DETAILED DESCRIPTION

At the outset, it should be appreciated that like drawing numbers on different drawing views identify identical, or functionally similar, structural elements. It is to be understood that the claims are not limited to the disclosed aspects.

Furthermore, it is understood that this disclosure is not limited to the particular methodology, materials and modifications described and as such may, of course, vary. It is also understood that the terminology used herein is for the purpose of describing particular aspects only, and is not intended to limit the scope of the claims.

Unless defined otherwise, all technical and scientific terms used herein have the same meaning as commonly understood to one of ordinary skill in the art to which this disclosure pertains. It should be understood that any methods, devices or materials similar or equivalent to those described herein can be used in the practice or testing of the example embodiments. The assembly of the present disclosure could be driven by hydraulics, electronics, and/or pneumatics.

It should be appreciated that the term "substantially" is synonymous with terms such as "nearly," "very nearly," "about," "approximately," "around," "bordering on," "close to," "essentially," "in the neighborhood of," "in the vicinity of," etc., and such terms may be used interchangeably as appearing in the specification and claims. It should be appreciated that the term "proximate" is synonymous with terms such as "nearby," "close," "adjacent," "neighboring," "immediate," "adjoining," etc., and such terms may be used interchangeably as appearing in the specification and claims. The term "approximately" is intended to mean values within ten percent of the specified value.

By "non-rotatably connected" elements, we mean that: the elements are connected so that whenever one of the elements rotate, all the elements rotate; and relative rotation between the elements is not possible. Radial and/or axial movement of non-rotatably connected elements with respect to each other is possible, but not required.

Adverting now to the figures, FIG. **1**A is a front perspective view of flip-top assembly **100** with lid **10** closed, in accordance with an embodiment of the present invention. Flip top assembly **100** comprises lid **10**, actuator **20**, pivot-spring **30**, and cover **40**. Lid **10** engages cover **40** at interface **104**. Lid **10** engages pivot-spring **30** at spring interface **106**. Actuator **20** is assembled on pivot-spring **30**, which is fed into cover **40** and secures lid **10**. Flip-top assembly **100** and its components are preferably made out of molded plastic, however, any other suitable material, such as metal, rubber, elastomeric material, or a combination of materials among its components may be used.

FIG. **1**B is a front perspective view of flip-top assembly **100**, with lid **10** open, in accordance with an embodiment of the present invention. When opened, lid **10** disengages cover **40** at interface **104**. In addition, lid **10** forces pivot-spring **30** forward at interface **106**. Pivot-spring **30** resists this forward movement, thus biasing lid **10** back to the closed position.

FIG. **2** is a rear perspective view of flip-top assembly **100** on aerosol canister **50**, in accordance with an embodiment of the present invention. In this exemplary embodiment, flip-top assembly **100** is dimensioned with an axial length and a radius to engage a canister of pepper spray. It should be appreciated, however, that flip-top assembly **100** can have dimensions to suitably engage any type of canister. Rear opening **102** is generally ellipsoidal in shape with its top arcuate curve defined by lid **10** and its bottom arcuate curve defined by cover **40**. Lid **10** engages cover **40** at interface **104**. Lid **10** engages pivot-spring **30** at spring interface **106**.

FIG. **3**A is a front perspective view of lid **10** of flip-top assembly **100** as shown in FIG. **1**A, in accordance with an embodiment of the present invention. FIG. **3**B is a front planar view of lid **10** shown in FIG. **3**A, FIG. **3**C is a bottom planar view of lid **10** shown in FIG. **3**A, and FIG. **3**D is a cross-sectional view of lid **10** shown in FIG. **3**A taken generally along line **3**D-**3**D in FIG. **3**C. In this exemplary embodiment, lid **10** comprises arms **12***a* and **12***b*, lateral wings **14***a* and **14***b*, legs **16***a* and **16***b*, lid front edge **18**, and lid rear opening surface **19**. Lid **10** is pivotably attached to cover **40** by arms **12***a* and **12***b* such that lid **10** is at least partially rotatable about axis X-X. Lid tabs **37***a* and **37***b* of pivot-spring **30** secure arms **12***a* and **12***b* in lid curved receptacles **44***a* and **44***b* of lid **40**, respectively (see FIG. **7**). Legs **16***a* and **16***b* straddle nozzle **24** of actuator **20** and can be used to prevent lid **10** from moving rotationally. Lid front edge **18** engages tongue **32** (see FIGS. **5**A-**5**D) of pivot-spring **30** at spring interface **106**. When a user's thumb is inserted into opening **102**, lateral wings **14***a* and **14***b* are raised from interface **104** such that lid **10** disengages cover **40**. Lid front edge **18** forces tongue **32** to bend elastically forward. When the user's thumb is removed from opening **102**, the elasticity of tongue **32** returns lid **10** to the closed position.

FIG. **4**A is a front perspective view of actuator **20** of flip-top assembly **100** as shown in FIG. **1**A, in accordance with an embodiment of the present invention. FIG. **4**B is a front planar view of actuator **20** shown in FIG. **4**A, FIG. **4**C is a top planar view of actuator **20** shown in FIG. **4**A, and FIG. **4**D is a cross-sectional view of actuator **20** shown in FIG. **4**A taken generally along line **4**D-**4**D in FIG. **4**C. In this exemplary embodiment, actuator **20** comprises curvatures **22***a* and **22***b*, nozzle **24**, bottom surface **25**, receiving port **26**, and actuator wall **28**. Actuator **20** is assembled onto pivot-spring **30**. Curvatures **22***a* and **22***b* are slid along dowels **38***a* and **38***b* (see FIGS. **5**A-**5**D) of pivot-spring **30**, respectively. Actuator wall **28** fits snuggly around guides **34***a*, **34***b*, and **34***c* such that actuator **20** can move axially with respect to pivot-spring **30**. Nozzle **24** is always aligned with tongue opening **33**. When actuator **20** is fully depressed, bottom surface **25** abuts against flange **35** (see FIGS. **5**A-**5**D). Receiving port **26** is internally connected to nozzle **24** (see FIG. **4**D) and is capable of engaging a stem of an aerosol canister such that the contents thereof are dispersible through nozzle **24**.

FIG. **5**A is a front perspective view of pivot-spring **30** of flip-top assembly **100** as shown in FIG. **1**A, in accordance with an embodiment of the present invention. FIG. **5**B is a front planar view of pivot-spring **30** shown in FIG. **5**A, FIG. **5**C is a top planar view of pivot-spring **30** shown in FIG. **5**A, and FIG. **5**D is a cross-sectional view of pivot-spring **30** shown in FIG. **5**A taken generally along line **5**D-**5**D in FIG. **5**C. In this exemplary embodiment, pivot-spring **30** comprises tongue **32**, tongue opening **33**, guides **34***a*, **34***b*, and **34***c*, flange **35**, vertical curvatures **36***a* and **36***b*, lid tabs **37***a* and **37***b*, and dowels **38***a* and **38***b*. Tongue **32** is flexible and provides a biasing torque against lid **10** (shown in FIG. **1**B) towards a closed position while dowels **38***a* and **38***b* are rigid and provide stability within cover **40**. Dowels **38***a* and **38***b* engage cover top cavities **49***a* and **49***b*, respectively. Lid tabs **37***a* and **37***b* enclose arms **12***a* and **12***b* within lid curved receptacles **44***a* and **44***b*, respectively, such that lid **10** is at least partially rotatable with respect to cover **40**, pivot-spring **30**, and actuator **20**. The geometry of tongue **32** enables pivot-spring **30** to be manufactured out of plastic instead of metal requiring an appropriate yield strength that is typically used in spring mechanisms. Tongue **32** is rectangular with at least one curved surface and is capable of elastically bending. Tongue opening **33** is a slot that runs longitudinally through tongue **32** such that tongue **32** bends with the appropriate spring constant for the desired required force and the contents of aerosol canister **50** can be dispersed. Guides **34***a*, **34***b*, and **34***c* and dowels **38***a* and **38***b* provide stability to actuator **20** during axial movement.

FIG. **6**A is a front perspective view of cover **40** of flip-top assembly **100** as shown in FIG. **1**A, in accordance with an embodiment of the present invention. FIG. **6**B is a front planar view of cover **40** shown in FIG. **6**A, FIG. **6**C is a bottom planar view of cover **40** shown in FIG. **6**A, and FIG. **6**D is a cross-sectional view of cover **40** shown in FIG. **6**A taken generally along line **6**D-**6**D in FIG. **6**C. In this exemplary embodiment, cover **40** comprises cover rear opening surface **41**, finger ridge **42**, cover front opening **43**, lid curved receptacles **44***a* and **44***b*, vertical guides **46***a* and **46***b*, cover apexes **48***a* and **48***b*, and cover top cavities **49***a* and **49***b*. Cover **40** is generally a circular tube arranged to enclose a canister containing a substance under pressure. Cover front opening **43** enables nozzle **24** of actuator **20** to direct any dispelled material outward through flip-top assembly **100**. Cover front opening **43** is slightly elongated in the axial direction to accommodate the upward and downward axial movement of nozzle **24** when a user depresses actuator **20** to actuate the expulsion of the material within aerosol canister **50** and then releases actuator **20** to cease the expulsion of material. Finger ridge **42** is a generally horizontal bump molded into cover **40** in order to increase the user's comfort while gripping flip-top assembly **100** and indicate the direction of nozzle **24**. It should be appreciated, however, that finger ridge **42** does not have to be molded into cover **40**. Instead, for example, finger ridge **42** can be added to cover **40** as a separate component after cover **40** is molded. Lid curved receptacles **44***a* and **44***b* are operatively arranged to receive arms **12***a* and **12***b*, respectively, such that lid **10** is at least partially rotatable with respect to cover **40**. Vertical guides **46***a* and **46***b* help position pivot-spring **30** within cover **40**. When inserting pivot-spring **30** into cover **40**, vertical curvatures **36***a* and **36***b* are slid along vertical guides **46***a* and **46***b*, respectively. Dowels **38***a* and **38***b* engage cover top cavities **49***a* and **49***b*, respectively. Cover apexes **48***a* and **48***b* provide a pivot point for tongue **32** during elastic deformation. When the user's thumb is inserted into rear opening **102**, lid **10** is lifted and lid front edge **18** engages tongue **32**. Tongue **32** elastically bends around cover apexes **48***a* and **48***b* (see FIG. **1**B).

FIG. **7** is an exploded view of flip-top assembly **100** shown in FIG. **1**A, in accordance with an embodiment of the present invention. Aerosol canister **50** (not shown) is inserted axially upwards through the bottom of cover **40**. The stem of aerosol canister **50** is inserted into receiving port **26** of actuator **20**. Nozzle **24** directs the discharged contents of aerosol canister **50** through tongue opening **33** and cover front opening **43**.

Arms **12***a* and **12***b* fit into lid curved receptacles **44***a* and **44***b*, respectively, such that lid **10** is rotatable about axis X-X. In this exemplary embodiment, actuator **20** is assembled on pivot-spring **30** and non-rotatably secured by dowels **38***a* and **38***b* and guides **34***a*, **34***b*, and **34***c*. Curvatures **22***a* and **22***b* abut against dowels **38***a* and **38***b*, respectively. Guides **34***a*, **34***b*, and **34***c* abut against actuator wall **28** in three locations (e.g., at 90°, 180°, and 270°). Nozzle **24** aligns with tongue opening **33**. When assembled, actuator **20** is axially moveable and nozzle **24** always aligns with tongue opening **33**. Pivot-spring **30** is inserted in cover **40** such that lid tabs **37***a* and **37***b* enclose arms **12***a* and **12***b* in lid curved receptacles **44***a* and **44***b*, respectively. Vertical curvatures **36***a* and **36***b* abut against vertical guides **46***a* and **46***b* (see FIG. **6**D), respectively.

FIGS. **8**A-**8**C illustrate aerosol canister **50** housed within flip-top assembly **100** and in the process of being used by a user. The user is shown holding flip-top assembly **100**. The user's index finger is located just below finger ridge **42**. To dispel the contents of aerosol canister **50**, the user's thumb is inserted into rear opening **102** and depresses actuator **20**.

FIG. **8**A is a front perspective view of flip-top assembly **100** being used, with the user's thumb partially inserted into rear opening **102**, in accordance with an embodiment of the present invention. Lid **10** is biased toward its closed position (shown in FIG. **1**A) by tongue **32** of pivot-spring **30**. The user must overcome the force of tongue **32** to open lid **10**. The user can use a single substantially linear motion to insert the thumb into rear opening **102**. The ease of a single substantially linear motion is especially important when aerosol canister **50** contains pepper spray and the user is presented with a threat.

FIG. **8**B is a front perspective view of flip-top assembly **100**, with the user's thumb fully inserted into rear opening **102**, in accordance with an embodiment of the present invention. The tip of the user's thumb is in position to

depress actuator **20**. Lid **10** provides some downward force on the user's thumb because lid **10** is biased toward the closed position by tongue **32** of pivot-spring **30**. Tongue **32** elastically bends around cover apexes **48***a* and **48***b*.

FIG. **8**C is a front perspective view of flip-top assembly **100** being used, with the user's thumb fully inserted into rear opening **102** and depressing actuator **20**, in accordance with an embodiment of the present invention. In this position, lid **10** provides some downward force on the user's thumb because lid **10** is biased toward the closed position by tongue **32** of pivot-spring **30**. While the user is depressing actuator **20** in a downward axial direction, finger ridge **42** helps prevent cover **40** from slipping in the user's hand. FIG. **8**C shows material being dispelled from aerosol canister **50** represented by dotted lines.

It will be appreciated that various aspects of the disclosure above and other features and functions, or alternatives thereof, may be desirably combined into many other different systems or applications. Various presently unforeseen or unanticipated alternatives, modifications, variations, or improvements therein may be subsequently made by those skilled in the art which are also intended to be encompassed by the following claims.

LIST OF REFERENCE NUMERALS

10 Lid
12*a* Arm
12*b* Arm
14*a* Lateral Lid Wing
14*b* Lateral Lid Wing
16*a* Leg
16*b* Leg
18 Lid Front Edge
19 Lid Rear Opening Surface
20 Actuator
22*a* Curvature
22*b* Curvature
24 Nozzle
25 Bottom Surface
26 Receiving Port
28 Actuator Wall
30 Pivot-Spring
32 Tongue
33 Tongue Opening
34*a* Guide
34*b* Guide
34*c* Guide
35 Flange
36*a* Vertical Curvature
36*b* Vertical Curvature
37*a* Lid Tab
37*b* Lid Tab
38*a* Dowel
38*b* Dowel
40 Cover
41 Cover Rear Opening Surface
42 Finger Ridge
43 Cover Front Opening
44*a* Lid Curved Receptacle
44*b* Lid Curved Receptacle
46*a* Vertical Guide
46*b* Vertical Guide
48*a* Cover Apex
48*b* Cover Apex
49*a* Cover Top Cavity
49*b* Cover Top Cavity
50 Aerosol Canister
100 Flip-Top Assembly
102 Rear Opening
104 Interface
106 Spring Interface

What is claimed is:

1. A pivot-spring assembly for dispersing contents from an aerosol canister, comprising:
- a cover having an opening;
- a lid;
- a pivot-spring operatively arranged in the cover to rotatably secure the lid to the cover, the pivot-spring comprising:
  - a flexible tongue;
  - at least one tab operatively arranged to at least partially enclose at least one arm of the lid;
  - at least one dowel; and,
  - at least one guide, wherein the flexible tongue, the at least one lid tab, the at least one dowel, and the at least one guide are vertically arranged on a flange; and,
- an actuator having a nozzle and non-rotatably secured on the pivot-spring, the actuator operatively arranged to engage a stem of the aerosol canister and disperse contents from the aerosol canister.

2. The pivot-spring assembly as recited in claim **1**, wherein the flexible tongue is operatively arranged to elastically deform when the lid is in an opened position.

3. The pivot-spring assembly as recited in claim **2**, wherein the flexible tongue is operatively arranged to bias the lid to a closed position.

4. The pivot-spring assembly as recited in claim **2**, wherein the actuator is axially movable along the at least one dowel and the at least one guide.

5. The pivot-spring assembly as recited in claim **1**, wherein the cover comprises a finger ridge.

6. The pivot-spring assembly as recited in claim **2**, wherein the flexible tongue is made of plastic.

7. A case for a canister capable of dispelling material, comprising:
- a main body to house the canister, the main body having a front aperture;
- a top lid to cover the main body, the top lid having at least one arm;
- a spring non-rotatably secured to the main body and rotatably secured to the top lid, the spring comprising:
  - a flexible tongue;
  - at least one lid tab operatively arranged to at least partially enclose the at least one arm;
  - at least one dowel; and,
  - at least one guide, wherein the flexible tongue, the at least one lid tab, the at least one dowel, and the at least one guide are vertically arranged on a flange; and,
- an actuator to direct dispelled material from the canister out of the main body through the front aperture.

8. The pivot-spring assembly as recited in claim **7**, wherein the flexible tongue is operatively arranged to elastically deform when the top lid is in an opened position.

9. The case as recited in claim **7**, wherein the flexible tongue asserts a biasing torque on the top lid toward a closed position.

10. The pivot-spring assembly as recited in claim **7**, wherein the actuator is axially movable along the at least one dowel and the at least one guide.

11. The pivot-spring assembly as recited in claim **7**, wherein the main body comprises a finger ridge.

12. The pivot-spring assembly as recited in claim 7, wherein the flexible tongue is made of plastic.

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