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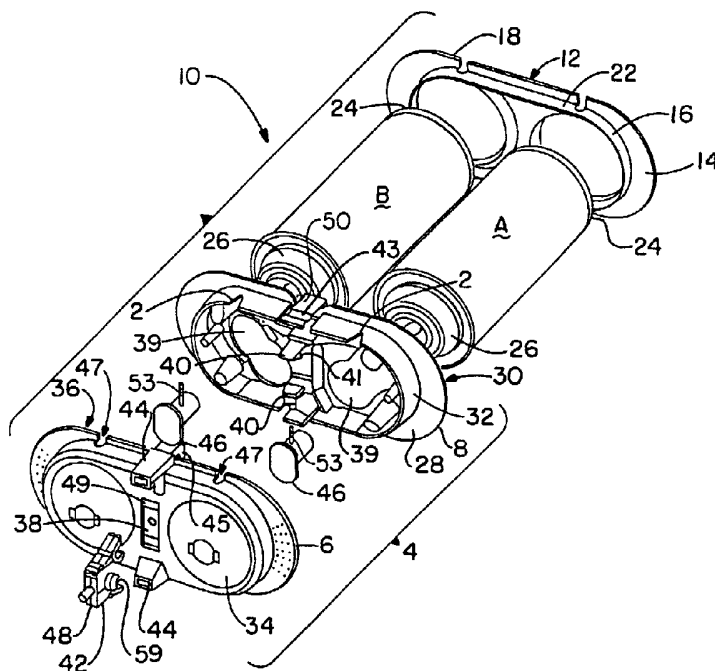
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- (71) Applicant: **FOMO PRODUCTS, INC.** [US/US]; 2775 Barber Road, Norton, OH 44203 (US).
- (72) Inventors: **KARR, Michael**; 4440 Great Smokey Circle, Medina, OH 44256 (US). **HURRAY, Paul**; 1392 Hadden Circle, Akron, OH 44313 (US). **LEYSHON, Frank**; 803 North Seventh Street, Cambridge, OH 43725 (US).
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(54) Title: PUSH BUTTON FOAM DISPENSING DEVICE



(57) Abstract: The invention relates to a fluid dispensing device incorporating a push-button actuator normally biased in the closed position, a housing for receiving the aerosol canisters and a carrying case for the entire assembly. Activation is achieved by longitudinal axial compression followed by snapping engagement of the housing fitted about the aerosol valves which depresses the aerosol valves.



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Push Button Foam Dispensing Device

Technical Field

The invention relates generally to a pressurized chemical dispensing apparatus, and more particularly to a hand-held apparatus particularly suitable for use in dispensing two-component systems, more particularly urethane foams, wherein the apparatus includes a push button dispensing assembly interconnected to the canister supplies. Optionally the apparatus is contained within a kit which permits one-handed operation.

Background of the Invention

The use of urethane and similar expandable foams has increased over the years for numerous applications. Urethane foams are well known as having desirable characteristics useful for many applications, such as insulation. Urethane foams are also well known for their compatibility with low cost blowing agents which allow such foams to be applied by way of pressurized containers as well as their natural adhesive qualities which allow such foams to bond excellently to any number of substrates. Typically, urethane foams are the reaction product of two individual components, one being an isocyanate and the other being a resin. These two individual components when reacted together under pressure, give the resultant foam various chemical compositions, each such composition having significant utility in a particular application. Thus, urethane foams may be specially formulated to provide a final foam which is rigid, semi-rigid or flexible.

Closed cell urethane foams have particular utility in building and structural insulation while open cell urethane foams have particular utility in packaging or non-insulating purposes. Regardless of cell structure, two-component urethane foams are typically formed by mixing the two or more individual foam components together when the foam components exit respective supply containers. Individual material supply tubes leading from each foam component container convey the foam components to a foam dispensing apparatus, such as a nozzle.

There are numerous applications in which polyurethane foam is used at a site for any number of applications in addition to its traditional use in the building trades as a source of insulation. Recently polyurethane foam has become used with increasing frequency as a sealant in the building trades for sealing spaces between window and door frames and the like and as an adhesive for glueing flooring and roof tiles and the like. The polyurethane foam for such in-situ applications is typically supplied as a one-

1 component froth foam or a two-component froth foam. A one-component foam means
2 that both the resin and isocyanate for the foam is supplied in a single pressurized
3 container and dispensed from the container through a valve or gun attached to the
4 container. A two-component "froth" foam means that one component is supplied in one
5 pressurized container, typically the "A" container (i.e., polymeric isocyanate,
6 fluorocarbons etc) while the resin is supplied in a second pressurized container,
7 typically the "B" container (i.e., polyols, catalyst, flame retardants etc.). Typically two-
8 component kits use pressurized cylinders which are connected by hoses to a
9 dispensing gun. There are advantages and disadvantages to one-component and two-
10 component foams. One of the advantages of the two-component system is its relatively
11 long shelf life resulting from the fact that the chemicals are not mixed until they
12 encounter one-another in the dispensing gun.

13 One application for a hand-held, portable two-component polyurethane froth
14 foam kit exists in the mining industry. In the event of a fire in a shaft being tunneled,
15 standard procedure is to extinguish the fire by sealing the shaft with a fire "door" and
16 then pumping out from the shaft sealed by the door, the air in the shaft to extinguish the
17 fire. It has been found that polyurethane foam is excellent for sealing the bulkhead or
18 door to the tunnel. As already noted, the polyurethane foam has an adhesive
19 characteristic and the foam can be formulated to provide a relatively quick tack free time
20 with little permeability for gas escape. Surprisingly, the fire door is not adjacent an open
21 flame, and whatever temperature the gases exhausted from the shaft are, they are not
22 sufficiently high in temperature to disintegrate the foam. Because of its long shelf life, a
23 two-component foam is ideal for this application. Standard procedure is to simply
24 provide two-component kits at the shaft being tunneled to seal and secure the fire door
25 or bulkhead to the shaft in the event of a fire.

26 Different packaging arrangements are used by different manufacturers. Many
27 two-component kit packages use some form of tray with knock-out holes through which
28 the hoses extend after the box is opened and the hoses attached to the cylinder's
29 valved fitting. However, there is at least one two-component polyurethane froth foam
30 box which utilizes cylinders equipped with "dip tubes" which extend through the outlet
31 valve from the inside bottom of the cylinder. This allows the cylinders to be placed
32 upright in the box instead of upside down. This carton does not use a tray and has the
33 hoses extend out the side of the box through knock-out plugs. The carton is carried by a

1 strap affixed to the top cover. The top cover is a flap which has to be opened and closed
2 to gain access to the cylinder's valve after the hoses are connected to the cylinders.

3 What has been missing from the Prior Art however, is a foam dispensing device
4 which couples both fail-safe operation by a two-stage activation procedure, coupled with
5 a dispensing mechanism whereby the dispensing means is biased into a "closed"
6 position.

7 ***Summary of the Invention***

8 The invention is directed to an easily assembled foam dispensing apparatus in
9 which two foam component supply containers are held in place by an carrier assembly
10 which includes a push-button dispensing assembly which is separate from the carrier
11 assembly.

12 In one principal aspect of the present invention, the entire dispensing apparatus
13 and carrier unit is contained in a carrying case. The carrying case contains two foam
14 component supply canisters and an actuating assembly in the form of two foam
15 component supply tubes, each having a predefined length which is sufficient to permit a
16 dispensing assembly attached to the supply tubes to be operated remotely from the
17 carrying case while interconnected thereto. The material supply tubes, dispensing
18 assembly and one or more detachable dispensing nozzles are positioned within a
19 designated area within the carrying case so that the apparatus may be sold as a single
20 unit or kit. The case not only functions as a carrier assembly for the dispensing
21 apparatus, but may also function as a shipping container therefor or as a display case.

22 In another principal aspect of the present invention, the dispensing apparatus
23 includes a carrier which holds two foam component supply canisters in place and
24 incorporates an actuating assembly to ensure simultaneous release of the two foam
25 components from their respective supply canisters through foam component supply
26 tubes. The tubes extend to a foam dispenser which includes a dispensing nozzle. The
27 carrier is capable of holding the supply canisters in place in either an upright or inverted
28 orientation depending on whether the canisters have a dip tube contained therein.

29 Accordingly, it is an object of the present invention to provide an improved foam
30 dispensing apparatus having a foam dispensing member interconnected to two foam
31 component supply canisters by a pair of supply tubes, the supply tubes conveying foam
32 components to the foam dispensing member and permitting the dispensing nozzle
33 member to operate detached from the apparatus and operated remotely from the foam
34 supply canisters adjacent a work area.

1 It is another object of the present invention to provide a simple foam dispensing
2 apparatus which can be easily operated by an ordinary consumer in which the
3 apparatus includes a carrier member containing two upright foam component supply
4 containers the carrier member including an actuating assembly having means for
5 aligning a pair of material supply tubes with the foam component supply containers and
6 actuating the same to convey foam components from the supply container to a push-
7 button dispensing member biased in the closed position which upon activation through
8 depression, dispenses the fluid contained within the canisters.

9 These and other objects of the present invention will become more readily
10 apparent from a reading of the following detailed description taken in conjunction with
11 the accompanying drawings wherein like reference numerals indicate the parts and
12 appended claims.

13 ***Brief Description of the Drawings***

14 The invention may take physical form in certain parts and arrangements of parts,
15 a preferred embodiment of which will be described in detail in the specification and
16 illustrated in the accompanying drawings which form a part hereof, and wherein:

17 FIG. 1 is an assembly view of the two component system showing two aerosol
18 cans positioned within a two part top housing plate and a bottom canister positioning
19 plate;

20 FIG. 2 is a perspective view of the bottom side of the canister positioning plate;

21 FIG. 3 is an assembly view of a valve depressor for one aerosol dispensing
22 valve;

23 FIG. 4 is an assembly view of the shut-off valve housing within the dispensing
24 nozzle;

25 FIG. 5 is an assembly view of a push button dispensing nozzle;

26 FIG. 6 is a side elevational view in partial cross-section showing the push button
27 dispensing nozzle in the closed position;

28 FIG. 7 is an enlarged side elevational view in partial cross-section showing the
29 push button dispensing nozzle in a closed position with supplemental outwardly biased
30 spring;

31 FIG. 8 is a reduced top plan view of a carrying case for the aerosol system; and

32 FIG. 9 is a reduced side elevational view of the carrying case of FIG. 8.

Detailed Description of the Invention

Referring now to the drawings wherein the showings are for purposes of illustrating the preferred embodiment of the invention only and not for purposes of limiting the same, the Figures show a two-component portable polyurethane foam apparatus, optionally for inclusion in kit form. It is to be understood that the words "container" or "box" or "case" or "kit" are, for purposes of this description, identical and are used interchangeably throughout the specification in describing the combination of the two-component polyurethane foam dispensing system plus carrying case.

The portable two-component polyurethane foam kit includes two cylinders, typically an "A" cylinder, which contains a polymeric isocyanate and a "B" cylinder, which contains a polyol amine or resin. Formulations within each cylinder can vary significantly depending on the application. For example, adhesive applications produce a polyurethane foam which has very little, if any, "foam" while insulation applications use a formulation which produces a significant rise in the foam. Usually, portable, hand carried two-component polyurethane foam kits dispense the chemicals from the dispensing apparatus as a "froth" having a consistency or texture similar to that dispensed from an aerosol can of shaving cream. All such variations in the formulations of polyurethane and whether the chemicals are dispensed as a spray or froth are included within the scope of the present invention so long as the formulations are supplied in a portable, hand-carry form.

As illustrated in FIG. 1, a two component fluid (e.g., polyurethane foam) dispensing holder assembly **10** is shown illustrating an "A" aerosol component and a "B" aerosol component. The dispensing holder assembly **10** has an elongated oval canister positioning plate **12** having a top **14** and a bottom **18** side as well as an elongated oval two component top housing assembly **4** having an upper housing **6** and a lower housing **8**. Canister positioning plate **12** has a pair of raised circular ridges **16** on the top side **14** of the canister positioning plate which are dimensioned for frictional engagement with either of the circular aerosol can bottoms **24**. Optionally, the raised circular ridges will have an inwardly facing notch (not shown) at a bottom thereof for mating engagement with the peripherally extending canister lip when fully inserted into canister positioning plate **12**. Optionally a pair of supporting ribs **22** connect each raised circular ridge at a peripheral point thereupon. For ease of use in a multilingual environment, bottom side **18** of canister positioning plate **12** has a pair of hands **20** imprinted or molded thereunto to illustrate the location of an end-user's hands to effect longitudinal axial actuating

1 movement of the valves positioned upon aerosol canisters "A" and "B" for the aerosol
2 components which make up the two component polyurethane foam. Upon longitudinal
3 axial compression, the aerosol system is transformed from its inactive state into an
4 active state ready-for-use due to corresponding longitudinal axial compressive
5 movement of the valves positioned at the top of each aerosol can.

6 Bottom housing **8** of the two component top housing assembly **4** will have a pair
7 of openings **39** for insertion of the top (valve side) of canisters "A" and "B" through
8 bottom side **30** of lower housing **8** with securing frictional engagement with a circular
9 ridge on each dome-shaped circular top **26** of aerosol cans "A" and "B" as well as two
10 pairs of resilient flexible upwardly-directioned clips **40**(inner), **50**(outer). Outer clips **50**
11 have a detent **43** for engagement with inwardly facing hook member **45** of downwardly
12 facing latch member **44** which when engaged with detent **43**, secure the top **6** and
13 bottom **8** housings of two component top housing assembly **4** together at a predefined
14 spaced apart distance when the dispensing system is in its inactivated state. When
15 transitioning from the inactive to the active state, hook **45** of latch member **44** is
16 disengaged from detent **43** by inward compressive movement of outer clips **50** coupled
17 with further longitudinal axial compression. Complete aerosol activation via aerosol
18 valve depression is achieved when mating engagement is effected between protruding
19 lips **41** on inner clips **40** with lowered top surface **38** after penetration through a pair of
20 receiving apertures **49** disposed on opposed ends of lowered surface **38** and inwardly
21 disposed oval ridge **32** of bottom housing **8** moves via sliding engagement toward the
22 top of raised portion **34**. A pair of indentations **2** are disposed within oval ridge **32** and
23 positioned in proximity to ribbed exit port **53** positioned at the top of each outlet for each
24 aerosol can for egress of a flexible plastic tube **52,54** affixed to each aerosol dispensing
25 valve **46** positioned on top of each valve stem of each aerosol cylinder.

26 As illustrated in FIG. 3, each aerosol dispensing valve **46** has an apertured
27 bottom dimensioned for frictional engagement with an outer periphery of a valve stem of
28 the aerosol can and a ribbed exit port **53** for affixing a plastic hose **52,54** thereto via
29 securing rings **51** for transporting the contents of either aerosol can "A" or "B" to a
30 dispensing nozzle as illustrated in FIGS. 4-5, by egress of said tubing through
31 indentations **2** of oval ridge **32** and cut-out portions **47** of raised portion **34** of upper
32 housing **6**. Each tube enters an upper **92** and lower **94** finned rear end **72** of the
33 dispenser **100** through a pair of ribbed inlet ports **64** and secured by a pair of securing
34 rings **63** for ingress of fluid into chamber **56** having a vertically oriented axial bore **55**

1 disposed therethrough (see Fig. 4), a pair of ribbed inlet ports **64** and one outlet bore **67**
2 as illustrated in FIGS. 5-7. Each aerosol dispensing valve **46** is securedly fastened to
3 raised portion **34** by retaining clips (not shown) extending downwardly from the raised
4 portion and which engage a peripheral edge of the dispensing valve.

5 Dispenser **100** is comprised of a finned rear segment **72**, a chamber **56**, a
6 centrally apertured **88** front nozzle **70** having an exit bore **90**, an upper retaining
7 assembly **62** and a push-bottom **58** actuator. Front nozzle **70** sealed within the
8 dispenser by frictional or rotational screw-like engagement of rearwardly protruding
9 centrally apertured nozzle inlet **66** with chamber exit bore **67** within chamber **56**. In its
10 fully inserted position, laterally and peripherally extending shelf **68** of nozzle **70** abuts
11 front shelf **74** of finned rear segment **72** and front shelf **80** of upper retaining assembly
12 **62**. Disposed within a forward compartment of rear segment **72** is chamber **56** held in
13 place via insertion of at least one laterally extending projection into a mating recess in
14 the forward compartment. Push-button **58** actuator is positioned and retained within the
15 foam dispenser by laterally extending shelves or wings **78** which abut the apertured
16 overlapping top surface of upper retaining assembly **62** and retaining clips **104**. Push-
17 button valve **58** is biased in its closed position, i.e., laterally extending apertures **84**
18 within circular projections **82** are not in fluid alignment with either the centrally disposed
19 inlet bores **102** within ribbed inlet tubes **64** or chamber exit bore **67**. Resilient upward
20 biasing is effected by the incorporation of extension piece **96** in contact with a bottom
21 split wall **98** of the dispensing nozzle defining movable resiliently flexible flap **76** of rear
22 segment **72**. Only upon positive downward engagement by a user of the nozzle will the
23 horizontal laterally extending apertures **84** move into fluid alignment with inlet bores **102**
24 and chamber exit bore **67** and nozzle entrance bore **88** egressing through nozzle tip **90**.
25 In an optional embodiment the nozzle will further incorporate a secondary biasing
26 means, e.g., a spring **99** for insuring that push button **58** remains in a closed position
27 unless purposefully depressed and activated by an end user.

28 As an additional safety feature preventing against accidental or premature
29 activation of the canisters through depression of the valves, a safety insert **48** may be
30 incorporated into the assembly. This insert has a pair of legs **42** with extensions **59**
31 which are insertable into receiving apertures **49** positioned within lowered surface **38**.
32 With the safety inserted, it is not possible for the inner pair of clips **40** to penetrate
33 through apertures **49** for locking engagement with lowered surface **38**.

1 Dispensing holder assembly **10** is often shipped within packaging or shipping
2 container **150**. This foldable container has a pair of sides **152,154** having a pair of
3 recesses **174,178** for securing of aerosol canisters "A" and "B" as well as top segment
4 **156** having a movable tab **168** for affixing onto a display hanger and bottom segment
5 **158**. Each pair of recesses has a bottom **162** and a top **164,166** for receiving the
6 canister positioning plate **12** and upper housing **6** and lower housing **8** component of
7 top housing assembly **4** respectively. Recess **170** is available for storage of dispensing
8 nozzle **100**.

9 When dispensing holder assembly **10** with canisters "A" and "B" is positioned
10 within container **150**, and dispenser **100** is positioned within recess **170**, the end user
11 can operate the entire assembly with one hand after activation of the unit by depressing
12 push-button valve **58** which is exposed through opening **180**. It should be recognized
13 that when the assembly is used in kit form, the aerosol canisters must be in their
14 inverted position, unless the canisters are equipped with a dip tube. This means that in
15 operation, top segment **156** is at the bottom, whereas bottom segment **158** is positioned
16 at the top so as to enable the end-user to effect fluid transfer when depressing push-
17 button valve **58**.

18 While the dispensing holder assembly **10** is preferably used to dispense
19 polyurethane foams, any pressurized fluid (gas, liquid, semi-solid or combinations
20 thereof) is capable of being dispensed. Additionally, the invention is not limited to any
21 one foam or polymer and additionally, is not limited to two canister two-component "A"
22 and "B" systems. When the foam to be dispensed is a one-component system, the
23 dispensing apparatus will operate with two canisters, each containing the same or
24 different one-component compositions, and each canister positioned in the locations
25 identified for the "A" and "B" components previously. In an alternative embodiment, the
26 assembly will function with only one canister, said canister positioned in either of the
27 two locations indicated previously, or positioned more centrally between those locations.

28 This invention has been described in detail with reference to specific
29 embodiments thereof, including the respective best modes for carrying out each
30 embodiment. It shall be understood that these illustrations are by way of example and
31 not by way of limitation.

What is Claimed is:

1. A device for dispensing a fluid comprising:
 - (a) a dispensing housing;
 - (b) a chamber in said housing, said chamber having at least one inlet and at least one outlet, each inlet and each outlet having an essentially centrally disposed bore therethrough;
 - (c) a means for selective activation of said device from a normally biased off position to an open position to enable fluid communication between said at least one inlet [bore] and said at least one outlet wherein said push-button actuator further comprises:
 - (i) at least one essentially cylindrical projection from a top of said actuator, said cylindrical projection having at least one transverse bore extending therethrough;
 - (ii) said at least one transverse bore positioned such that upon at least partial longitudinal axial movement, at least a portion of said at least one transverse bore will be in fluid alignment with at least a portion of said at least one inlet and at least a portion of said at least one outlet;
 - (d) a removable dispensing nozzle having a bore therethrough in fluid communication with said at least one outlet [bore] of said chamber; and
 - (e) a biasing means to bias said selective activation means in said biased off position.
2. The device of claim 1 wherein said at least one cylindrical projection is two cylindrical projections, each projection having one transverse bore.
3. The device of claim 1 which further comprises
 - (a) a push-button retaining means.
4. The device of claim 3 wherein said retaining means comprises
 - (a) an inwardly extending ledge over at least a portion of a pair of laterally and peripherally extending ledges of said push-button actuator.
5. The device of claim 4 wherein said biasing means is
 - (a) a flap in a bottom side of said housing acting in concert with a projection in contact with a tip of said longitudinally axially extending cylindrical projection.
6. The device of claim 1 wherein said biasing means is
 - (a) a spring.

7. The device of claim 6 wherein said biasing means comprises
 - (a) a flap in a bottom side of said housing acting in concert with a projection in contact with a tip of said longitudinally axially extending cylindrical projection and a spring.
8. The device of claim 7 which further comprises
 - (a) a housing for at least one aerosol container.
9. The device of claim 1 wherein said housing for said at least one aerosol container further comprises
 - (a) a bottom plate having at least one raised cylindrical ridge in said plate dimensioned to accommodate a bottom diameter of said at least one aerosol container;
 - (b) a top assembly comprising a lower and an upper housing, said lower housing having an opening dimensioned to accommodate at least partial insertion of a top of said at least one aerosol container, said top assembly further comprising
 - (i) at least one pair of flexible clips which secure said upper and lower housings together upon longitudinal axial compression of said upper and lower housings.
10. The device of claim 9 which further comprises
 - (a) at least one second pair of flexible clips for securing said upper and lower housings of said top assembly in a spaced apart relationship.
11. The device of claim 10 in a kit form, said kit which further comprises an outer housing having
 - (a) a pair of side walls, each side wall having
 - (i) at least one cavity for said at least one aerosol container,
 - (ii) a bottom recess for said upper housing assembly in each side wall, and
 - (iii) a top recess for said plate in each side wall;
 - (b) each side wall in flexible communication with a top wall;
 - (c) one side wall in flexible communication with a bottom wall; and
 - (d) said bottom wall in flexible communication with a closure means.
12. The device of claim 10 wherein said bottom wall further comprises
 - (a) a cavity for said nozzle dispensing device.
13. The device of claim 12 wherein

- (a) said cavity for said nozzle dispensing device has an aperture disposed therein in alignment with said push-button actuator to permit one-handed operation.
14. The device of claim 13 which further comprises
- (a) a housing for a pair of aerosol containers.
15. The device of claim 9 wherein said housing for said pair of aerosol containers further comprises
- (a) a bottom plate having a pair of raised cylindrical ridges in said plate dimensioned to accommodate a bottom diameter of each aerosol container;
- (b) a top assembly comprising a lower and an upper housing, said lower housing having an opening dimensioned to accommodate at least partial insertion of a top of each aerosol container, said top assembly further comprising
- (i) at least one pair of flexible clips which secure said upper and lower housings together upon longitudinal axial compression of said upper and lower housings.
16. The device of claim 15 which further comprises
- (a) at least one second pair of flexible clips for securing said upper and lower housings of said top assembly in a spaced apart relationship.
17. The device of claim 16 wherein said top assembly further comprises a pair of openings to accommodate a pair of tubes emanating from each of a pair of aerosol dispensing valves positioned on each of said aerosol containers.
18. The device of claim 16 in a kit form, said kit which further comprises an outer housing having
- (a) a pair of side walls, each side wall having
- (i) a pair of cavities for each aerosol container,
- (ii) a bottom recesses for said upper housing assembly in each side wall, and
- (iii) a top recesses for said plate in each side wall;
- (b) each side wall in flexible communication with a top wall;
- (c) one side wall in flexible communication with a bottom wall; and
- (d) said bottom wall in flexible communication with a closure means.
19. The device of claim 16 wherein said bottom wall further comprises
- (a) a cavity for said nozzle dispensing device.
20. The device of claim 19 wherein

- (a) said cavity for said nozzle dispensing device has an aperture disposed therein in alignment with said push-button actuator to permit one-handed operation.

21. The device of claim 20 wherein said closure means comprises

- (a) at least one frictionally engaging raised portion with at least one mating recessed portion.

22. A device for dispensing a fluid comprising:

- (a) a dispensing housing;
- (b) a chamber in said housing, said chamber having at least one inlet and at least one outlet, each inlet and outlet having an essentially centrally disposed bore therethrough;
- (c) a means for selective activation of said device from a normally biased off position to an open position to enable fluid communication between said at least one inlet and said at least one outlet of said chamber;
- (d) a dispensing nozzle having a bore therethrough in fluid communication with said at least one outlet of said chamber;
- (e) a biasing means to bias said selective activation means in said biased off position; and
- (f) a housing for at least one aerosol container, said housing further comprising
 - (i) a bottom plate having at least one raised cylindrical ridge in said bottom plate dimensioned to accommodate a bottom diameter of said at least one aerosol container;
 - (ii) a top assembly comprising a lower and an upper housing, said lower housing having an opening dimensioned to accommodate at least partial insertion of a top of said at least one aerosol container, said top assembly further comprising
 - (A) at least one pair of flexible clips which secure said upper and lower housings together upon longitudinal axial compression of said upper and lower housings.

23. The device of claim 22 wherein said means for selective activation further comprises a push-button actuator which further comprises:

- (a) at least one essentially cylindrical projection from said top, said cylindrical projection having at least one transverse bore extending therethrough,

- (i) said at least one transverse bore positioned such that upon at least partial longitudinal axial movement, at least a portion of said at least one transverse bore will be in fluid alignment with at least a portion of said at least one inlet [bore] and at least a portion of said at least one outlet.
24. The device of claim 23 wherein said at least one essentially cylindrical projection is two cylindrical projections, each projection having one transverse bore.
25. The device of claim 23 which further comprises
- (a) a push button retaining means.
26. The device of claim 25 wherein said retaining means comprises
- (a) an inwardly extending ledge over at least a portion of a pair of laterally and peripherally extending ledges of said push-button actuator.
27. The device of claim 23 wherein said biasing means is
- (a) a flap in a bottom side of said housing acting in concert with said at least one projection in contact with a tip of said at least one longitudinally axially extending cylindrical projection.
28. The device of claim 23 wherein said biasing means is
- (a) a spring.
29. The device of claim 23 wherein said biasing means comprises
- (a) a flap in a bottom side of said housing acting in concert with a projection in contact with a tip of said longitudinally axially extending cylindrical projection and a spring.
30. The device of claim 23 in a kit form, said kit which further comprises an outer housing having
- (a) a pair of side walls, each side wall having
 - (i) at least one cavity for said at least one aerosol container,
 - (ii) a bottom recess for said upper housing assembly in each side wall, and
 - (iii) a top recess for said plate in each side wall;
 - (b) each side wall in flexible communication with a top wall;
 - (c) one side wall in flexible communication with a bottom wall; and
 - (d) said bottom wall in flexible communication with a closure means.
31. The device of claim 30 wherein said bottom wall further comprises
- (a) a cavity for said nozzle dispensing device.
32. The device of claim 31 wherein

- (a) said cavity for said nozzle dispensing device has an aperture disposed therein in alignment with said push-button actuator to permit one-handed operation.
33. The device of claim 23 which further comprises
- (a) a housing for a pair of aerosol containers.
34. The device of claim 33 wherein said housing for said pair of aerosol containers further comprises
- (a) a bottom plate having a pair of raised cylindrical ridges in said plate dimensioned to accommodate a bottom diameter of each aerosol container;
- (b) a top assembly comprising a lower and an upper housing, said lower housing having an opening dimensioned to accommodate at least partial insertion of a top of each aerosol container, said top assembly further comprising
- (i) at least one pair of flexible clips which secure said upper and lower housings together upon longitudinal axial compression of said upper and lower housings.
35. The device of claim 34 which further comprises
- (a) at least one second pair of flexible clips for securing said upper and lower housings of said top assembly in a spaced apart relationship.
36. The device of claim 34 wherein said top assembly further comprises a pair of openings to accommodate a pair of tubes emanating from each of a pair of aerosol dispensing valves positioned on each of said aerosol containers.
37. The device of claim 34 in a kit form, said kit which further comprises an outer housing having
- (a) a pair of side walls, each side wall having
- (i) a pair of cavities for each aerosol container,
- (ii) a bottom recesses for said upper housing assembly in each side wall, and
- (iii) a top recesses for said plate in each side wall;
- (b) each side wall in flexible communication with a top wall;
- (c) one side wall in flexible communication with a bottom wall; and
- (d) said bottom wall in flexible communication with a closure means.
38. The device of claim 37 wherein said bottom wall further comprises
- (a) a cavity for said nozzle dispensing device.
39. The device of claim 38 wherein

- (a) said cavity for said nozzle dispensing device has an aperture disposed therein in alignment with said push-button actuator to permit one-handed operation.

40. The device of claim 39 wherein said closure means comprises

- (a) at least one frictionally engaging raised portion with at least one mating recessed portion.

41. A kit for dispensing a fluid comprising:

- (a) a dispensing housing;
- (b) a chamber in said housing, said chamber having at least one inlet and at least one outlet, each inlet and outlet having an essentially centrally disposed bore therethrough;
- (c) a means for selective activation of said device from a normally biased off position to an open position to enable fluid communication between said at least one inlet and said at least one outlet;
- (d) a dispensing nozzle having a bore therethrough in fluid communication with said at least one outlet of said chamber;
- (e) a biasing means to bias said selective activation means in said biased off position; and
- (f) a housing for at least one aerosol container, said housing further comprising
 - (i) a bottom plate having at least one raised cylindrical ridge in said bottom plate dimensioned to accommodate a bottom diameter of said at least one aerosol container;
 - (ii) a top assembly comprising a lower and an upper housing, said lower housing having an opening dimensioned to accommodate at least partial insertion of a top of said at least one aerosol container, said top assembly further comprising
 - (A) at least one pair of flexible clips which secure said upper and lower housings together upon longitudinal axial compression of said upper and lower housings; and
- (g) a carrying case comprising
 - (i) a pair of side walls, each side wall having
 - (A) at least one cavity for said at least one aerosol container,
 - (B) a bottom recess for said upper housing assembly in each side wall,
 - (C) a top recess for said plate in each side wall,

- (ii) each side wall in flexible communication with a top wall;
 - (iii) one side wall in flexible communication with a bottom wall; and
 - (iv) said bottom wall in flexible communication with a closure means.
42. The device of claim 41 wherein said means for selective activation further comprises a push-button actuator which further comprises:
- (a) at least one essentially cylindrical projection from said top, said cylindrical projection having at least one transverse bore extending therethrough,
 - (i) said at least one transverse bore positioned such that upon at least partial longitudinal axial movement, at least a portion of said at least one transverse bore will be in fluid alignment with at least a portion of said at least one inlet and at least a portion of said at least one outlet.
43. The device of claim 42 wherein said at least one essentially cylindrical projection is two cylindrical projections, each projection having one transverse bore.
44. The device of claim 42 which further comprises
- (a) a push-button retaining means.
45. The device of claim 44 wherein said retaining means comprises
- (a) an inwardly extending ledge over at least a portion of a laterally and peripherally extending ledge of said push-button actuator.
46. The device of claim 42 wherein said biasing means is
- (a) a flap in a bottom side of said housing acting in concert with a projection in contact with a tip of said longitudinally axially extending cylindrical projection.
47. The device of claim 42 wherein said biasing means is
- (a) a spring.
48. The device of claim 42 wherein said biasing means comprises
- (a) a flap in a bottom side of said housing acting in concert with a projection in contact with a tip of said longitudinally axially extending cylindrical projection and a spring.
49. The device of claim 42 which further comprises
- (a) at least one second pair of flexible clips for securing said upper and lower housings of said top assembly in a spaced apart relationship.
50. The device of claim 42 wherein said bottom wall further comprises
- (a) a cavity for said nozzle dispensing device.
51. The device of claim 50 wherein

- (a) said cavity for said nozzle dispensing device has an aperture disposed therein in alignment with said push-button actuator to permit one-handed operation.

52. The device of claim 42 which further comprises

- (a) a housing for a pair of aerosol containers.

53. The device of claim 52 wherein said housing for said pair of aerosol containers further comprises

- (a) a bottom plate having a pair of raised cylindrical ridges in said plate dimensioned to accommodate a bottom diameter of each aerosol container;
- (b) a top assembly comprising a lower and an upper housing, said lower housing having an opening dimensioned to accommodate at least partial insertion of a top of each aerosol container, said top assembly further comprising
 - (i) at least one pair of flexible clips which secure said upper and lower housings together upon longitudinal axial compression of said upper and lower housings.

54. The device of claim 53 which further comprises

- (a) at least one second pair of flexible clips for securing said upper and lower housings of said top assembly in a spaced apart relationship.

55. The device of claim 53 wherein said top assembly further comprises

- (a) a pair of openings to accommodate a pair of tubes emanating from each of a pair of aerosol dispensing valves positioned on each of said aerosol containers.

56. The device of claim 53 wherein said bottom wall further comprises

- (a) a cavity for said nozzle dispensing device.

57. The device of claim 56 wherein

- (a) said cavity for said nozzle dispensing device has an aperture disposed therein in alignment with said push-button actuator to permit one-handed operation.

58. The device of claim 57 wherein said closure means comprises

- (a) at least one frictionally engaging raised portion with at least one mating recessed portion.

