

Sept. 24, 1968

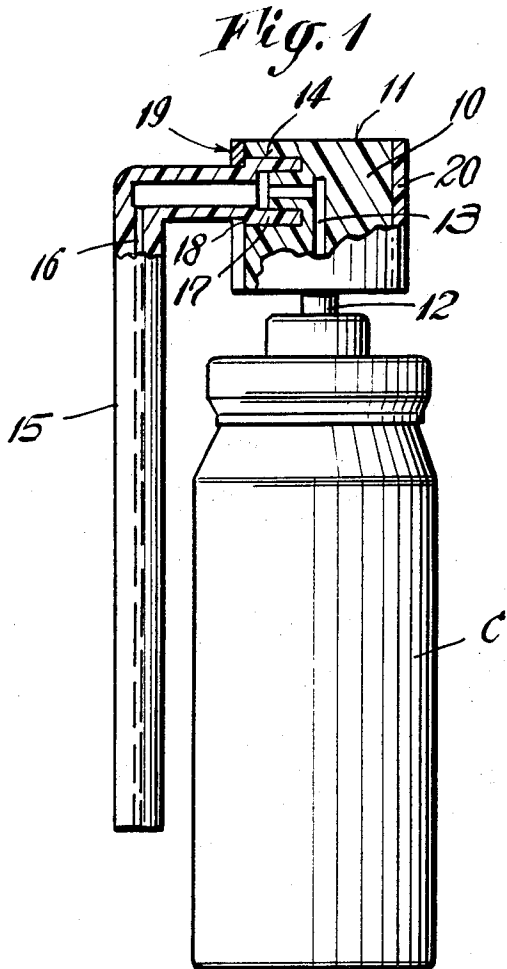
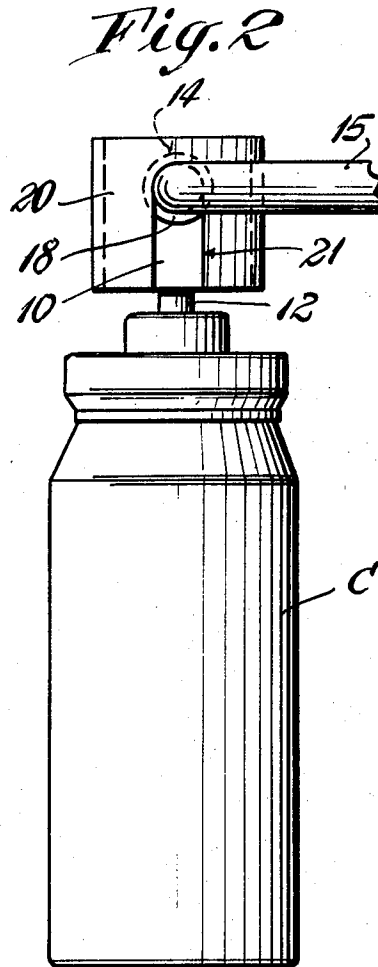
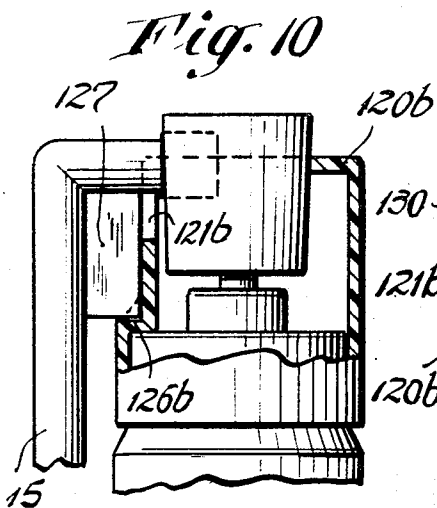
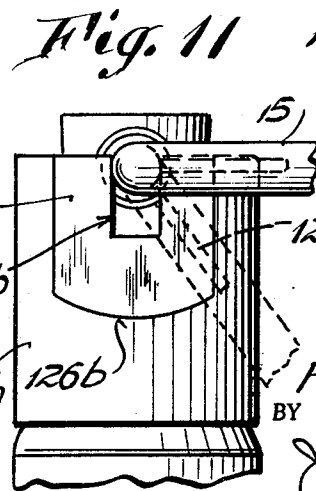
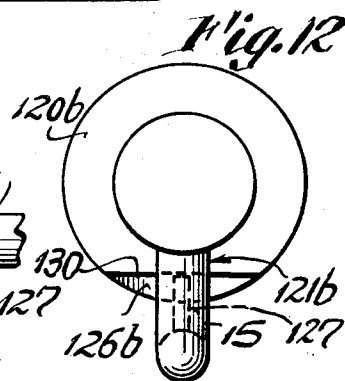
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3,402,862

DIRECTIONAL DISPENSER FOR MATERIALS UNDER PRESSURE

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2 Sheets-Sheet 1



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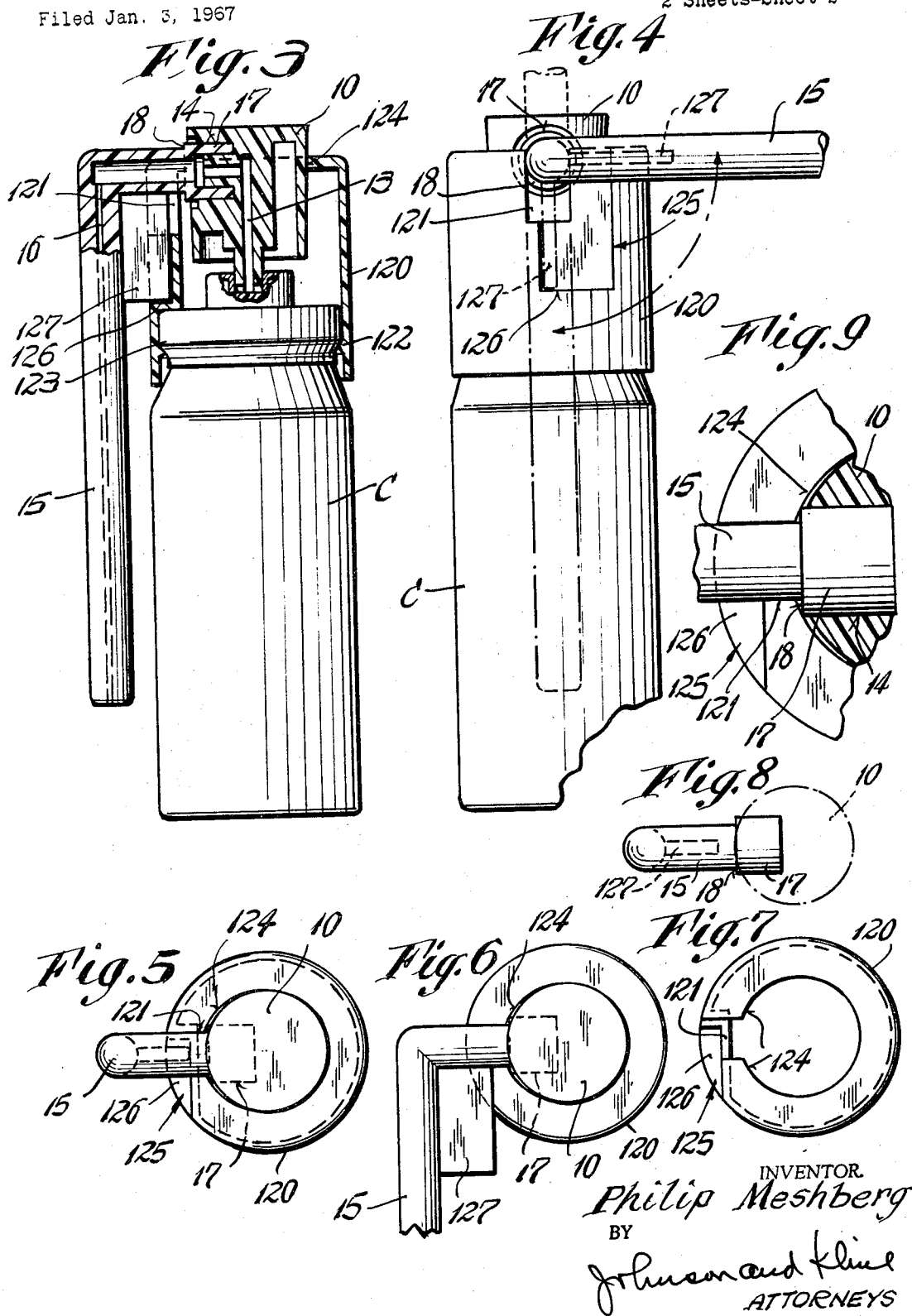
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DIRECTIONAL DISPENSER FOR MATERIALS UNDER PRESSURE

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3,402,862 DIRECTIONAL DISPENSER FOR MATERIALS UNDER PRESSURE

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9 Claims. (Cl. 222-402.11)

ABSTRACT OF THE DISCLOSURE

A dispensing button for controlling the dispensing of material under pressure from a container and having a directional tube provided with a cylindrical end rotatable in a socket in the button and a sleeve surrounding the button and engaging an annular shoulder on the tube adjacent the cylindrical end to prevent accidental displacement of the tube from the socket. The sleeve may also form an outboard bearing for the button and/or tube to support them against lateral movement relative to the container.

This invention is an improvement over my U.S. Patent No. 3,148,806 wherein the directional button has a bent tube having one end rotating in a socket but there is no means to prevent the tube from being accidentally withdrawn from the socket. Also the button is supported on the valve actuator or stem and under some circumstances places an undue lateral strain thereon during the operation thereof or the adjustment of the tube on the button.

The present invention solves these problems by providing means on the button for locking the directional tube in the socket against accidental withdrawal and, by providing when necessary, an outboard bearing means for stabilizing the button and directional tube during adjustment and use.

This is accomplished by providing the tube with a shoulder adjacent the cylindrical end thereof rotatably positioned in the socket on the button and by providing a member overlapping the shoulder to prevent the tube from being accidentally withdrawn from the button. As preferred, this member is a sleeve surrounding the button.

If the occasion requires support for the button against lateral displacement, the sleeve is fixed to the container and has a portion slidably receiving the button to support it for axial reciprocation. The sleeve has an open-ended elongate slot aligned with the socket on the button to receive the tube with the inner walls of the sleeve adjacent the slot overlapping the shoulder on the tube and holding the tube in the socket in all operative positions of the button. If desired the slot can have a width substantially equal to the diameter of the tube to provide a bearing therefor as the tube is rotated in the socket to various dispensing positions.

Other features and advantages of the invention will be apparent from the specification and claims when considered in connection with the accompanying drawings in which:

FIGURE 1 is a side view, partly in section, of the invention.

FIG. 2 is a front view of FIG. 1 showing the dispensing tube in dispensing position.

FIG. 3 is a view similar to FIG. 1 of another form of the invention showing the dispensing tube in non-dispensing position.

FIG. 4 is a front view of FIG. 3 showing the dispensing tube in dispensing position.

FIG. 5 is a top view of FIG. 3.

FIG. 6 is a top view of FIG. 4.

FIG. 7 is a top view of the sleeve.

FIG. 8 is a top view of the dispensing stem with the button in dot-and-dash lines.

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FIG. 9 is an enlarged fragmentary view, partly in section, showing the overlap of the abutment on the tube by the sleeve.

FIG. 10 is a view, partly in section, of another form of tube blocking means.

FIG. 11 is a front view of FIG. 10.

FIG. 12 is a top view of FIG. 10.

In the form of the invention shown in FIGS. 1 and 2 there is a valve actuating button 10. The button is normally held in the non-dispensing position of FIG. 1 and has an actuating portion 11 at one end to which pressure is applied to move the button inwardly to a dispensing position. The other end of the button is connected to the end of a valve operating member or portion 12 which extends into a container C to operate the usual valve (not shown) when the button is in dispensing position to control the flow of material under pressure from the container. The button, as shown in FIG. 1, has a passage 13 for conducting the material from the container to a cylindrical socket 14 in the sidewall of the button.

An elongate directional dispensing tube 15, preferably a bent tube, has a longitudinal passage 16 therein through which the material flows and has a cylindrical end portion 17 rotatably received in the socket with the passage 16 in communication with the passage 13 to dispense the material from the container in the various rotative positions of the tube with respect to the button.

In accordance with the present invention means is provided for preventing the tube from being accidentally withdrawn from the socket. As illustrated, the tube is provided with an outwardly facing shoulder 18 at the end of the cylindrical portion 17 and a member 19 on the button overlaps and engages the shoulder 18. While this member can take various forms, it is preferred to form it as a sleeve 20 surrounding the button.

To facilitate the assembly, the sleeve has an elongate open-ended slot 21 which is aligned with the socket and straddles the tube as it is put in place after the tube is inserted into the socket. When in position the inner surface of the sleeve adjacent the sides of the slot will overlap and engage the shoulder on the tube, as shown in FIGS. 1 and 2, and prevent accidental withdrawal thereof from the socket.

If it should be desired to stabilize the button against lateral movement during the operation thereof and the adjustment of the dispensing tube to its various dispensing positions, the form of the invention illustrated in FIGS. 3 to 9 can be employed. In this form of the invention a sleeve 120, which may be molded or formed from a plastic or other resilient material, is so constructed at its inner end so as to fixedly fasten it to the container C when an annular rib 122 is snapped under a shoulder 123 on the container C.

The sleeve at its outer end is provided with a bore 124 forming an outboard bearing slidably receiving and supporting the button 10 against lateral movement during the reciprocation thereof between normal and dispensing positions. The sleeve has an elongate slot 121 opening in the outer end which is aligned with the socket 14 in the button and through which the tube passes when in position on the button. The slot is long enough to permit the button to move from normal non-dispensing position, as shown in FIG. 3, inwardly to dispensing position when pressure is applied to the actuating portion 11 causing the operating portion 12 to operate the valve to dispense material from the container through passage 13 to the dispensing tube.

As shown in FIGS. 4, 5, 6 and 9 the inner sides of the sleeve adjacent the slot 121 overlap the shoulder 18 on the tube 15 in all rotative positions and prevents the tube from being accidentally removed from the socket.

In the preferred form of the invention the slot **121** in the fixed sleeve has a width substantially equal to the diameter of the tube **15** so that it will engage the tube and provide an outboard bearing therefor to stabilize it during its rotative adjustments with respect to the button to different dispensing positions and prevent possible lateral movement of the button during such adjustments.

If desired, the sleeve **120** can have a recess **125** in the side thereof forming an abutment **126** disposed below the slot to be engaged by a member **127**, herein shown as a portion of the tube **15**, when the tube is in a non-dispensing position alongside of the container **10** as shown in FIG. 4 to prevent accidental movement of the button inwardly to operate the valve controlling the dispensing of the material from the container. When it is desired to dispense the material, the tube is turned from the position of FIG. 3 to the desired dispensing position of FIG. 4 moving the member **127** out of engagement with the abutment **126** and freeing the button to move inwardly to operate the valve.

Under some circumstances, it may be desirable to block the movement of the button through a wider range of movement of the tube. Such a device is shown in FIGS. 10-12 wherein the recess **125** in the sleeve **120b** has a flat surface **130** (FIG. 12) on the side which lies in a plane perpendicular to the axis of rotation of the tube and has an arcuate abutment **126b** disposed below the slot **121b** for engaging the member **127** on the tube. As is clear from FIG. 11 this will prevent accidental operation of the button for a substantial arc of movement thereof on either side of the normal non-dispensing positions in which the tube is disposed along the side of the container. In the specific form illustrated, the arc is approximately 65% but it can be varied as required.

Variations and modifications may be made within the scope of the claims and portions of the improvements may be used without others.

I claim:

1. A directional dispenser for dispensing material from a container under pressure having a valve therein for controlling the flow of material from the container, comprising an actuating button having an actuating portion at one end to receive an operating pressure and a valve operating portion at the other end extending into operative relation with the valve to operate the valve in response to actuation of the button by pressure applied to the actuating portion, said button having a passage therein for receiving material from the valve, a cylindrical socket in the side wall of the button communicating with the passage, an elongate dispensing tube having a bend adjacent one end and a longitudinal bore extending therethrough, said one end of said tube having a cylindrical portion rotatably carried by the socket to be rotated therein as the dispensing tube is turned to a plurality of dispensing positions, said tube having an outwardly facing shoulder adjacent the outer end of the cylindrical portion disposed in the socket, and means on the exterior of the button and overlying the shoulder to prevent longitudinal movement of the cylindrical portion in said socket and accidental outward displacement of the end of the tube from the socket.

2. The invention as defined in claim 1 wherein the last means comprises a sleeve carried by and surrounding the button and having an open-ended slot therein aligned with the socket, the shoulder having a width greater than the slot and being disposed in engagement with the inner walls of the sleeve adjacent the slot to prevent accidental outward displacement of the end of the tube from the socket.

3. A directional dispenser for dispensing material from a container under pressure having a valve therein for controlling the flow of material from the container, comprising a sleeve fixedly carried by the container and having a button-receiving bore remote from the container, an actuating button slidable in the bore, said bore forming an outboard bearing for the button to prevent tilting thereof, said button having an actuating portion normally exposed

at one end of the sleeve and having a valve operating portion at the other end extending into operative relation with the valve to operate the valve in response to reciprocation of the button in the sleeve by pressure applied to said actuating portion, the button having a passage therein for receiving material from the valve, a cylindrical socket in the side wall of the button communicating with the passage, said sleeve having an open ended elongate slot aligned with the socket, and an elongate directional dispensing tube having a bend therein and having a longitudinal bore extending therethrough, one end of said tube passing through the slot and having a cylindrical portion rotatably carried by the socket to be rotated therein on the longitudinal axis thereof to a plurality of dispensing positions, said tube having a shoulder adjacent the outer end of said cylindrical portion having a width greater than the slot in the sleeve and being disposed in engagement with the inner walls of the sleeve adjacent the slot to prevent longitudinal movement and accidental withdrawal or removal of the end of the tube from the socket.

4. The invention as defined in claim 3 wherein said slot has a width substantially equal to the diameter of the tube with the sides of the slot engaging the tube to form a bearing to stabilize and support the tube during rotation thereof in said socket to various dispensing positions.

5. The invention as defined in claim 3 wherein said sleeve has an abutment disposed below the slot and said tube has a portion engaging said abutment in non-dispensing positions of the tube to prevent inadvertent dispensing therefrom.

6. The invention as defined in claim 5 wherein the abutment on the sleeve is arcuate and prevents inadvertent dispensing of the material through a predetermined arc of movement of said directional dispensing tube with respect thereto.

7. A directional dispenser for dispensing material from a container under pressure having a valve therein for controlling the flow of material from the container, comprising an actuating button having an actuating portion at one end to receive an operating pressure and a valve operating portion at the other end extending into operative relation with the valve to operate the valve in response to actuation of the button by pressure applied to the actuating portion, said button having a passage therein for receiving material from the valve, a cylindrical socket in the side wall of the button communicating with the passage, an elongate dispensing tube having a bend adjacent one end and a longitudinal bore extending therethrough, said end of said tube having a cylindrical portion rotatably carried by the socket to be rotated therein as the dispensing tube is turned to a plurality of dispensing positions, said cylindrical portion having a shoulder adjacent the outer end, and means separate from and carried by the exterior of the button and cooperating with the shoulder on the tube to prevent longitudinal movement of the cylindrical portion in the socket and accidental outward displacement of the end of the tube from the socket.

8. A directional dispenser for dispensing material from a container under pressure having a valve therein for controlling the flow of material from the container, comprising a sleeve fixedly carried by the container and having a button-receiving bore remote from the container, an actuating button for said valve slidable in the bore, said bore forming an outboard bearing for the button to prevent tilting thereof, said button having an actuating portion normally exposed at one end of the sleeve and having a valve operating portion at the other end extending into operative relation with the valve to operate the valve in response to reciprocation of the button in the sleeve by pressure applied to said actuating portion; the button having a passage therein for receiving material from the valve, a cylindrical socket in the side wall of the button communicating with the passage, said sleeve having an opening aligned with the socket in all reciprocated positions of the button, an

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elongate bent directional dispensing tube having a bend therein adjacent one end and having a longitudinal bore extending therethrough, said one end of said tube passing through the opening and having a cylindrical portion rotatably carried by the socket to be rotated therein on the longitudinal axis thereof to a plurality of dispensing positions, the sides of the opening in the sleeve engaging the tube to form a bearing to stabilize and support the tube during rotation thereof, and means on the sleeve cooperating with the tube to prevent accidental outward movement of the said one end of the tube from the socket.

9. The invention as defined in claim 8 wherein there are means on the sleeve surface cooperating with means on the bent dispensing tube to prevent accidental actuation of the button to operative position to operate the valve.

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References Cited

UNITED STATES PATENTS

2,076,893	4/1937	Johnson	222—153
3,148,806	9/1964	Meshberg	222—402.11
3,221,950	12/1965	O'Donnell	222—402.11
3,263,868	8/1966	Sagarin	222—182
3,272,390	9/1966	Horwitt	222—153
3,272,406	9/1966	Lehmann	222—531
3,276,641	10/1966	Lehmann	222—526

FOREIGN PATENTS

945,290	12/1963	Great Britain.
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