

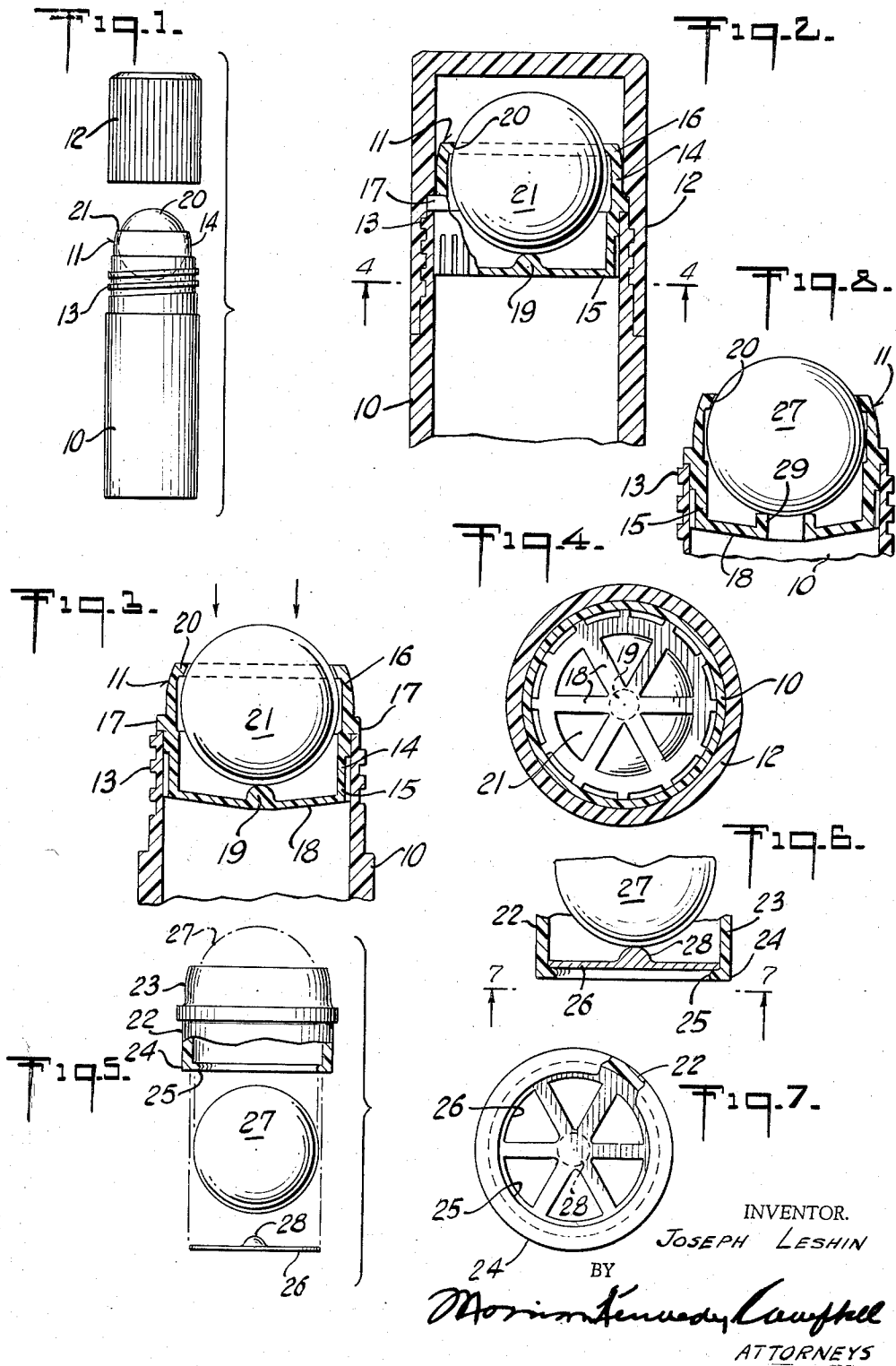
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J. LESHIN

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FLUID DISPENSER WITH BALL APPLICATOR

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FLUID DISPENSER WITH BALL APPLICATOR

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6 Claims. (Cl. 15—132.7)

This invention relates to a fluid dispenser for liquids, pasty or creamy fluids, such as deodorants, lotions or the like.

An object of the invention is to provide such a dispenser with a ball applicator, which, as it is rolled on the surface to be treated, carries a layer of the fluid from the container and applies it to the surface.

As one feature of the invention, the ball is normally held in tight closure contact with an upper rim of the dispenser, but is yieldingly mounted so that the pressure of the ball against the surface will open a thin passageway between the rim and the ball, whereby a thin layer of the fluid will be picked up by the ball as it rotates, and deposited on the surface as an even layer.

It is a further object to provide a device, the parts of which may be easily fabricated and assembled, and which when assembled will be dependable in use.

Further objects will become clear as the device is described.

The device comprises generally the construction shown in the drawings, in which

Figure 1 is an elevation of the container embodying the dispensing device of this invention and having a suitable closing cap situated above the container;

Fig. 2 is an enlarged section through the axis of the upper portion of the device showing the relation of parts with the cap in place;

Fig. 3 is a view similar to Fig. 2, but with the cap removed, and the ball depressed, as it would be in use;

Fig. 4 is a section on the line 4—4 of Fig. 2;

Fig. 5 is an exploded view of a modification of the device;

Fig. 6 is a fragmentary view of the parts shown in Fig. 5, with the retaining spider snapped into place;

Fig. 7 is an end view along line 7—7 of Fig. 6; and

Fig. 8 is a view similar to Fig. 3, of a modified form of the device.

In the drawings, the numeral 10 represents a container adapted for use with any fluid substance to be dispensed, such as cosmetics or the like, having at its upper end a dispensing element 11, and closed at the top by a cap 12. This cap preferably screws onto the container by threads shown at 13. The dispensing element has a cylindrical shell 14, the lower portion 15 of which fits liquid tight within the top of the container 10, and the upper portion 16 of which is enclosed by the cap 12. Between the portions 15 and 16, the wall 14 is provided with an exterior circumferential rim 17, which rests upon the top of the container 10, and which in turn is engaged at the top by the cap 12.

The dispensing element 11 has an open bottom comprising, as shown, a plurality of radially disposed resilient arms 18 joined together at the center to support a button 19. The upper portion 16 of the shell 14 extends inwardly, as shown, to provide a lip 20, and within the shell 14 resting upon the button 19, and confined in place by the inwardly extending lip 20, is a ball 21.

Normally, the ball, under the resilient influence of the

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radial arms 18, fits so tightly against the lip 20 as to close the container, but the arms 18 are sufficiently yielding so that if the ball is pressed against the skin for example, the ball will be urged inwardly away from the lip 20, to permit the ball as it rotates to carry a thin layer of the cosmetic to be applied to the skin. But as soon as the dispensing pressure is released, the ball will be again forced into tight engagement with the lip 20 to close the container.

The form of the invention disclosed in Figs. 5, 6 and 7 is generally similar to that disclosed in the preceding figures, except that in this modification the lower end 22 of the shell 23 corresponding to shell 14, is suitably provided at the bottom 24 with an inwardly extending rim 25, and a resilient perforated disc replaces the bottom 18. The construction facilitates the assembly of the device since the ball 27 may be inserted in the bottom of the device past the rim 25, and then the disc 26 may be forced in below it, above the rim 25, serving to give the upward pressure against the ball 27. This disc 26, like the bottom 18—19 of the shell 14, may be composed of a plurality of radial arms supporting a peripheral rim, and these arms themselves furnish the resilient pressure to press the ball 27 against the lip 20. This end disc 26 has a central button 28 like the button 19 and performing the same function.

In the form of the invention disclosed in Fig. 8, the spider-like bottom 18 of the shell 11 instead of having the button 19 to bear against the center of the ball, is provided with an upwardly projecting cylindrical tube or rim 29 which bears against the ball 27 around a circle, and itself tends to keep the ball centrally located and bearing equally on all sides of the rim 15.

The container 10 and cap 12, which may be formed of any suitable material, such as glass or styrene, may be given any desired shape but are preferably made cylindrical.

The applicator ball may be composed of plastic material but is preferably made of glass.

The dispenser shells are preferably made of molded plastic material such as polyethylene, which possesses considerable resilience.

In the form shown in Figs. 1 to 4, the ball 21 is assembled within the shell 14 by being forced through the top, the lip 20 being sufficiently resilient for that purpose.

In the form shown in Figs. 5 and 6, the ball 27 may likewise be assembled within the shell 22 by being forced past the base rim 25, if need be, although no force would be necessary if the internal diameter of the rim were less than the outside diameter of the ball. In this second form, too, the spring spider element 26 could, if desired, be made of thin elastic metal and the shell 16 made of glass.

In the form shown in Fig. 8, the ball 27 is assembled through the top of the shell, as in Figs. 1 to 4.

In the forms shown in Figs. 1 to 4 and in Fig. 8, the shells are molded in one piece, which is a manufacturing advantage.

In all instances, it should be noted that when the ball is assembled within the dispenser shell, the spring element at the base is stressed or placed under tension so as to act at all times to hold the ball in fluid tight contact with the lip portions of the shells.

What is claimed is:

1. A dispensing device comprising a cylindrical shell having a substantially flat, circular, resilient, perforated bottom and a top comprising a constricted rim, and a ball confined between said bottom and said rim and pressed against said rim by the resilience of the bottom, said ball having a portion of its surface exposed above said top, and said resilient bottom having in its central

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portion and rising above the plane thereof an upwardly protruding member engaging said ball and maintaining the resilient bottom under tension by such engagement.

2. A dispenser device according to claim 1, in which the upwardly protruding member presents an annular rim engaging the ball in a circle about its center above the plane of the resilient bottom.

3. A dispensing device according to claim 1 and in which the bottom of the shell is made as a separate circular piece and is held in place by a snap assembly over an annular flange projecting inwardly from the lower end of the cylindrical shell.

4. A dispensing device according to claim 1, in which the cylindrical shell is made in one piece of plastic material and in which the constricted rim is sufficiently resilient to permit the ball to be inserted into the cylindrical shell from the top.

5. A dispensing device according to claim 1, in which the cylindrical shell is formed with a circumferential rim adapted to engage the upper end of a cylindrical container and is also formed below said rim with a cylindrical portion adapted to make a liquid-tight fit

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within the neck portion of said cylindrical container.

6. A dispensing device according to claim 5, wherein the circumferential rim formed on the cylindrical shell is arranged to be engaged from above by an annular shoulder formed on the inner wall of a cylindrical cover applied to the container.

References Cited in the file of this patent

UNITED STATES PATENTS

1,670,458	Le Boeuf	May 22, 1928
2,059,685	Feldman	Nov. 3, 1936
2,113,695	Krannak	Apr. 12, 1938
2,425,198	Moore	Aug. 5, 1947
2,700,784	De Brock	Feb. 1, 1955
2,719,314	Taube	Oct. 4, 1955
2,807,817	Ackerman	Oct. 1, 1957
2,823,403	Whitney	Feb. 18, 1958

FOREIGN PATENTS

522,572	France	Apr. 1, 1921
1,093,277	France	Nov. 17, 1954

Notice of Adverse Decision in Interference

In Interference No. 93,497 involving Patent No. 2,968,826, J. Leshin,
FLUID DISPENSER WITH BALL APPLICATOR, final judgment adverse
to the patentee was rendered Mar. 19, 1965, as to claims 1, 4, 5 and 6.
[*Official Gazette May 4, 1965.*]

Notice

Strike out "In Interference No. 93,497 involving Patent No. 2,968,826, J. Leshin, FLUID DISPENSER WITH BALL APPLICATOR, final judgment adverse to the patentee was rendered Mar. 19, 1965, as to claims 1, 4, 5 and 6."

This notice supersedes the one previously issued in the Official Gazette of May 4, 1965, p. 2.

[*Official Gazette July 20, 1965.*]