May 8, 1962 J. J. WALSHAUSER 3,032,803

APPLICATOR DEVICE

Filed Oct. 12, 1960

FIG.1

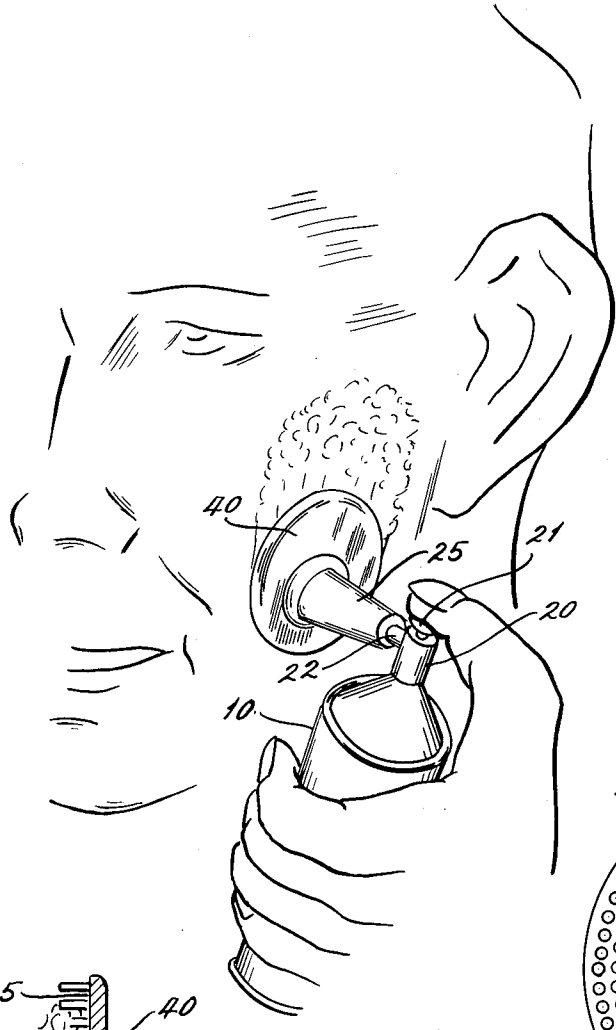


FIG.3

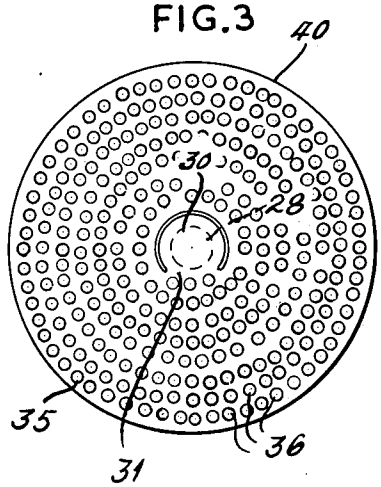
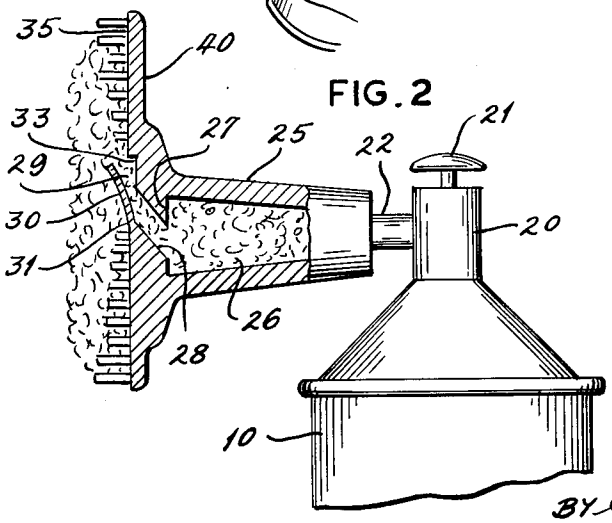


FIG.2



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APPLICATOR DEVICE

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This invention relates to an applicator for a dispensing device and more particularly to an applicator adapted for fluids or semi-fluids discharged under pressure from a pressurized dispensing container. One obvious application of this invention is here illustrated as applied to dispensing containers for aerated shaving creams, lotions or the like. The first example, self-forming shaving creams or soap, is illustrative. When using these pressurized products, especially shaving soap or cream, it is necessary to spread the foam around with the fingers. One procedure is to discharge the foaming lather on the finger tips first and then spread it on the skin. Of course, it would be much more convenient if the foaming shaving cream discharged could be applied directly from the pressurized can or container to the skin in the first place, and in the second place, this would be especially desirable if the pressure in the container could be used to form the uniform layer of foam on the skin. To my knowledge, there is no known device for satisfactorily performing this function, and especially none which operate to form the uniform layer by utilizing the pressure in the can or container.

It is an object of the present invention to provide an applicator adapted to dispensers with pressurized contents which will deposit a uniform layer under pressure.

It is a further object of the present invention to provide an applicator which utilizes the pressure in the dispenser to deposit a uniform layer.

It is a still further object of the present invention to provide an applicator adapted to dispensers of pressurized shaving cream or soap which utilize the pressure discharge from the container to form a uniform layer of foam on the skin.

Further objects and advantages of this invention will appear from the following detailed description which is in such full, clear and exact terms as will enable one skilled in the art to make and use the invention when taken in conjunction with the accompanying drawings forming a part thereof, and in which:

FIG. 1 is a perspective view showing a device according to this invention while being used;

FIG. 2 is a side elevational view with parts of the applicator broken away and shown in section so as to illustrate the internal construction and operation; and

FIG. 3 is a front elevational view of the structure shown in FIG. 2.

Turning now to FIG. 1 of the drawings, the can **10** contains the pressurized soap or shaving cream. The top of the can **10** has secured thereto a valve **20** operated by a button **21** for controlling the discharge of foam from a nozzle **22**. This invention is a unitary device **40** which has an adapter **25**.

With reference to FIG. 2, especially, the applicator **40** is preferably made of a flexible rubber-like material so that when the adapter **25** is telescoped over the dispensing spout **22**, a tight joint will be formed preventing leakage. Within the adapter **25** is a flexible walled expansion chamber **26** into which the foaming lather is discharged from the spout **22** when the button **21** is depressed. Chamber **26** modulates the discharge velocity from the spout **22** so as to slow down the flow, and this effect is further aided by the baffle **27** at the entrance to the angular related passage **28**. At the discharge end **29** of the passage **28** is a directional valve **30**. This valve like other parts of the applicator **40** is also of rubber-like material so as to be resilient. One side of the valve is integrally connected with the body of the applicator to form a sort of hinged joint **31**, such as shown more clearly in FIG. 3. The valve **30** operates to and from a suitable seat **33** which is arcuate and corresponds to the outline of the valve **30**.

On the active face **35** of the applicator **40** are a plurality of soft, flexible nubs or fingers, generally indicated as **36**, which may be arranged in a pattern more clearly illustrated in FIG. 3. The particular pattern in which the fingers or nubs **36** are arranged is not particularly material, except that the arrangement should be one to provide a plurality of tortuous passages across the active face **35** of the applicator **40**. The discharge of lather foam, therefore, is from the spout **22** to the expansion chamber **26** around the baffle **27** and through the passage **28** to the directional valve **30**. The pressure on the passage side of the valve **30** causes the valve to hinge about **31** and direct the foaming lather through the tortuous passageways between the fingers or nubs **36** across the active face **35** of the applicator, all as shown in FIG. 2, for example. One of the purposes of the expansion chamber **26**, the baffle **27** and the valve **30** is to modulate the flow from the discharge nozzle **22** to retain the flow confined until it passes the valve **30**, so that the foaming action of the lather will be partially delayed until it passes the valve **30** and will, therefore, take place about the fingers **36** as it flows through the tortuous passages between them. Valve **30** is specifically designed so as to direct the foaming action from one edge of the applicator **40** toward the opposite edge.

In operation, the can **10** is held in the hand of the user, as shown in FIG. 1, button **21** is depressed by the forefinger or thumb while the applicator **40** is held adjacent the face of the user. As the foam begins to burst forth from the valve **30** upwardly through the fingers **36**, the applicator is moved slowly across the cheek of the user thereby forming a uniform layer of foam lather for shaving. Since the ends of the fingers **36** are held adjacent or in contact with the skin, the foaming lather issuing from the valve **30** will disperse in all directions through the tortuous passages between the fingers **36**, but primarily the direction in which the foam will flow is away from the valve **30** due to the direction in which the valve is open. Now if the applicator is moved over the skin in the same direction as the foam issues from the valve **30**, a smooth uniform layer of foam will be deposited regardless of the pressure within the can **10**, since the pressure in any case is modulated by the expansion chamber **26** and the tortuous passages between the fingers **36** to reduce the velocity of flow and at the same time to confine the foaming action to the active surface of the applicator **35** and between this active surface and the skin. This means that the maximum benefit of the foaming lather is obtained by the user since the action takes place adjacent the skin and not on the fingers as in prior methods of application.

With the button **21** depressed, the applicator is moved smoothly over the skin at a uniform rate depositing strips of foaming lather of uniform thickness suitable for shaving. At the same time, the foaming action is confined adjacent to the skin at the bottom of the whiskers where the actual cutting will be done by the razor so that no subsequent rubbing in or massaging of the lather is necessary to obtain uniform, comfortable shaving results.

Changes in and modifications of the construction described may be made without departing from the spirit of my invention or sacrificing its advantages.

Having thus described the invention, what is claimed and desired to be secured by Letters Patent is:

1. A dispensing device including in combination a dispensing type of applicator for fluids or semi-fluids which

are discharged under pressure to produce a foam, a pressurized container for storage of the fluids and a valve controlled outlet from said pressurized container to said applicator, the improvement comprising, a bendable disk-like applicator body of flexible rubber-like material having a normally planar active surface and a discharge opening in said active surface, means on said applicator body forming an inlet connection to the valve controlled outlet on said container, a discharge passage from said inlet connection to said discharge opening in said active surface, a valve seat in said outlet, a directional valve operating on said valve seat and opening in response to pressure to discharge along said active face, and a plurality of spaced projections in the form of flexible fingers of uniform length projecting from said active face surrounding said outlet and acting as a spacing means between said active face and a surface to which the foam is applied, said flexible fingers being arranged in a pattern to form a plurality of continuous tortuous passages extending therebetween and over said active face in a plurality of

directions away from said valve and outlet into which the foam can expand to form a layer corresponding in thickness to said spacing means as the fluid is discharged and the applicator is moved along the surface on which the foam is applied.

2. A dispensing device as defined in the preceding claim in which said discharge passage from said inlet connection includes an expansion chamber located between said inlet connection and said discharge opening.

References Cited in the file of this patent

UNITED STATES PATENTS

2,196,379	Bender	Apr. 9, 1940
2,232,140	Rupp	Feb. 18, 1941
2,772,922	Boyd et al.	Dec. 4, 1956
2,849,737	Piccinini et al.	Sept. 2, 1958
2,897,526	Dootson	Aug. 4, 1959

FOREIGN PATENTS

483,135	Italy	July 17, 1953