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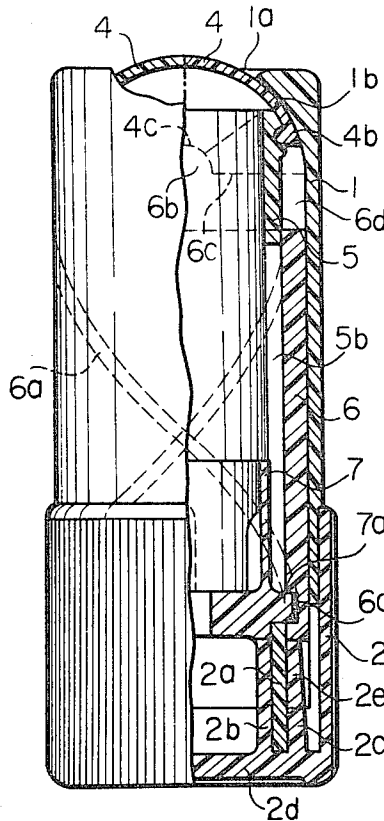
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[54] **COSMETIC APPLICATOR**
5 Claims, 4 Drawing Figs.
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ABSTRACT: A capless cosmetic applicator provided with a cylindrical casing and a knob turnably and telescopically engaged with the cylindrical casing. The tip portion of the cylindrical casing is opened and provided with a pair of shutter pieces swingably engaged with an inside wall thereof so that the shutter pieces are opened when a solid cosmetic contained is used or alternately closed when the applicator is not used. The opening or closing motion of the shutter pieces is operated by an actuating means disposed within the applicator when the knob is relatively pulled from or pushed in the cylindrical casing.



COSMETIC APPLICATOR

BRIEF SUMMARY OF THE INVENTION

The present invention relates to a cosmetic applicator, more particularly, relates to a capless cosmetic applicator for solid cosmetic, such as lipstick, eyebrow pencils, mascara and other solid cosmetic materials.

For convenience of clarifying the characteristic features of the cosmetic applicator according to the present invention, a cosmetic applicator for lipstick is particularly described, as an embodiment of the present invention.

A principal object of the present invention is to provide an improved cosmetic applicator which is immediately operable when it is desired for use, without taking off the cap of the applicator.

Another object of the present invention is to provide an improved cosmetic applicator which allows a simple operation for exposing the solid cosmetic from a housing in the applicator.

The cosmetic applicator of the present invention is provided with a cylindrical casing and a knob turnably and telescopically engaged with the cylindrical casing. One of the characteristic features of the cosmetic applicator according to the present invention is the tip portion of the cylindrical casing provided with a pair of shutter pieces swingably engaged with an inside wall thereof so that the shutter pieces open or close an aperture passing through the cylindrical casing. The opening motion of these shutter pieces is operated by an actuating means disposed within the applicator when the knob is relatively pulled outward from an original engaging position with the cylindrical casing while the closing motion is operated by the actuating means when the knob is telescopically returned to the original engaging position. After opening these shutter pieces, the solid cosmetic is projected from the opened aperture of the cylindrical casing by displacing a support means for solid cosmetic which is disposed within the applicator by means of coaxially turning the knob about the cylindrical casing. Therefore, the above-mentioned objects of the present invention can be easily attained.

A better understanding, further features and other objects and advantages of this invention will become obvious to those skilled in the art from the following detailed description with reference to the appended drawings.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING

FIG. 1 is a perspective elevational view of the assembled applicator according to the present invention,

FIG. 2 is a perspective view of the assembled applicator of FIG. 1, showing the lipstick in its projected position,

FIG. 3 is an enlarged elevational view, partly in longitudinal section, of the cosmetic applicator shown in FIG. 1,

FIG. 4 is also an enlarged elevational view, partly in longitudinal section, of the cosmetic applicator, shown from the right side in FIG. 3.

DETAILED DESCRIPTION

Referring now to the drawings, the cosmetic applicator of the present invention comprises a cylindrical casing 1 and a knob 2 turnably and telescopically engaged with the cylindrical casing 1. A pair of shutter pieces 4 are swingably disposed within the cylindrical casing 1 so that the shutter pieces 4 close or open an aperture 1a of the cylindrical casing 1. Means for actuating the motion of the shutter pieces 4 is provided within the applicator. The actuating means comprises a cylindrical sleeve member 5 coaxially disposed in the cylindrical casing 1 and the knob 2 so that the cylindrical casing 1 can be relatively turned about the sleeve member 5. The knob 2 is provided with double cylindrical projections 2b, 2c which are coaxially formed upon a circular bottom plate 2d thereof. The cylindrical projection 2c is provided with a projection 2e extended beyond a circular edge thereof as shown in the drawing. A bottom end of the sleeve member 5 is secured within a

cylindrical recess 2a formed between the cylindrical projections 2b and 2c. A tip portion of the sleeve member 5 is provided with an annular groove 5a. The sleeve member 5 is provided with a pair of longitudinally extended slots 5b symmetrically formed with respect to an axis thereof. A cylindrical sleeve 6 is interposed between the cylindrical casing 1 and the sleeve member 5 in such a way that the cylindrical sleeve 6 is secured to the cylindrical casing 1 while the sleeve 6 is allowed to turn about the sleeve member 5. The cylindrical sleeve 6 is provided with a pair of helical grooves 6a symmetrically formed upon the inside wall thereof. A pair of fulcrum projections 6b are symmetrically formed upon an outer cylindrical edge 6c thereof. This cylindrical edge 6c is provided with a pair of cutout portions so that a pair of spaces 6d are symmetrically formed between the cylindrical casing 1 and the outer end portion of the sleeve member 5 as shown in the drawing.

The cylindrical casing 1 is provided with an inwardly projected flange portion 1b having a cutout spherical inside surface. This flange portion 1b forms a head portion of the cylindrical casing 1. A pair of shutter pieces 4 are swingably supported by the fulcrum projections 6b and the annular groove 5a so that each shutter piece is slidably engaged with the inside wall 1b of the cylindrical casing 1. To attain the above-mentioned function, each shutter piece 4 forms a cutout spherical surface and is provided with a fulcrum end portion 4c slidably engaged with the fulcrum projection 6b and an inward projection 4b slidably engaged with the annular groove 5a. The cutout spherical surface 4a fits that of the inside wall 1b. Since there is a pair of spaces 6d having sufficiently large space for receiving each shutter piece 4, the shutter pieces 4 can be housed in these spaces 6d when the cylindrical sleeve member 5 is relatively displaced toward the bottom of the cylindrical casing 1 by means of pulling the knob 2, in other words, when the cylindrical sleeve member 5 is displaced as mentioned above, the inward projection 4b of each shutter piece 4 is displaced to the inside terminal of the space 6d together with the displacement of the annular groove 5a. Therefore, each shutter piece 4 is turned about the fulcrum 6b so that the shutter pieces 4 are opened, that is, the aperture 1a of the cylindrical casing 1 is opened. By telescoping the cylindrical sleeve member 5 within the cylindrical casing 1, the inward projection 4b of each shutter piece 4 is displaced outward from the space 6d, therefore, the shutter pieces 4 can be closed, that is, the opening 1a of the cylindrical casing 1 can be completely closed.

A small barrel 7 for supporting a solid cosmetic or lipstick 3 is slidably engaged with the inside cylindrical wall of the cylindrical sleeve 5. The small barrel 7 is provided with a pair of outward projections 7a which are slidably engaged with the respective longitudinally extended slots 5b and respective helical grooves 6a. The cylindrical sleeve 6 is provided with cutout portions 6e symmetrically formed at the bottom cylindrical end portion thereof so that projections 2e of the cylindrical projection 2c can be engaged with the respective cutout portions 6e. That is, when the cylindrical casing 1 is positioned at the closing position of the shutter pieces 4, the projections 2e engage with the respective cutout portions 6e, while the projections 2e disengage from the respective cutout portions 6e when the knob 2 is pulled from the cylindrical casing 1 so as to open the shutter pieces 4 completely. Consequently, when the engagements of each projection 2e with the cutout portion 6e is released, the knob 2 can be turned about the cylindrical casing 1 so that the small barrel 7 is displaced toward the aperture 1a of the cylindrical casing 1 while projections 7a are slidably displaced within the respective longitudinal slots 5b and the helical grooves 6a. The length of the small barrel 7 and the longitudinally extended slots 5b are so designed that the displacement of the upper end of the small barrel 7 terminates at the upper end of the cylindrical sleeve member 5. The above-mentioned cosmetic applicator can be operated immediately by the simple operation when it is desired to apply the lip cosmetic to the lips, that is, the shutter pieces 4 are opened by a relative pulling operation of the knob from the cylindrical

casing 1 and then, the lipstick 3 is projected from the aperture of the cylindrical casing 1 by the relative turning of the knob 2 about the cylindrical casing 1 and when it is required to house the lipstick 3 into the cylindrical casing 1, reverse operations to the above-mentioned operations are simply performed. Therefore, the objects of the present invention are satisfactorily attained by the cosmetic applicator of the present invention.

What is claimed is:

1. In a cosmetic applicator provided with a cylindrical casing and a small barrel for holding a solid cosmetic coaxially disposed within said cylindrical casing, an improvement comprising a cylindrical knob turnably and telescopically engaged with a bottom portion of said cylindrical casing, a cylindrical sleeve secured to an inside wall of said cylindrical casing, a cylindrical sleeve member turnably and telescopically engaged with an inside wall of said cylindrical sleeve and secured bottom end thereof with a bottom portion of said knob and provided with an annular groove formed upon an outside surface of a head portion thereof, said cylindrical sleeve provided with a pair of fulcrums symmetrically projected from a head cylindrical edge thereof, a pair of shutter pieces, each provided with a central offset projection slidably engaged with said annular groove and provided with a pair of fulcrum ends turnably contacted with said fulcrums of said cylindrical sleeve respectively, means for displacing said small barrel within said cylindrical sleeve member when said knob is turned about said cylindrical casing, means for preventing free turning of said knob about said cylindrical casing when said knob is telescopically engaged with said cylindrical casing, whereby, when said knob is pulled from said cylindrical casing so as to release said telescoping engagement, said cylindrical sleeve member is displaced from said aperture by displacing said guide projection of each shutter piece together with said annular groove so that said shutter pieces are turned toward relatively reverse directions about said fulcrums of said cylindrical sleeve member respectively, thereby said aperture is opened, next said small barrel is displaced toward said aperture by turning said knob about said cylindrical casing in a predetermined direction so that said solid cosmetic is projected from said aperture, after completion of using said cosmetic, said small barrel is displaced into said cylindrical

sleeve member by turning said knob about said cylindrical casing towards a reverse direction so that said solid cosmetic is encased within said cylindrical casing, next, said knob is pushed toward said aperture so that said shutter pieces turn to a facing direction and said aperture is closed, said preventing means is simultaneously locked.

2. An improved cosmetic applicator according to claim 1, wherein each of said shutter pieces is provided with a cutout spherical surface portion so that said spherical surface forms a component surface of a continuous surface covering said aperture when said shutter pieces are closed, said spherical surface portion can be encased within a space formed between said head portion of said cylindrical sleeve member and said cylindrical casing.

3. An improved cosmetic applicator according to claim 1, wherein said cylindrical casing is provided with an inwardly projected flange at a head portion thereof, said flange forms a cutout spherical inside surface slidably engaged with said cutout spherical surface portion of each of said shutter pieces.

4. An improved cosmetic applicator according to claim 1, wherein said displacing means comprises a pair of longitudinally extended slots symmetrically formed upon said cylindrical sleeve member, a pair of projections symmetrically formed upon said small barrel and slidably engaged with said slots respectively, a pair of helical grooves symmetrically formed upon an inside cylindrical wall of said cylindrical sleeve and slidably engaged with a tip portion of each of said projections respectively.

5. An improved cosmetic applicator according to claim 1, wherein said preventing means comprises, a cylindrical wall coaxially projected from a bottom plate of said knob, said cylindrical wall is provided with a pair of projections symmetrically extended from an upper cylindrical edge along a surface thereof, a pair of cutoff portions symmetrically formed at a bottom cylindrical portion of said cylindrical sleeve so that each of said projections can be engaged with said cutoff portions of said cylindrical sleeve respectively when said knob is telescopically engaged with said cylindrical casing and said shutter pieces are closed, while said engagement of said projections with said cutoff portions of said cylindrical sleeve can be released when said knob is pulled from said cylindrical casing and said shutter pieces are opened.

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