United States Patent

Geisel

[15] **3,653,776**

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[54] CARTRIDGE-TYPE LIPSTICK CONTAINER OR THE LIKE

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[21] Appl. No.: **1,114**

[52] **U.S. Cl.** **401/86**

[51] **Int. Cl.** **A45d 40/06**

[58] **Field of Search** 401/68–87

[56] **References Cited**

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[57] **ABSTRACT**

The invention contemplates an improved refill cartridge and insert construction for use in lipstick containers involving outer decorative casings, the insert being permanently assembled into the bore of the base of the outer decorative casing. The particular feature of the invention resides in locking or detent action between a part of the base end of the refill cartridge and an inwardly projecting insert part which also has keyed rotary driving engagement with the base end of the cartridge. The nature of the action is such as to permit smooth insertion and removal of the cartridge with minimum transient distortion of the outer decorative casing. No residual stress is applied to the casing once the insertion or the removal of the cartridge has been completed.

9 Claims, 7 Drawing Figures

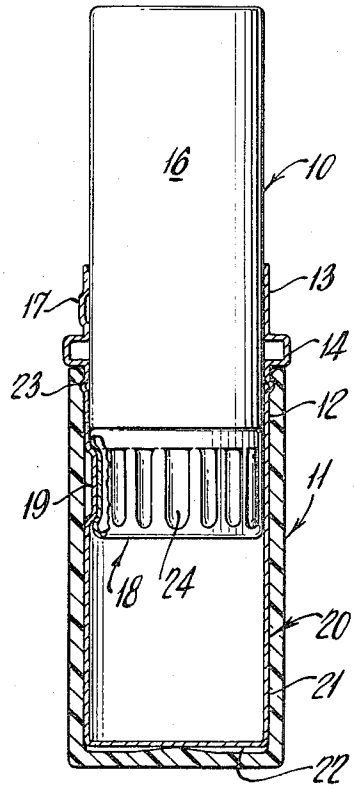


Fig. 1.

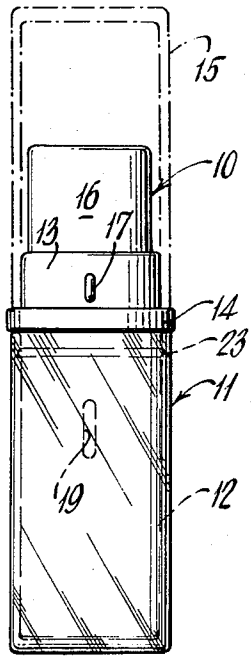
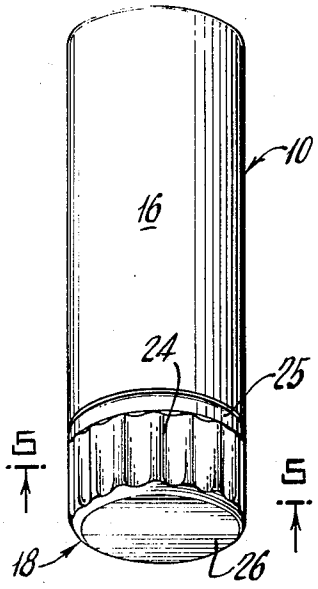


Fig. 3.



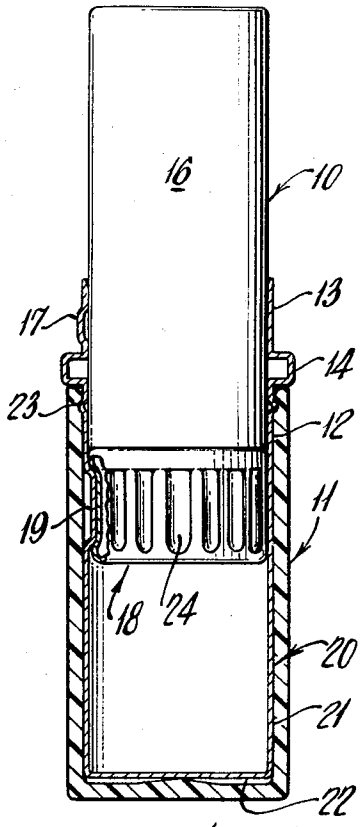
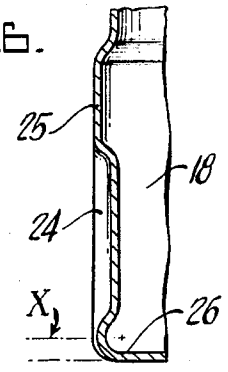


Fig. 4.

Fig. 6.



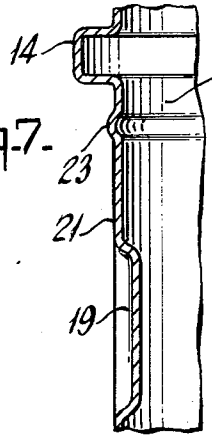


Fig. 7.

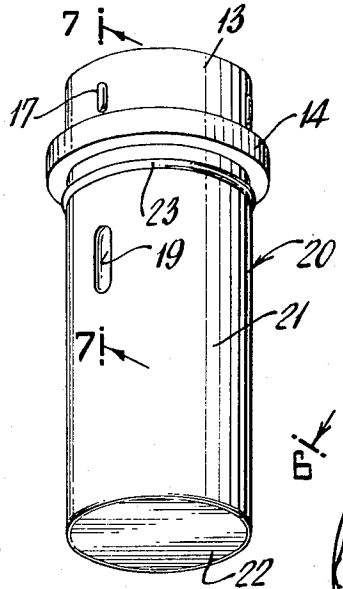
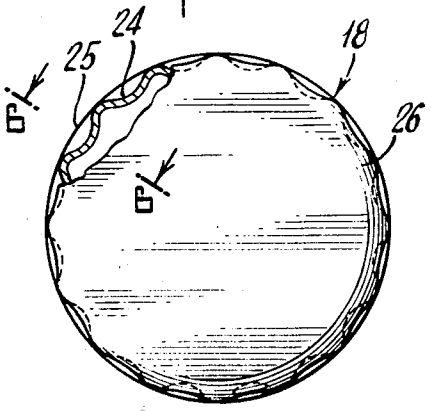


Fig. 2.

Fig. 5.



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CARTRIDGE-TYPE LIPSTICK CONTAINER OR THE LIKE

This invention relates to an improved lipstick container construction, and in particular to a lipstick of the removable cartridge type wherein the cartridge assembly is received in an outer decorative casing.

It is an object of the invention to provide an improved device of the character indicated.

Another object is to provide a cartridge-type refill-container construction featuring improved locking engagement between the parts when the cartridge is received in the housing.

A further object is to meet the above objects with a device in which adequately positive locking action is assured as long as the parts are assembled, and yet they may be unlocked by simple manipulation.

A still further object is to meet the above objects with a basic insert construction for an outer decorative casing so as to render the cartridge and insert structure universally applicable to a plurality of outer casing configurations, and so as also to inherently receive and secure a plurality of types of refill-cartridge construction, said insert construction being basically usable in the most delicate of outer casing structures.

A specific object is to meet the foregoing objects with a construction in which the same parts and formations serve both the functions of axial locking and angular keying of the cartridge to the outer decorative casing.

Other objects and various further features of novelty and invention will be pointed out or will be apparent to those skilled in the art from a reading of the following specification in conjunction with the accompanying drawings. In said drawings, which show, for illustrative purposes only, a preferred form of the invention:

FIG. 1 is a view in elevation of an assembly according to the invention with a cartridge refill received in the base housing member of the outer decorative housing, the closure cap being suggested in phantom outline;

FIG. 2 is an enlarged view in perspective showing an insert shell construction incorporated into the base housing structure of FIG. 1;

FIG. 3 is a similar perspective view of a refill cartridge adapted to coact with the shell of FIG. 2;

FIG. 4 is an enlarged view in elevation, with base housing parts partly broken-away and shown in section to reveal coaction of the parts in assembled relation;

FIG. 5 is an enlarged sectional view of the base end of the cartridge, taken substantially at the plane 5—5 of FIG. 3;

FIG. 6 is a fragmentary sectional view taken in the plane 6—6 of FIG. 5; and

FIG. 7 is a fragmentary sectional view of part of the insert, taken substantially at the radial plane 7—7 of FIG. 2.

Briefly stated, the invention contemplates an improved refill cartridge and insert construction for use in lipstick containers involving outer decorative casings, the insert being permanently assembled into the bore of the base of the outer decorative casing. The particular feature of the invention resides in locking or detent action between a part of the base end of the refill cartridge and an inwardly projecting insert part which also has keyed rotary driving engagement with the base end of the cartridge. The nature of the action is such as to permit smooth insertion and removal of the cartridge with minimum transient distortion of the outer decorative casing. No residual stress is applied to the casing once the insertion or the removal of the cartridge has been completed.

Referring to FIG. 1 of the drawings, the invention is shown in application to a cartridge-refill container designated generally **10**, removably received within the lower or base half of an outer decorative housing member, designated generally **11**. The housing member is shown to be generally cylindrical and to comprise a lower cylindrical end **12** and an upper or reduced cylindrical end **13**. A stop formation such as the bead **14** separates the two cylindrical portions **12–13**, and the entire assembly is closed when desired by placement of the closure

cap **15** over the sleeve portion **13** for friction retention, as by nib means **17** adjacent the bead **14**. The cartridge refill **10** may be of the type employing two relatively rotatable parts to produce propel-repel action of a lipstick carrier therewithin, and it suffices for present purposes to identify the upper or application end **16**, which may be cylindrical, having an opening through which the lipstick is selectively projected, and in addition, to identify a lower or base operating end **18** received and concealed within the base housing member **12**.

When the closure cap **15** is removed and with the parts then as shown in solid outline in FIG. **1**, the lipstick within the cartridge **10** is projected and retracted in accordance with relative rotation of the exposed cartridge part **16** and the base housing member **12**. This is done by means of a keyed engagement between the base end **18** of the cartridge and a suitable formation or formations within the bore of the base housing member **12**. These formations serve not only to provide the indicated keying engagement but also coact with the base end **18** to achieve a two-way acting detent snap-lock function.

In accordance with the invention, the formation or formations in the bore of the casing **11** are provided as one or more radially inward projections **19** in the wall of an insert or shell **20** (FIG. **2**). The insert **20** is permanently assembled to the bore of the outer decorative casing part **12**, so as to permit universal adaptability to a wide variety of outer decorative casings, to suit particular customer requirements.

As shown, the insert **20** comprises an elongated cylindrical shell portion **21** which conforms to the axial and diametrical extent of the bore of casing part **12**, and the lower end **22** is closed to provide both bottom and cylindrical support for the casing part **12**. To relieve the need for total reliance on a pressfit to assure permanent assembly, a small circumferential bead **23** is shown formed in the cylindrical portion **21**, at a location near but spaced from the bead **14**. Bead **14** is shown as an integral formation of insert **20**, and the reduced neck **13** is also integral therewith. The casing part **12** may be of any material including injection-molded plastic; it has a smooth bore contiguous to the insert surface **21**, and is axially retained at an internal groove into which bead **23** snaps upon telescoped assembly. The entire described insert **20** is preferably made of thin stiffly resilient metal, such as a suitable brass or steel, and may be formed from flat stock, of 0.010- to 0.012-inch thickness, on a so-called eyelet machine.

The nature of keying and detent action is such that the inward projection or bump **19** interferes transiently with a part of the base **18** as the cartridge is assembled to the insert **20**. The interference causes local resilient radial deformation of the cylindrical portion **21** and, once past the interference, the projection **19** is retained within one of the plurality of like, equally spaced local depressions **24** which characterize the base end **18**. Preferably, the depressions **24** and projection **19** are of matching contour, with slight clearance after assembly, so as to assure against prolonged residual radial stress on the cylindrical part **12** of outer casing **11**. As shown, both the projection **19** and the depressions **24** are axially elongated, for better loading of abutting surfaces when rotary drive torque is applied.

Referring to the detailed sectional views of FIGS. **5**, **6** and **7**, the depressions **24** are seen to extend axially between a circumferential bead **25** and the apparently enlarged bottom end **26** of the base **18**. In reality, this is only an appearance, resulting from the fact that depressions **24** are local inward deformations in the otherwise cylindrical wall of the base **18**. Since depressions **24** occur axially upward of the bottom end **26**, there necessarily remains a generally circular bead at **26**, by which the depressions **24** terminate short of the bottom end **26**. The radial extent of the bead at **26** may thus be said to define a "terminal plane" (marked "X") at its maximum. It is the radial extent at the terminal plane X which is relied upon to achieve detent interference with projection **19**. Yet, when projection **19** is in full axial and angular register with one of the depressions **24**, having completely traversed the terminal plane, the local resilient stress of insert **20** is relieved with a

gentle snap action, and the parts are removably locked in place.

It will be seen that I have described an improved construction meeting all the stated objects. The mechanism lends itself to a wide range of decorative casing employments. For example, the molded casing part **12** may be brittle by reason of intaglio or relief external features, or it may be smooth and relatively thin and translucent, to develop pearlescent effects when the smooth supporting surface **21** is brightly finished or is otherwise characterized; for variously colored and striated effects, a propionate-type material such as that known as C.A.P. may be used. Even the bright highlight of the bead **23**, as viewed through translucent material, may enhance the decorative appeal. The inventive action may be achieved when only one or when a plurality of projections **19** are formed in the surface **21**, and I generally prefer to utilize two or three projections **19**. In the latter event, the angular spacing between adjacent projections **19** is an integer multiple of the angular spacing of adjacent depressions **24**. The gently rounded undulations of and between depressions **24** appear clearly in FIG. **5** and will be appreciated as providing angular camming coaction with projection **19**, to assure ultimately correct angular registry of the mated formations **19–24**.

While the invention has been described in detail for the preferred form shown, it will be understood that modifications may be made without departure from the invention.

What is claimed is:

1. In combination, a lipstick or the like container cartridge having a base end and an applicator end for exposing lipstick or the like to be applied, a cup-shaped housing member having an opening removably receiving the base end of the cartridge, said cup-shaped housing member including an outer decorative cup and an insert shell fixedly carried by the bore of said cup near the open end thereof, said shell including an integral radially inwardly directed projection located axially short of the closed end of said housing member, and said base end having a key formation engageable with said projection when axially inserted therein, said key formation and projection also having two-way acting axial snap-lock detent action at their angular alignment for keyed engagement, said detent action occurring just prior to full axial insertion of said base end into said shell, whereby the same parts provide both detent and key functions for a wide variety of different possible outer decorative cups into which said shell is fixedly assembled, said base end being characterized by a plurality of like angularly spaced depressions any one of which is adapted to receive said projection when in angular register with said projection, said depressions being near the lower terminal plane of said base end and having their maximum radial depth axially inwardly of said terminal plane, whereby detent action may occur at substantially the region of projection interference at said terminal plane and therefore just prior to full axial registry of said projection with one of the depressions.

2. The combination of claim **1**, in which said shell has two spaced like projections engageable with said depressions, the angular space between said projections being an integer multiple of the angular space between adjacent depressions at said base end.

3. The combination of claim **1**, in which said shell has plural spaced like projections engageable with said projections, the angular spaces between adjacent projections being integer multiples of the angular space between adjacent depressions at said base end.

4. The combination of claim **1**, in which said depressions are axially elongated beginning substantially at said terminal plane and extending in the axially upward direction therefrom, said projection being correspondingly elongated, whereby increased elongated keying contact is provided.

5. The combination of claim **1**, in which said shell is of thin relatively stiffly resilient metal, whereby slight local radial compliance is available to provide positive yet easy-acting detent operation.

6. The combination of claim **5**, in which said shell is axially elongated in both directions away from the region of said projection and in which said shell is fully contained within the bore of said outer decorative cup, whereby detent action occasions slight transient radial deformation of said shell, such deformation being axially limited to a region remote from the axial ends of said outer decorative cup so as to create a minimum hazard to the permanent integrity of such cup even for the most delicate decorative cup construction.

7. In combination, a lipstick or the like container cartridge having a base end and an applicator end for exposing lipstick or the like to be applied, a cup-shaped housing member having an opening removably receiving the base end of the cartridge, said cup-shaped housing member including an outer decorative cup and an insert shell fixedly carried by the bore of said cup near the open end thereof, said shell including an integral radially inwardly directed projection located axially short of the closed end of said housing member, and said base end having a key formation engageable with said projection when axially inserted therein, said key formation and projection also having two-way acting axial snap-lock detent action at their angular alignment for keyed engagement, said detent action occurring just prior to full axial insertion of said base end into said shell, whereby the same parts provide both detent and key functions for a wide variety of different possible outer decorative cups into which said shell is fixedly assembled, said shell being the tubular wall of a metal insert cup having a closed end abutting and supporting the closed end of the outer decorative cup.

8. The combination of claim **7**, in which said shell is tubular and extends axially for substantially the full axial extent of the bore of said outer decorative cup and in radially supporting relation therewith.

9. The combination of claim **8**, in which said shell includes a radially outward bead adjacent the open end of said outer decorative cup.

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