March 18, 1958 J. W. ANDERSON 2,827,164

COSMETIC CAKE EXPELLANT HOLDER

Filed July 2, 1951

Fig. 1

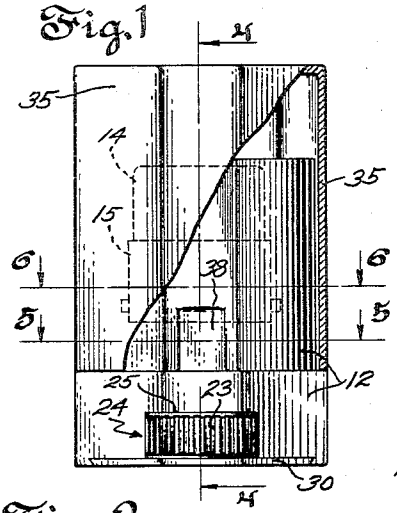


Fig. 2

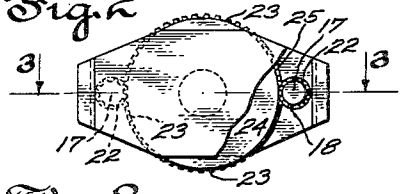


Fig. 3

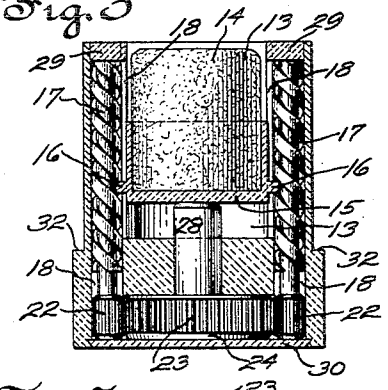


Fig. 5

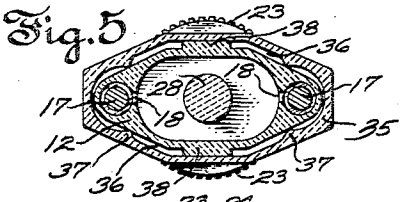


Fig. 6

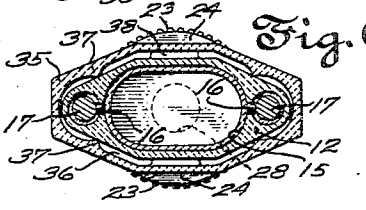


Fig. 7

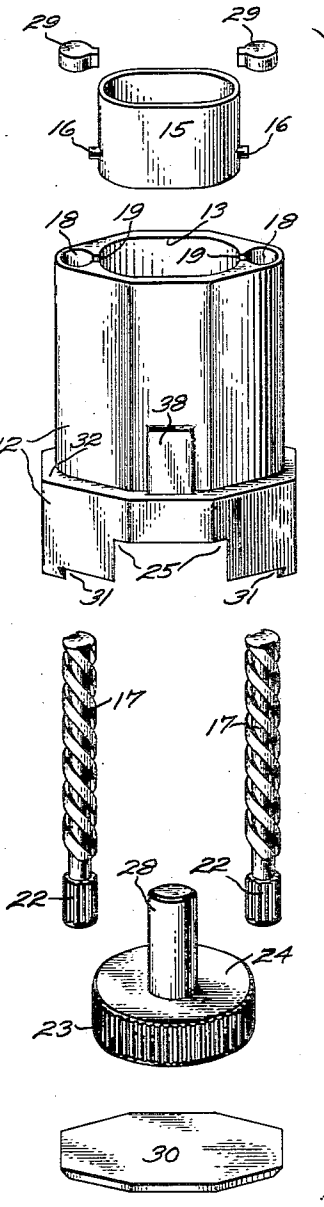


Fig. 4

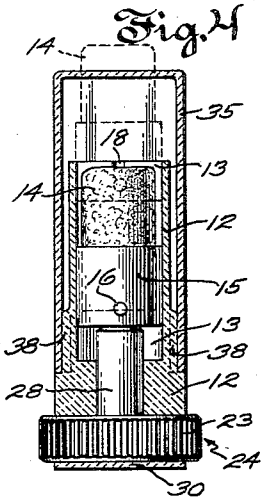
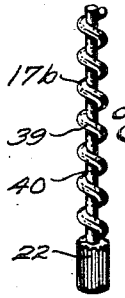


Fig. 8



Fig. 9



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COSMETIC CAKE EXPELLANT HOLDER

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8 Claims. (Cl. 206—56)

The present invention relates to a cosmetic applicative holder particularly of the type designed to contain, project and retract a dispensable cosmetic in cake form to be applied by rubbing the cake against the face.

As distinguished from the lipstick type of cosmetic, which commonly is of relatively slim pencil-like shape, cosmetic cakes for application to the face require a greater area of rubbing surface for contact with the skin, and they are more convenient to use when their face marking surface area is of relatively long and narrow proportions because such shape offers a choice of breadth in the marking stroke. The problem of projecting and retracting a cake of cosmetic whose cross-sectional profile is of such size and proportions, as distinguished from the usually slender, cylindrical and crayon-like lipstick, calls for a new and different kind of operating mechanism for moving the cake carrier successfully between projected and retracted positions.

It is an object of the present improvements to provide an applicative holder for a cosmetic cake of relatively long and relatively narrow cross-sectional shape which shall insure a smooth action of the cake carrier in its sliding movement even when resisted by daubings of the cosmetic that may become lodged between the relatively movable parts of the holder mechanism.

Another object is to decentralize the cake carrier motivating mechanism in order to take advantage of the non-circular and unequal cross-sectional proportions of the carrier for housing in rather widely separated relation plural motivating screws which then may act simultaneously on the cake carrier at points well separated laterally to impel it forcefully in sliding direction while serving also to constrain it against disalignment with its direction of sliding movement that might cause it to cock or jam in the guide well of its casing.

Another object is to enable the shape of the outer casing to follow closely the shape of the cosmetic cake so that the bulk and over all dimensions of the entire holder may be kept to a minimum in comparison with the size of the cosmetic cake held and dispensed thereby.

A further object is to afford combined functions for the roughened surface of a wheel handle so that it may serve both as a motion transmitting gear and as a rotary actuator to be grasped and turned by the fingers of the user's hand.

A further object is to arrange such wheel handle coaxially with the line of reciprocative movement of the carrier of the applicative cosmetic cake.

A further object is to provide an assembly comprising plural impelling screws and a train of gears operatively interconnecting them so that all these working parts may be removed from the casing by merely displacing a common thrust affording element that retains them against axial movement when in place.

These and related objects of the improvements will appear in greater particular from the following description of a successful embodiment of the invention having reference to the appended sheet of drawings wherein:

Fig. 1 is an elevation of the improved cosmetic applicative holder showing its cover cap partially broken away.

Fig. 2 is a bottom plan view looking upward at Fig. 1 showing the retaining plate partially broken away.

Fig. 3 is a view with the cover cap removed taken in section on the plane 3—3 in Fig. 2, looking in the direction of the arrows.

Fig. 4 is a view taken in section on the plane 4—4 in Fig. 1, looking in the direction of the arrows.

Fig. 5 is a view taken in section on the plane 5—5 in Fig. 3, looking in the direction of the arrows.

Fig. 6 is a view with the cosmetic cake removed taken in section on the plane 6—6 in Fig. 3, looking in the direction of the arrows.

Fig. 7 is an exploded view showing the working parts removed from the casing of Fig. 3.

Fig. 8 shows a modified form of impelling screw.

Fig. 9 shows a differently modified form of impelling screw.

Like reference numerals refer to respectively like parts of the structure throughout the drawings.

The casing body **12** of my improved applicative holder has a hollow fully encompassed by said body which provides a guide well **13** extending in an axial direction and open at one axial end to permit the projection and retraction therethrough of a cake of cosmetic marking substance **14**. This cosmetic cake is lodged in a slidable carrier cup **15** which is preferably ovate or of elongate shape along a major axis in transverse profile, as is the cosmetic cake. Thus the top or applicative surface of the cake is of relatively large area and presents a shape which gives a choice of width of marking stroke depending upon the direction and angle at which the cake is applied and wiped against the user's face.

Carrier cup **15** is equipped with two follower lugs **16** which project laterally therefrom. Each of these lugs tracks axially in impellable engagement with only the nearest sides of equally pitched helically winding threads of impelling screws **17** when the latter turn in unison. Each of these screws is in outboard relation to and substantially isolated from the guide well **13**. The threads of screws **17** comprise helical tracks so engaged by follower lugs **16**, respectively, that the lugs are kept on a common level to prevent cocking or jamming of cup **15** in well **13**. To help insure this the impelling screws are spaced laterally apart as far as is permitted by the transverse dimensions of the casing.

Each impelling screw **17** substantially fills the girth of or rotatably fits, and is axially retained within, a full length bearing hole or transmission chamber **18** in casing body **12**. Each of these bearing holes communicates laterally with guide well **13** through narrow vertical slots **19** in a partition intervening between the guide well and each of screws **17**. The partitions comprise walls spanning and dividing the hollow of the casing body into the guide well **13** and the transmission chambers **18**. Follower lugs **16** are free to slide up and down in slot **19** but are restrained thereby against turning movement about the central axis of the casing. Thus the carrier cup **15** is kept from turning about its vertical axis and does not depend for this constraint upon its ovate profile nor the fit thereof within the guide well **13**, wherefore the carrier and well might, if preferred, be round instead of ovate.

On the bottom end of each impelling screw **17** there are fixed pinion teeth **22** which are located rotatably in mesh with corresponding gear teeth **23** on the periphery of a rotary actuator which as here shown is in the nature of a wheel handle **24** having a multiple ridged periphery affording gear teeth **23**. The small pitch of gear teeth **23** and the absence of sharp edges thereon adapt the

periphery of handle 24 to be grasped comfortably and turned by the fingers of a user's hand applied to diametrically opposite segmental portions of the handle which are exposed for manipulation outside the confines of the base portion of casing body 12 as shown in Figs. 1, 2, 4, 5 and 6. Other portions of the wheel handle are concealed within the confines of casing body 12, the latter being circularly recessed at 25 to accommodate the central concealed portions of the wheel handle.

Recess 25 communicates with the bearing holes 18 to permit the meeting and intermeshing of gear and pinion teeth 22, 23. Trunnion 28 is a fixed part of and projects co-axially upward from handle wheel 24 and has rotary bearing centrally in the base portion of casing 12, projecting upward therethrough into guide well 13. Its top end acts as a stop to limit downward travel of carrier cup 15 in well 13 to the position shown in Figs. 3 and 4 where the cosmetic cake is retracted as far as possible into the guide well of the casing. The tops of bearing holes 18 and slots 19 may be blocked permanently by the plugs 29 which serve as top end thrust for the impelling screw 17.

A bottom end thrust for these same impelling screws is afforded by the retainer plate 30 which slides edgewise into and snugly fits a shallow dovetailed recess 31 at the extreme bottom of casing 12. Plate 30 spans the wheel containing recess 25 and completely closes the otherwise open bottom end of the casing. If gearing is provided which turns screws 17 in opposite directions, one screw will be furnished with a right hand thread and the other with a left hand thread.

When in place, plate 30 serves as an axial thrust retainer in common for the wheel manual 24 and for the impeller screws 17. Since the latter are thus unable to move endwise, they impel the lugs 16 of carrier cup 15 upward and downward in the slots 19 whenever they are caused to rotate in unison in a common rotary direction by the turning of wheel handle 24.

The outer surface of the superimposed upper portion of casing 12 is stepped back in relation to the base portion of the casing to afford a marginal ledge 32 on which seats the bottom open end of a cover cap 35 when the latter is in place. The internal walls of cap 35 may be shaped as is best shown in Figs. 5 and 6 so as to leave generous spaces 36 between cap 35 and the casing 12 at all points except where internal ridges 37 formed on the cover cap and external bosses 38 formed on the casing adjoining ledge 32 make sliding frictional contact with the otherwise smooth surfaces of the casing and cap walls. Thus the troubles are avoided both of binding and of too much looseness which otherwise might result from excessive warping or shrinkage of the plastic materials of which cap 35 and/or casing 12 may be made. The cap walls are resilient and will spring a little outward in whatever local regions are necessary to enable all of ridges 37 and bosses 38 to participate in taking up any looseness between cap and casing and providing dependable frictional cling therebetween.

There are many ways in which worm-like impelling screws such as 17 may be constructed other than by milling out threads in a cylindrical rod. As examples, a similarly operating impelling screw such as 12*a* in Fig. 8 may be produced by twisting a strip of metal or other material that will take a permanent set. Also as shown in Fig. 9 a serpentine wire 39 may be twisted about a core wire 40 and fixed thereon to produce an impelling screw such as 17*b*. Of course, the serpentine wire 39 may be a wire of square or ribbon shaped cross section rather than a round wire and this would result in a screw track defined by relatively sharp cornered so called "square" threads or helically winding fins. It is believed unnecessary to mention or illustrate the many other varieties of construction by which a worm like impelling screw may be produced to perform the intended work of screws 17, 17*a* and 17*b*.

In operation, the holder will be carried or stored with its cover cap 35 in place. For use, the cap is merely pulled off the casing 12, and the wheel handle 23 is grasped by thumb and finger of the user's hand which may straddle the retaining plate 30 for this purpose. Turning handle 23 in one direction expells the cosmetic cake 14 from its full line position to its broken line position in Fig. 4. Turning handle 23 reversely returns the cake to its retracted full line position. The leverage and friction conditions of the combined gear and screw transmission are such that no pressure downward on the cake 14 will cause screws 17 to turn. Hence, the cake remains, in effect, locked against retraction by direct pressure thereon in whatever protruding position it is purposely set.

The folowing claims are directed to and intended to cover all variations of the exact shapes and arrangements of parts herein chosen to illustrate the invention which would be obvious equivalents thereof or come within the broadest meaning of the language employed in the claims.

I claim:

1. In a cosmetic applicative holder or the like, the combination of, a hollow casing containing an axially directed guide well, a plurality of threaded impelling screws in laterally outboard relation thereto extending parallel with the axis thereof, a cosmetic carrier constrained to slide axially of said well equipped with thread followers extending laterally from said well into operable engagement with said screws respectively, a wheel handle rotatably mounted in said casing, having gear teeth on its periphery exposed for finger manipulation externally of said casing, and pinions fixed to said screws respectively, each of said pinions having teeth meshing with said gear teeth of said wheel handle in a manner to cause said screws to turn simultaneously, thereby to maintain said carrier in non-grabbing alignment with said well as said carrier is impelled axially thereof through the medium of said followers.

2. In a cosmetic applicative holder or the like, the combination of, a hollow casing containing an axially directed guide well, a plurality of threaded impelling screws substantially isolated from said well in laterally outboard relation thereto extending parallel with the axis thereof, a cosmetic carrier constrained to slide axially of said well equipped with thread followers extending laterally from said well into operable engagement with said screws respectively, a partition intervening between said well and each of said screws separating the latter from the former with sufficient completeness to inhibit clogging of said screws by cosmetic escaped from said carrier, each of said partitions having a narrow axially directed slot in which said thread followers are slidable, a wheel handle rotatably mounted in said casing having gear teeth on its periphery exposed for finger manipulation externally of said casing, and pinions fixed to said screws respectively each having teeth meshing with said gear teeth of said wheel handle in a manner to cause said screws to turn simultaneously, thereby to maintain said carrier in nongrabbing alignment with said well as said carrier is impelled axially thereof through the medium of said followers.

3. A cosmetic expellant holder or the like comprising, a casing body having a hollow therein fully encompassed by said body and spanned by partition walls dividing said hollow into a relatively large cosmetic containing guide well and relatively narrow elongate transmission chambers separated from said well by said walls, each of said walls having a narrow elongate guide slot extending therethrough lengthwise of the transmission chamber and affording highly restricted communication of the latter with said well, a cosmetic carrier slidable within said well, turnable impelling screws located respectively in and substantially filling the girths of said transmission chambers presenting helical threads closely flanking said slots in the partition walls, a pinion fixed on one end of each

of said impelling screws, screw follower lugs projecting laterally from said carrier extending respectively through said slots into tracking engagement with said threads at only the sides of said threads nearest said slot, and an operating wheel pivotally mounted on said casing body between said pinions having gear teeth on its periphery meshing with both of said pinions, said wheel periphery extending sufficiently to the exterior of said casing body to be accessible thereat for being grasped as a handle thereby manually to turn said wheel and simultaneously to turn said impelling screws.

4. A cosmetic expellant holder or the like as defined in claim 3, in which the said threaded impelling screws have the peripheries of their threads journaled in rotary bearing contact respectively with the said partition walls.

5. A cosmetic expellant holder or the like as defined in claim 4, in which the said transmission chambers have ends opening through an outer surface of the said casing body, together with a lipped groove in said outer surface of the casing body extending across said ends of said chambers, and a retainer plate covering the open ends of said chambers having edges slidably fitting said lipped groove in a manner to hold said plate secured to said outer surface of the casing body, whereby to retain the said impelling screws in their said chambers while permitting free removal of said screws endwise from said chambers when said plate is displaced edgewise along said groove.

6. A cosmetic expellant holder or the like as defined in claim 3, in which the said casing body has a cross wall recessed inward from an outermost end surface of said casing body and forming a floor at the bottom of said well, said cross wall containing a bore extending through sufficient thickness thereof to afford an elongate rotor bearing and said operating wheel having a trunnion journaled solely in said bore.

7. A cosmetic expellant holder or the like as defined in claim 6, together with a lipped groove in the said outermost end surface of the said casing body wider than the expanse of the said cross wall, and a retainer plate covering the said operating wheel having edges slidably fitting said lipped groove in a manner to hold said plate secured to said outermost end surface of the casing body, whereby to retain the said wheel rotatably mounted in said cross wall while permitting free removal of the said wheel trunnion from the said rotor bearing when said plate is displaced edgewise along said groove.

8. A readily cleanable cosmetic expellant holder or the like, including an assembly of easily taken apart integral pieces, one of said pieces comprising an integral

hollow casing body having an applicative end and an opposite handle end with a crosswall of substantial thickness intermediate said ends containing a rotary bearing hole, the handle end of said body being cupped to form a recess having lateral walls at least one of which walls is notched to provide a lateral opening from said recess to the exterior of said casing body, said body containing a relatively broad guide well opening outward of said body through said applicative end thereof and dead ended by said cross wall, said body containing two transmission chambers adjacent said well extending through said cross wall and opening outward of said casing body through said handle end thereof, said chambers having restricted communication with said guide well through a narrow slot, there being a transverse groove across said handle end of the casing body wider than the expanse of said recess lipped to form a slide bearing; two others of said pieces comprising impelling rotors having helical screw threads journaled in and filling the girths of said chambers respectively, each of said rotors extending from its said transmission chamber into said recess and thereat carrying pinion teeth; another of said pieces comprising a manually rotatably handle wheel occupying said recess and whose periphery in part projects through said notch to the outside of the casing body and is provided with gear teeth meshing with said pinion teeth on both of said impelling rotors, said wheel having a trunnion journaled in said bore; together with a plate slidable in said groove transversely of said handle end of the casing from a position to cover and retain said wheel in said recess and to cover and retain said screws in said chambers to a position exposing and releasing said wheel and screws for withdrawal from said casing body; a cosmetic carrier slidably fitting said guide well having lateral projections riding slidably in said slots and impellably engaged with said threads of said impelling rotors respectively; and means to close the ends of said transmission chambers at said applicative end of said casing body.

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