

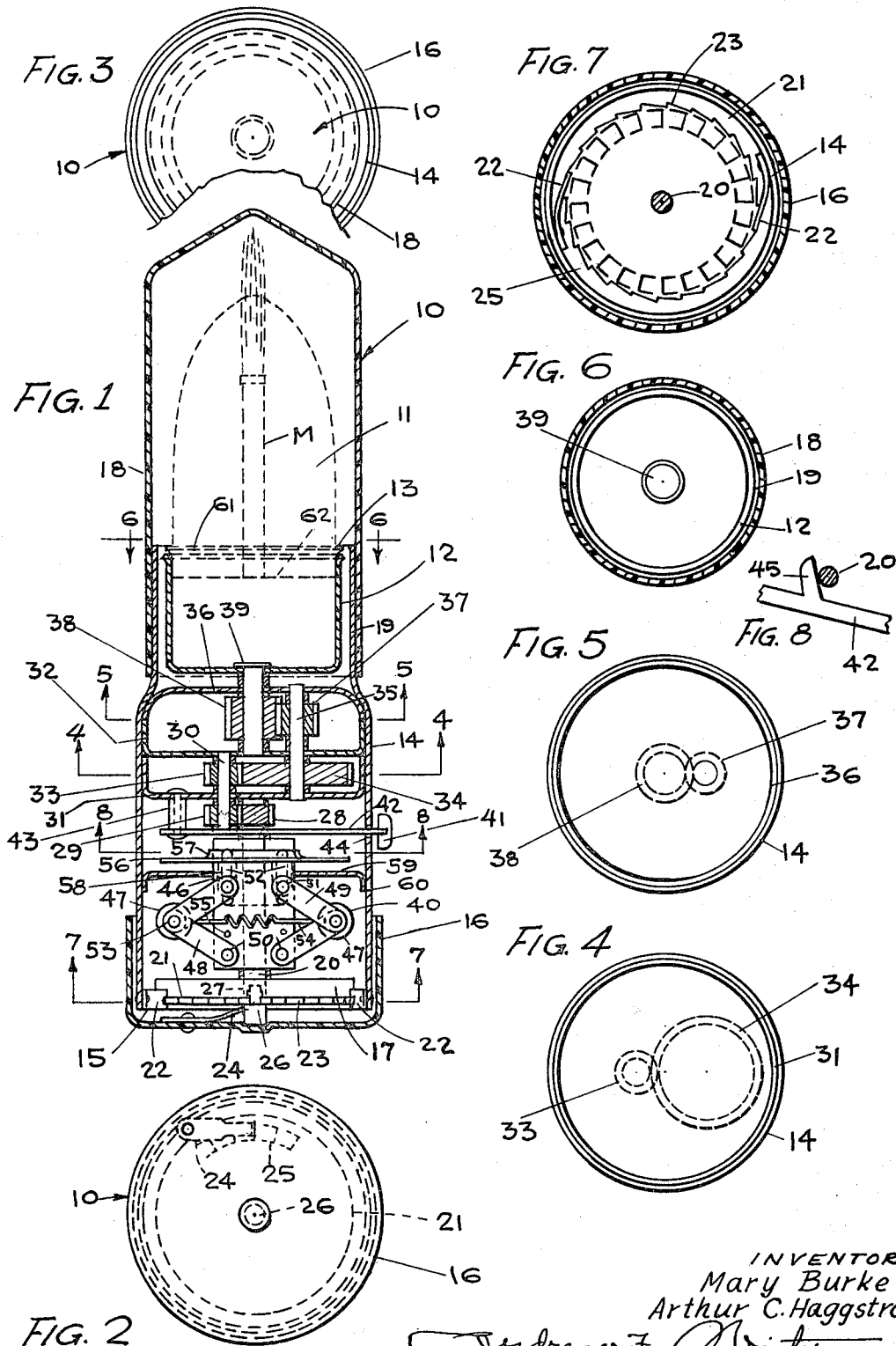
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ROTARY LIPSTICK DEVICE

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ROTARY LIPSTICK DEVICE

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This invention relates to a rotary lipstick device, the advantages of which are:

- (1) Even wear on the lipstick;
- (2) Less wasting of lipstick, and
- (3) An all-around better performance, with a view to more artistic application of the lipstick following evenly the contours of the lips.

A salient feature of the device of our invention is its built-in drive mechanism adapted to be easily wound up by hand between operations, the lipstick being automatically held against turning until ready for use, at which time the mechanism is released for operation and transmits rotary motion to the lipstick, thereby insuring keeping a uniform bullet-shaped end to enable artistic application of the lipstick following evenly contours of the lips. The device is also adapted to operate a mascara brush attachment.

The invention is illustrated in the accompanying drawing, in which:

FIG. 1 is a longitudinal section through a rotary lipstick device of our invention on an enlarged scale, indicating in dotted lines how a mascara brush attachment may be substituted for the lipstick;

FIGS. 2 and 3 are bottom and top views, respectively, and

FIGS. 4 to 8 are cross-sections on the correspondingly numbered lines of FIG. 1.

The same reference numerals are applied to corresponding parts throughout the views.

Referring to the drawing, the reference numeral 10 designates an improved rotary lipstick device made in accordance with our invention, 11 designating the lipstick and 12 the rotary holder therefor turning within the open upper end 13 of the tubular body or handle 14 whose open lower end 15 is covered by a flanged knob or cap 16 used for winding the spiral spring 17 that furnishes the power for the drive mechanism that is housed in the handle 14 and transmits drive to the holder 12. A cap 18 has a friction fit on the reduced upper end portion 19 of the handle 14 and serves to enclose and protect the lipstick 11 until such time as it is to be used, when, of course, the cap is removed. The spring 17 is the like any conventional spiral clock spring and has its inner end suitably fixed to the lower end of a drive shaft 20 and its outer end suitably secured to a ratchet wheel 21 cooperating with spring-pressed pawls 22 carried on the inside of the handle and engaging the ratchet teeth 23 on the periphery of the wheel 21 to maintain the wound condition of the spring 17 between windings with knob 16. The latter has a spring pressed pawl 24 engageable in ratchet teeth 25 provided on the bottom face of the ratchet wheel 21, the knob 16 having a center mounting stud 26, the reduced end portion 27 of which has spring pressed ball detents engageable in an annular groove in an axial recess provided in the lower end of the shaft 20 to retain the knob 16 in place and still allow the slow rotation of shaft 20 with respect to knob 16 under spring drive when the device is in operation.

Shaft 20 transmits drive to holder 12 through the following gearing: a pinion 28 fixed on the upper end of shaft 20 meshes with pinion 29 on the lower end of a counter-shaft 30 suitably mounted in bearing provided therefor on cupped discs 31 and 32 pressed into place in abutting relationship in the handle 14. A second pinion

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33 on the upper end of the countershaft 30 meshes with a gear 34 on another counter-shaft 35 mounted in bearings in discs 31 and 32 and a third cupped discs 36, this last step 33-34 being the first of two stages of gear reduction, the next and final step being of which is that provided by pinion 37 on shaft 35 meshing with gear 38 fixed on a shaft 39 that is coaxially disposed with respect to drive shaft 10 and is suitably mounted in bearings in discs 32 and 36 and has its upper end welded or otherwise suitably secured to the center of the cupped holder 12 at the bottom thereof. With this two-stage reduction gearing, there is a step-down gear ratio of approximately six to one, which, taken with the size and power of spring 17, in relation to the amount of drag or resistance to turning of holder 12 when the lipstick 11 is in contact with the lips, insures the desired slow speed rotation. However, to further insure against the turning of the holder 12 above a predetermined speed in the event someone runs the device unloaded, we have provided the combination governor and friction brake mechanism indicated generally by the reference numeral 40, which is set into operation automatically the instant the device is operated, namely, when knob 41 on the outer end of the arm 42 pivoted at 43 inside the handle 14 is moved from "off" to "on" position, the arm 42 extending freely through a slot 44 in the wall of the handle 14 and having a cam-shaped projection 45 intermediate its ends and on an arc eccentric with respect to the pivot 43 for arm 42, which, in the "off" position of the arm wedgingly engages the shaft 20 to hold it against turning but in its "on" position allows the shaft to turn freely.

Any suitable or preferred combination governor and brake mechanism may be employed, the one shown at 40 being merely illustrative of a simple and inexpensive mechanism of that kind. It consist of a square elongated collar 46 suitably fixed on the shaft 20 above the spring 17 and having governor weights 47 mounted on the opposite sides thereof on pairs of toggle arms 48 and 49 disposed on opposite sides of the collar 46, the lower pairs of arms 48 being pivotally mounted on the lower end of the collar, as seen at 50, while the upper pairs of arms 49 have pins 51 pivotally and slidably mounted in slots 52 provided therefor in the upper end portion of the collar 46, the outer ends of the arms 48 and 49 being pivotally connected together, as shown at 53, on pins that carry the governor weights 47. Tension springs 54 provided on opposite sides of the collar 46 extend between the pins 53 normally urging the governor weights 47 inwardly toward the collar 46 to the extent limited by stop pins 55 projecting from the opposite sides of collar 46. Under these conditions, a friction brake disc 56, which has a square center hole defined therein by an upwardly swaged flange 57 slidable freely on the collar 46, is connected by means of ears 58 with the aforementioned pins 51 working in slots 52 and is disposed in slightly spaced relation to a fixed friction brake ring 59 that has a marginal flange 60 inserted with a press fit inside the handle 14. Thus, if the spring 17 happens to be wound to such an extent that the holder 12 would otherwise be turned too fast, if not prevented from doing so, the combination governor and brake mechanism 40 will keep the speed down to a predetermined level be reason of the engagement of friction disc 56 with friction ring 59 when the governor weights 47 are thrown outwardly under centrifugal force against the action of their restraining springs 54.

In operation, the knob 41 on the outer end of the arm 42 is set in the "off" position after each operation of the rotary lipstick device. Then, before using the lipstick, the operator need only wind the spring 17 with one or more turns of the knob 16 to supply sufficient power for turning the holder 12 throughout one operation of the lipstick, the lipstick 11 being turned by spring

power when the knob 41 on arm 42 is moved to the "on" position. Fairly uniform slow speed of rotation is assured with the combination governor and brake mechanism 40 and also by the reduction gearing provided at 28-38 between the drive shaft 20 and driven shaft 39. We have shown the winding knob 16 and cover cap 18 as being of plastic material and the rest of the structure as being made of metal. On the other hand, most, if not all, of the outer parts of the device could be of plastic materials as well as the inserts 31, 32, and 36 and holder 12, in order to secure the desired lightness as well as economy of manufacture, inasmuch as only the operating mechanism inside the device need be made of metal. The lipstick 11 has a metal or plastic cup 61 on the inner end thereof which has a close enough friction fit in the holder 12 to transmit drive to the lipstick 11, and, of course, when the lipstick 11 is used up, a refill may be procured and substituted for the old one. When the lipstick 11 is removed, the holder 12 may receive the handle end 62 of a mascara brush, as indicated in dotted lines at M in FIG. 1, with a similar close enough friction fit to transmit rotation to the brush to enable applying the mascara more evenly to the eyelashes. Thus, the one device serves a double purpose.

It is believed the foregoing description conveys a good understanding of the objects and advantages of our invention. The appended claims have been drawn to cover all legitimate modifications and adaptations.

We claim:

1. A rotary lipstick device comprising an elongated tubular handle, a holder for lipstick rotatably mounted on one end of said handle on an axis extending longitudinally thereof, drive means housed in said handle, reduction gearing also housed in said handle drivingly connecting the drive means with said holder, and manually controlled clutch means controlling the starting and stopping of the holder, the drive means comprising a spiral spring housed in said handle at the end remote from the lipstick holder, and a knob rotatable relative to the last named end of said handle attached to one end of said spring to wind the same by rotation of said knob relative to said handle, the other end of said spring being operatively connected with the reduction gearing.

2. A rotary lipstick device as set forth in claim 1 including centrifugal governor means housed in said handle driven by the drive means concurrently with the reduction gearing to regulate the speed of rotation of said holder.

3. A rotary lipstick device as set forth in claim 1 in-

cluding centrifugal governor means housed in said handle driven by the drive means concurrently with the reduction gearing to regulate the speed of rotation of said holder, there being friction brake means housed in said handle operable automatically with said governor arranged to be engaged to slow down the operation of the holder automatically to a predetermined speed.

4. A rotary lipstick device as set forth in claim 1 including a mascara brush insertable interchangeably in lieu of a lipstick in the holder for rotation when applying mascara to the eyelashes.

5. A rotary mascara brush device comprising an elongated tubular handle, a holder for a mascara brush rotatably mounted on one end of said handle on an axis extending longitudinally thereof, drive means housed in said handle, reduction gearing also housed in said handle drivingly connecting the drive means with said holder, and manually controlled clutch means controlling the starting and stopping of the holder, the drive means comprising a spiral spring housed in said handle at the end remote from the brush holder, and a knob rotatable relative to the last named end of said handle attached to one end of said spring to wind the same by rotation of said knob relative to said handle, the other end of said spring being operatively connected with the reduction gearing.

6. A rotary mascara brush device as set forth in claim 5 including centrifugal governor means housed in said handle driven by the drive means concurrently with the reduction gearing to regulate the speed of rotation of said holder.

7. A rotary mascara brush device as set forth in claim 5 including centrifugal governor means housed in said handle driven by the drive means concurrently with the reduction gearing to regulate the speed of rotation of said holder, there being friction brake means housed in said handle operable automatically with said governor arranged to be engaged to slow down the operation of the holder automatically to a predetermined speed.

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