

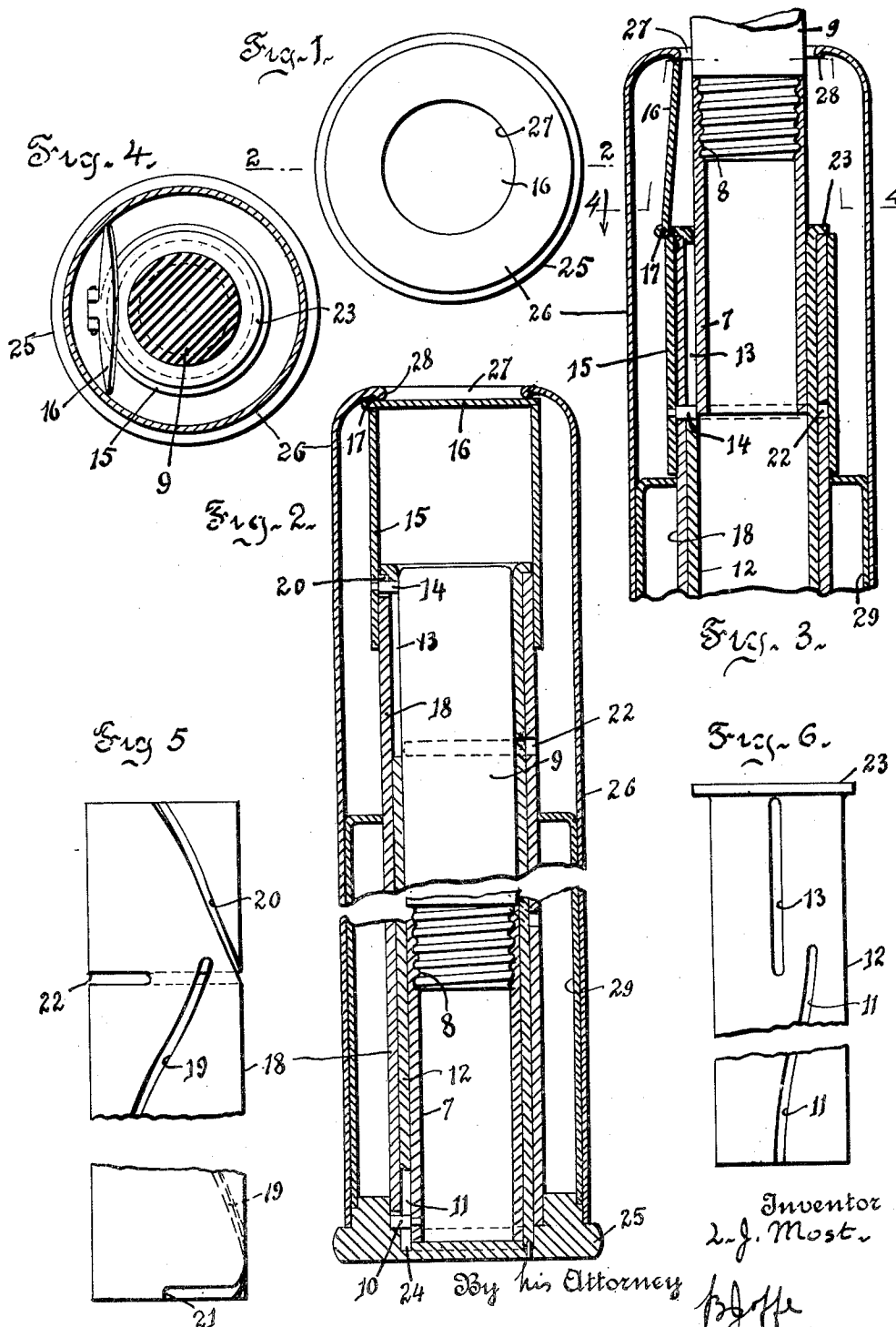
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CONTAINER

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CONTAINER

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My invention relates to containers suitable for cosmetics or other material capable of being fed forth and back, as for example, lipstick, and the object is to provide a container the cover of which is automatically opened when the material is to be fed out of the container and automatically closed when the material is retracted into the container.

The form of container illustrated and claimed in this application is an improvement over my joint application Serial #276,210, filed May 9, 1928, from which it differs in that the lid which opens or closes the container is housed within the outer shell of the container, whether the container is open or closed.

In the appended drawing, Figure 1 is a plan view of the container when closed.

Figure 2 is a vertical section on line 2-2, Figure 1.

Figure 3 is a fragmentary section similar to that of Figure 2, showing the container open, and the material fed out of it to the fullest extent.

Figure 4 is a section on line 4-4, Figure 3.

Figure 5 is an elevation of the tubular member provided with the helical and circular slots, and

Figure 6 is an elevation of the actuator.

In the figures 7 is a cosmetic carrier, preferably in the shape of a tubular member, the upper portion 8 of which is shaped to tightly engage the similarly shaped end of a pencil type of cosmetic 9. The carrier 7, at its lower end, is provided with a pin 10 which extends through a longitudinal slot 11 (see Figures 2 and 6) of an actuator 12 tubular in shape. The slot 11 has a slight slant to clear a slot 13 of the actuator 12. The slot 13 is engaged by a pin 14 provided on the annular lid carrier 15, the lid 16 being hinged at 17 to the lid carrier 15 to obstruct or clear the adjacent open end of the actuator 12.

Between the lid support 15 and the actuator 12 is a tubular helix 18 provided with helical slots 19 and 20. The helical slot 19 is to be engaged by the pin 10 of the cosmetic carrier, and the helical slot 20 is to be engaged by the pin 14 of the lid support. The two helical slots 19 and 20 pitch into opposite directions, the longer helical slot 19 being

merged at the end remote from the slot 20 into a circular slot 21, the circular length of which is equivalent to the circular length of the projection of the helical slot 20 on the plane of slot 21. The helical slot 20 merges into a circular slot 22, the circular length of said slot being substantially equal to the circular length of the helical slot 19 when projected on the plane of slot 22.

The actuator 12 is provided with an outward flange 23 at its upper end; that is, at the lid end, which flange rests against the upper end of the helix 18 but clears the lid support 15. The lower end of the actuator extends past the helix 18 into an annular recess 24 provided in a head 25, said head having also a suitable annular recess for the tubular member 18, but where the actuator is keyed to the head 25 to rotate therewith, the helix 18 is free to turn in said head 25.

The lid support 15 and the helix 18 are, in turn, inclosed by a housing 26 open at the lower end to fit a shoulder on the head 25. The other end of the housing is provided with an opening 27 spaced from and aligning with the adjacent open end of the actuator to permit the passage of material secured to the cosmetic carrier 7. Preferably, the housing 26 at the opening 27 is rounded to provide a bead 28 against which the lid 16 is brought when the material is fully retracted into the housing.

Since the housing 26 is made of thin material, a reinforcing spacer 29 is provided within the housing fitting tightly into the housing and against the helix 18, so as to prevent relative rotation between the housing 26 and the helix 18.

As shown in Figure 2, the container is in a closed position. That is to say, the opening 27 is closed by the lid 16, and in this position of the lid it may be said that the actuator is also closed by said lid. By holding the housing 26 and turning relatively thereto the head 25 toward the right, the actuator 12 is rotated with the head. Thus the pin 14, engaged by the slot 13 and also by the helical slot 20, forces the lid support 15 away from the opening 27, and therewith the lid 16, the helix 18 being held through the spacer 29 by the hous-

ing 26. Pin 10 of the carrier 7 engages the slot 11 of the actuator 12, and also the circular slot 21 of the helix 18. Therefore, while the lid 16 with its support 15 are travelling away from the opening until the end of the helical slot 20 is reached, the cosmetic carrier 7 while turning is not moving longitudinally. That is, near the point where the helical slot 20 merges with the circular slot 22, the lid 16 will strike the flange 23 of the actuator 12, and forces the same to the position shown in full lines in Figure 3. At that time, the pin 14 will reach the lower end of the straight slot 13, and also enter the circular slot 22. Since the circular slot 21 is equivalent in its circular length to the projection of helical slot 20, it follows that the carrier 7 remains stationary longitudinally until the pin 10 enters the helical slot 19, but that takes place when the pin 14 enters the circular slot 22. Therefore, as the head 25 continues to rotate to the right, the lid support 15 will not move longitudinally any more, although it will turn, while the carrier 7 will rotate and move longitudinally. It only turned without moving longitudinally while the pin 10 was engaged with the circular slot 21.

As the head 25 is revolved to the left from the position shown in Figure 3, the carrier 7 is both revolved and moved longitudinally while its pin 10 is in engagement with the helical slot 19. On the other hand, the lid support 15 will only revolve and not move longitudinally while its pin 14 remains in engagement with the circular slot 22, and since the circular length of the slot 22 and the circular length of the projection of the helical slot 19 are the same, there will be no longitudinal movement of the lid support 15 until the cosmetic carrier 7 is fully retracted. At the moment the pin 10 of the carrier 7 enters the circular slot 21, the helical slot 20 engages the pin 14 of the lid support 15, and the continued rotation of the head 25 to the left necessarily forces the lid support up, causing the lid 16 to fall on to the support 15 as it is brought by the movement of the head in the direction stated against the beads 28 at the opening 27 of the housing 26.

It will be noted that the lid is opened or closed, within the housing 26, so that it does not in any way interfere with the use of the container nor does it mar the appearance of the container when it is open. Furthermore, the opening and closing of the lid or cover are positive; that is, the closed lid can only open if the actuator 12 is revolved through the head 25, nor can the lid fall against the pencil 9 when in open position, as the flange 23 forms an obstruction for the lid, preventing it from moving unless the lid support 15 is raised sufficiently by means of the head 25 to permit the lid to move on to the lid carrier, which motion is helped by the container's engagement with the lid, as best seen in Figure 4.

I claim:

1. A container having an opening, a material carrier mounted to move to and from the opening, a lid for said opening interposed between the carrier and the opening, and means for moving successively the lid from the opening to expose the carrier to the opening and move the carrier toward the opening, and vice versa.

2. A container having an opening, a cosmetic carrier mounted to move to and from the opening, a lid for said opening interposed between the carrier and the opening, and means for moving successively the lid and the carrier in opposite longitudinal directions, said last means being adapted to actuate the lid to clear the opening in the container when said lid is near the end of its longitudinal movement from the opening.

3. A container having an opening, a hinged lid for said opening mounted to reciprocate to and from the opening, a carrier for cosmetics also mounted to reciprocate to and from the opening, means for reciprocating the lid and carrier successively, and means for moving the lid on its hinge near the end of its reciprocating motion away from the opening.

4. A container having an opening, a lid for said opening mounted to reciprocate to and from the opening, a carrier for cosmetics also mounted to reciprocate to and from the opening, means for reciprocating the lid and carrier successively in opposite directions, and means for moving the lid to clear the opening near the end of its reciprocating motion away from the opening.

5. A container having an opening, a carrier for material, a lid between the opening and the carrier, an actuator revolvably mounted in the container engaging the carrier and lid to revolve them both and permit a longitudinal movement thereof, a member attached to the container having means to permit the carrier and lid an angular movement only and a combined angular and longitudinal movement, said movement of lid and carrier being so related that when one moves angularly, the other moves angularly and longitudinally, and means on the actuator for engaging the lid when it nears the end of its longitudinal and angular movement away from the opening to actuate the lid and expose the opening of the container.

6. A container having an opening, a carrier for material, a lid between the opening and the carrier, an actuator revolvably mounted within the container engaging the carrier and the lid to revolve them both and to permit a longitudinal movement thereof, a member stationary relative to the container engaging the carrier and lid to permit to them both an angular movement only and a combined angular and longitudinal movement when they are turned by the actuator, said member

being so arranged that their combined angular and longitudinal movement are in opposite directions, and when one moves angularly and longitudinally, the other moves only angularly, and means associated with the actuator to engage the lid to uncover the opening for the carrier when the lid moves angularly only.

7. A container having an opening, a carrier for material, a lid for the opening, a lid support, an actuator revolubly mounted within the container engaging the carrier and support to provide for both angular movement only and combined angular and longitudinal movements, said member being so arranged that although the carrier and support revolve simultaneously the longitudinal movements are so arranged that when one moves longitudinally, the other is only moving angularly, and means associated with the actuator to engage the lid to expose the opening for the carrier when the support for the lid moves angularly.

8. A container having an opening, a carrier for material, a lid for the opening, a lid support, an actuator revolubly mounted within the container engaging the carrier and support to provide for both angular movement only and combined angular and longitudinal movements, said member being so arranged that although the carrier and support revolve simultaneously, their longitudinal movements are arranged in opposite direction, and when one moves longitudinally, the other is only moving angularly, and means associated with the actuator to engage the lid to expose the opening for the carrier when the support for the lid moves angularly.

9. A container having an opening, a carrier for material, a lid between the opening and carrier, an actuator revolubly mounted in the container and engaging the carrier and lid to revolve them both and to permit them to move longitudinally, a member attached to the container having a helical slot engaged by the carrier, said member having also a helical slot engaged by the lid, each of said helical slots merging into a corresponding circular slot, the circular length of each slot being substantially equal to the circular projection of the helical slot with which it does not merge, said actuator having means for engaging the lid to expose the opening in the container when the carrier is to move longitudinally and angularly, said carrier and lid being arranged to engage their respective helical and circular slots so, that when one engages its circular slot, the other engages its helical slot.

10. A container having an opening, a carrier for material, a lid between the opening and carrier, an actuator revolubly mounted in the container and engaging the carrier and lid to revolve them both and to permit them to move longitudinally, a member attached to

the container having a helical slot engaged by the carrier, said member having also a helical slot engaged by the lid, the two helical slots having opposite pitches, each of said helical slots merging into a corresponding circular slot, the circular length of each slot being substantially equal to the circular projection of the helical slot with which it does not merge, said actuator having means for engaging the lid to expose the opening in the container when the carrier is to move longitudinally and angularly, said carrier and lid being arranged to engage their respective helical and circular slots, so that when one engages its circular slot, the other engages its helical slot of the member.

11. A container having an opening, a carrier for material, a lid, a lid support for maintaining the lid between the carrier and the opening, an actuator revolubly mounted in the container engaging the carrier and support to revolve them both and to permit longitudinal movement thereof, a helix attached to the container having a helical slot engaged by the carrier and another helical slot engaged by the support, the two helical slots having opposite pitches, said helix having a circular slot for each of the helical slots with which it merges, the circular length of each circular slot being substantially equal to the circular projection of the helical slot with which it does not merge, said actuator having means for engaging the lid to expose the opening of the container for the carrier when said support is to engage the circular slot with which the helical slot engaged by the support is merged, said carrier and lid support so engaging their respective slots in the helix that when one is in engagement with its helical slot, the other is in engagement with its circular slot.

12. A container comprising an actuator, a cosmetic carrier in the actuator mounted to revolve therewith and move longitudinally therein, a helix housing the actuator revolubly and preventing its longitudinal movement relative thereto, said helix engaging the carrier so that it can move angularly only and angularly and longitudinally when the actuator is turned, a lid for one end of the actuator, a lid support engaging the helix and the actuator, so, as to turn with the turning of the actuator and to move angularly only and angularly and longitudinally when the actuator is revolved relatively to the helix, means on the actuator to engage the lid to clear the end of the actuator when the lid support moves only angularly, said helix being so arranged that when the support moves angularly only the carrier moves angularly and longitudinally and vice versa, and a housing fitting over the lid and helix engaging the helix to prevent the same from turning relative to the housing, said housing having an opening aligning with the actuator and spaced therefrom to accommodate the lid when the

same clears the end of the actuator, said lid support maintaining the lid at the opening of the housing when the carrier is fully retracted within the actuator.

- 5 13. A container having an opening, a carrier for material mounted to move to and from the opening, a hinged lid for said opening interposed between the carrier and the opening, and means for moving successively the lid from the opening and the carrier toward the opening, and vice versa.
- 10 14. A container having an opening, a carrier for material mounted to move to and from the opening, a lid for said opening normally barring the passage of the material in the carrier and a member revoluble on the container including means for moving successively, the lid to expose the opening to the carrier and to move the carrier toward the opening and vice versa.
- 15 15. A container having an opening, a carrier for material mounted to move to and from the opening, a lid for said opening normally barring the passage to material in the carrier, and means revoluble on the container for moving successively, the lid from the opening to expose the same to the carrier and to move the carrier to the opening and vice versa.
- 20 16. A container having an opening, a carrier for material mounted to move to and from the opening, a lid for said opening normally barring the passage of material in the carrier, and means operable from the outside of the container and engaging the lid and carrier to move the lid from the opening to expose the same to the material in the carrier, and then to move the carrier toward the opening, and vice versa.
- 25 17. A container having an opening, a carrier for material mounted to move to and from the opening, a lid for said opening normally barring the passage of material in the carrier, and motion transmission means for the lid and carrier operable from the outside of the container for moving successively the lid from the opening to expose the same to the material in the carrier, and to move the carrier toward the opening, and vice versa.
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