

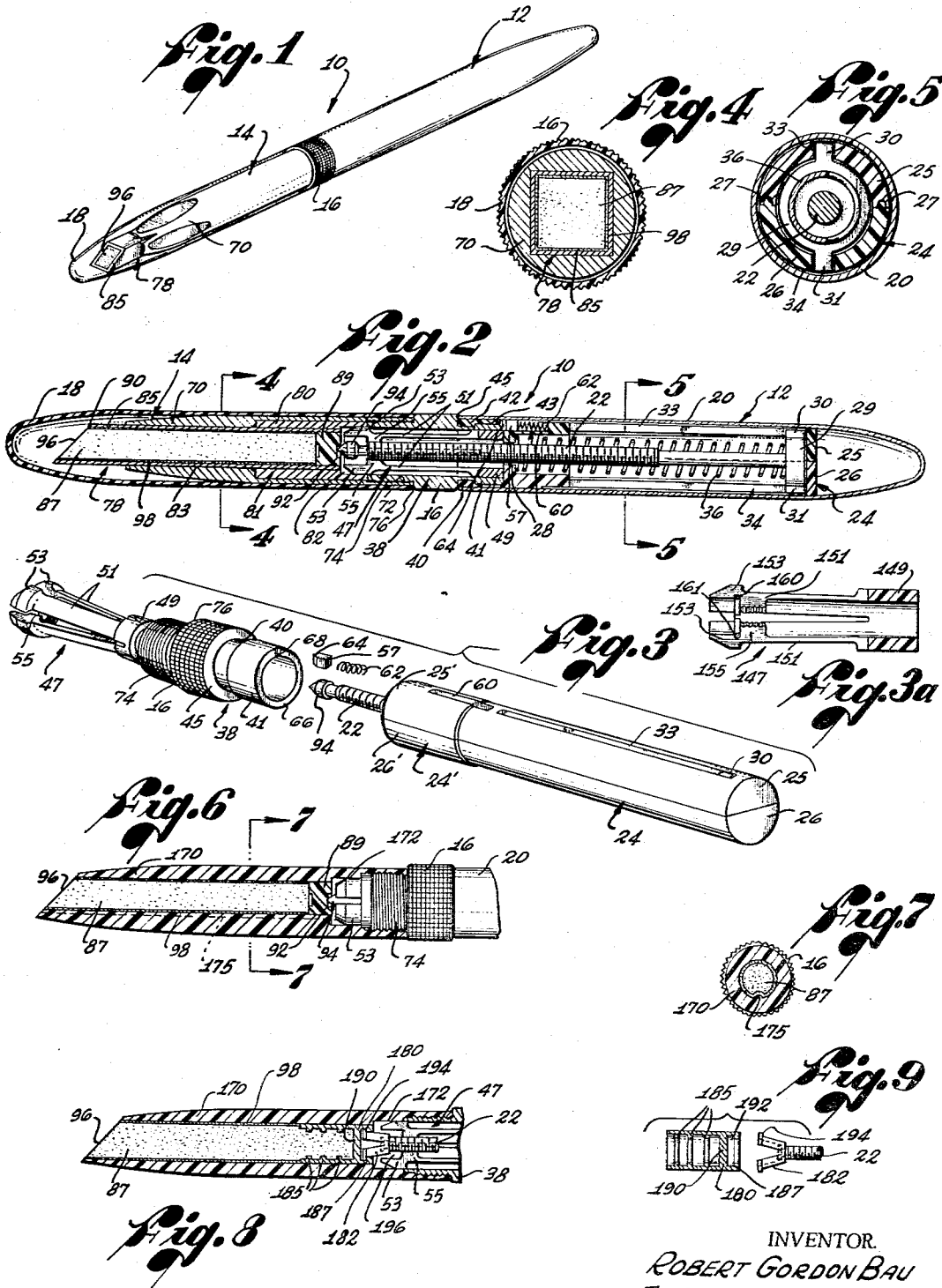
Dec. 19, 1967

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3,358,699

COSMETIC STORING AND DISPENSING DEVICE

Filed Oct. 3, 1962



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3,358,699

**COSMETIC STORING AND DISPENSING DEVICE**

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Filed Oct. 3, 1962, Ser. No. 228,199

8 Claims. (Cl. 132-79)

This invention relates generally to devices for storing and dispensing wax and oil base cosmetics, such as lipstick and the like, or other potted materials of relatively soft composition, and more particularly to an improved pomade dispensing device having unique means for supporting a replaceable cartridge and dispensing the pomade therefrom, and which permits the use of cartridges of minimum complexity and expense.

More specifically, this invention relates to improvements in refill-type cosmetic dispensers such as are disclosed and claimed in my copending applications Ser. No. 164,834, now Patent No. 3,256,980 filed Jan. 8, 1962 and Ser. No. 191,927 now Patent No. 3,219,044 filed May 2, 1962, wherein an elongated pomade holder, or quill, is fitted onto an actuator housing, and in which an elongated screw member or actuator forming part of the quill extends into the housing for use in forcing the pomade out of the quill to the extent needed by the user.

Generally the screw member is threaded in the housing and is turned in one direction (e.g., clockwise) so as to move longitudinally and thereby extend the pomade with it. After the pomade supply is used up, the quill with its screw member is removed and replaced with a refill. Although these unique inventions operate as desired, I have found a need to provide such a cosmetic dispenser which facilitates the use of even simpler and less expensive refills, which reduces the manual operations required by the user, and which minimizes the likelihood of waste of pomade by the user.

It is an object of my invention to provide a cosmetic storing and dispensing device with an actuator capable of repeated used, and which accommodates simple and inexpensive cosmetic refill cartridges.

It is another object of my invention to provide, for a refill-type dispenser for potted materials, refill cartridges of minimum complexity and cost.

A further object of my invention is to provide a cosmetic dispensing device embodying means for metering the cosmetic supply in precisely controlled amounts.

A still further object of my invention is to provide an improved cosmetic dispensing device having a minimum number of component parts of simple design and rugged construction.

The above and other objects and advantages of my invention will be better understood by reference to the following detailed description when considered in connection with the accompanying drawings of illustrative embodiments thereof, wherein:

FIGURE 1 is a perspective view of an assembled refill-type pomade dispenser in accordance with my invention;

FIGURE 2 is a longitudinal sectional view of the device of FIGURE 1, showing the structural cooperation between the cosmetic supply cartridge and the dispensing mechanism, with the cartridge properly installed upon the main shell of the dispensing device;

FIGURE 3 is an exploded perspective view of the main structural components of the reuseable portion of the dispensing mechanism;

FIGURE 3a is a longitudinal sectional view of an alternate embodiment of the spring element used in the dispensing mechanism of the present invention;

FIGURE 4 is a sectional view taken along the line 4-4 of FIGURE 2, showing the structure of the cartridge;

FIGURE 5 is a sectional view taken along the line 5-5 of FIGURE 2, and illustrates the manner of supporting

and aligning the dispensing means within the main shell;

FIGURE 6 is a fragmentary sectional view of my refill-type dispenser adapted to support a cartridge that carries a pomade stick of circular cross section;

FIGURE 7 is a sectional view taken along the line 7-7 of FIGURE 6, showing the ridge in the quill to which the pomade conforms so as to prevent angular movement of the pomade stick;

FIGURE 8 is a fragmentary sectional view of an alternate embodiment of the pomade holder of my invention, showing means wherein the pomade stick may be extended and retracted manually while a cartridge is in use; and

FIGURE 9 is a fragmentary sectional view of the main parts of the embodiment of FIGURE 8 for permitting manual extend and retract operations.

Referring now to the drawings, and particularly to FIGURES 1 and 2 thereof, there is shown a fully assembled refill-type cosmetic dispensing device 10 of my invention for dispensing lip pomade. The device 10 has a generally cylindrical, fountain-pen-like appearance in its assembled state and includes a rear main body 12 containing the main structural components of a reuseable dispensing mechanism, and a forward cartridge section 14 containing a supply of lip pomade. Intermediate the main body 12 and the cartridge section 14 is a knurled gap 16 which is rotatable with respect to the main body, but fixed with respect to the cartridge section. To dispense the cosmetic from the cartridge section 14, the knurled grip 16 is held stationary by the fingers of one hand while the main body 12 is rotated by the other hand, as in the conventional clockwise direction, thereby to cause the pomade to be extended out of its holder.

A removable end cap 18 is friction fitted over the cartridge section 14 when the device 10 is not in use. This protects the exposed end of the pomade from damage by the elements, and also provides a sealed unit which can be carried about in a purse or pocket without danger that the lining of the purse or pocket will be soiled by the pomade. The cap 18 may be fabricated of any suitable structural material, such as metal, plastic or the like, and may be either opaque or transparent. Transparent caps have the added advantage, however, of facilitating identification of the potted material within the cartridge, as by color, texture or the like, without requiring removal of the end cap.

The internal structural details and manner of assembly and operation of the device 10 will be described with reference to FIGURES 2-5. The structural elements employed may be fabricated of plastic, metal, or any combination thereof, depending upon which manufacturing techniques and materials are most economical or desirable. Referring to FIGURES 2-5, the main body 12 includes a hollow, generally cylindrical, outer shell 20 for housing the dispensing mechanism. Since the shell 20 contains the reuseable portion of the device 10, and is thereby a permanent structural element, its outer surface may be jeweled or otherwise expensively decorated to render the device attractive without in any way contributing to the cost of the refill cartridges.

A threaded rod or screw member 22 is coaxially supported within the shell 20 by means of a cylindrical sleeve 24. Preferably the sleeve 24 is split along any convenient longitudinal plane, so that it is formed of a pair of complementary sleeve sections 25, 26. In assembling the device 10, the halves of the sleeve 24 are held together by the shell 20. To this end, the sleeve 24 at one end has an enlarged diameter portion 24' formed of enlarged semi-cylindrical portions 25', 26' of the sleeve sections when they are in abutment, and the shell 20 at its open end is adapted to be forced over and snugly fit onto the enlarged

portion 24'. To insure proper alignment of the sections 25, 26 in assembly, they are preferably provided with mating projections and openings, as indicated at 27 in FIGURE 5, which are spaced along their lengths.

The rod 22 is maintained in coaxial alignment within the sleeve 24 by a reduced diameter section forming a constriction 28 in the sleeve 24 adjacent one end thereof, and by a disc 29 on the rear end of the rod. The opening in the constriction 28 provides just enough clearance for a sliding fit with the rod, and the disc 29 is of such a diameter to be in slidable engagement with the interior of the sleeve 24.

The disc 29 has a pair of diametrically opposed, radial ears 30, 31. The sleeve sections 25, 26 have respective elongated slots 33, 34 which slidably receive the ears 30, 31, when the rod 22 is installed within the sleeve 24.

A coil spring 36 surrounds the disc 29 and the confronting radial face of the construction 28. Hence, the spring 36 constantly biases the disc 29 and rod 22 towards the rear of the sleeve 24.

The knurled grip 16 forms part of a hollow sleeve 38 that is supported within the open end of the shell 20 by locking engagement with the sleeve 24. This is accomplished by interlocking the sleeves 24, 38, as by means of an annular recess 40 in the outer surface of the sleeve 38 adjacent the knurled grip 16, and a mating internal rib 42 and an adjacent internal recess 43 in the enlarged end 24' of the sleeve 24. The end portion 41 of the sleeve 38 forms a collar for a spring member 47, and is captured in the internal recess 43.

As will be appreciated, the rib 42 and the recess 43 in the sleeve portion 24' are formed of semi-cylindrical ribs and recesses in the ends 25', 26' of the sleeve sections 25, 26. In assembly, when the sections 25, 26 are placed together over the rod 22, and with the spring 36 and sleeve 38 in place as shown in FIGURE 2, the shell 20 upon being forced over the sleeve portion 24' is brought up against the grip 16, i.e., against a radial shoulder 45 thereon, thereby to hold the sleeves 24, 38 in their interlocked positions. Thus arranged, the shell 20 is adapted, when rotating it while holding the grip 16 (and hence the sleeve 38) stationary, to rotate the sleeve 24 therewith.

As previously indicated, the sleeve 38 is adapted to receive the spring member 47. This spring member, which may be formed of a spring metal such as bronze, has a tubular insert 49 at one end adapted to be press fitted into the collar 41 on the sleeve 38. The tubular insert 49 is thus both rotationally and translationally fixed with respect to the sleeve 38.

A plurality of normally divergent spring members 51 extend in cantilevered fashion from the insert 49. Each of the members 51 carries an enlarged head 53 and an internally threaded jaw 55 adjacent its unsupported end. When the heads 53 are brought together, the threaded portions of their jaws are brought into mating engagement with the threads on the rod 22. When this has occurred, and the shell 20 is rotated with respect to the knurled grip 16, the rod 22 is caused to rotate with respect to the spring member 47, whereupon the rod is caused to move longitudinally within the sleeve 24.

The pitch of the threads on the jaws 55 and the rod 22 are such that when the threads are in engagement, the rod 22 advances a distance equal to the pitch of its threads for each complete revolution of the shell 20. Hence, the pomade is extended the same distance out of its holder. In this regard, the rod 22 is threaded along a sufficient portion of its length to enable it to be advanced longitudinally a sufficient distance for dispensing the entire contents of a properly installed supply cartridge. Preferably, the pitch of the threads is such that one complete turn of the shell 20 advances the shaft 22 just far enough that the amount of pomade accessible to the user is that which is sufficient for an average application.

To insure the aforescribed cooperation between the threads on the jaws 55 and the rod 22, my invention includes automatic self-indexing means by which to establish the necessary threaded engagement, and for ascertaining when the shell 20 has been rotated exactly one complete revolution. In accordance with my invention, both of these ends are satisfied simultaneously by a single detent mechanism of relatively simple construction.

The detent mechanism comprises a plunger 57 seated within a longitudinal groove 60 in the surface of the sleeve section 25, and biased to a forward position within the groove by a miniature compression spring 62. The forward end of the groove 60 intercepts and extends a short distance into the internal recess 43 in the sleeve 24. Hence, with the sleeve 38 installed within the sleeve 24, the forward tip 64 of the plunger 57 rides against the end surface 66 of the collar 41.

The end surface 66 of the collar 41 is provided with a single indexing notch 68 adapted to receive the forward tip 64 of the plunger 57. As is apparent, the plunger 57 is carried by the sleeve 24, so that at one point per revolution of the shell 20 with respect to the sleeve 38, the plunger is brought into alignment with the notch 68, and is thrust into the notch by the spring 62. This action is a positive one, and results in a distinct audible click, and is a movement which is also felt by the user. When the shell 20 is turned from this position, the plunger 57 is cammed out of the notch 68, and thereafter rides against the end surface 66 of the sleeve 38 until the plunger is again brought into alignment with the notch 68. The position of the notch 68 in the surface 66 is selected so when the plunger enters the notch, the threads on the rod 22 are in helical phase with the threads of the jaws 55.

The forward tip 64 of the plunger 57 preferably is shaped, as by being tapered as shown in FIGURE 3, to facilitate camming the plunger out of the notch when the shell 20 is turned. Since the plunger 57 engages the notch 68 only once for each revolution of the shell 20 with respect to the knurled grip 16, and since each such revolution meters the proper amount of pomade, the user is appraised by the click to stop the dispensing operation and use the pomade thus made available. From the user's standpoint, of course, this feature minimizes the likelihood of waste, and of the necessity of replacing the pomade cartridge with a refill sooner than would otherwise be necessary.

FIGURE 3a illustrates a plastic insert 147, of nylon or the like, which may be substituted for the spring metal member 47 in FIGURE 3. In this regard, the structural elements 149-155 of the member 147 correspond to the structural elements 49-55 of the member 47 in FIGURE 3. However, since the plastic member 147 has relatively little natural resilience of its own, means are provided for diverging the legs 151 so as to normally spread apart the heads 153 and jaws 155. To this end, an annular groove 160 is provided in the inner surface of the heads 153, just forward of the jaws 155. A circular torsion spring 161 is seated within the groove 116 and normally holds the heads 153 and jaws 155 apart. However, as in the case of the member 47, radial compression of the heads 153 sufficient to overcome the spring forces holding them apart, will bring the jaws 155 together so that they engage the rod 22.

As best observed in FIGURE 2, installation of the cartridge section 14 upon the sleeve 38 provides the necessary radial compression to bring the jaws 55 into threaded engagement with the rod 22. The cartridge section 14 includes an outer casing 70 having internal threads 72 at its rearward end. The threads 72 are adapted to engage threads 74 upon the outer surface of the sleeve 38 between the forward end of the sleeve and a forwardly facing shoulder 76 of the grip 16.

A quill cartridge 78 is supported within the casing 70 in coaxial alignment therewith, so that installation of the cartridge section 14 upon the sleeve 38 automatically aligns the longitudinal axis of the quill cartridge with that

of the rod 22. The quill cartridge 78 includes a circular cylindrical sleeve 80 which is press fit within a mating circular bore 81 at the rear of the casing 70. The rear of the sleeve 80 includes a bore 82 providing a compression collar for the heads 53 of the insert 47 when the cartridge is installed. The sleeve 80 and casing 70 also provide a forward cylindrical bore 83 of proper cross section for receiving a quill tube 85 which is press fit within this forward bore. Although the cross-sectional shape of the quill tube 85 is shown as rectangular in FIGURE 4, it is to be understood that this is by way of example only, and other quill tube cross sections, e.g., triangular, elliptical, circular, etc., may be used without in any way departing from the spirit and scope of the present invention.

A stick 87 of pomade is potted within the quill tube 85 along the major portion of the tube length. A small piston 89 abuts the base of the pomade stick 87 within the tube 85 and is supported in sliding engagement with the interior wall surface of the tube. Hence, as the piston 89 moves forwardly in the quill tube 85, the pomade stick 87 is likewise propelled forwardly and dispensed from the tube through its open end 90. To this end, the piston 89 has a central recess 92 in its rear face which is adapted to engage a driving nose 94 at the forward end of the rod 22, so that longitudinal advancement of the rod is thereby transmitted to the piston for propelling the stick 87.

The forward open end 90 of the quill tube 85 may be cut at any desired angle to provide a bevel face 96 upon the leading end of the pomade stick 87 as it is dispensed, so that the pomade may be applied in a brush-like manner. To reduce sliding friction between the stick 87 and the inner wall surface of the quill tube 85, a layer 98 of an appropriate lubricant, e.g., of the silicone variety, may be applied to the interior of the tube prior to potting the pomade therein.

The portion of the cartridge section 14 which is replaceable by the user of the device 10, after the supply of pomade has become exhausted, may take a variety of forms. If the cartridge casing 70 is expensively decorated, it would be impractical to provide a new casing for every refill cartridge. In such an instance, the casing 70 would be retained, and only the quill cartridge 78 would be replaced. The old quill cartridge 78 is removable from the casing 70 by driving the cartridge rearwardly to dislodge the tube 85 and sleeve 80 from the casing, so that the cartridge may be removed through the rear of the casing. A fresh quill cartridge can then be installed within the casing 70 in the same manner as the previous quill cartridge.

If it is desired to further simplify cartridge replacement and reduce cartridge costs, the sleeve 80 may be permanently secured within the casing 70, and the tube 85 would then be the only portion of the quill cartridge 78 which is replaced. It should be noted, however, that where the casing 70 is not expensively decorated, it too may be a replaceable unit. In this latter case, the entire cartridge section 14 would be replaced each time it is desired to replenish the supply of pomade.

It will be observed in FIGURES 6 and 8 that, where the outer casing is included as a part of each refill cartridge, the sleeve 80 and tube 85 may be dispensed with entirely to provide a casing 170 into which the pomade stick 87 is directly potted. In such an arrangement, the casing 170 is provided with an internal shoulder 172 of reduced diameter, to substitute for the sleeve 80 in compressing the heads 53 of the member 47 during installation of the cartridge section upon the sleeve 38. Moreover, as in the case of the embodiment of FIGURE 2, a lubricating layer 98 may or may not be included to minimize friction between the pomade stick 87 and the cartridge walls containing it.

When the cartridge section 14 is removed from the sleeve 38, the heads 53 and jaws 55 spring apart, the jaws thus disengaging from the threaded rod 22. Upon release of the rod, the spring 36 immediately drives the disc 29 and rod 22 rearwardly, to return the rod to its original

starting position. Hence, when a cartridge section 14 is again installed upon the sleeve 38, the rod 22 is already in the proper position for dispensing a fresh supply stick 87 without having to be manually retracted. In this regard, when installing a fresh cartridge section 14, the shell 20 is first rotated to a position wherein the plunger 57 engages the slot 68, so that the threads upon the jaws 55 will be properly phased with the threads upon the rod 22 as the cartridge is installed. Of course, for purposes of simplicity, the spring jaw arrangement may be eliminated and replaced by a fixed jaw assembly in constant threaded engagement with the rod 22. If this latter arrangement is used, however, the rod 22 must be manually retracted prior to each new installation of a cosmetic supply cartridge.

FIGURES 6 and 7 illustrate an embodiment of the invention to facilitate use by those desiring it of a cosmetic stick 87 which is circular in cross section. Obviously, it is undesirable to allow the stick 87 to rotate within the casing 170. Therefore, I arrange to make the stick and its casing mating noncircular parts by providing an elongated ridge 175 along the inner surface of the casing 170 the length of the stick 87. The ridge 175 thus extends into the peripheral surface of the stick 87 and forms a stop which prevents rotation of the stick with respect to the casing 170.

FIGURES 8 and 9 illustrate an embodiment of the invention wherein the supply stick 87 may be retracted inwardly of the casing 170, as well as propelled forwardly within the casing. Several modifications are required to accomplish this objective. First, a retaining piston 180 is substituted for the simple propelling piston 89. Second, a set of spring jaws 182 is substituted for the driving nose 94 at the forward end of the rod 22 in FIGURE 2.

The retaining piston 180 includes a plurality of internal annular ridges 185 which grip the potted material and enable the piston to pull as well as push the stick 87. The rear end of the retaining piston 180 includes an inwardly projecting annular ridge 187 and a closure wall 190 spaced forwardly of the latter ridge to provide a channel-like recess 192 within the piston. This recess 192 is adapted to engage a plurality of outwardly projecting mating lips 194 at the forward end of the jaws 182 when the jaws are compressed to enter the piston 180 and thereafter allowed to expand into the recess 192.

The set of jaws 182 is secured at its rearward end to the forward end of the rod 22 for rotation therewith, or the jaws may be secured to the rod by a swivel arrangement to permit relative rotation between the jaws and the rod.

In using the extend-retract arrangement of FIGURES 8 and 9, the jaws 182 are initially seated within a forward recess 196 in the spring member 47. When the casing 170 is installed upon the sleeve 38, compression of the heads 53 of the member 47 also serves to compress the jaws 182 while they are seated within the recess 196. With the jaws 182 thus compressed, they readily clear the ridge 187 of the piston 180 and abut the closure wall 180. Upon advancing the rod 22, the jaws 182 leave the recess 196 and expand to seat the lips 194 in the piston recess 192. With the jaws 182 thus engaging the retaining piston 180, the stick 87 of potted material may be either propelled or retracted within the casing 170 by merely selectively rotating the rod 22 in one direction or the other.

When the supply of pomade has become exhausted, and it is desired to replace the cartridge, the casing 170 is removed from the sleeve 38 in the same manner previously described. The jaws 182 are disengaged from the piston 180 by merely applying sufficient force in opposite directions along their common longitudinal axis to separate them. The jaws 182 will compress inwardly to release the retaining piston 180 before any level of force is reached which would tend to shear the lips 194. In this regard, the forces required to extend and retract the

pomade stick 87 within the casing 170 are considerably below the level necessary to cause separation of the jaws 182 from the piston 180 and, therefore, separation of these elements will not occur in normal use except upon removal of the cartridge.

It will be apparent from the foregoing that, while particular forms of my invention have been illustrated and described, various modifications can be made without departing from the spirit and scope of my invention. Accordingly, I do not intend that my invention be limited, except as by the appended claims.

I claim:

1. A dispensing device comprising:
  - a substantially cylindrical casing having an open end;
  - a sleeve member carried at the open end of said casing and rotatable with respect to said casing;
  - a substantially cylindrical cartridge section removably secured at the end of said sleeve member opposite that carried by said casing and rotatable with said sleeve member;
  - a piston within said cartridge section;
  - a stick of potted material within said cartridge section adapted to be advanced longitudinally along the axis of said section by said piston;
  - a threaded rod coaxially supported within said casing and said sleeve member, the leading end of said rod being adapted to releasably engage said piston;
  - means for preventing relative rotation of said rod with respect to said casing while permitting axial displacement of said rod with respect to both said casing and said sleeve member whereby said rod can be moved into and out of said casing;
  - spring means within said casing, said spring means engaging a portion of said rod for biasing said rod to a retracted position within said casing;
  - normally disabled threaded means carried within said sleeve member for releasably engaging the threads upon said rod;
  - and means carried within said cartridge section for bringing about engagement between said threaded means and said rod upon installation of said cartridge section upon said sleeve member, whereby rotation of said rear casing with respect to said sleeve member and cartridge section will cause axial movement of said rod, said piston and said stick of potted material.
2. A dispensing device as set forth in claim 1 including means for indicating in phase helical alignment between said threaded means and the threads upon said rod.
3. A dispensing device for potted materials of relatively soft composition, comprising:
  - an elongated casing having an open end;
  - a rotatable sleeve having one end rotatably coupled to the open end of said casing;
  - an elongated cartridge section removably secured to the end of said sleeve opposite that coupled to said casing;
  - a piston within said cartridge section;
  - a stick of potted material wholly contained within said cartridge section and adapted to be moved longitudinally along the common axis of said casing and said cartridge by said piston;
  - a threaded rod coaxially supported within said casing and said sleeve, the leading end of said rod being adapted to engage said piston;
  - means for allowing axial displacement of said rod with respect to said casing while preventing rotation of said shaft with respect to said casing whereby said rod can be moved into and out of said casing;
  - spring means within said casing, said spring means engaging a portion of said rod for biasing said rod to a retracted position within said casing;
  - a plurality of internally threaded spring jaws within said sleeve and surrounding said rod, a portion of

- said jaws projecting outwardly beyond the end of said sleeve to which said cartridge is secured;
  - means within said cartridge section for compressing said spring jaws upon installation of said cartridge section upon said sleeve, whereby said threaded jaws engage the threads upon said rod;
  - and means for indicating helical in phase alignment between the threads upon said jaws and the threads upon said rod.
4. A dispensing device as set forth in claim 3, wherein said spring jaws are of spring metal.
  5. A dispensing device as set forth in claim 3, wherein said spring jaws are of plastic material, and said jaws are normally held apart by an auxiliary spring.
  6. In a dispensing device, the combination comprising:
    - an open-ended, substantially cylindrical casing;
    - a first sleeve supported within said casing and rotatable therewith, said sleeve having a pair of diametrically opposed, elongated clearance slots along a portion of its length;
    - a second sleeve having one end coupled to said first sleeve at the open end of said casing, said second sleeve being rotatable with respect to said casing and said first sleeve;
    - a threaded rod coaxially supported within said sleeves and said casing for movement into and out of said first sleeve;
    - a pair of ears projecting from said rod, each ear extending into one of said slots in said first sleeve;
    - spring means within said first sleeve and in engagement with said rod for biasing said rod for retraction within said first sleeve;
    - an insert press fit within said second sleeve and rotatable therewith;
    - a plurality of normally spread apart, internally threaded spring jaws extending from said insert, said jaws surrounding said rod and a portion of said jaws projecting beyond the end of said second sleeve opposite that coupled to said first sleeve;
    - a substantially cylindrical cartridge removably secured to one end of said second sleeve and rotatable therewith;
    - a piston within said cartridge;
    - a stick of potted material within said cartridge and adapted to be moved longitudinally along the axis of said cartridge by said piston, said piston being releasably engageable by said rod;
    - an internal shoulder of reduced diameter within said cartridge for compressing said spring jaws to bring about threaded engagement between said jaws and said rod;
    - an annular surface upon said second sleeve;
    - a spring-loaded plunger carried within said first sleeve and said casing and adapted to ride along said annular surface during relative rotation between said casing and said second sleeve;
    - and a single notch in said annular surface, said notch being adapted to engage said plunger and being so located that engagement by said plunger automatically aligns the threads of said spring jaws with the threads upon said rod.
  7. In a dispensing device, the combination comprising:
    - a cartridge having an axial bore of uniform cross section along a substantial portion of its length;
    - a retaining piston within said bore in sliding engagement therewith;
    - a stick of potted material within said bore, a portion of said stick being locked to one end of said retaining piston so that longitudinal movement of said piston in either direction along said bore is imparted to said stick;
    - an annular flange at the end of said piston opposite that locked to said stick; a closure wall spaced inwardly of said flange within said piston, said flange and said wall defining a channel-like recess;

a casing removably and rotatably coupled to said cartridge;  
 a threaded rod within said casing in coaxial alignment with said casing and said cartridge;  
 a set of spring jaws having external lips, said jaws extending from the leading end of said rod;  
 and means for maintaining said jaws in a compressed state adjacent said flange upon installation of said cartridge upon said casing, whereby initial longitudinal advancement of said rod causes said jaws to enter and expand within said piston and thereby seat said lips within said recess.

8. A combination as set forth in claim 7, wherein said means for maintaining said jaws in a compressed state includes a second set of spring jaws initially surrounding the first set of spring jaws at the leading end of said rod, compression of said second set of jaws thereby being imparted to said first set of jaws upon installation of said cartridge upon said casing.

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