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3,295,537

COMBINATION APPLICATOR COMB AND DISPENSING CARTRIDGE
WITH POSITIONAL FLOW CONTROL MEANS

Filed May 24, 1963

2 Sheets-Sheet 1

Fig. 1

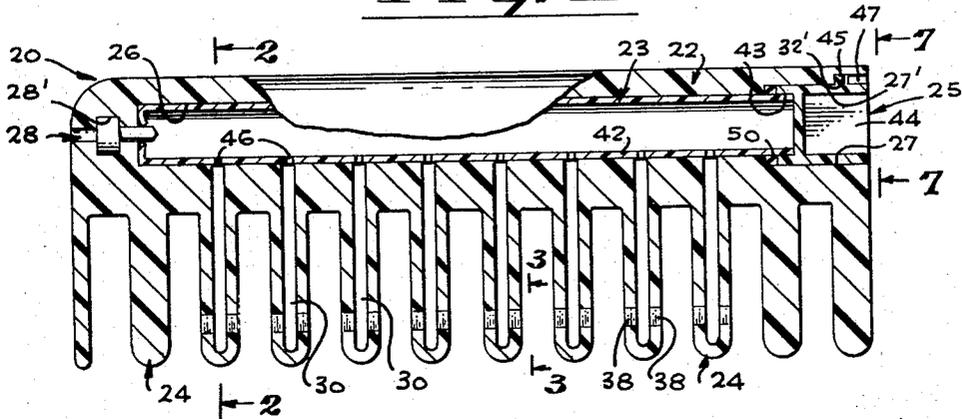


Fig. 2 Fig. 3 Fig. 4 Fig. 6

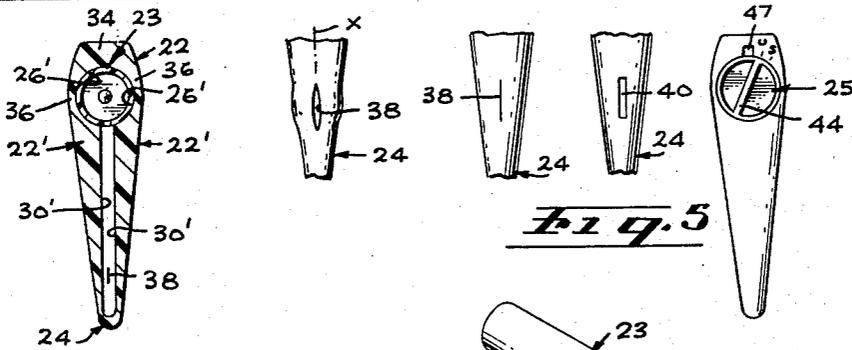


Fig. 7

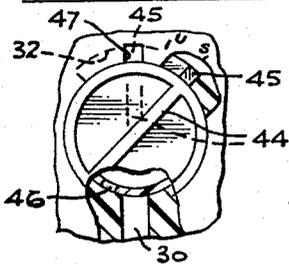


Fig. 8

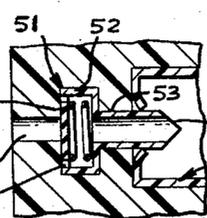


Fig. 10

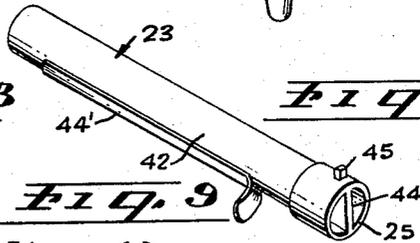


Fig. 11

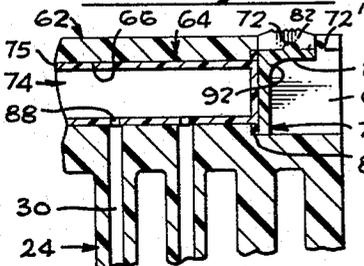


Fig. 13

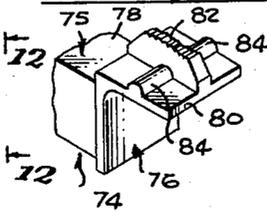
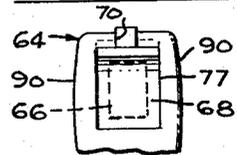


Fig. 12



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2 Sheets-Sheet 2

Fig. 14

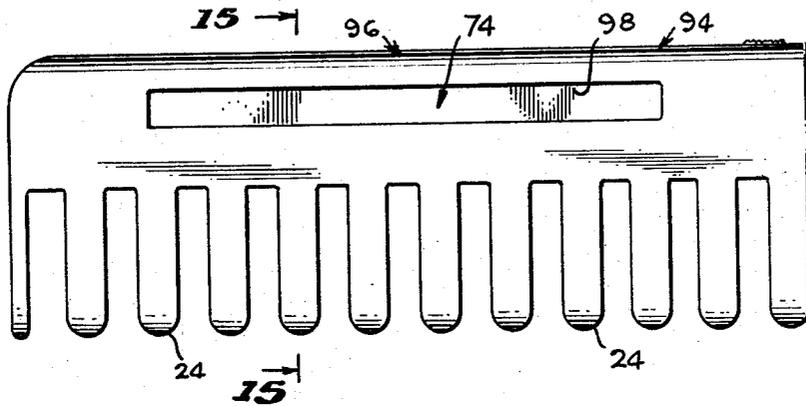
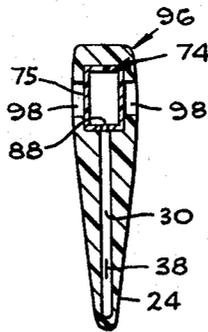


Fig. 15



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COMBINATION APPLICATOR COMB AND DISPENSING CARTRIDGE WITH POSITIONAL FLOW CONTROL MEANS

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3 Claims. (Cl. 132-113)

This invention relates to a novel comb which is designed to apply or to dispense hair and scalp treatment substances such as oils or powders easily and uniformly, when desired, to the hair and scalp of humans and also animals, and which is designed to be sealed against leakage of such substances when the comb is not in use.

It is an object of the invention to provide a hair comb formed of a hollow frame and passages in the comb teeth, said hollow frame adapted to receive a disposable cartridge of a substance, e.g., an oil, to be dispensed, such that when the comb frame or the cartridge is squeezed or compressed, the contents of the cartridge will be dispensed from discharge openings in the comb teeth, onto the scalp and hair.

Another object of the invention is the provision of a hair comb of the type noted above, which is designed so that when the squeezing or compressive force which cause the contents of the cartridge to be dispensed is released, the comb is designed not only to permit blocking off of the openings between the cartridge and the comb teeth, but the passages in the teeth become restricted to prevent further flow of said substance from the discharge openings in the teeth to the exterior.

Still another object is the design of a combination comb and cartridge, as above noted, and the subcombinations thereof.

The above and other objects and advantages of the invention are described below or will be apparent from the following description of the invention.

According to the invention, a hollow comb frame is provided, conveniently formed of two identical frame halves, such that when assembled, it contains a hollow body portion to receive and enclose a cartridge whose contents are filled with a material to be dispensed from the comb, and a plurality of teeth integrally connected to the body portion, some or all of said teeth having passages therein which communicate with the hollow interior of such body portion. The comb teeth are provided with one or more discharge openings at or adjacent their lower ends, which normally are closed or are of such small size as to prevent any of the substance ejected from the cartridge and which is present in the tooth passages, from being discharged through such openings to the exterior. The comb is formed preferably of a plastic material, e.g., polyethylene, which is sufficiently flexible to be compressible, yet has sufficient stiffness such that the comb teeth will not bend or deform to such an extent when passed through the hair as to render the comb inoperative in use.

A disposable cartridge containing the substance to be dispensed from the comb teeth is provided, the cartridge case being formed of a relatively thin pliable, deformable, preferably plastic, material such as a polyvinyl plastic. The cartridge is provided with a series of holes which, when the cartridge is inserted into the hollow frame of the comb, can be aligned, or removed from alignment, with the passages in the comb teeth by a rotary or longitudinal movement of the cartridge within the comb. Means are provided to retain the cartridge in a selected position within the comb frame, and means are also furnished at the outer end of the cartridge to indicate the aligned or non-aligned position of the cartridge holes with the passages in the comb teeth.

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When the cartridge is manipulated to the "use" position with the holes therein aligned with the passages in the comb teeth, and the comb frame or cartridge is squeezed with the fingers, the contents of the cartridge are forced through the holes therein into the passages of the hollow comb teeth, and the pressure of the substance thus forced into such passages expands or distends the discharge openings in the outer ends of the teeth, and permits passage of such substance or contents of the cartridge exteriorly onto the hair and scalp.

When the finger pressure is released from the comb frame or the cartridge, the tooth discharge openings retract and are restored to their original substantially closed position due to the elasticity or resiliency of the material of which the comb is constructed, sealing these openings against further outward flow of the substance being dispensed, and the elastic or resilient comb frame returns to its original shape, with flow of the substance from the cartridge interrupted. The cartridge is then manipulated to displace the holes therein from the aligned to the misaligned position with respect to the passages in the comb teeth, thereby preventing further passage of the contents of the cartridge to the hollow comb teeth.

It is thus seen that the applicator comb of the invention has a dual seal design which effects sealing of the cartridge against unscheduled dispensing of the cartridge contents. One of these seals is provided by constructing the comb teeth of a flexible material such that when the finger pressure is released from the comb frame, the discharge openings near the ends of the comb teeth retract sufficiently, substantially to close such openings and prevent leakage of cartridge contents still in the passages of the comb teeth, outwardly therefrom. A second seal is provided by the rotation or axial motion of the cartridge to form a seal by nonalignment of the cartridge openings and the comb teeth passages. A third seal is also provided between the interior wall of the hollow comb frame and the cartridge wall, to prevent leakage of the cartridge contents through the cartridge insert opening in the comb frame. It is thus seen that the above-described seal design assures complete control of the dispensing of the cartridge contents, so that dispensing of material from the cartridge and the discharge openings of the hollow comb teeth only occurs when the discharge openings in the cartridge are properly aligned with the passages in the hollow teeth, and the comb frame is squeezed.

The comb of this invention preferably is also provided with a "breather" component to insure easy flow of material from the cartridge and the comb teeth against external air pressure resistance.

The invention will be more clearly understood from the following description of certain preferred embodiments, taken in connection with the accompanying drawings, wherein:

FIG. 1 is a longitudinal section of an applicator comb according to the invention;

FIG. 2 is a section taken on line 2-2 of FIG. 1;

FIG. 3 is a detail taken on line 3-3 of FIG. 1, showing the tooth discharge openings in expanded or open position;

FIG. 4 is a detail similar to FIG. 3, showing the tooth discharge openings in contracted or substantially closed position;

FIG. 5 shows a modification of the design of the tooth discharge openings;

FIG. 6 is an end view taken on line 7-7 of FIG. 1, and showing the cartridge in the use or dispensing position;

FIG. 7 is an enlarged detail, partially broken away, at that end of the comb in which the cartridge is inserted, showing the cartridge rotated to the "store" or nondispensing position;

FIG. 8 is a cross sectional detail showing the breather valve structure;

FIG. 9 is a plan view of the diaphragm of the breather valve of FIG. 8;

FIG. 10 is a perspective view of the cartridge employed with the comb;

FIG. 11 shows a partial longitudinal section of a modification of the comb and cartridge assembly;

FIG. 12 is an end view taken on line 12—12 of FIG. 11;

FIG. 13 is a perspective view of the cap portion of the cartridge employed in the unit of FIG. 11;

FIG. 14 is an elevation of another modification of the comb and cartridge unit; and

FIG. 15 is a section taken on line 15—15 of FIG. 14.

As illustrated particularly in FIGS. 1 and 2 of the drawing, the applicator comb of the invention, indicated at 20, is composed of a hollow frame 22 which is adapted to receive therein a flexible, deformable, cylindrical cartridge indicated at 23 containing a substance which is to be discharged from the comb, such as an oil, tonic, cream or powder, the comb frame having a plurality of teeth 24 integrally connected thereto. A cylindrical cartridge bore 26 is provided in the comb frame to receive the cartridge 23, and there is also provided in the comb frame a cylindrical counterbore 27 at one end thereof adapted to receive the cartridge cap 25, and a breather valve cavity 28 at the other end of the comb frame. A plurality of passages 30 are provided in at least some of the comb teeth, such passages communicating with the cartridge bore 26. The comb 20 is preferably formed of a flexible plastic material which has resilience or elasticity and which can be deformed, but which is sufficiently rigid so that the comb teeth 24 do not buckle or bend to any substantial degree when the comb is passed through the hair. An illustrative type of plastic material which can be employed to form the comb is polyethylene plastic, although it will be understood that other types of plastic materials, preferably of a thermoplastic nature, can be employed. The comb frame 22 is preferably and conveniently formed of two identical frame halves 22', each half having a semi-cylindrical cartridge recess 26', teeth recesses 30', a breather recess 28', a cartridge cap recess 27' and a cartridge retainer tab recess 32' in the wall of the cap recess 27'. When the two half portions 22' of the comb are joined together, e.g., by cementing or by fusing with heat where the plastic material is thermoplastic, the corresponding recesses of these half portions are placed in alignment, thus forming the cylindrical cartridge bore or enclosure 22 for the cartridge, the hollow comb teeth 24, the cavity 28 for the breather valve described in detail below, and the arcuate groove 32 for the cartridge retainer tab 45.

The discharge openings 38 from the hollow comb teeth 24 are in the joining plane, indicated at X, of the two frame half portions 22'. Such comb teeth openings 38 are formed by leaving a length of the two joining halves along the comb teeth uncemented or unfused at the locations where it is desired that the tooth openings be formed. In the embodiment shown in FIGS. 1 and 3 it will be noted that there are two discharge openings 38 on opposite sides of each hollow comb tooth 24 provided therewith, such discharge openings being located near the bottom of the tooth. However, it will be understood that any combination of bottom and side tooth openings may be used with any combination of hollow comb teeth.

Since the comb frame halves 22' are not cemented together at those areas defining the openings 38 in the teeth, such openings will enlarge or expand as indicated in FIG. 4, when there is a pressure buildup within the hollow teeth. When such pressure is released, such openings 38, as indicated in FIG. 4, will be substantially closed. It will be seen that the tooth openings 38 in the embodiment of FIGS. 3 and 4 are kept narrow in width particularly or use with low viscosity materials to be dispensed, such as oils and tonics, and under these conditions the width

of the tooth openings as illustrated at FIG. 4 should be kept narrow enough to provide capillary action for sealing when there is no pressure within the passages 30 of the teeth. Where the applicator comb of the invention is employed for dispensing high viscosity materials such as creams or powders, the tooth openings can be enlarged in width as indicated at 40 in FIG. 5. Such openings can be in the nature of a thin slot of a size such that when there is no pressure within the comb teeth, the viscous material within the passages 30 of the teeth will be prevented from passing through such passages 40.

The comb 20 of the invention, referring particularly to FIG. 2, has a heavy top section 34 and thin side sections 36, which are easily deflectable. The thin side sections 36 are squeezed inwardly with the fingers, thus compressing the cartridge 23 contained within the comb. When the finger pressure is released, the flexible elastic plastic frame material seeks its original shape. It will be noted that the elasticity of the frame material is also relied upon to restore the tooth openings 38 to their original closed condition, as illustrated in FIG. 4.

The cartridge 23 shown in FIGS. 1 and 10 is composed of a cartridge case 42 made of a relatively thin pliable plastic material, for example, a polyvinyl plastic, and carries a cap 25 which is connected to the open end of the cartridge case by cementing or other means at 43 after the container has been filled. The cartridge cap 25 is preferably made of a hard plastic material. The cap 25 has a diametric vertical fin 44 which is adapted to be grasped by the fingers for rotation thereof. Also mounted on the cap 25 is the cartridge retainer tab 45. The cartridge case 42 carries a plurality of longitudinally disposed holes 46 which are so positioned as to be in alignment with the upper ends of the passages 30 in the comb teeth when the cartridge is inserted in the comb as seen in FIG. 1 and properly oriented as described below. A removable strip of gummed paper indicated at 44' is used to seal the holes of the filled cartridge against leakage of the contents, and such paper is stripped from the surface of the cartridge case prior to insertion in cartridge bore 26 of the comb.

The size of the cartridge case 42 is such that it forms a light snug fit with the cartridge bore 26 of the comb frame assembly when the cartridge is inserted in such bore. The upper inside wall of counterbore 27 at the end of the comb frame is provided with a groove 47 to receive the cartridge retainer tab 45 of the cartridge when the latter is inserted in the cartridge bore 26. The inner end of such groove 47 communicates with the arcuate groove 32 in which the retainer tab is received when the cartridge is in the inserted position shown in FIG. 1.

When the cartridge is fully seated in the comb frame, as seen in FIG. 1, with the cap 25 seated in the cap recess or counterbore 27 and the retainer tab 45 positioned within the retainer tab arcuate groove 32, by rotating the cartridge, using fins 44 for this purpose, so that the retainer tab is displaced from a vertical position shown in dotted lines in FIG. 7, to the full line position, the cartridge is now retained and locked against longitudinal movement in the comb, but has limited rotary motion in the cartridge bore 26, as defined by the length of the arcuate retainer groove 32. Hence, grooves 47 and 32 and tab 45 provide a bayonet-type pin and slot arrangement for locking the cartridge against axial motion within the comb frame.

The holes 46 in the cartridge case are now capable of being aligned with the upper ends of the passages 30 in the hollow comb teeth, by rotating the cartridge assembly until the retainer tab 45 indicates alignment of the holes in the cartridge case and the passages in the comb teeth. This position shown in FIG. 6 is the use position of the cartridge assembly, as indicated by indicia such as the letter U placed adjacent this position, as illustrated in FIGS. 6 and 7. A slight clockwise rota-

tion of the cartridge from the "use" position in FIG. 6 places the retainer tab 45 against the extreme right end of arcuate groove 45, as indicated by the full line position of the fin 44 and tab 45 in FIG. 7. This cartridge assembly position is the "store" position, as indicated by the letter S in FIG. 7, and corresponds to misalignment of the holes 46 in the cartridge with the passages 30 in the comb teeth. Sealing of the cartridge in the "store" position is effected by the above noted light snug fit of the cartridge in the cartridge bore. A ring-shaped seal 50 made of a soft plastic material is positioned at the forward end of the cap recess or counterbore 27. This seal becomes slightly compressed when the cartridge assembly is seated in place and prevents leakage of the cartridge contents from the applicator comb assembly through the cap recess 27.

The breather valve assembly 51 illustrated in detail in FIG. 8 consists of a metal case 52 having a hollow needle 54 mounted at its inner end and a flapper disc or diaphragm 56, preferably formed as shown in FIG. 9, with an outer diameter almost equal to the inside diameter almost equal to the inside diameter of the case 52, to permit slidable axial movement of the diaphragm within the case. Such diaphragm preferably is formed with a series of peripherally spaced notches 58, diaphragm 56 normally being urged against the open outer end of case 52 by a small spring 56, thus closing off the interior of case 52 from external atmospheric pressure via passage 59. The needle 54 is long enough so as to penetrate the bottom of the cartridge case 42 when the cartridge is fully seated as shown in FIG. 1, so that case 52 is in communication with the interior of the cartridge. The needle 54 and the cartridge case are coaxially aligned so as to allow easy rotation of the cartridge assembly. The purpose of the breather valve assembly 51 is to admit air via passage 59 and case 52, to the cartridge, when the compressive or squeezing force against the cartridge has been released, by the atmospheric pressure urging diaphragm 56 inward away from the end of the case 52 against the action of spring 56, thus preventing the formation of a partial vacuum within the cartridge. Notches 58 in diaphragm 56 facilitate passage of air from the left side of the diaphragm to the other side thereof and into the case 52, viewing FIG. 8, when the diaphragm is urged to the right by the action of atmospheric pressure entering via passage 59. The spring 56 acts to hold the flapper disc 58 in position as shown in FIG. 7 normally to provide a seal against leakage.

Although it is believed that the operation of the applicator comb described above is obvious, briefly, it will be seen that when it is desired to dispense the contents of the cartridge 23, the cartridge is rotated so that retainer tab 45 is at the use (U) position shown in FIG. 6, thus aligning the holes 46 of the cartridge with the passages 30 in the teeth, and the sides 36 of the comb frame are then squeezed, forcing the substance out of the cartridge into the tooth passages 30, the pressure thus generated in the tooth passages distending the discharge openings 38 in the teeth, as shown in FIG. 3, and forcing the material in the passages of the teeth out through the openings 38, or 40 in the modification of FIG. 5.

Release of the finger pressure from the sides 36 of the comb again restricts the passages 38, preventing further outward flow of material from the comb teeth. The cartridge 23 is then rotated until the retainer 45 tab is at the "S" or store position shown in FIG. 7.

It will thus be seen that the misaligned position of the cartridge holes 46 with the passages 30 in the comb teeth, and the restriction of the openings 38 in the teeth to a substantially closed position provides a double seal against undesired discharge or leakage of material from the cartridge or from the passages in the comb teeth, to the exterior. Also it will be noted that the seal 50 provides a further assurance against leakage of the con-

tents of the cartridge from around the cap 25 at the end of the comb.

FIGS. 11 to 13 show a modification of the applicator comb assembly of the invention. In the modification shown in FIG. 11 the comb assembly 62 has a flexible elastic frame 64 having a longitudinal bore 66 of square or rectangular cross-section, as indicated in FIG. 12, and a counterbore 68 at one end of the comb also of rectangular cross-section as indicated at 77 in FIG. 12. The top of the comb frame above the counterbore 68 has a central longitudinal notch 70 therein, as best seen in FIG. 12, and in the undersurface of the top of counterbore 68 are a pair of spaced laterally extending notches 72 and 72' extending on both sides of the central notch 70, as best seen in FIG. 11.

A cartridge assembly 74 containing the contents which is desired to be dispensed, as best seen in FIG. 13 is composed of a case 75 of rectangular cross-section which is adapted to fit with a light snug fit within the rectangular bore 66 of the comb frame. Such container is formed of a readily deformable plastic material as in the case of cartridge 23 of the embodiment of FIGS. 1 and 10. The open end of the container after introduction of the contents therein, is closed by an actuating member 76 which is cemented to the cartridge case. The actuating member 76 has integrally attached at right angles thereto a cap member 80, such actuating member being preferably molded of a plastic material. The cap member 80 carries a central longitudinally extending crown 82 and on opposite sides of such crown are molded a pair of aligned laterally extending ribs 84 which are adapted to seat in the notches 72 and 72' on the upper interior surface of the counterbore 68 of the comb frame 64.

The cartridge assembly 74 is inserted in the cartridge bore 66 of the comb frame, forming a light snug but slidable fit within such bore, the crown 82 atop the cap member 80 being received within the notch 70. In the innermost position of the cartridge assembly 74, the cap member 80 of the cartridge seats within the counterbore 68 with the lateral ribs 84 thereof received within the forward pair of lateral notches 72 on opposite sides of the longitudinal notch 70, as seen in FIG. 11. A rectangular ring shaped seal 86 e.g., formed of a sponge type material is disposed at the forward end of the counterbore, such seal being compressed against the adjacent face of the actuating member 76.

In this position of the cartridge within the comb frame bore 66, the holes 88 which are spaced longitudinally along the bottom of the cartridge are aligned with the passages 30 in the comb teeth 24. This is the use position as above described, and by compressing the sides 90 of the comb frame 64 with the fingers the contents of the cartridge will be discharged via the passages 30 in the teeth and the discharge openings in the teeth e.g., as illustrated at 38 in FIG. 3, unto the hair or scalp. Release of the finger pressure from the sides 90 of the comb frame ceases outward flow of the contents of cartridge 75 from the comb, as described above in connection with the modification of FIG. 1.

The cartridge assembly 74 is placed in the store or inoperative position by grasping the crown 82 of the cap member 80, which is received within the notch 70 and protrudes above the top of the comb frame, as seen in FIG. 11, and sliding the cartridge assembly to the right as viewed in FIG. 11, until the ribs 84 seat in the adjacent lateral notches 72'.

The ribs 84 are unseated from the notches 72 by first pressing the crown 82 downward and then sliding the cartridge assembly 74 to the right until the ribs 84 snap into the adjacent notches 72'. It will be seen that when the cartridge assembly is in the displaced position to the right in FIG. 11, wherein the ribs 84 of the actuator member are disposed in the notches 72', the holes 88 in the cartridge are no longer aligned with the passages 30

in the comb teeth. In a similar manner the cartridge is moved forward from this position to the use position illustrated in FIG. 11, that is, by pushing down on the crown 82 to disengage the ribs 84 from the notches 72' and pushing the cartridge assembly to the left as viewed in FIG. 11, until the ribs 84 snap into the notches 72.

In order to permit movement of the ribs 84 of the actuator member 76 into and out of the notches 72 and 72' in the manner described above, it will be seen that the cap member 80 is connected to the body of the actuator 76 by a connecting member indicated at 92 having a radius end a thickness such as to provide the cap member 80 with sufficient rigidity to maintain the ribs 88 in the notches 72 or 72', yet with sufficient elasticity so that cap member 80 can be forced downwardly readily to disengage ribs 88 from notches 72 and 72', and will snap back to its normal horizontally disposed position as shown in FIG. 11 with the ribs 84 either in notches 72 or 72', when there is no downward force on crown 82.

It is to be understood, as previously indicated, that as many hollow comb teeth containing discharge passages such as 38, as desired, may be employed. Thus, as few as one or two of such comb teeth can be designed to contain a passage such as 30 and discharge openings, for dispensing the cartridge contents from the comb, the remainder of such teeth being of the solid conventional type, or, if desired, a greater number or all of the comb teeth can be designed to be hollow and contain discharge openings for disposing the cartridge contents according to the invention. Also, it will be understood that instead of employing two discharge openings, such as 38, at opposite sides of each hollow comb tooth near the bottom thereof, only one such discharge opening can be provided in each tooth for communication with the hollow passage therein, and such single discharge opening located, if desired, at the very tip of the hollow comb tooth. Further, more than two discharge openings such as 38 can be provided in each hollow comb tooth, e.g., 3 or 4, and such discharge openings positioned at any desired location along the length of the hollow comb teeth. Also, the number of discharge openings in the respective hollow comb teeth of the comb can be varied, for example, some hollow comb teeth may be provided with two discharge openings such as 38, while other hollow comb teeth may be provided with but a single discharge opening at the lower tip of such teeth, as previously noted.

It will be understood that although the breather valve shown in the embodiment of FIG. 1 is not an essential element of my novel applicator comb structure, the provision of such an element is preferred for best operation. Further, although one specific form of breather valve structure is shown and described herein, other equivalent forms of breather valves can be embodied in my comb, and functioning to maintain approximately atmospheric pressure within the cartridge for ease of dispensing the contents thereof from the comb according to the invention.

The modified comb and cartridge assembly 94 shown in FIGS. 14 and 15 is substantially the same as that shown in FIGS. 11 to 13, except that the comb frame 96 of the unit 94 has a pair of similar longitudinally extending openings or windows 98 formed in the opposite sides of the comb frame, exposing opposite sides of the cartridge 75 of cartridge assembly 74. In this modification the user inserts the fingers into the windows 98 on opposite sides of the comb frame, and squeezes or compresses the side walls of the cartridge itself to force the contents of the cartridge into the passages 30 of the comb teeth, when the cartridge assembly 74 is in the use position as described above. This modified form of the invention can be used where the side walls of the comb frame are not sufficiently flexible for easy compression or squeezing of the cartridge during use. It will be understood, of course, that if desired, only one such window 98 may be provided on one side of the comb frame, or if desired, a plurality of spaced

small windows or openings can be provided on either or both sides of the comb frame. Further, if desired, the modification shown in FIG. 1 can be provided with openings or windows in the sides of the hollow comb frame 22.

While I have described particular embodiments of my invention for the purpose of illustration, it should be understood that various modifications and adaptations thereof may be made within the spirit of the invention, as set forth in the appended claims.

I claim:

1. An applicator comb assembly which comprises a comb formed of a flexible resilient material, and including a frame having deflectable sides and a plurality of laterally extending teeth integrally connected to said frame, at least a portion of said teeth each having a passage extending axially therein, and at least one discharge opening communicating with said passage, said discharge opening being located adjacent the outer end of each of said teeth containing said passage, said discharge openings being normally in substantially closed position, and being expandible to an open position by pressure generated in said passages, and retractable to said substantially closed position on removal of said pressure, said frame having a cylindrical longitudinal bore therein having an open outer end and communicating laterally with the inner ends of said passages in said teeth, a deformable cylindrical cartridge containing a material to be dispensed from said comb, said cartridge being received with a snug but rotatable fit within said cylindrical bore, a cylindrical cap fixed to the outer end of said cartridge and disposed within the outer end of said last named bore, means on said cap for manually rotating said cartridge in said bore, means permitting limited rotation of said cartridge in said bore but restraining said cartridge against axial displacement in said bore, a seal between the outer wall of said cartridge and said bore, said cartridge having a plurality of holes positioned in longitudinal alignment in a wall of said cartridge, such that in a first angular position of said cartridge, said holes therein are aligned with the inner ends of said teeth passages, and in a second angularly displaced position of said cartridge said holes are misaligned with the inner ends of said teeth passages, and indicator means indicating said first and second positions of said cartridge.

2. An applicator comb assembly which comprises a comb formed of a flexible resilient material, and including a frame having deflectable sides and a plurality of laterally extending teeth integrally connected to said frame, at least a portion of said teeth each having a passage extending axially therein, and at least one discharge opening communicating with said passage, and being expandible to an open position by pressure generated in said passages, said frame having a longitudinal bore therein open at its outer end and communicating laterally with the inner ends of said passages in said teeth, a deformable cartridge containing a material to be dispensed from said comb, said cartridge comprising a deformable case and being received with a snug but displaceable fit within said bore of the comb frame, means to retain said cartridge within said bore, said cartridge having a plurality of holes positioned in longitudinal alignment in a wall of said cartridge, such that in a first position of said cartridge said holes therein are aligned with the inner ends of said teeth passages, and in a second position of said cartridge said holes therein are non-aligned with said teeth passages, and means to displace said cartridge in said bore selectively to said first and second positions, said assembly including a breather valve mounted on said comb frame adjacent the inner closed end of said bore, said valve comprising a compartment, a spring biased flapper disc normally closing the outer end of said compartment, a first passage connecting the atmosphere and the outer side of said flapper disc and a hollow needle mounted on and communicating with the inner end of said compartment, said needle disposed coaxially of said cartridge and piercing the inner end of said cartridge, said breather valve connecting said car-

tridge with the atmosphere by atmospheric pressure forcing said disc inwardly against the action of said spring to open said compartment to atmospheric pressure, and preventing formation of a partial vacuum in said cartridge.

3. An applicator comb assembly which comprises a comb formed of a flexible resilient plastic material, and including a frame formed of two symmetrical half sections cemented together at a central plane along abutting contiguous edges of said half sections, said frame having thin deflectable side sections, a relatively rigid top section and a plurality of laterally extending teeth integrally connected to said frame, at least a portion of said teeth each having a passage extending axially therein and a pair of oppositely positioned discharge openings communicating with said passage in each such tooth and located near the tip of the tooth, said discharge openings being formed by omitting cementing of the two half sections in the areas of said openings, said discharge openings being normally in substantially closed position, and being expandible to an open position by pressure generated in said passages and retractable to said substantially closed position on removal of said pressure, said frame having a cylindrical longitudinal bore therein having an open outer end and communicating laterally with the inner ends of said passages in said teeth, a cylindrical counterbore communicating with the outer end of said first mentioned bore, a deformable cylindrical cartridge of a thin pliable material containing a material to be dispensed from said comb, said cartridge being received with a snug but rotatable fit within said cylindrical bore, a cylindrical cap fixed to the outer end of said cartridge and disposed within said counterbore, a fin in said cap and adapted to be manipulated by the fingers for rotation of said cartridge in said cylindrical bore, a tab mounted on the cylindrical outer wall of said cap, said tab received in a peripheral arcuate slot in the wall of said counterbore and permitting limited rotation of said cartridge in said bore but restraining said cartridge against axial displacement in said bore, a ring seal in the inner end of said counterbore around said cartridge and abutting the inner end of said cap, said cartridge having a plurality of holes positioned in longitudinal alignment in a wall of said cartridge, such that in a first

angular position of said cartridge, said holes therein are aligned with the inner ends of said teeth passages, and in a second angularly displaced position of said cartridge said holes are misaligned with the inner ends of said teeth passages, and indicia at the end of said frame adjacent the periphery of said cap indicating the position of said tab corresponding to said first and second angular positions of said cartridge, and a breather valve mounted in said comb frame adjacent the inner closed end of said cylindrical bore, said valve comprising a compartment, a spring biased flapper disc normally closing the outer end of said compartment, a first passage connecting the atmosphere to the outer side of said flapper disc, and a hollow needle mounted on and communicating with the inner end of said compartment, said needle disposed coaxially of said cartridge and piercing the inner end of said cartridge, said breather valve connecting said cartridge with the atmosphere by atmospheric pressure forcing said disc inwardly against the action of said spring to open said compartment to atmospheric pressure, and preventing formation of a partial vacuum in said cartridge.

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