Aug. 28, 1951 P. SCHROER 2,565,889

DISPENSING APPLICATOR

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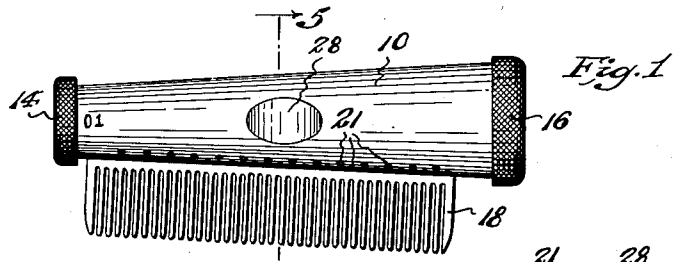



Fig. 1

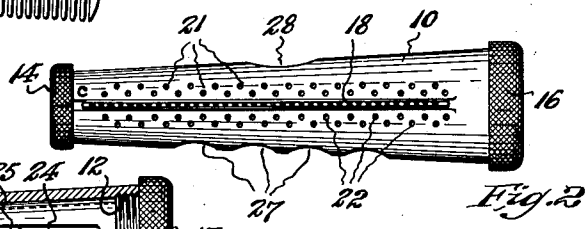



Fig. 2

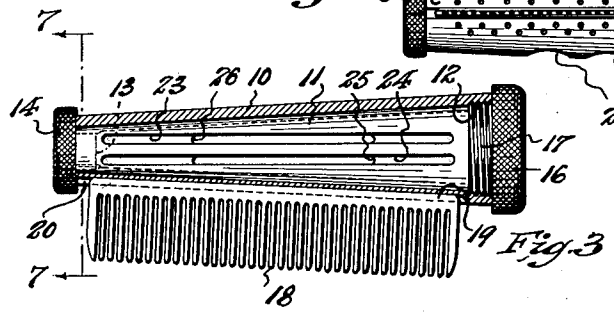



Fig. 3

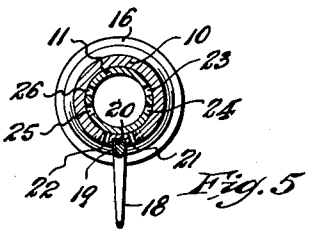



Fig. 5

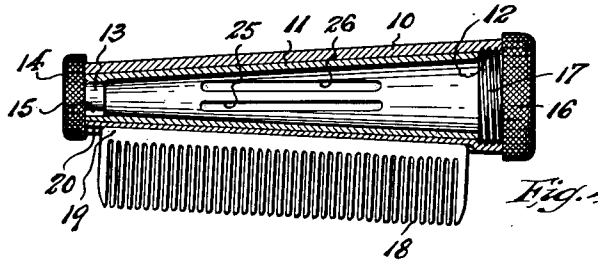



Fig. 4

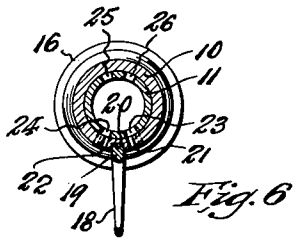



Fig. 6

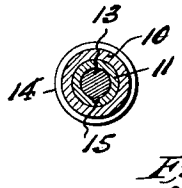



Fig. 7

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## DISPENSING APPLICATOR

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3 Claims. (Cl. 132—13)

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This invention relates to improvements in dispensing applicators; and the invention has reference, more particularly, to a novel means for dispensing a selected substance and simultaneously applying the same to the hair.

The invention has for an object to provide a novel dispensing applicator adapted to be easily and conveniently manipulated for applying a suitable substance, in either powder or liquid form, to the hair and scalp of the human head or to the hair and skin of animals, and in such manner that thorough penetration of the hair by the dispensed substance, and uniform distribution of the substance throughout the hair masses treated, will be assured without waste.

The invention has for another object to provide a novel dispensing applicator for the stated purposes which comprises a container for the substance to be dispensed, an applicator comb affixed to said container, and means for discharging the substance from the container in the path of the applicator comb, when the latter, in use, is passed through the hair to be treated.

The invention has for a further object to provide a novel dispensing applicator, as above characterized, which is provided with manipulatable means for opening and closing the container for and against discharge of the treating substance therefrom, including means for regulating the amount of treating substance discharged.

Other objects of the invention, not at this time more particularly enumerated, will be understood from the following detailed description of the same.

An illustrative embodiment of the invention is shown in the accompanying drawings, in which:

Fig. 1 is a side elevational view of a dispensing applicator made according to this invention; Fig. 2 is a bottom plan view of the same; Fig. 3 is a side elevational view with an outer body part of the container shown in longitudinal section, the container being shown in closed condition; Fig. 4 is a similar view with both the inner and outer body parts of the container shown in longitudinal section; Fig. 5 is a transverse vertical sectional view, taken on line 5—5 in Fig. 1, the container being shown in closed condition; Fig. 6 is a view similar to that of Fig. 5, but with the container shown in an open condition; and Fig. 7 is a transverse vertical sectional view, taken on line 7—7 in Fig. 3.

Similar characters of reference are employed in the above described views, to indicate corresponding parts.

Referring to the drawings, the dispensing applicator, in the illustrative embodiment thereof as shown, comprises a container member formed by an external tubular casing or body 10, within the interior of which is entered an internal tubular sleeve 11, which will be hereinafter referred to as the "valve sleeve". The external surface of the valve sleeve 11 contacts the internal surface of the casing or body 10, and said valve sleeve is rotatively movable relative to the casing or body. In order to better assure a closely contacting fit of the valve sleeve 11 within the casing or body 10, it is preferred that these parts be of the tapered form shown, although this is not absolutely essential since said parts may be of cylindrical form if desired.

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The valve sleeve 11 is of somewhat less length than the length of the casing or body 10, so that when ends of these parts are aligned at one end, preferably the smaller end, of the container member, the opposite end of the valve sleeve 11 will be spaced inwardly from the adjacent end of the casing or body 10, whereby to provide a receiving socket 12 within said latter and larger end of the casing or body.

The smaller end of the container member is permanently closed by a headed plug, the shank 13 of which is entered within the adjacent open end of the valve sleeve 11, while the diametrically enlarged, external head 14 of which abuts and laps the aligned extremities of the casing or body 10 and valve sleeve 11. The shank 13 of said plug is suitably affixed to the valve sleeve 11, preferably by a key or spline 15, so that the external head 14 may serve as a finger piece by which the valve sleeve may be rotated relative to the casing or body 10 for purposes subsequently herein referred to.

The receiving socket 12 of the casing or body 10 is adapted to receive a removable closure means. Preferably the receiving socket is internally screw-threaded, and the closure means comprises a cap 16 having an externally screw-threaded shank 17 adapted to screw into said receiving socket.

Suitably affixed to the casing or body 10, to extend along the same and so as to project radially therefrom, is an applicator comb 18. One method of mounting said applicator comb 18 on the body or casing 10, as shown, is to shape the back of the comb in the form of a longitudinal tenon 19, and to provide the casing or body 10 with an external, longitudinally extending mortise groove 20 into which said tenon 19 may be slid, thus interlocking the comb and casing or body together in the aforesaid assembled relation.

The casing or body 10 is provided in its wall with rows or groups 21 and 22 of longitudinally spaced discharge openings which are respectively located closely adjacent to opposite sides of the applicator comb 18. The valve sleeve 11 is provided with a pair of valve openings or slots 23—24 of major length, which, by proper rotative movement of the valve sleeve, may respectively be brought into alignment and communication with the respective rows or groups 21—22 of discharge openings. The lengths of said valve openings or slots 23—24 correspond to the lengths of said rows or groups 21—22 of discharge openings, so that, when brought into alignment and communicating relation to the latter, a maximum quantity of treating substance which is supplied to and contained in the container member, may be discharged through and from the discharge openings. Said valve sleeve 11 is additionally provided with a second pair of valve openings or slots 25—26 of minor length, which, by proper rotative movement of said valve sleeve may be respectively brought into alignment and communication with corresponding portions of the lengths of the respective rows or groups 21—22 of the discharge openings, whereby to permit discharge of a minor or lesser quantity of treating substance from the container member. The relative spacing and dispositions of the respective pairs of valve openings or slots 23—24 and 25—26 is such that an intermediate imperforate wall portion of the valve sleeve 11 may be disposed in covering relation to the rows or groups 21—22 of discharge openings, so as to normally close the same (see Fig. 5). With the pairs of valve openings or slots thus arranged, when the valve sleeve 11 is rotated in one direction, e. g. clockwise, the major valve openings or slots 23—24 may be brought into aligned and communicating relation to the discharge openings 21—22 (see Fig. 6), but if the valve sleeve 11 is rotated in the opposite direction, e. g. counter clockwise, then the minor valve openings or slots 25—26 may be brought into aligned and communicating relation to the discharge openings 21—22. It will be understood that the external surface of the casing or body 10 adjacent the closure plug head 14 may be provided with suitably located valve sleeve position denoting indicia (see Figs. 1 and 2), with which an indicator pointer with which the closure plug head 14 is provided (see Fig. 2) may cooperate for indicating closed and selected open positions of the valve sleeve.

To prepare the dispensing applicator for use, after the discharge openings 21—22 are closed by the valve sleeve 11, the container member is filled with a desired hair treating substance. This is done by removing the cap 16 and introducing the substance through the open end of the container member. After thus filling the container member, the cap 16 is replaced so as to close the same whereupon the valve sleeve 11 is rotated to open the discharge openings 21—22 in whole or in part, accordingly as it may be desired to dispense a maximum or minimum amount of the treating substance.

The dispensing applicator may be used to dispense either a liquid or powdered hair treating substance, but is especially well adapted for efficient discharge of a powdered substance, such e. g. as a dry shampoo powder.

In the use of the dispensing applicator, the container member is grasped in the hand so as



to direct the teeth of the applicator comb 18 for insertion into the hair to be treated, the device being thereupon manipulated so as to move the comb teeth through the hair masses. To facilitate a firm grasping of the container member by the hand of the user, the casing or body 10 is preferably provided in its exterior surface with suitably located finger seating indentations 27 at one side thereof, and with a thumb seating indentation 28 at the opposite side thereof (see Fig. 2). As the applicator comb 18 is passed through the hair, the treating powder is discharged from the discharge openings 21—22 so as to sift downwardly adjacently along the comb teeth, whereby, as the latter part or separate the hair filaments, the powder will readily and quickly penetrate the hair mass, and will be very uniformly distributed throughout the latter down to the scalp or skin as the case may be. Such uniform and thorough penetration and distribution of the discharged powder through the hair mass is facilitated by the movement of the comb teeth therethrough during the combing action, since the powder in advance of the comb teeth will be quickly worked into and through the hair mass, and, as the hair filaments are separated by the movement of the comb teeth through the hair, the powder discharged behind said comb teeth will readily sift down through the interstices between separated hair filaments.

Not only is the dispensing applicator well adapted for supplying either a powdered or liquid hair and scalp treating substance to the human head, but is also equally well adapted for applying disinfectant, flea or cleansing powder to the coats of domestic animals, such as cats and dogs, or to the coats of other hair or fur bearing animals.

It will be understood that the novel dispensing applicator of this invention may be selectively made from various materials, as e. g. from metal, wood, paper, glass, plastic material or the like. It will also be understood that the device may be made in various sizes, in whole or in part, to suit particular uses or requirements.

Having now described my invention, I claim:

1. A dispensing applicator device comprising a tubular casing having a filling opening at one end, removable means closing said filling opening, a toothed comb affixed to said casing to extend along the same in radial projection therefrom, said casing having rows of discharge openings disposed adjacently along opposite sides of said comb, a tubular valve sleeve rotatably mounted within said casing and substantially coextensive with the length of the latter, said valve sleeve having a pair of longitudinally extending parallel valve port slots of major length spaced apart for registration with said rows of discharge openings when aligned therewith and a second pair of longitudinally extending parallel valve port slots of minor length likewise spaced apart for registration with said rows of discharge openings when aligned therewith, said pairs of valve port slots being adapted by rotation of said sleeve to be selectively moved into and out of communication with said rows of discharge openings in the casing, and an external head abutting the end of said casing opposite the filling opening, said head having means affixing the valve sleeve thereto, whereby said head is manipulatable to rotate said sleeve.

2. A dispensing applicator device according to

claim 1 wherein the casing is provided with an external longitudinal mortise groove and the comb back is formed to provide a tenon slidably receivable in said mortise groove, whereby to detachably connect the comb in assembled relation to the casing.

3. A dispensing applicator device according to claim 1 wherein the casing is provided on one external side with longitudinally spaced finger seating indentations and on opposite external side with a thumb seating indentation whereby to facilitate firm grasping of the device in use.

PAUL SCHROER.

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