United States Patent

[11] **3,570,499**

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[21] Appl. No. **772,793**
[22] Filed **Nov. 1, 1968**
[45] Patented **Mar. 16, 1971**
Continuation-in-part of application Ser. No. 490,171, Sept. 23, 1965, now abandoned.

[54] **APPLICATOR FOR LIQUID HAIR TREATING PREPARATIONS**
3 Claims, 13 Drawing Figs.

[52] **U.S. Cl.** **132/9**
[51] **Int. Cl.** **A45d 19/02**
[50] **Field of Search** 132/9, 85, 5, 7, 114, 111, 161, 135; 401/28, 132, 135, 137; 128/269, 65, 67; 215/11

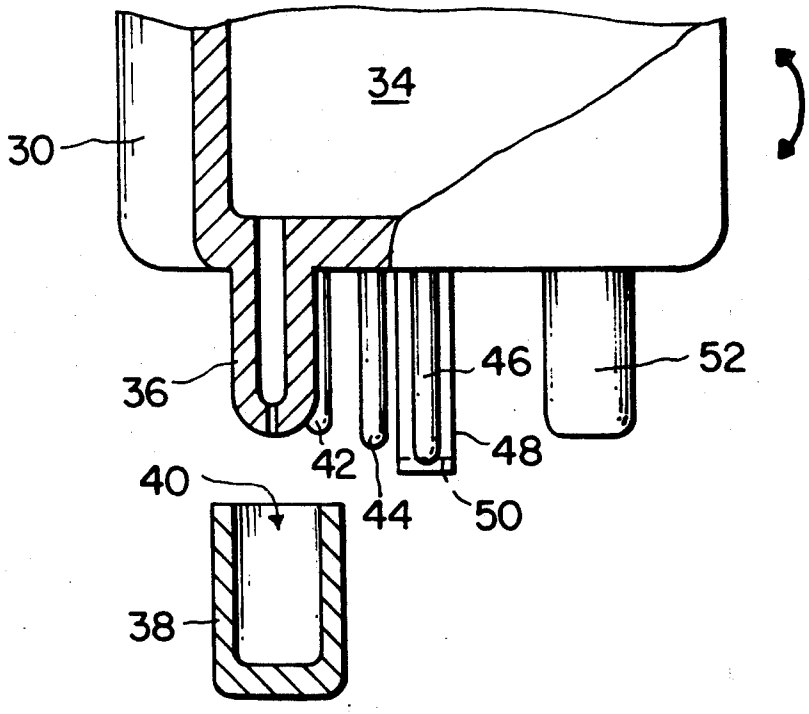
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ABSTRACT: An applicator for liquid hair preparations and the like is provided with a plurality of liquid dispensing nozzles which may be applied to or worked through the hair for selected and selective application to produce a streaked application of the preparation. The applicator is also provided with a plurality of spacer teeth substantially as long as the dispensing nozzles to permit the operator to guide the applicator along the scalp by means of the dispensing nozzles and the teeth to vary the distance between the nozzles and the scalp, and said teeth also serving to aid in separating the flow of preparation to provide the streaked effect. The applicator is a container made of deformable squeeze material for control of the preparation dispensing.



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Fig. 1

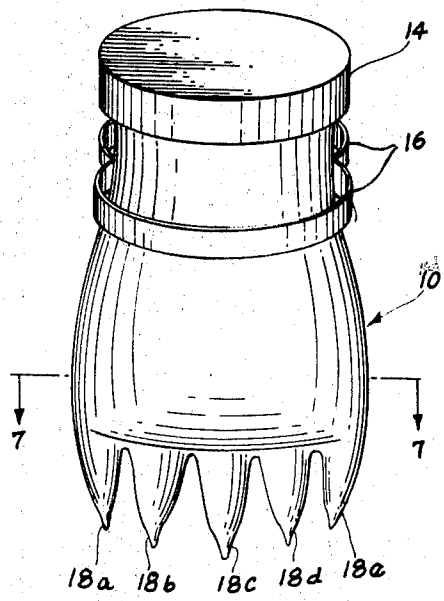


Fig. 2

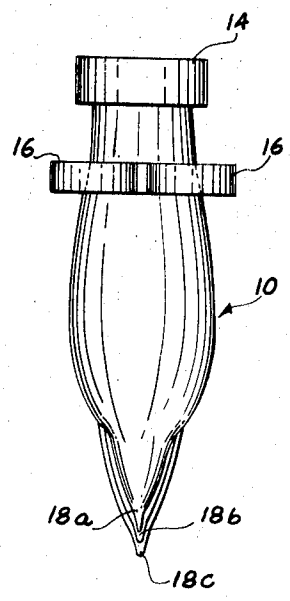


Fig. 4

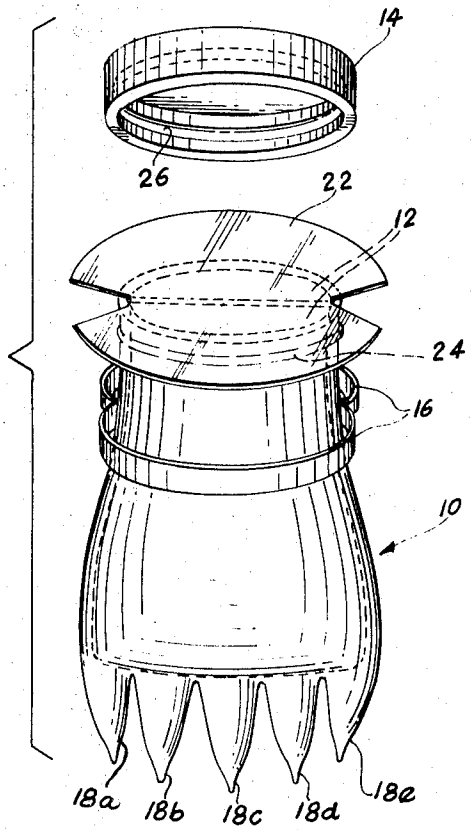
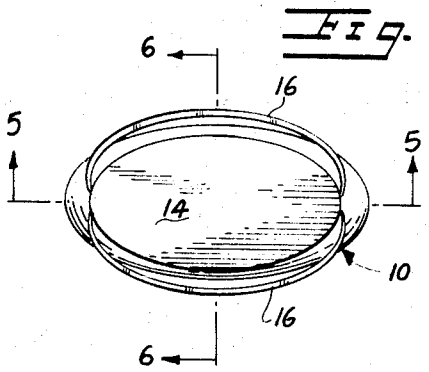


Fig. 3



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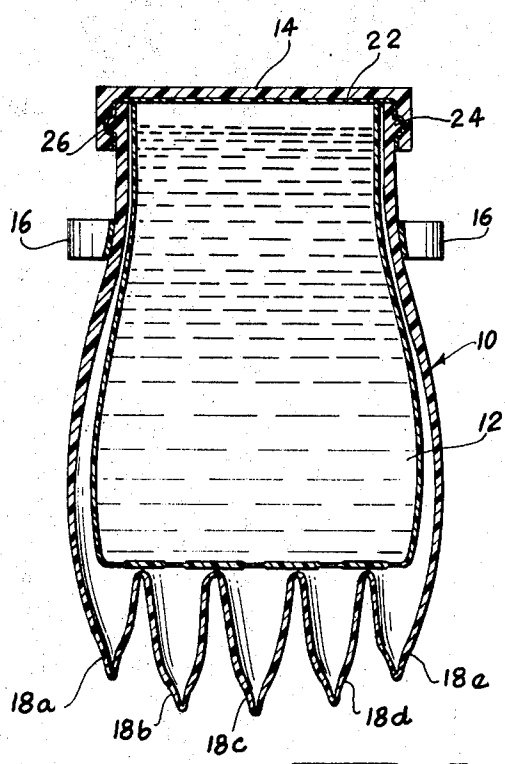


Fig. 5

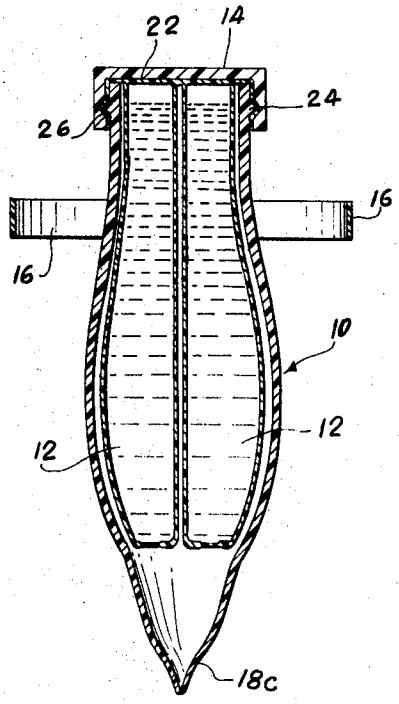


Fig. 6

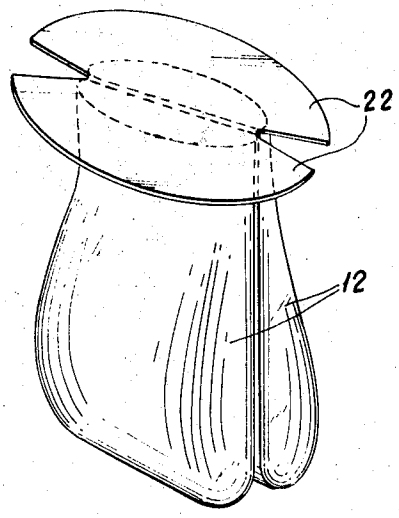


Fig. 8

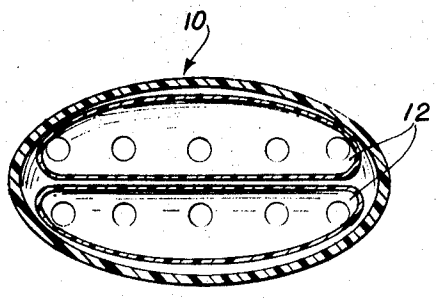


Fig. 7

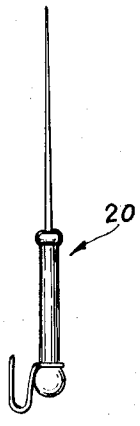


Fig. 9

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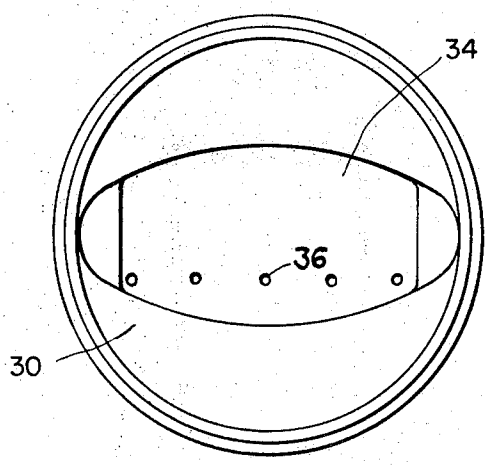


FIG. 11

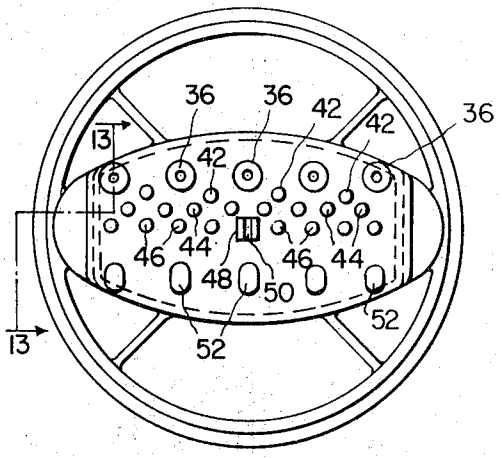


FIG. 12

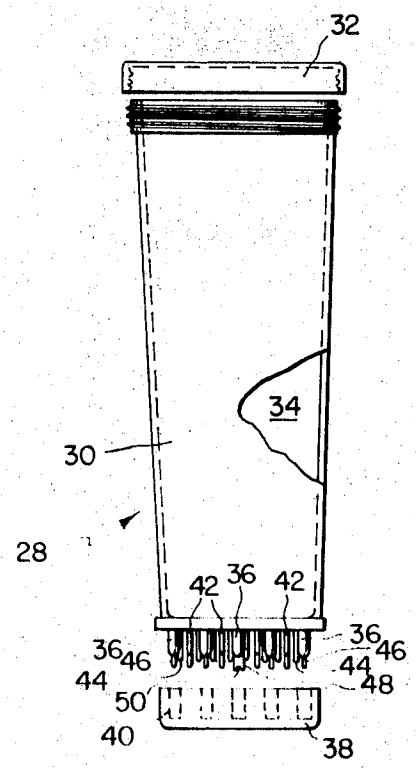


FIG. 10

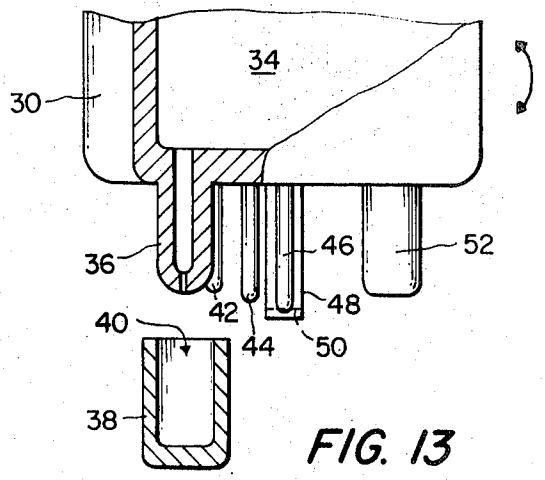


FIG. 13

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APPLICATOR FOR LIQUID HAIR TREATING PREPARATIONS

This application is a continuation-in-part of application Ser. No. 490,171, now abandoned filed Sept. 23, 1965.

This invention relates to an applicator for liquid hair treating preparations and the like. It may be used to store, dispense and apply such liquid preparations.

The present invention will be described solely in terms of its relation to hair treating solutions, but it will be understood that this is to be done solely for illustrative purposes and such description should not be deemed to limit the invention to human or animal hair treating preparations. Nevertheless, its principal use is in connection with the treatment of hair, for example hair dyeing, and, consequently, it will be described in such terms.

Briefly stated, this invention comprises an outer container and optionally one or more inner containers. The outer container may be used and is used time and again; the inner containers are disposable and are intended for a single application of preparation or for a limited number of applications. The outer container principally functions as the means of applying the hair treating preparation or the like which may be dispensed directly from a reservoir in the outer container or from disposable inner containers held within the outer container.

The principal object of this invention is the provision of an applicator comprising a reservoir and dispensing means in the form of dispensing nozzles for dispensing hair preparations; for example bleach or dye, in selected streaked arrangement to achieve the result of providing a coiffure which will have one or more distinctive streaks of a contrasting color to the rest of the hairdo.

It is a further object of this invention to provide spacer teeth to cooperate with the dispensing nozzles to permit an operator to control the placement of the hair preparation by tilting the applicator against the scalp or hair of the patron to vary the distance of the nozzle ends with relation to the hair and scalp of the patron.

It is also an object of the invention to provide such spacer teeth to control the flow of the preparation to provide a streaked effect.

It is a further object of the invention to provide an applicator of the character described which may be used over the entire hairdo of the patron to provide a coiffure over the entire head having a streaked or mottled contrasting color effect, and it is also an object of this invention to provide the applicator with a deformable body portion around the container or reservoir portion of the applicator so that the operator may, by squeeze manipulation, control the flow of the preparation.

An optional feature of this invention resides in the provision of separate disposable inner containers which have the feature of changeability. As an illustration, one such inner container may contain a hair bleach while another may contain a coloring dye. As another illustration, one such inner container may contain a color dye of one shade and the other may contain a coloring dye of another shade. A beauty salon may stock a large number of such inner containers containing a great variety of hair treating solutions. To proceed from one customer to another, all that need be done is to remove one set of inner containers from the outer or applicator container and to substitute another set of inner containers therein. The inner containers are made of relatively inexpensive material, such as very thin sheet or film plastics and they may readily be stored and stocked for future use. The outer or applicator container is a more substantial article which may be used and reused many times. It is to be understood that in the preferred forms of this invention, the inner container need not be used at all, as the outer container is designed to operate without the inner container. In such case where it is desired to use more than one color, or more than one preparation, during a treatment, the operator may use two applicators separately, each made in accordance with the invention and each containing a different preparation during the treatment.

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

FIG. 1 is a perspective view of an applicator made in accordance with the present invention, said applicator being shown closed and containing a pair of inner containers;

FIG. 2 is a side view thereof;

FIG. 3 is a top view thereof;

FIG. 4 is an exploded perspective view showing the inner containers mounted within the outer applicator container and the cap elevated above said outer and inner containers in spaced relation thereto;

FIG. 5 is a vertical section taken on the line 5–5 of FIG. 3;

FIG. 6 is a vertical section taken on the line 6–6 of FIG. 3;

FIG. 7 is a horizontal section taken on the line 7–7 of FIG. 1;

FIG. 8 is a perspective view of a pair of inner containers;

FIG. 9 is a view of a piercing needle which may be used to puncture the nozzles on the outer container and also to puncture the inner containers so that their contents may be dispensed;

FIG. 10 is a front elevation of another form of the invention with the cover removed in exploded position;

FIG. 11 is an enlarged top plan view of the form of invention shown in FIG. 10 with the cover removed;

FIG. 12 is an enlarged bottom plan view of the form of invention shown in FIG. 10; and

FIG. 13 is an elevational view further enlarged as seen along the lines 13–13 in FIG. 12, showing the detail of a nozzle in section and with parts cut away from the FIG.

Similar numerals refer to similar parts throughout the several views.

A first form of the invention which may include the optional inner containers is illustrated in FIGS. 1 through 9 of the drawings. It comprises an outer container 10 which serves as an applicator, a plurality of optional inner containers 12 in which the liquids to be dispensed may be stored, a cover or closure 14 which may also be used to lock the optional inner containers in place within the outer applicator container, and a pair of strap or handle members 16 which may be used to facilitate holding and using said applicator container.

It will be noted that the outer applicator container 10 is provided at its lower end with a plurality of nozzles 18*a*, 18*b*, 18*c*, 18*d* and 18*e* respectively. These nozzles are integral with the outer container proper and it will be understood that the entire unit, that is, the outer container and its several nozzle elements may be molded in the same mold and at the same time of relatively flexible plastic material or rubber or the like. What is required is that the material be chemically inert with respect to the liquids which are to be applied to the hair, and that the outer applicator container be relatively flexible and resilient as well as structurally strong so that it may be used and reused over a long period of time and may be flexed and squeezed as needed in the dispensing of the liquid contents.

The optional inner containers 12, on the other hand, are disposable units and, consequently, may be made of relatively thin sheet or volume plastics. Such material should also be chemically inert with respect to the liquid contents and sufficiently flexible and resilient to enable said inner containers to be flexed and squeezed as needed.

Nozzles 18*a*, 18*b*, 18*c*, 18*d* and 18*e* are normally closed and may be opened by the simple expedient of snapping off their respective tips by means of a pair of scissors or other suitable cutting instrument. Where relatively small dispensing openings are desired, only the very ends of the tips are removed. When it is desired to provide larger openings for a greater or faster flow of liquid, larger portions of the tips are removed. This is a matter which may be determined by the individual operator and it provides great flexibility in the use of the present device. As a matter of fact, where the operator prefers, a very thin stream or spray of material, pinhole openings may be formed in said nozzles and the piercing needle 20 herein provided may be used for that purpose.

Inner containers 12 may best be described as comprising a pair of plastic bags or envelopes adapted to contain suitable hair treating liquid preparations. These inner containers or bags may be separate units or they may be adapted to each

other by means, for example, of a top sheet 22. This top sheet may be heat-sealed or welded or cemented or affixed by any other means to the open top ends of the inner bags or containers 12. Sheet 22 may function as a closure member to seal in the contents of said inner bags or containers. It may also serve as a means for holding the two inner bags or containers together and, finally, it serves as a means of separating the two inner bags or containers from the top of the outer applicator container 10.

In the use of the present device, inner bags or containers 12 are placed within the outer applicator container 10, sheet 22 being disposed open and extended radially outwardly from the upper lip of the outer applicator container 10. This is clearly shown in FIG. 4 of the drawings. Cap 14 is thereupon placed on said sheet 22, and it is pressed downwardly to fold the marginal edges of said sheet downwardly upon and around the upper end of the applicator container 10. Cap 14 may be provided with inner screw threads and the upper end of the applicator container may be provided with outer screw threads, so that when the cap is screwed down upon the outer container, sheet 22 is held in place between the upper end of the applicator container and the cap to start the inner bags or containers in operative position within said applicator. Another method of attaching the cap to the outer applicator container is shown in the drawings. It comprises an annular bead or ring 24 molded integrally upon the applicator container adjacent its upper end. Alternatively, said ring 24 may be a separate element mounted upon and affixed to said applicator container. In either case, a complementary annular groove 26 is formed in cap 14. When the cap is pressed downwardly upon sheet 22 which seals and joins the inner containers, it folds the marginal edges of said sheet 22 downwardly and across ring 24 and the cap, thereupon, snaps into place on said outer container, groove 26 receiving ring 24 and those portions of sheet 22 which extend across said ring.

The inner bags or containers are now locked in place within the outer applicator container and the device is now ready for use. The operator inserts needle 20 through the openings which are formed at the tips of nozzles 18*a*, 18*b*, 18*c*, 18*d* and 18*e* in order to puncture the inner bags or containers to release their contents. It will now be understood that depending upon the practices of the individual operator, either all or a selected number of the nozzles may be opened to dispense the contents of the inner bags or containers. Similarly, also depending upon the individual practices of the operators using such devices, one hole or a plurality of holes may be formed in the inner bags or containers. Where a greater flow is desired, a larger number of holes may be formed. Where a smaller flow is desired, a smaller number of holes may be formed.

In order to facilitate use of the present device, the operator may slip her fingers or her hand through one or the other of straps or handles 16. This will enable the operator to manipulate the device with a minimum of effort. The nozzles may be worked through the hair or applied to selected portions of the hair, all as determined by the individual operator and in accordance with style and customer requirements. As the nozzles are directed against or through the hair, the outer applicator container may be squeezed to dispense the contents of the inner bag containers and direct such contents in the form of a stream or plurality of streams upon the hair. The construction of the device permits the streams of hair preparation, for example dye, bleach or the like, to be applied in a streaked effect, and many various unique and beautiful hairdo arrangements comprising one or more contrasting streaks, or an entire coiffure comprising streaked or mottled coloring of contrasting effect, may be obtained.

The form of invention just described is illustrative of the basic principle of the invention, and it will be understood that this form will be modified and other forms may be provided within the broad spirit of the invention. It is to be understood that the inner bags may be eliminated completely and the outer container may be used without inserts to dispense liquids or solutions in accordance with the invention which are placed directly into the outer container for dispensing in accordance with the invention.

In FIGS. 10 through 13, I show another form of the invention in which the applicator dispenser 28 is provided with a comblike set of teeth in combination with the dispensing nozzles. In this form of the invention, the dispenser 28 has a main body portion 30 made of a squeeze plastic or other deformable material and having a closure cap 32 to close off the reservoir 34 contained within body portion 30. The body portion 30 has a series of nozzles 36 for dispensing the preparation which is placed in the reservoir 34. I may also provide a nozzle cap 38 having as many recesses 40 as there are nozzles 36 adapted to fit over the nozzles 36 to close them off when the device is not in use.

The dispenser 28 is provided with three rows of teeth. There are short teeth 42 in a first row, medium length teeth 44 in a second row, and longer teeth 46 in a third row, as can best be seen by referring to FIG. 13 of the drawings. There is also a pivot tooth 48 longer than the other teeth and located centrally with reference to the dispenser 28 and the dispensing nozzles 36. The pivot tooth may have a groove 50 running perpendicular to the row of nozzles 36.

It is the purpose of this invention to provide a coiffure treatment such as dyeing or bleaching which will result in a streaked or mottled effect in which either the natural color of the hair is contrasted with streaks of another color, or in which the hair which has already been dyed one color may be enhanced in beauty with contrasting streaks of another color. The dispenser 28 is particularly adapted to provide streaks since the nozzles 36 will dispense the coloring fluid, and the comb teeth 42, 44, 46 and the pivot tooth 48 will spread the hair as well as the fluid so that the fluid will reach only a portion of the hair over which the dispenser is travelled to produce the streaked effect. The operator may pass the dispenser over the hair only once to produce either one or a minimum number of streaks, or the operator may pass the dispenser over the hair many times to produce either many streaks or a mottled effect over the entire hairdo. The pivot tooth 48 is used to aid the operator in adjusting the nozzles 36 to the desired height over the scalp and over the hair. The pivot tooth 48 as well as the nozzles 36 may be placed against the scalp of the user. Then the dispenser 28 may be tilted up and down in the direction of the double headed arrow in FIG. 13 to vary the distance from the end of a nozzle or nozzles 36 from the hair and scalp as desired. This aids the operator in producing a varied effect in the streaking and mottling during the treatment.

The optional groove 50 is provided to further vary the streaking effect during the operation of the dispenser. I may also provide a further row of teeth 52 at the rear of the device which may further help in separating the hairs for the streaking and mottling effect, and may also act as means to bear against the scalp while lifting the nozzles away from the scalp and hairs.

It is to be understood that in the operation of the device, it is moved with the nozzles 36 first or in a direction from right to left when viewing the device as in FIG. 13 of the drawings. The left hand portion of FIG. 13 represents the front of the device, and the right hand portion of FIG. 13 represents the rear of the device.

A typical method of dyeing hair which comprises the device of the invention would be selecting a device made in accordance with the invention, filling it with selected hair dye, then applying the dye to hair by squeezing the applicator to cause the liquid to flow through the nozzles at times when the nozzles are in actual contact with the hair, and also squeezing the applicator to discharge its contents at times when the nozzles are directed toward but not in actual contact with the hair. It is intended in the use of this device and the method that the hair treatment or dye be applied to less than all of the scalp and hair in order to produce the streaked or mottled effect. A further step in the method is the separating of the hairs with the teeth of the applicator to spread the hair as well as the

fluid to prevent the fluid from reaching all of the hair, and a further step in the method is the use of the pivot tooth during the application of the hair dye to pivot the applicator against the scalp and hair to guide the nozzles toward and away from the hair.

While I have described my invention in its preferred forms, there are many forms which it may take, and I desire to be protected for all of such forms.

I claim:

1. An applicator for liquid hair treating preparations, comprising a container made of relatively flexible, resilient material and comprising a plurality of nozzles formed thereon, said container being adapted to be held in one hand of an operator to dispense the liquid contents therethrough when the container is squeezed by the hand action of the operator, in which there is a row of nozzles positioned substantially in alignment together with at least one other row of teeth substantially in alignment and substantially parallel to the row of nozzles, and in which there is a pivot tooth longer than said teeth and said nozzles and offset from said nozzles.

2. An applicator in accordance with claim 1, in which there is a plurality of rows of teeth, and in which the teeth in each of said rows are of different lengths.

3. An applicator in accordance with claim 1, in which said nozzles are formed with blind ends and are adapted to be punctured or cut to have openings of selected sizes.