An object of the present invention is to provide a new and novel dispensing comb apparatus which is adapted to serve the dual function of a conventional comb and a dispenser for dispensing liquid hair dressing.

Another object of the invention is the provision of dispensing comb apparatus including means for positively closing and sealing the dispensing openings provided through the body means and to provide a neat external appearance.

A further object of the invention is to provide dispensing comb apparatus including means for sealing and positioning the dispensing means with respect to the body means such that no leakage occurs into the storage cavity of the body means within which the dispensing means is disposed, thereby preventing leakage of the hair dressing liquid into the cavity, and to further provide an arrangement whereby the hair dressing liquid can be effectively dispensed through the openings formed in the body means.

Still another object of the invention is to provide dispensing comb apparatus which is quite simple and inexpensive in construction, and yet which is sturdy and efficient in operation.

Other objects and many attendant advantages will become more apparent when considered in connection with the specification and accompanying drawings, wherein:

FIG. 1 is a perspective view of a first modification according to the present invention;
FIG. 2 is an elevation view partly broken away of the apparatus shown in FIG. 1;
FIG. 3 is a sectional view taken along line 3—3 of FIG. 2, looking in the direction of the arrows;
FIG. 4 is a broken away view illustrating one end portion of the apparatus;
FIG. 5 is an end view of the device shown in FIG. 2;
FIG. 6 is a sectional view taken along line 6—6 of FIG. 2 looking in the direction of the arrows;
FIG. 7 is a sectional view taken along the same line as FIG. 6, with the clip-on cover means removed;
FIG. 8 is a sectional view taken along line 8—8 of FIG. 2 looking in the direction of the arrows;
FIG. 9 is a perspective view of a second modification according to the present invention;
FIG. 10 is an elevation partly broken away of the device shown in FIG. 9;
FIG. 11 is a sectional view taken along line 11—11 of FIG. 10 looking in the direction of the arrows;
FIG. 12 is a view partly broken away illustrating the details of construction of an end portion of the device;
FIG. 13 is an end view of the device shown in FIG. 10;
FIG. 14 is a sectional view taken along line 14—14 of FIG. 10 looking in the direction of the arrows;
FIG. 15 is a view taken along the same line as FIG. 14 with the clip-on cover means removed; and
FIG. 16 is a sectional view taken along line 16—16 of FIG. 10 looking in the direction of the arrows.

Referring now to the drawings wherein like reference characters designate corresponding parts throughout the several views, a first modification of the invention is illustrated in FIGS. 1—8 of the drawings, and as seen most clearly in FIGS. 1 and 2, a body means 10 is provided, the body means being formed of a suitable light-weight material such as plastic or the like which also has sufficient rigidity for withstanding the forces normally applied to a comb when in use.

A first plurality of teeth indicated generally by reference numeral 11 is formed integral with the body means and extends outwardly therefrom, the teeth 11 being spaced from one another as is conventional in most combs. Also formed integral with and extending outwardly from the body means are a second plurality of teeth 12 which are spaced from one another by a distance substantially greater than the plurality of teeth 11;
the teeth being spaced to permit dispensing of a hair dressing liquid as will hereinafter appear.

As seen particularly in FIGS. 2 and 3, body means 10 is provided with a cavity 15 therewithin, the cavity opening into side face 16 of the body means and a recessed portion 17 being also formed in side face 16 and communicating with the cavity 15. A cover means 20 is provided for closing the open side of cavity 15, the cover means being substantially rectangular in shape to completely fill the rectangular opening at one side of the cavity 15. Cover 20 is provided with a central lip 22 extending along one end thereof, this lip fitting within a corresponding groove 22 formed in the body means. In addition, the opposite end of the cover is provided with a groove 24 which extends along the edge thereof, this groove receiving a lip 25 which extends along the adjacent surface of the recess 17. It is evident that by interlocking the lips and grooves 21, 22 and 24, 25 by snapping the cover member into the operative position shown, the cover 20 will be retained in its operative position in overlying relationship to the open side of the cavity.

Cover 20 is provided with an elongated slot 30 which extends longitudinally of the cover member 20 and is spaced from the ends thereof. A control or pressure member comprises a main body portion 31 having a configuration such as to fit rather snugly within the rectangular cavity 15 whereby the body portion 31 may be pushed longitudinally along the length thereof through an open nozzle portion 41 provided at one end of the dispensing means 35 which is slidably fitted within groove 30, and an enlarged disc-like portion 32 is secured to the outer end of the inner portion 32, portion 33 serving as a hand grip portion which can be manually grasped for actuating the pressure member.

The body means is provided with a bore portion 35 which may be substantially cylindrical, this bore portion 35 communicating with the interior of cavity 15. A passage 36 is also formed in the body means, this passage communicating with the central portion of bore 35 and the reduced diameter thereof providing a shoulder or seat portion 37.

A dispensing means indicated generally by reference numeral 40 comprises a hollow collapsible flexible member which may be formed of any suitable material such as a lightweight metal, plastic or even a heavy-duty paper. The dispensing means 40 being formed as a bellows member, this bellows construction permitting the dispensing means to be readily collapsed as the pressure member is moved to the right as seen in FIGS. 2 and 3, whereby fluid dressing liquid which is normally disposed within the dispensing means will be ejected through an open nozzle 41 provided at one end of the dispensing means. As seen in FIG. 8, the cross-sectional configuration of the bellows member 40 is substantially circular, and a suitable hair dressing liquid 45 is disposed within the dispensing member 40. It will, of course, be evident that dispensing member 40 should be waterproof in order to prevent leakage of the hair dressing liquid through the walls of the dispensing means itself.

As seen particularly in FIGS. 2 and 3, the end portion of the dispensing means opposite to the nozzle will, of course, be closed, and the nozzle portion 41 has a slightly tapered configuration, an annular flange 50 being formed about the nozzle 41. This annular flange 50 is provided with a rounded outer surface, and this rounded outer surface of flange 50 is adapted to fit within a correspondingly rounded annular groove 51 formed in the body means adjacent thereto and merging with the shoulder 57 formed adjacent the point of intersection of passage 36, and bore 35.

Flange 50 formed about the nozzle portion of the dispensing means is preferably formed of a material such as plastic or the like which can be slightly deformed whereby the flange 50 is adapted to snap within the annular groove 51 formed in the body means. In this manner, the nozzle means of the dispenser is adapted to be positively held in position relative to the body means, and furthermore, the nozzle is seated and sealed with respect to the body means thereby preventing any leakage from the dispensing means. Moreover, the body means 10 is provided with a very small annular groove 51 to prevent any loss of operation due to the tight fit between the annular flange 50 and the cooperating groove 51 formed in the body means. It is evident that this is an important feature since if it were not for this type of seal, some of the hair dressing liquid which is dispensed under pressure might well leak into the body and thus contaminate the nozzle portion of the dispenser and cause the liquid to become contaminated.

Passage 36 as seen in FIG. 2 curves downwardly at portion 55 and thence extends longitudinally of the body means throughout the portion 56 of the passage. Openings 58 are provided between adjacent teeth 12 of the plurality of teeth 12. It is accordingly evident that when hair dressing liquid is dispensed through nozzle 41, the dispersed liquid will be transmitted through the passage portions 55 and 56 to the openings 58 provided between teeth 12.

As shown in FIGS. 2, 5 and 6, a clip-on cover is indicated generally by reference numeral 60 is provided for normally closing the openings 58 provided between the teeth 12. As seen especially in FIG. 2, each of the openings 58 has a downwardly and outwardly tapered conical-like shape, and the bottom wall 61 of the clip-on cover 60 is provided with complementary shaped conical-like projections 62 which extend upwardly and fit tightly within the bottom portions of the openings 58. Accordingly, when the clip-on cover is in operative sealing position as seen in FIG. 2, the projections 62 tightly fit within and effectively seal the openings 58 to prevent any liquid from passing outwardly through the openings. As seen in FIGS. 5 and 6, the bottom wall 61 of the clip-on cover is joined with an upwardly and outwardly extending side wall portion 66 which in turn in joined with a vertically extending side wall portion 66, the upper end of said wall terminating in inwardly extending leg portions 67. The body means of the apparatus is provided with corresponding recesses at opposite sides thereof which snugly receive the portions 65, 66 and 67 of the clip-on cover such that when the clip-on cover is disposed in operative position, the outer surfaces thereof will be disposed substantially flush with the adjacent outer surfaces of the body means 10 of the apparatus. The clip-on cover 60 is formed of a flexible or resilient material such as plastic or the like, whereby the portions 65 and 66 and 67 thereof may be bent outwardly away from the body means to permit the cover to be completely slipped off of the body means.

When the clip-on cover is removed from the body means as seen in FIG. 7, it will be evident that the lower conical portions of the openings 58 are completely open, and furthermore, the recessed portions 70 which receive portions 66 and 67 of the cover are clearly visible. It is evident that the wall portions 71 of the body means are adapted to fit snugly against the portions 65 of the cover means as previously described.

When the clip-on cover is removed as shown in FIGS. 4 and 7, any liquid dispensed through the nozzle 41 of the dispensing means will pass through passage portions 55 and 56 and thence outwardly through the openings 58.

To provide a uniform and effective distribution of the hair dressing liquid through a person's hair, the comb apparatus may be passed through the hair in a conventional manner while such liquid is dispensed through the openings between the teeth thereof, and in this manner, the hair dressing is applied in a very neat manner without the necessity of touching the hair dressing liquid with the hands.

Referring now to the modification shown in FIGS. 9-16, a body means 101 is provided which has a slightly different configuration than that shown in FIG. 1. In
this case, the body means includes reduced portions at opposite ends thereof and an enlarged portion 80 is provided within which the cavity means is formed. A first plurality of teeth 11' are provided similar to the teeth 11 shown in FIG. 1, and further, a second plurality of teeth 12' are spaced from one another and also are formed similar to the teeth 12 shown in FIG. 1.

A cavity 15' is provided within the enlarged body portion 80, this cavity differing somewhat from the opening shown in the previous modification in that the cavity opens through the upper surface of the body means rather than through a side surface thereof as in the previous modification.

An elongated slot 30' is provided through the side wall portion 81 of the enlarged body portion 80, and a control or pressure member identical with that previously described is provided. The pressure member includes a main body portion 31' which fits snugly within the cavity 15', a Shank portion 32' fitting through the elongated slot 30' and being connected with an enlarged disc-like portion 33' which is, of course, adapted to be manually grasped for moving the pressure member reciprocably within the body means.

A cover member 85 is provided for closing the upper portion of the cavity, the cover member also fitting within a recess 86 formed within the body means adjacent one end thereof. Cover member 85 is provided at one end with a first rib portion 90 which fits within a corresponding groove 91 formed in the body means. The cover member is also provided with a rib portion 92 at the opposite end thereof which fits within a groove 93 formed in the body means. Here again, the cover member is formed of plastic or a similar substance such that it is adapted to be snapped into position as seen in FIG. 10 for example in overlying relationship with respect to the cavity 15'. A dispensing means 40' is provided which may be in all respects identical with the dispensing means 40 previously described, the dispensing means being provided with a tapered nozzle 41' and having a rounded peripheral flange 50' disposed therearound adjacent the nozzle 41'. The manner in which the nozzle port is located into and seated with respect to the body means is slightly different in the modification presently under discussion, and the details of this construction may be more clearly understood by reference to FIG. 12.

As seen in FIG. 12, passage means 55' and 56' is provided as in the previous modification which in turn communicates with openings 58' formed between the spaced teeth 12' formed at one end of the body means. A tapered seat 100 is formed adjacent the passage portion 55' which is adapted to snugly receive and is complementary to the tapered nozzle 41'. The body means is provided with a semicylindrical groove portion 101 which is adapted to receive the bottom half of the rounded annular flange portion 50', and a semicylindrical groove portion 102 is provided in the under surface of the downwardly extending portion 103 of the cover member 85. It is evident that these two semicylindrical groove portions are adapted to cooperate with one another such that when the cover member is disposed in the operative position shown, the annular flange portion 50' will be received within the cooperating groove portions. Furthermore, the left hand surfaces of the groove portions 101 and 102 as seen in FIG. 12 are rounded so as to fit against the flange 50' formed in the dispensing means. With this construction, when the cover means is placed in its operative position, the flange portion 50' will be urged to the position shown in FIG. 12 thereby wedging the tapered nozzle 41' into the tapered seat 100 formed on the body means. Accordingly, a very tight and obtainable seal between the tapered seat 100, and the tapered nozzle 41' thereby preventing any possible leakage from the discharge nozzle back into the cavity 15' formed in the body means.

The end portion 105 of the body means in this modification is of a reduced dimension, and a clip-on cover 60' is provided which is similar to the clip-on cover previously described. The bottom wall 61' of this clip-on cover also includes upwardly extending projections 62' which fit snugly within the openings 58' provided in the body means for sealing the openings when the cover is in operative position as shown.

The bottom wall 61' of the clip-on cover is formed integral with vertically extending side wall portions 106 which fit snugly up against the adjacent side walls of the body means portion 105. Upwardly extending walls 106 terminate in laterally extending legs 107 which are disposed within suitable recess portions 108 provided in the body portion 105. It is apparent that the clip-on cover 60' serves the same function as the clip-on cover 60 previously described.

It is apparent from the foregoing that there is provided a new and novel apparatus which serves both as a conventional comb and further as a device for dispensing hair dressing liquid directly into the hair. In each modification of the invention, a clip-on cover means is provided for positively closing and sealing the openings between the teeth of the apparatus such that no undesired leakage or liquid through these openings occurs while using the device solely as a comb. This clip-on cover means is also particularly adapted to provide an attractive external appearance to the apparatus when disposed in operative position thereon. In each modification, means is provided for positively positioning the dispenser means within the cavity of the body means, and to provide an effective seal between the nozzle of the dispensing means and the body means to prevent any leakage of the dispensed liquid into the cavity of the apparatus. The structural arrangement is quite simple and inexpensive and yet the device is quite sturdy and reliable in operation. As this invention may be embodied in several forms without departing from the spirit or essential characteristics thereof, the present embodiment is therefore illustrative and not restrictive, and since the scope of the invention is defined by the appended claims, all changes that fall within the metes and bounds of the claims or that form their functional as well as conjointly cooperative equivalents are therefore intended to be embraced by those claims.

I claim:

1. Dispensing comb apparatus comprising a body means having a cavity formed therein, a plurality of spaced teeth attached to said body means and extending therefrom, said body means having a plurality of openings formed there in, said openings being formed between said teeth, said body means having passage means formed therein providing communication between said cavity and said openings, removable dispensing means disposed within said cavity and including a dispensing nozzle formed at one end thereof, means for positively seating and sealing said nozzle with respect to the surrounding structure such that the nozzle communicates only with said passage means, and control means adapted to engage a portion of said dispensing means remote from said nozzle for dispensing material from said dispensing means, said comb apparatus also including a clip-on cover means having a plurality of projections formed thereon, each of said projections fitting within one of said openings in said body means, and control means adapted to engage a portion of said dispensing means remote from said nozzle for dispensing material from said dispensing means, said comb apparatus also including a clip-on cover means having a plurality of projections formed thereon, each of said projections fitting within one of said openings in said body means.

2. Dispensing comb apparatus comprising body means having a plurality of teeth extending from said body means, said body means having a plurality of openings formed there in, said openings being formed between adjacent teeth at one end portion of the body means, said body means having a storage cavity formed therein, a flexible collapsible hollow dispensing means removably disposed within said cavity and having a tapered nozzle formed at one end portion thereof, means for engaging said nozzle and retaining the nozzle in sealed
relationship with respect to said body means, a movable control pressure member movably positioned within said cavity and engaging the opposite end portion of said dispensing means whereby upon movement of the pressure member, the dispensing means may be collapsed to eject material within the dispensing means outwardly through the nozzle thereof, said body means having passage means formed therein providing communication between said openings and said cavity and nozzle when disposed in operative position whereby material ejected through said nozzle will be transmitted to said openings in the body means, said dispensing comb apparatus also including a separate removable cover means having a plurality of projections and slots formed therein, each of said projections fitting within one of the openings provided in the body means for closing and sealing the openings, said slots formed in the cover means receiving certain teeth of said comb.

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