

Aug. 9, 1960

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2,948,284

HOME PERMANENT HAIR WAVING DEVICES

Filed April 16, 1959

3 Sheets-Sheet 1

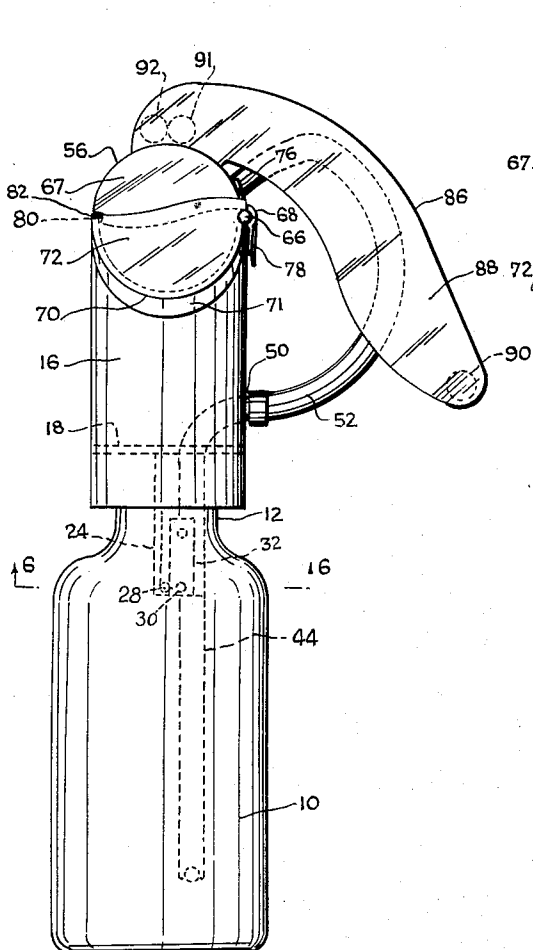


Fig. 1.

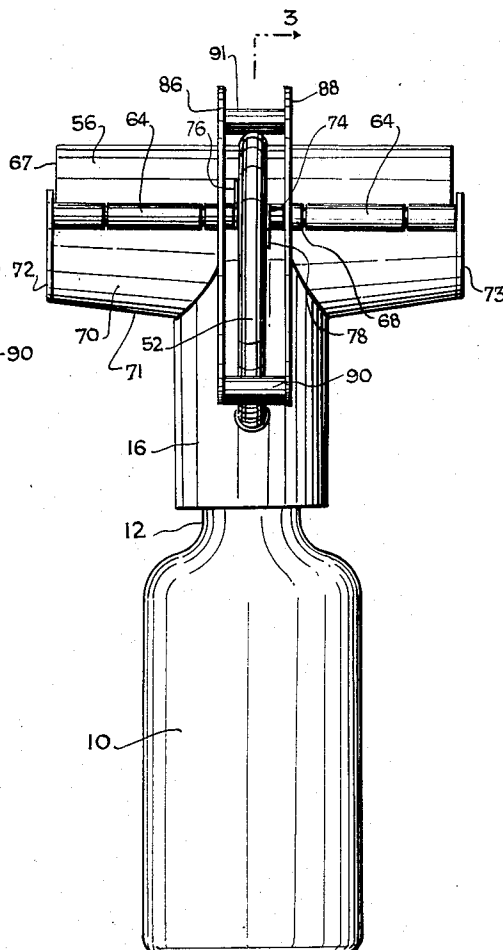


Fig. 2.

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3 Sheets-Sheet 2

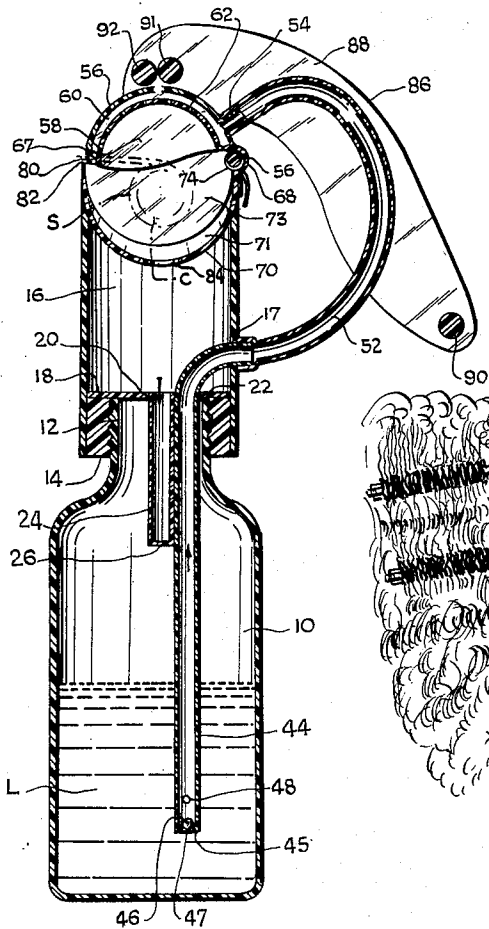


Fig. 3.

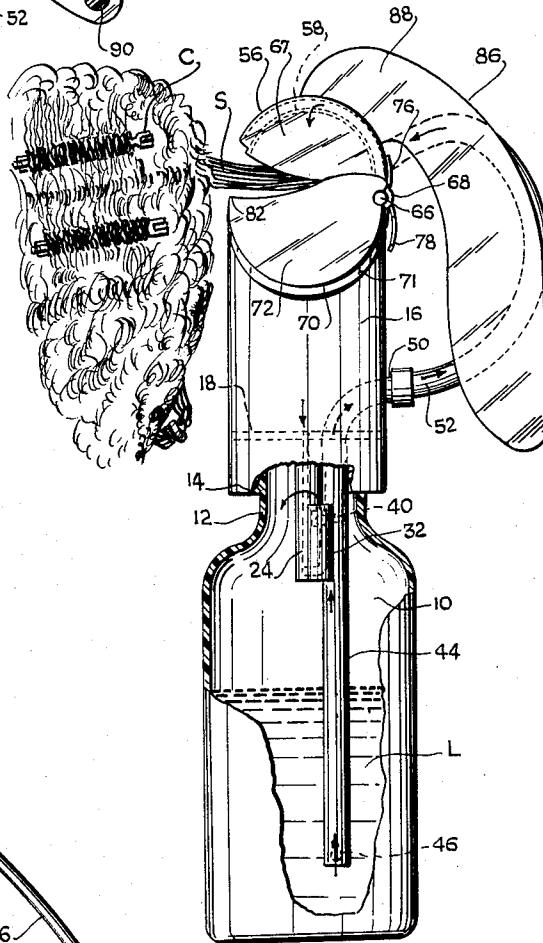


Fig. 4.

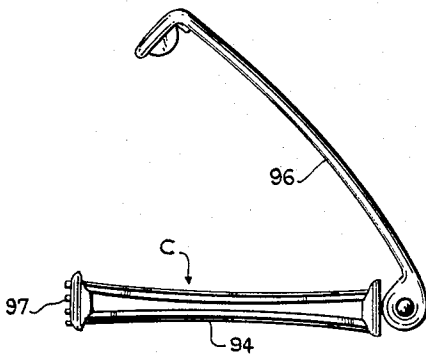


Fig. 5.

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3 Sheets-Sheet 3

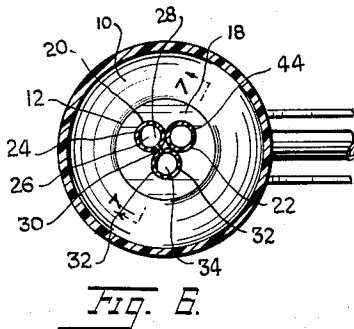


Fig. 6.

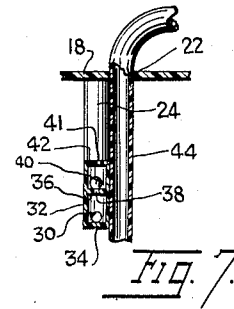


Fig. 7.

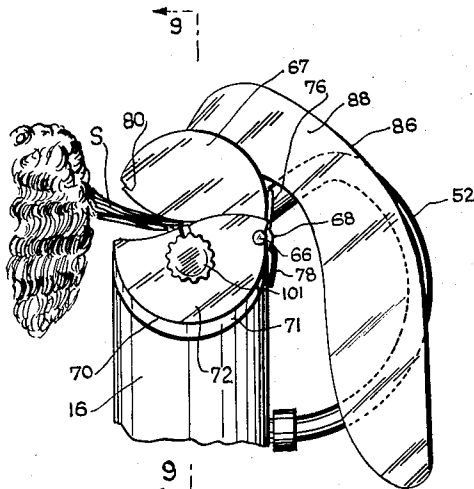


Fig. 8.

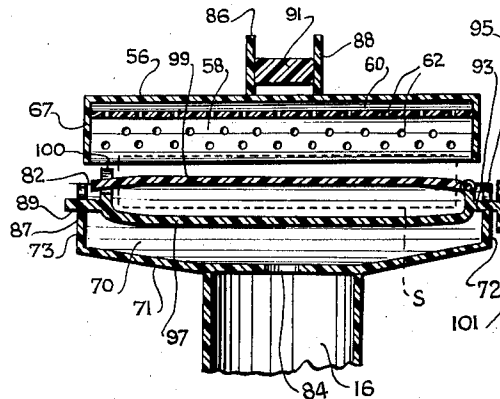


Fig. 9.

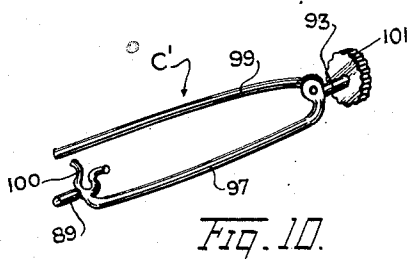


Fig. 10.

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2,948,284

HOME PERMANENT HAIR WAVING DEVICES

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9 Claims. (Cl. 132—9)

This invention concerns an improved device for imparting a permanent wave to hair.

Heretofore various devices have been provided for spraying waving lotion upon a coil of hair wound on a curler. The excess solution is caught in a cup as it drains off the hair. The use of a separate sprayer and cup requires that both hands of the operator be occupied in this operation which is undesirable. Furthermore, the use of a separate sprayer fails to apply the waving solution uniformly to the hair curls. The use of a separate cup results in dripping of the solution onto the face, neck and portions of the clothing of the person being treated. The present invention is directed at overcoming these and other difficulties and disadvantages encountered with prior permanent waving devices.

A principal object of the invention is to provide a device for applying permanent waving solution to hair, which device is especially adapted to be used by women in administering home type permanents to their own hair without requiring assistance of a skilled operator or attendant.

A further object is to provide a device which effects an economy in use of waving solution by collecting excess solution in its entirety in a container or bottle from which the solution is initially sprayed.

A further object is the provision of a permanent waving device having a squeeze bottle, a removably attached curl treating chamber and valved means for returning excess fluid to the bottle.

According to the invention, a hair curling clip is wound with a strand of hair to form a curl. The curled strand with the curling clip is placed in a cradle having a hinged cover to define a chamber in which the curl is treated. A flexible plastic squeeze bottle is connected to the cover which is perforated to spray waving solution over the curl as it is discharged from the squeeze bottle. Excess waving solution drains out of the cradle back into the bottle through valved tubes. No portion of the solution drips out of the compartment. The cradle has a tube extending into the bottle and provided with a one-way ball valve so that the fluid enters the tube and passes upward into the cover of the device when the bottle is squeezed. A drain tube is disposed in the bottom of the cradle and connects with a ball valve controlled tubular section to permit the fluid draining out of the cradle to pass through the tubular section back into the bottle.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a side elevational view of the device embodying the invention.

Fig. 2 is a front elevational view of the device.

Fig. 3 is a sectional view taken on line 3—3 of Fig. 2.

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Fig. 4 is a side elevational view of the device with portions broken away to show internal construction and with the device in position for treating the hair of a person.

Fig. 5 is a side view of a hair curling clip which may be used with the device.

Fig. 6 is a plan sectional view taken on line 6—6 of Fig. 1.

Fig. 7 is a sectional view taken on line 7—7 of Fig. 6 showing portions of the valve structure of the device.

Fig. 8 is a fragmentary side elevational view of another form of device embodying the invention.

Fig. 9 is a sectional view taken on line 9—9 of Fig. 8.

Fig. 10 is a perspective view of another hair curling clip.

Referring to Figs. 1—7, there is shown a flexible plastic squeeze bottle 10 made of polyethylene or the like. The bottle has a threaded neck 12 which screws into a threaded plug 14 secured in the lower end of a cylindrical tube 16. Secured to the top of the plug and across the tube is a partition 18 having two holes 20 and 22. In hole 20 is fitted a short tube 24 having a closed bottom end 26. The upper end of tube 24 is open to the interior of tube 16. At the lower end of the wall of tube 24 is a hole 28 best shown in Figs. 6 and 7 which communicates with a hole 30 in the wall of a short valved tube 32. Tubes 24 and 32 are juxtaposed in side-by-side relationship. Tube 32 is closed at its lower end 34 and is open at its upper end to the interior of the bottle 10. A partition 36 is formed in tube 32 above hole 30. Partition 36 has a hole 38 which is closed by a small plastic ball 40. The partition thus provides a seat for the ball. The upper end of the tube 32 has only a narrow opening 41 formed by an annular lip 42 so that the ball 40 cannot be ejected from the tube.

Adjacent to tubes 24 and 32 is another long tube 44 which is fitted in hole 22 and extends close to the bottom of the bottle at its lower end. The bottom of tube 44 is formed with an annular lip 45 and hole 47 which retains another light plastic ball or bead 46 therein. A pin 48 extends transversely across the tube 44 near ball 46 but spaced therefrom so that the ball can rise to clear the opening in lip 45. The upper end of the tube 44 is curved and extends outwardly of the wall of tube 16 through an opening 17 in the side thereof. Attached to the stub end 50 of tube 44 is a flexible plastic tube or pipe 52. The pipe extends arcuately upward and is fitted at its upper end on a nipple 54 on the cover 56. This cover is a semicylindrical member having an inner arcuate wall 58 spaced therefrom to form an arcuate chamber 60. Wall 58 is formed with small spaced openings 62 for discharging fluid therethrough in a spray. Cover 56 is formed with hinge elements 64 engaged on a pintle 66. Cooperating hinge elements 68 are also engaged on pintle 66 and are secured to a semicylindrical cradle 70 having a sloping bottom 71. This cradle has flat end walls 72, 73 extending outwardly beyond the end walls 67 of the cover 56. Mounted on pintle 66 is a coil spring 74 having its free ends 76 and 78 bearing on the cover and tube 16, respectively, and tending to bias the cover into a nested position within the cradle. The forward end of the cover is formed with a depending flange 80 adapted to fit within the forward straight edge 82 of the cradle. A central aperture 84 is formed in the bottom of the cradle. A handle 86 consisting of two flat arcuate plates 88 connected by short spacers 90, 91 and 92 is secured to the top of the cover 56.

In operation of the device, a strand S of hair will be curled upon a curler clip C of the type shown in Fig. 5. This clip has a rotatable slotted reel 94 on which the strand can be curled. A crossbar 96 is pivotally attached to the reel and adapted to be engaged on teeth

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97 at the end of the reel. The curled strand will then be placed in the cradle as shown in Figs. 3 and 4 together with the clip C. The user will pivot the handle 86 downwardly to permit the curled strand to be placed in the cradle and will then release the handle so that the cover flange 80 will clamp the hair against the upper edge 82 of the cradle. The user will hold the device at the base of bottle 10 which contains waving lotion L. By squeezing the bottle, the lotion will be forced up through tube 44. Ball 46 will rise in tube 44 up to the stop element 48 to provide a sufficient passage for the lotion up through tube 44 and into the flexible tube 52. Ball 40 will be forced by air pressure onto partition 36 closing opening 38. From tube 52 the lotion enters chamber 60 and is discharged into the treatment compartment through the holes or openings 62 in a finely divided spray. The excess lotion drains out of the curled strand to the bottom of the cradle. It passes through aperture 84 into tube 16 and from there enters tube 24. From tube 24 the lotion passes through holes 28 and 30 into the lower end of tube 32 below partition 36. Then the lotion forces up the ball 40 off of seat 36 to open a passage through the tube 32 and out of its open top into the bottle 10. Thus the excess lotion drains off the curled strand and is collected in the bottle without any of the lotion escaping outside of the device.

After the treatment with lotion is completed for all curls, the bottle 10 can be unscrewed, and replaced with a bottle of neutralizing solution. The treatment will then be repeated with neutralizing solution. After this treatment is completed, the treatment can be repeated by replacing the bottle of neutralized lotion with a bottle of plain water. Following this water treatment, the curlers can be removed and the hair can be rinsed in clear water to complete the permanent wave treatment.

During the treatment of each curl only one hand is needed by the user to hold the device and squeeze the bottle. The other hand is free to open the cover to remove a curled strand and to insert another. Actually the user need not touch a curled strand with the fingers before or after the lotion is applied, since the user will open the cover by pressing down on the handle, and will shift the position of the device from one curled strand to another while holding the bottle in one hand and manipulating the handle in the other hand. During the actual spraying of the lotion, neutralizer and water on the successive curls, the user need not hold the handle.

In the form of the invention shown in Figs. 8 and 9, the end wall 73 of the cover is provided with a hole 87 in which is removably fitted the stud end 89 of a clip C'. This clip has a knob 101 which is accessible outside of wall 72. Shank 93 of the clip fits in a slot 95 in wall 72. The clip has a finger 97 to which is pivotally attached another finger 99 adapted to engage with upstanding U-shaped spring clip ends 100 of the clip, best shown in Fig. 10. To use this form of the invention, it is only necessary to engage the free end of a strand of hair between fingers 97 and 99. Then the strand can be inserted in the cradle 70, cover 56 closed, and the strand treated by spraying with lotion while the user gradually turns the knob 101 to curl the hair on the clip. Thus the hair will be treated with the lotion while it is being curled up on the curling clip. This will effect a more uniform and thorough treatment of the hair with the lotion.

It will be noted that all parts of the device are formed of plastic material which is easily washed and rendered sanitary. Transparent plastic material can be used so that at all times the user or an operator can see the condition of the hair inside the treatment compartment.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and that various changes and modifications may

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be made within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

1. A lotion applicator for a curled strand of hair, comprising a cradle for receiving said curled strand, a cover hinged to the cradle and provided with spring means for clamping the hair between abutting edges of the cradle and cover, said cradle and cover defining a compartment for treating said curled strand with said lotion, a squeeze bottle communicating with said compartment for spraying said lotion therefrom upon the curled strand, and valved means communicating said compartment with said bottle for draining excess lotion from the sprayed curled strand back into the bottle, said cover having an inner perforated wall defining a chamber for receiving the lotion from the bottle and distributing the lotion in a spray into said compartment, there being a tube having a one-way valve disposed in the bottle for receiving the lotion therefrom, and a flexible plastic tube connected between the first-named tube and said chamber for passing the lotion into the chamber.

2. A lotion applicator for a curled strand of hair, comprising a cradle for receiving said curled strand, a cover hinged to the cradle and provided with spring means for clamping the hair between abutting edges of the cradle and cover, said cradle and cover defining a compartment for treating said curled strand with said lotion, a squeeze bottle communicating with said compartment for spraying said lotion therefrom upon the curled strand, and valved means communicating said compartment with said bottle for draining excess lotion from the sprayed curled strand back into the bottle, said cover having an inner perforated wall defining a chamber for receiving the lotion from the bottle and distributing the lotion in a spray into said compartment, there being a tube having a one-way valve disposed in the bottle for receiving the lotion therefrom, and a flexible plastic tube connected between the first-named tube and said chamber for passing the lotion into the chamber, said valved means comprising a first short tube communicating with said compartment, and a second short tube having a one-way ball valve therein connected to the first tube and opening into the bottle.

3. As an article of manufacture, a lotion applicator for a curled strand of hair comprising a first tube adapted to fit on the neck of a squeeze bottle, said tube having a partition disposed transversely thereacross, a second tube extending through an aperture in said partition for passing said lotion therethrough in one direction, a short tube fitted in another aperture in said partition for receiving lotion from the first tube, and a valved member communicating with the short tube for controlling passage of the lotion through the short tube in a direction opposite to said one direction, a semicylindrical cradle secured to one end of the first tube and having an opening into the first tube for passing lotion from the cradle into the tube, and a semicylindrical cover hinged to the cradle and defining a compartment for lotion therewith.

4. As an article of manufacture, a lotion applicator for a curled strand of hair comprising a first tube adapted to fit on the neck of a squeeze bottle, said tube having a partition disposed transversely thereacross, a second tube extending through an aperture in said partition for passing said lotion therethrough in one direction, a short tube fitted in another aperture in said partition for receiving lotion from the first tube, and a valved member communicating with the short tube for controlling passage of the lotion through the short tube in a direction opposite to said one direction, a semicylindrical cradle secured to one end of the first tube and having an opening into the first tube for passing lotion from the cradle into the tube, and a semicylindrical cover hinged to the cradle and defining a compartment for lotion therewith,

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said second tube opening through said cover into said compartment.

5. As an article of manufacture, a lotion applicator for a curled strand of hair comprising a first tube adapted to fit on the neck of a squeeze bottle, said tube having a partition disposed transversely thereacross, a second tube extending through an aperture in said partition for passing said lotion therethrough in one direction, a short tube fitted in another aperture in said partition for receiving lotion from the first tube, and a valved member communicating with the short tube for controlling passage of the lotion through the short tube in a direction opposite to said one direction, a semicylindrical cradle secured to one end of the first tube and having an opening into the first tube for passing lotion from the cradle into the tube, and a semicylindrical cover hinged to the cradle and defining a compartment for lotion therewith, said second tube opening through said cover into said compartment, there being a handle secured to said cover for opening the compartment.

6. A lotion applicator for a curled strand of hair, comprising a cradle for receiving said curled strand, a cover hinged to the cradle and provided with spring means for clamping the hair between abutting edges of the cradle and cover, said cradle and cover defining a compartment for treating said curled strand with said lotion, a squeeze bottle communicating with said compartment for spraying said lotion therefrom upon the curled strand, and valved means communicating said compartment with said bottle for draining excess lotion from the sprayed curled strand back into the bottle, said cover having an inner perforated wall defining a chamber for receiving the lotion from the bottle and distributing the lotion in a spray into said compartment, there being a tube having a one-way valve disposed in the bottle for receiving the lotion therefrom, and a flexible plastic tube connected between the first-named tube and said chamber for passing the lotion into the chamber, said valved means comprising a first short tube communicating with said compartment, and a second short tube having a one-way ball valve therein connected to the first tube and opening into the bottle, there being a handle secured to the cover for pivoting the cover with respect to the cradle on said hinge to open the compartment while the plastic tube flexes.

7. A lotion applicator for a curled strand of hair, comprising a cradle for receiving said curled strand, a cover hinged to the cradle and provided with spring means for clamping the hair between abutting edges of the cradle and cover, said cradle and cover defining a compartment for treating said curled strand with said lotion, a squeeze bottle communicating with said compartment for spraying said lotion therefrom upon the curled strand, and valved means communicating said compartment with said bottle for draining excess lotion from the sprayed curled strand back into the bottle, said cover having an inner perforated wall defining a chamber for receiving the lotion from the bottle and distributing the lotion in a spray into said compartment, there being a tube having a one-way valve disposed in the bottle for receiving the lotion therefrom, and a flexible plastic tube connected between the first-named tube and said chamber for passing the lotion into the chamber, said valved means comprising a first short tube communicating with said compartment,

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and a second short tube having a one-way ball valve therein connected to the first tube and opening into the bottle, there being a handle secured to the cover for pivoting the cover with respect to the cradle on said hinge to open the compartment while the plastic tube flexes, said cradle having flat side walls with a hair clip journaled in said side walls, said clip having a knob handle disposed outside the cradle for turning the clip while said strand of hair is being curled up on the clip.

8. As an article of manufacture, a lotion applicator for a curled strand of hair comprising a first tube adapted to fit on the neck of a squeeze bottle, said tube having a partition disposed transversely thereacross, a second tube extending through an aperture in said partition for passing said lotion therethrough in one direction, a short tube fitted in another aperture in said partition for receiving lotion from the first tube, and a valve member communicating with the short tube for controlling passage of the lotion through the short tube in a direction opposite to said one direction, a semicylindrical cradle secured to one end of the first tube and having an opening into the first tube for passing lotion from the cradle into the tube, and a semicylindrical cover hinged to the cradle and defining a compartment for lotion therewith, said second tube opening through said cover into said compartment, there being a handle secured to said cover for opening the compartment, there being means in the cover for distributing the lotion into a finely divided spray in said compartment.

9. As an article of manufacture, a lotion applicator for a curled strand of hair comprising a first tube adapted to fit on the neck of a squeeze bottle, said tube having a partition disposed transversely thereacross, a second tube extending through an aperture in said partition for passing said lotion therethrough in one direction, a short tube fitted in another aperture in said partition for receiving lotion from the first tube, and a valved member communicating with the short tube for controlling passage of the lotion through the short tube in a direction opposite to said one direction, a semicylindrical cradle secured to one end of the first tube and having an opening into the first tube for passing lotion from the cradle into the tube, and a semicylindrical cover hinged to the cradle and defining a compartment for lotion therewith, said second tube opening through said cover into said compartment, there being a handle secured to said cover for opening the compartment, there being means in the cover for distributing the lotion into a finely divided spray in said compartment, the last-named means being a curved wall having a plurality of fine openings therein spaced from the inside of the cover.

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