Claims

1. An applicator tip assembly for use in an appliance for applying skin formulations, comprising:

a base portion, of rigid material so as to be insertable onto and removable from a drive end of a motor for the appliance and further structurally configured and arranged to mate with a correspondingly configured drive end of the motor so that it moves with a linear oscillating action with the motor drive end toward and away from the skin of a user; and

a tip portion which is of soft material so as to provide comfortable contact with the facial skin of a user, wherein the tip portion includes only one concave forward surface for receiving skin formulations, and wherein the base portion and the tip portion are mated so that they move together by the action of the motor, toward and away from the skin, contacting the skin to produce an effective infusion of the skin formulation present in the one concave forward surface.

2. The applicator tip assembly of claim 1, wherein the tip potion is soft silicone or rubber, approximately Shore scale OO Durometer 30.

3. The applicator tip assembly of claim 1, wherein the action of the motor end drive is oscillating in a linear direction.

4. The applicator tip assembly of claim 3, wherein the oscillation is within the frequency range of 50-200 Hz.

5. The applicator tip assembly of claim 3, wherein the oscillation is within the range of 100-140 Hz.

6. The applicator tip assembly of claim 1, wherein the tip portion is molded or cast onto a tip attachment element or elements which extend upwardly from the base portion.

7. The applicator tip assembly of claim 1, wherein the drive end element includes a protrusion portion at a forward end thereof.

8. The applicator tip assembly of claim 7, wherein the protrusion is square or

rectangular in cross-section and has a forward larger portion and a rear smaller portion.

9. The applicator tip assembly of claim 8, wherein the larger portion and the smaller portions both are tapered.

10. The applicator tip assembly of claim 7, wherein the protrusion has a conical forward section and a smaller rear section.

11. The applicator tip assembly of claim 7, wherein the base portion includes a lower element portion, having an opening which is configured and arranged to be smaller than the protrusion but sufficiently flexible to permit installation thereof onto the protrusion, wherein an inner edge of the opening abuts a rear taper portion of the protrusion, securely holding the applicator tip assembly onto the protrusion.

12. The applicator tip assembly of claim 6, wherein the attachment element is a continuous ring.

13. The applicator tip assembly of claim 7, wherein the base portion includes a lower element with a central opening through which the protrusion can move, and an inner surface having rib portions which are arranged and configured to latch and securely hold the tip assembly onto the protrusion following insertion of the tip assembly and rotation thereof a partial turn.

14. The applicator tip assembly of claim 7, wherein the base portion includes an outer wall and an inner ring secured to the outer wall by spaced web members, the inner ring including flexible legs/elements between the web members which extend downwardly and are arranged and configured to permit a first taper portion of the protrusion to move therethrough by spreading the leg elements outwardly, wherein the leg elements spring back against the protrusion, holding the tip assembly securely onto the protrusion.

15. The applicator tip assembly of claim 14, wherein the leg elements are equally spaced and sufficiently flexible to permit the tip assembly to be removed from and installed onto the protrusion, while holding the tip assembly against the protrusion in operation to prevent lost motion.

16. In combination, an applicator tip assembly and a motor in an appliance for applying skin formulations, comprising:

an appliance motor having a drive end;

an applicator tip assembly having a base portion and a tip portion, wherein the base portion is sufficiently rigid to be insertable onto and removable from the drive end of the motor and further structurally configured and arranged to mate with the drive end of the motor so that it moves with a linear oscillating action with the action of the motor drive end toward and away from the skin of a user; and wherein the tip portion is sufficiently soft to provide comfortable contact with the facial skin of a user, wherein the tip portion includes only one concave forward surface for receiving skin formations, and wherein the base portion and the tip portion are so securely mated that they move together by the oscillating, linear action of the motor.

17. The combination of claim 16, wherein the oscillation is within the frequency range of 50-200 Hz.

18. The combination of claim 16, wherein the drive end of the motor includes a protrusion portion at a forward end thereof.

19. The combination of claim 18, wherein the protrusion is square or rectangular in cross-section and has a forward larger portion and a rear smaller portion.

20. The combination of claim 19, wherein the larger portion and the smaller portions both are tapered.

21. The combination of claim 18, wherein the protrusion has a conical forward section and a smaller rear section.

22. The combination of claim 18, wherein the base portion includes a lower element portion, having an opening which is configured and arranged to be smaller than the protrusion but sufficiently flexible to permit installation thereof onto the protrusion, wherein an inner edge of the opening abuts a rear portion of the protrusion, securely holding the applicator tip assembly onto the protrusion, without loss of motion during the linear oscillating action of the motor.

23. The combination of claim 16, wherein the base portion includes a lower element with a central opening through which the protrusion can move, and an inner surface having rib portions which are arranged and configured to latch and securely hold the tip assembly onto the protrusion following insertion of the tip assembly and rotation thereof a partial turn.

24. The combination of claim 18, wherein the base portion includes an outer wall and an inner ring secured to the outer wall by spaced web members, the inner ring including flexible legs/elements between the web members which extend downwardly and are arranged and configured to permit a first taper portion of the protrusion to move therethrough by spreading the leg elements outwardly, wherein the leg elements spring back against the protrusion, holding the tip assembly securely onto the protrusion.

25. The combination of claim 24, wherein the leg elements are equally spaced and sufficiently flexible to permit the tip assembly to be removed from and installed onto the protrusion, while holding the tip assembly against the protrusion in operation to prevent lost motion.

Claims

1. An applicator tip assembly for use in an appliance for applying skin formulations, comprising:

a base portion, of rigid material so as to be insertable onto and removable from a drive end of a motor for the appliance and further structurally configured and arranged to mate with a correspondingly configured drive end of the motor so that it moves with a linear oscillating action with the motor drive end toward and away from the skin of a user; and

a tip portion which is of soft material so as to provide comfortable contact with the facial skin of a user, having a flexibility similar to that of human skin, wherein the tip portion includes only one concave forward surface bounded by a peripheral edge in a single plane, for receiving, holding and then applying a skin formulation as the tip portion with the skin formulation moves toward and away from the skin, contacting the skin to apply the formulation thereto and produce an effective infusion of the skin formulation, wherein the base portion and the tip portion are so mated that they move together by the oscillating linear action of the motor.

2. The applicator tip assembly of claim 1, wherein the tip potion is soft silicone or rubber, approximately Shore scale OO Durometer 30.

3. The applicator tip assembly of claim 1, wherein the action of the motor end drive is oscillating in a linear direction.

4. The applicator tip assembly of claim 3, wherein the oscillation is within the frequency range of 50-200 Hz.

5. The applicator tip assembly of claim 3, wherein the oscillation is within the range of 100-140 Hz.

6. The applicator tip assembly of claim 1, wherein the tip portion is molded or cast onto a tip attachment element or elements which extend upwardly from the base portion.

7. The applicator tip assembly of claim 1, wherein the drive end element

includes a protrusion portion at a forward end thereof.

8. The applicator tip assembly of claim 7, wherein the protrusion is square or rectangular in cross-section and has a forward larger portion and a rear smaller portion.

9. The applicator tip assembly of claim 8, wherein the larger portion and the smaller portions both are tapered.

10. The applicator tip assembly of claim 7, wherein the protrusion has a conical forward section and a smaller rear section.

11. The applicator tip assembly of claim 7, wherein the base portion includes a lower element portion, having an opening which is configured and arranged to be smaller than the protrusion but sufficiently flexible to permit installation thereof onto the protrusion, wherein an inner edge of the opening abuts a rear taper portion of the protrusion, securely holding the applicator tip assembly onto the protrusion.

12. The applicator tip assembly of claim 6, wherein the attachment element is a continuous ring.

13. The applicator tip assembly of claim 7, wherein the base portion includes a lower element with a central opening through which the protrusion can move, and an inner surface having rib portions which are arranged and configured to latch and securely hold the tip assembly onto the protrusion following insertion of the tip assembly and rotation thereof a partial turn.

14. The applicator tip assembly of claim 7, wherein the base portion includes an outer wall and an inner ring secured to the outer wall by spaced web members, the inner ring including flexible legs/elements between the web members which extend downwardly and are arranged and configured to permit a first taper portion of the protrusion to move therethrough by spreading the leg elements outwardly, wherein the leg elements spring back against the protrusion, holding the tip assembly securely onto the protrusion.

15. The applicator tip assembly of claim 14, wherein the leg elements are

equally spaced and sufficiently flexible to permit the tip assembly to be removed from and installed onto the protrusion, while holding the tip assembly against the protrusion in operation to prevent lost motion.

16. In combination, an applicator tip assembly and a motor in an appliance for applying skin formulations, comprising:

an appliance motor having a drive end;

an applicator tip assembly having a base portion and a tip portion, wherein the base portion is of rigid material so as to be insertable onto and removable from a drive end of the motor and further structurally configured and arranged to mate with the drive end of the motor so that it moves with a linear oscillating action with the motor drive end toward and away from the skin of a user; and wherein the tip portion is of soft material to provide comfortable contact with the facial skin of a user, having a flexibility similar to that of human skin, and wherein the tip portion includes only one concave forward surface for receiving, holding and then applying a skin formulation as the tip portion with the skin formulation moves toward the skin, contacts the skin and then moves away from the skin, producing an effective infusion of the skin formulation, and wherein the base portion and the tip portion are so mated so that they move together by the oscillating linear action of the motor.

17. The combination of claim 16, wherein the oscillation is within the frequency range of 50-200 Hz.

18. The combination of claim 16, wherein the drive end of the motor includes a protrusion portion at a forward end thereof.

19. The combination of claim 18, wherein the protrusion is square or rectangular in cross-section and has a forward larger portion and a rear smaller portion.

20. The combination of claim 19, wherein the larger portion and the smaller portions both are tapered.

21. The combination of claim 18, wherein the protrusion has a conical forward section and a smaller rear section.

22. The combination of claim 18, wherein the base portion includes a lower element portion, having an opening which is configured and arranged to be smaller than the protrusion but sufficiently flexible to permit installation thereof onto the protrusion, wherein an inner edge of the opening abuts a rear portion of the protrusion, securely holding the applicator tip assembly onto the protrusion, without loss of motion during the linear oscillating action of the motor.

23. The combination of claim 16, wherein the base portion includes a lower element with a central opening through which the protrusion can move, and an inner surface having rib portions which are arranged and configured to latch and securely hold the tip assembly onto the protrusion following insertion of the tip assembly and rotation thereof a partial turn.

24. The combination of claim 18, wherein the base portion includes an outer wall and an inner ring secured to the outer wall by spaced web members, the inner ring including flexible legs/elements between the web members which extend downwardly and are arranged and configured to permit a first taper portion of the protrusion to move therethrough by spreading the leg elements outwardly, wherein the leg elements spring back against the protrusion, holding the tip assembly securely onto the protrusion.

25. The combination of claim 24, wherein the leg elements are equally spaced and sufficiently flexible to permit the tip assembly to be removed from and installed onto the protrusion, while holding the tip assembly against the protrusion in operation to prevent lost motion.