Claims

What is claimed is:

1. A device for administering medication, the device comprising:

a lower housing having a bottom surface and supporting a syringe that is configured to contain a medication therein;

a middle housing attached to the lower housing and comprising a body;

an upper housing attached to the middle housing and configured to move along the middle housing toward the bottom surface of the lower housing from a first position to a second position, wherein the middle housing body is exposed between the upper housing and the lower housing when the upper housing is in the first position, and the upper housing substantially completely covers the middle housing body when the upper housing is in the second position; and

a plunger rod supported by the upper housing, wherein movement of the upper housing from the first position to the second position causes the plunger rod to advance with the upper housing relative to the syringe, thereby causing the syringe to deliver the medication.

2. The device of claim 1, wherein the lower housing further comprises a needle guard, wherein the needle guard moves upwardly to expose a needle when the lower housing bottom surface is pressed against a skin surface.

3. The device of claim 2, wherein the needle guard further comprises a needle guard return capable of extending the needle guard over the needle when the lower housing bottom surface is removed from the skin surface.

4. The device of claim 1, wherein the lower housing further comprises a first surface at its proximal end, which first surface is complementary to and mates with a second surface that comprises the distal end of the upper housing when delivery of the medication is substantially complete.

5. The device of claim 1, wherein the lower housing further comprises at least one window therein through which the distal end of the syringe is visible.

6. The device of claim 1, further comprising an assist drive capable of applying a downward force on the upper housing.

7. The device of claim 1, wherein the upper housing further comprises a cylindrical sleeve therein and fixedly attached thereto, wherein the distal portion of the cylindrical sleeve is housed within the middle housing, the distal portion including an assist drive.

8. The device of claim 1, wherein the lower housing further comprises a clicker to indicate when medication delivery is substantially complete.

9. A device for administering medication, the device comprising:

a lower housing and a syringe supported by the lower housing, the syringe having a needle attached thereto and medication disposed therein;

a plunger rod;

an upper housing moveably supported by the lower housing and configured to move toward the lower housing to cause the plunger rod to advance into the syringe and eject the medication out the needle; and

a biasing element configured to produce a biasing force that biases the upper housing to move toward the lower housing, but is insufficient to cause the upper housing to move toward the lower housing, the biasing force configured to assist an external force that is applied to the upper housing in a direction toward the lower housing so as to cause the upper housing to move toward the lower housing.

10. The device of claim 9, wherein the biasing force of the biasing element is set in relation to the viscosity of the medication intended for delivery.

11. The device of claim 4, wherein the exposed portion of the middle housing body is disposed between the first and second surfaces when the upper housing is in the first position.

12. The device of claim 11, wherein the first surface moves progressively toward the second surface as the upper housing moves from the first position toward the second position.

13. The device of claim 2, further comprising a latch that locks the upper housing in the first position, wherein movement of the needle guard upwardly biases the latch so as to allow the upper housing to move toward the second position.

14. The device of claim 13, wherein the latch is coupled to the lower housing and abuts the upper housing to thereby lock the upper housing in the first position.

15. The device of claim 3, further comprising a needle guard latch that prevents the needle guard from moving upwardly after the needle guard extends over the needle when the lower housing bottom surface is removed from the skin surface.

16. The device of claim 15, further comprising a housing latch that is coupled to the upper housing, wherein the middle housing defines a capture slot that is configured to receive the housing latch when the upper housing has moved to the second position to thereby lock the upper housing in the second position.

17. The device of claim 1, wherein the syringe is fixed with respect to the lower housing.

18. The device of claim 1, wherein the plunger rod bears against the medication contained within the syringe as the upper housing is moved toward the second position to thereby cause the syringe to deliver the medication.

19. The device of claim 9, wherein the upper housing is configured to move toward the lower housing along a first direction and the external force is applied to the upper housing along the first direction.

20. The device of claim 19, wherein the external force causes the upper housing to move toward the lower housing.

21. A device for administering medication, the device comprising:

a lower housing having a bottom surface and supporting a syringe that is configured to contain a medication therein, the lower housing comprising a needle guard, wherein the needle guard moves upwardly to expose a needle when the lower housing bottom surface is pressed against a skin surface;

a middle housing attached to the lower housing and comprising a body;

an upper housing attached to the middle housing and configured to move along the middle housing toward the bottom surface of the lower housing from a first position to a second position, wherein the middle housing body is exposed between the upper housing and the lower housing when the upper housing is in the first position, and the upper housing substantially completely covers the middle housing body when the upper housing is in the second position; and

a plunger rod supported by the upper housing, wherein movement of the upper housing from the first position to the second position causes the plunger rod to advance relative to the syringe, thereby causing the syringe to deliver the medication.

22. The device of claim 21, further comprising a latch that locks the upper housing in the first position, wherein movement of the needle guard upwardly biases the latch so as to allow the upper housing to move toward the second position.

23. The device of claim 21, wherein the needle guard further comprises a needle guard return capable of extending the needle guard over the needle when the lower housing bottom surface is removed from the skin surface.

24. The device of claim 23, further comprising a needle guard latch that prevents the needle guard from moving upwardly after the needle guard extends over the needle when the lower housing bottom surface is removed from the skin surface.

25. The device of claim 24, further comprising a housing latch that is coupled to the upper housing, wherein the middle housing defines a capture slot that is configured to receive the housing latch when the upper housing has moved to the second position to thereby lock the upper housing in the second position.

26. The device of claim 21, wherein the lower housing further comprises a first surface at its proximal end, which first surface is complementary to and mates with a second surface that comprises the distal end of the upper housing when delivery of the medication is substantially complete.

27. The device of claim 21, wherein the lower housing further comprises at least one window therein through which the distal end of the syringe is visible.

28. The device of claim 21, further comprising an assist drive capable of applying a downward force on the upper housing.

29. The device of claim 21, wherein the plunger rod bears against the medication contained within the syringe as the upper housing is moved toward the second position to thereby cause the syringe to deliver the medication.

30. A device for administering medication, the device comprising:

a lower housing having a bottom surface and supporting a syringe that is configured to contain a medication therein;

a middle housing attached to the lower housing and comprising a body;

an upper housing attached to the middle housing and configured to move along the middle housing toward the bottom surface of the lower housing from a first position to a second position, wherein the middle housing body is exposed between the upper housing and the lower housing when the upper housing is in the first position, and the upper housing substantially completely covers the middle housing body when the upper housing is in the second position; and

a plunger rod supported by the upper housing, wherein movement of the upper housing from the first position to the second position causes the plunger rod to advance relative to the syringe, thereby causing the syringe to deliver the medication; and

an assist drive capable of applying a downward force on the upper housing.

31. The device of claim 30, wherein the assist drive is configured to produce a biasing force that biases the upper housing to move toward the lower housing, but is insufficient to cause the upper housing to move toward the lower housing, the biasing force configured to assist an external force that is applied to the upper housing in a direction toward the lower housing so as to cause the upper housing to move toward the lower housing.

32. The device of claim 30, wherein the lower housing further comprises a first surface at its proximal end, which first surface is complementary to and mates with a second surface that comprises the distal end of the upper housing when delivery of the medication is substantially complete.

33. The device of claim 30, wherein the lower housing further comprises at least one window therein through which the distal end of the syringe is visible.

34. The device of claim 30, wherein the plunger rod bears against the medication contained within the syringe as the upper housing is moved toward the second position to thereby cause the syringe to deliver the medication.

35. A device for administering medication, the device comprising:

a lower housing having a bottom surface and supporting a syringe that is configured to contain a medication therein;

a middle housing attached to the lower housing and comprising a body;

an upper housing attached to the middle housing and configured to move along the middle housing toward the bottom surface of the lower housing from a first position to a second position, wherein the middle housing body is exposed between the upper housing and the lower housing when the upper housing is in the first position, and the upper housing substantially completely covers the middle housing body when the upper housing is in the second position; and

a plunger rod supported by the upper housing, wherein:

movement of the upper housing from the first position to the second position causes the plunger rod to advance relative to the syringe, thereby causing the syringe to deliver the medication; and

the plunger rod bears against the medication contained within the syringe as the upper housing is moved toward the second position to thereby cause the syringe to deliver the medication.

36. The device of claim 35, wherein the lower housing further comprises a first surface at its proximal end, which first surface is complementary to and mates with a second surface that comprises the distal end of the upper housing when delivery of the medication is substantially complete.

37. The device of claim 35, wherein the lower housing further comprises at least one window therein through which the distal end of the syringe is visible.