What is Claimed:

1. A device configured to administer a medication, the device comprising:

a lower housing that includes a housing latch;

a syringe supported by the lower housing and being configured to retain a medication, the syringe having a needle configured to be inserted into tissue;

a needle guard that is movable relative to the lower housing along a first direction from a first position, wherein the needle guard guards a tip of the needle, to a second position so as to expose the tip of the needle;

an upper housing supported relative to the lower housing, the upper housing configured to receive a manual force and move with respect to the lower housing along the second direction from a pre-use position to a dispensed position in response to the manual force; and

a plunger rod carried by the upper housing and movable with the upper housing so as to advance relative to the syringe when the upper housing is moved along the second direction, wherein advancement of the plunger rod relative to the syringe causes the syringe to deliver the medication out the needle;

wherein the housing latch releasably interferes with the upper housing when the upper housing is in the pre-use position so as to prevent the upper housing from moving relative to the lower housing toward the dispensed position, and the movement of the needle guard toward the second position, causes the interference to be removed, thereby allowing the upper housing to move relative to the lower housing from the pre-use position to the dispensed position.

2. The device of claim 1, wherein the needle guard carries a stop that abuts the housing latch when the needle guard is in the first position so as to maintain the housing latch in interference with the upper housing.

3. The device of claim 2, wherein as the needle guard moves toward the second position, the stop moves out of contact with the housing latch such that the housing latch is capable of moving out of interference with the upper housing.

4. The device of claim 3, wherein the needle guard includes a needle guard return configured to cause the needle guard to move toward a final position along the second direction and over the needle as the needle is removed from the tissue.

5. The device of claim 4, wherein the needle guard is configured to move a first distance along the first direction when the needle guard is moved to the second position, and the needle guard is configured to move a second distance along the second direction when the needle guard is moved to the final position, the second distance being greater than the first distance.

6. The device of claim 4, wherein the needle guard includes a needle guard latch, the needle guard latch being configured to mate with the housing latch when the needle guard moves to the final position such that the housing latch locks the needle guard in the final position.

7. The device of claim 6, wherein the needle guard latch includes a groove and the housing latch includes a protrusion, and wherein at least one of the needle guard latch and the housing latch is configured to flex toward the other such that the protrusion is received within the groove when the needle guard is in the final position.

8. The device of claim 6, wherein the lower housing includes two housing latches and the needle guard includes two needle guard latches, each needle guard latch being configured to mate with a respective one of the housing latches when the needle guard moves to the final position.

9. The device of claim 8, wherein the upper housing includes a pair of guides that each abut a respective housing latch when the upper housing is in the pre-use position to thereby retain the upper housing in the pre-use position.

10. The device of claim 1, further comprising a middle housing coupled between the lower housing and the upper housing, wherein the middle housing includes a body that is exposed between the upper housing and the lower housing when the upper housing is in the pre-use position, and substantially completely covered by the upper housing when the upper housing is in the dispensed position.

11. The device of claim 10, wherein the middle housing body includes a sidewall and at least one friction member supported by the sidewall, and the upper housing includes at least one friction member that interferes with the at least one friction member of the middle housing to thereby create a frictional force as the upper housing moves from the pre-use position toward the dispensed position.

12. The device of claim 1, wherein the syringe includes a bottom shoulder and an upper rim spaced from the bottom shoulder along the first direction, the device further comprising a syringe retainer that is configured to receive the syringe and support the syringe at the bottom shoulder.

13. The device of claim 12, wherein the syringe retainer includes a body and a pair of elastically flexible legs that extend from the body along the second direction, the elastically flexible legs being spaced from each other along a direction that is perpendicular to the second direction so as to define a gap between the elastically flexible legs.

14. The device of claim 13, wherein each elastically flexible leg includes a tab that extends toward the other leg such that when the syringe is moved through the gap along the second direction and toward a seated position, the elastically flexible legs move away from each other and when the syringe is in the seated position, the elastically flexible legs move back toward each other so that the tabs engage the bottom shoulder of the syringe.

15. The device of claim 1, wherein the upper housing includes at least one locking latch, and the lower housing defines at least one corresponding latch member such that when the upper housing moves to the dispensed position, the at least one locking latch snaps over the at least one latch member to thereby lock the upper housing in the dispensed position.

16. A device configured to administer a medication, the device comprising:

a lower housing;

a syringe supported by the lower housing and being configured to retain a medication, the syringe having a needle configured to be inserted into tissue;

a middle housing attached to the lower housing, the middle housing including a body and at least one friction member that is carried by the body;

an upper housing attached to the middle housing and configured to move along the body of the middle housing from a pre-use position to a dispensed position in response to a manual force, the upper housing including at least one friction member that interferes with the at least one friction member of the middle housing to thereby create resistance to the manual force as the upper housing is moved from the pre-use position to the dispensed position; and

a plunger rod carried by the upper housing and movable with the upper housing so as to advance relative to the syringe when the upper housing is moved toward the dispensed position,

wherein advancement of the plunger rod relative to the syringe causes the syringe to deliver the medication out the needle.

17. The device of claim 16, wherein the middle housing body includes a sidewall and at least one friction member supported by the sidewall, and the upper housing includes at least one friction member that interferes with the at least one friction member of the middle housing to thereby create a frictional force as the upper housing moves from the pre-use position toward the dispensed position.

18. The device of claim 17, wherein each friction member of the middle housing is a cantilevered portion that is coupled to the sidewall at a respective hinge, each cantilevered portion being configured to flex about the respective hinge relative to a central axis of the middle housing as the upper housing moves toward the dispensed position.

19. The device of claim 18, wherein each friction member of the upper housing is a rail that is configured to ride along a respective one of the cantilevered portions.

20. The device of claim 19, wherein the upper housing includes a skirt that defines a distal end and a proximal end that is spaced from the distal end along the first direction, and wherein each rail extends from a location proximate to the distal end of the skirt and toward the proximal end of the skirt such that the rail tapers as the rail extends toward the proximal end.

21. The device of claim 18, wherein the middle housing includes a first pair of cantilevered portions and a second pair of cantilevered portions, each of the first and second pairs of cantilevered portions including a first cantilevered portion that extends clockwise from a respective hinge and a second cantilevered portion that extends counterclockwise from a respective hinge and away from the first cantilevered portion.

22. The device of claim 21, wherein each cantilevered portion includes an elastomeric portion, and the friction members of the upper housing are configured to ride along the elastomeric portions.

23. The device of claim 17, further comprising a needle guard that is movable relative to the lower housing from a first position to a second position so as to expose the needle.

24. The device of claim 23, wherein the needle guard includes a spring configured to cause the needle guard to move from the second position toward a final position and over the needle as the needle is removed from the tissue, and wherein the resistance is greater than or equal to a force generated by the spring when the needle guard is in the second position.

25. The device of claim 23, wherein the lower housing includes a housing latch that releasably interferes with the upper housing when the upper housing is in the pre-use position so as to prevent the upper housing from moving toward the dispensed position, and the movement of the needle guard toward the second position, causes the interference to be removed, thereby allowing the upper housing to move from the pre-use position to the dispensed position.

Claims

1. A device configured to administer a medication, the device comprising:

a lower housing that includes a housing latch;

a syringe supported by the lower housing and being configured to retain a medication, the syringe having a needle configured to be inserted into tissue;

a needle guard that is movable relative to the lower housing along a first direction from a first position, wherein the needle guard extends from the lower housing in a second direction, opposite the first direction, so as to cover a tip of the needle as the needle extends from the lower housing in the second direction, to a second position, wherein the needle guard is retracted relative to the tip of the needle so as to expose the tip of the needle;

an upper housing supported relative to the lower housing, the upper housing configured to receive a manual force and move with respect to the lower housing along the second direction from a pre-use position to a dispensed position in response to the manual force; and

a plunger rod carried by the upper housing and movable with the upper housing so as to advance relative to the syringe when the upper housing is moved along the second direction, wherein advancement of the plunger rod relative to the syringe causes the syringe to deliver the medication out the needle;

wherein the needle guard carries a stop that abuts the housing latch when the needle guard is in the first position so as to maintain the housing latch in interference with the upper housing and the housing latch releasably interferes with the upper housing when the upper housing is in the pre-use position so as to prevent the upper housing from moving relative to the lower housing toward the dispensed position, and the movement of the needle guard toward the second position, causes the interference to be removed, thereby allowing the upper housing to move relative to the lower housing from the pre-use position to the dispensed position.

2. The device of claim 1, wherein as the needle guard moves toward the second position, the stop moves out of contact with the housing latch such that the housing latch is capable of moving out of interference with the upper housing.

3. The device of claim 2, wherein the needle guard includes a needle guard return configured to cause the needle guard to move toward a final position along the second direction and over the needle as the needle is removed from the tissue.

4. The device of claim 3, wherein the needle guard is configured to move a first distance along the first direction when the needle guard is moved to the second position, and the needle guard is configured to move a second distance along the second direction when the needle guard is moved to the final position, the second distance being greater than the first distance.

5. The device of claim 3, wherein the needle guard includes a needle guard latch, the needle guard latch being configured to mate with the housing latch when the needle guard moves to the final position such that the housing latch locks the needle guard in the final position.

6. The device of claim 5, wherein the needle guard latch includes a groove and the housing latch includes a protrusion, and wherein at least one of the needle guard latch and the housing latch is configured to flex toward the other such that the protrusion is received within the groove when the needle guard is in the final position.

7. The device of claim 5, wherein the lower housing includes two housing latches and the needle guard includes two needle guard latches, each needle guard latch being configured to mate with a respective one of the housing latches when the needle guard moves to the final position.

8. The device of claim 7, wherein the upper housing includes a pair of guides that each abut a respective housing latch when the upper housing is in the pre-use position to thereby retain the upper housing in the pre-use position.

9. The device of claim 1, further comprising a middle housing coupled between the lower housing and the upper housing, wherein the middle housing includes a body that is exposed between the upper housing and the lower housing when the upper housing is in the pre-use

position, and substantially completely covered by the upper housing when the upper housing is in the dispensed position.

10. The device of claim 9, wherein the middle housing body includes a sidewall and at least one friction member supported by the sidewall, and the upper housing includes at least one friction member that interferes with the at least one friction member of the middle housing to thereby create a frictional force as the upper housing moves from the pre-use position toward the dispensed position.

11. The device of claim 1, wherein the syringe includes a bottom shoulder and an upper rim spaced from the bottom shoulder along the first direction, the device further comprising a syringe retainer that is configured to receive the syringe and support the syringe at the bottom shoulder.

12. The device of claim 11, wherein the syringe retainer includes a body and a pair of elastically flexible legs that extend from the body along the second direction, the elastically flexible legs being spaced from each other along a direction that is perpendicular to the second direction so as to define a gap between the elastically flexible legs.

13. The device of claim 12, wherein each elastically flexible leg includes a tab that extends toward the other leg such that when the syringe is moved through the gap along the second direction and toward a seated position, the elastically flexible legs move away from each other and when the syringe is in the seated position, the elastically flexible legs move back toward each other so that the tabs engage the bottom shoulder of the syringe.

14. The device of claim 1, wherein the upper housing includes at least one locking latch, and the lower housing defines at least one corresponding latch member such that when the upper housing moves to the dispensed position, the at least one locking latch snaps over the at least one latch member to thereby lock the upper housing in the dispensed position.

15. A device configured to administer a medication, the device comprising:

a lower housing;

a syringe supported by the lower housing and being configured to retain a medication, the syringe having a needle configured to be inserted into tissue;

a middle housing attached to the lower housing, the middle housing including a body and at least one friction member that is carried by the body;

an upper housing attached to the middle housing and configured to move along the body of the middle housing from a pre-use position to a dispensed position in response to a manual force, the upper housing including at least one friction member that interferes with the at least one friction member of the middle housing to thereby create resistance to the manual force as the upper housing is moved from the pre-use position to the dispensed position; and

a plunger rod carried by the upper housing and movable with the upper housing so as to advance relative to the syringe when the upper housing is moved toward the dispensed position,

wherein advancement of the plunger rod relative to the syringe causes the syringe to deliver the medication out the needle.

16. The device of claim 15, wherein the middle housing body includes a sidewall and at least one friction member supported by the sidewall, and the upper housing includes at least one friction member that interferes with the at least one friction member of the middle housing to thereby create a frictional force as the upper housing moves from the pre-use position toward the dispensed position.

17. The device of claim 16, wherein each friction member of the middle housing is a cantilevered portion that is coupled to the sidewall at a respective hinge, each cantilevered portion being configured to flex about the respective hinge relative to a central axis of the middle housing as the upper housing moves toward the dispensed position.

18. The device of claim 17, wherein each friction member of the upper housing is a rail that is configured to ride along a respective one of the cantilevered portions.

19. The device of claim 18, wherein the upper housing includes a skirt that defines a distal end and a proximal end that is spaced from the distal end along the first direction, and wherein each rail extends from a location proximate to the distal end of the skirt and toward the proximal end of the skirt such that the rail tapers as the rail extends toward the proximal end.

20. The device of claim 17, wherein the middle housing includes a first pair of cantilevered portions and a second pair of cantilevered portions, each of the first and second pairs of cantilevered portions including a first cantilevered portion that extends clockwise from a respective hinge and a second cantilevered portion that extends counterclockwise from a respective hinge and away from the first cantilevered portion.

21. The device of claim 20, wherein each cantilevered portion includes an elastomeric portion, and the friction members of the upper housing are configured to ride along the elastomeric portions.

22. The device of claim 16, further comprising a needle guard that is movable relative to the lower housing from a first position to a second position so as to expose the needle.

23. The device of claim 22, wherein the needle guard includes a spring configured to cause the needle guard to move from the second position toward a final position and over the needle as the needle is removed from the tissue, and wherein the resistance is greater than or equal to a force generated by the spring when the needle guard is in the second position.

24. The device of claim 22, wherein the lower housing includes a housing latch that releasably interferes with the upper housing when the upper housing is in the pre-use position so as to prevent the upper housing from moving toward the dispensed position, and the movement of the needle guard toward the second position, causes the interference to be removed, thereby allowing the upper housing to move from the pre-use position to the dispensed position.