What is claimed is:

1. A syringe assembly comprising:

a barrel including a cylindrical sidewall having an interior surface with a first cross-sectional width defining a chamber for retaining fluid, an open proximal end and a distal end including a distal wall having an opening therethrough in fluid communication with said chamber, said sidewall including a rib adjacent said proximal end defining a second cross-sectional width that is less than the first cross-sectional width;

an elongate plunger rod including a proximal end, a distal end, and a main body extending between the proximal and distal end, the plunger rod being distally and proximally movable within said chamber, the proximal end including a thumb press, the distal end including a stopper-engaging portion, the plunger rod further including a flexible protrusion between the thumb press and the main body, the protrusion having a cross-sectional width greater than the cross-sectional width of the barrel at the rib and the plunger rod further including a support member including an outer edge disposed proximally adjacent to the flexible protrusion and at least one frangible portion comprising disposed proximally adjacent to the support member and comprising two or more point connections are disposed adjacent to the edge of the support member;

a stopper having a proximal end and a distal end, the stopper attached to the stopper-engaging portion of the plunger rod such that when the distal end of the stopper is in contact with the distal wall of the barrel, the flexible protrusion is permitted to advance distally past the rib in the barrel and lock the plunger rod in the barrel to prevent reuse of the syringe assembly.

2. The syringe assembly of claim 1, wherein the frangible portion comprises at least three point connections spaced equidistant from one another.

3. The syringe assembly of claim 1, wherein the frangible portion comprises at least four point connections with a first and second of the four point connections disposed equidistant from each other and a third and fourth point connection

disposed equidistant from each other, wherein the distance between the first and the second point connections is greater than the distance between the third and the fourth point connections.

4. The syringe assembly of claim 1, wherein the protrusion comprises at least two leaves extending radially outwardly from the plunger rod.

5. The syringe assembly of claim 4, wherein the frangible portion comprises at least four point connections with a first and second of the four point connections aligned with a first and second leaves.

6. The syringe assembly of claim 5, wherein the protrusion includes four leaves disposed equidistant from each other and a third point connection and fourth point connection is misaligned with a third and a fourth leaves, wherein the third point connection and the fourth point connection are disposed adjacent to opposite ends of the outer edge of the support member.

7. The syringe assembly of claim 1, wherein the protrusion facilitates distal movement of the plunger rod by flexing in the proximal direction as a force in the distal direction is applied to the plunger rod.

8. The syringe assembly of claim 1, further comprising a gap between the distal end of the stopper and the distal wall of the barrel when the syringe assembly is in an initial position.

9. The syringe assembly of claim 8, wherein the application of a continuous distally directed force to the plunger rod causes the stopper and plunger rod to move together in the distal direction within the barrel until the stopper reaches the distal end of the barrel, thereby allowing the protrusion to advance distally past the rib in the barrel and lock the plunger rod in the barrel to prevent reuse of the syringe assembly.

10. The syringe assembly of claim 1, wherein application of a proximally directed force to the plunger, after the protrusion has advanced distally past the rib, causes the frangible portion of the plunger rod to break.

11. The syringe assembly of claim 1, wherein the two or more point connections are adapted to withstand application of a force on the plunger rod in the distal direction and break upon application of a force in the proximal direction after the flexible protrusion has advanced distally past the rib.

12. The syringe assembly of claim 11, wherein the force required to move the plunger rod in a proximal direction after the flexible protrusion has advanced distally past the rib exceeds the force required to break the two or more point connections.

13. A syringe assembly comprising:

a barrel including a cylindrical sidewall having an interior surface with a first cross-sectional width defining a chamber for retaining fluid, an open proximal end and a distal end including a distal wall having an opening therethrough in fluid communication with said chamber, said sidewall including a rib adjacent said proximal end defining a second cross-sectional width that is less than the first cross-sectional width;

an elongate plunger rod including a proximal end, a distal end, and a main body extending between the proximal and distal end, the plunger rod being distally and proximally movable within said chamber, the proximal end including a thumb press, the distal end including a stopper-engaging portion, the plunger rod further including a flexible protrusion between the thumb press and the main body, the protrusion having a cross-sectional width greater than the cross-sectional width of the barrel at the rib and the plunger rod further including a support member having a proximally facing surface having a surface area disposed proximally adjacent to the flexible protrusion and at least one frangible portion disposed proximally adjacent to the support member, the frangible portion comprising two or more point connections collectively defining a point connection surface having a surface area that is attached to the proximally facing surface such that the ratio of the

surface area of the proximally facing surface to the surface area of the point connection surface is at least 200;

a stopper having a proximal end and a distal end, the stopper attached to the stopper-engaging portion of the plunger rod such that when the distal end of the stopper is in contact with the distal wall of the barrel, the flexible protrusion is permitted to advance distally past the rib in the barrel and lock the plunger rod in the barrel to prevent reuse of the syringe assembly.

14. The syringe assembly of claim 13, wherein the two or more point connections comprise a distal end, a proximal end and a body portion extending from the distal end to the proximal end, the body portion having a circular cross-section defining a cross-sectional width.

15. The syringe assembly of claim 14, wherein the cross-sectional width of the two or more point connections is constant.

16. The syringe assembly of claim 14, wherein the cross-sectional width of the two or more point connections decreases from the distal end to the proximal end.

17. The syringe assembly of claim 14, wherein the body portion comprises a distal portion having a first cross-sectional width, a proximal portion having a second cross-sectional width that is less than the first cross-sectional width, and a transition portion disposed between the distal portion and the proximal portion, the transition portion having a transitional cross-sectional width that decreases from the distal portion to the proximal portion.

18. The syringe assembly of claim 13 further comprising a gap between the distal end of the stopper and the distal wall of the barrel when the syringe assembly is in an initial position.

19. The syringe assembly of claim 18, wherein the stopper-engaging portion of the plunger rod is connected to the stopper such that application of a continuous distally directed force to the plunger rod causes the stopper and plunger rod to move together in the distal direction within the barrel until the stopper reaches the

distal end of the barrel, thereby allowing the protrusion to advance distally past the rib in the barrel and lock the plunger rod in the barrel to prevent reuse of the syringe assembly.

20. The syringe assembly of claim 13, wherein application of a proximally directed force to the plunger, after the protrusion has advanced distally past the rib, causes the frangible portion of the plunger rod to break.

21. The syringe assembly of claim 13, where the main body of the plunger rod comprises a proximal end and a distal end, the distal end including a disc disposed between the main body and the stopper-engaging portion of the plunger rod and application of a continuous proximally directed force on the plunger rod causes the rib to engage the disc and the frangible portion of the plunger rod to break.

22. The syringe assembly of claim 1, wherein the stopper-engaging portion comprises a visual indicator being fully visible when the stopper-engaging portion is proximally moved relative to the stopper.

23. The syringe assembly of claim 22, wherein the visual indicator is not visible when the stopper-engaging portion is distally moved relative to stopper.

24. The syringe assembly of claim 13, wherein the stopper-engaging portion comprises a visual indicator being fully visible when the stopper-engaging portion is proximally moved relative to the stopper.

25. The syringe assembly of claim 24, wherein the visual indicator is not visible when the stopper-engaging portion is distally moved relative to stopper.

What is claimed is:

1. A syringe assembly comprising:

a barrel including a cylindrical sidewall having an interior surface with a first cross-sectional width defining a chamber for retaining fluid, an open proximal end and a distal end including a distal wall having an opening therethrough in fluid communication with said chamber, said sidewall including a rib adjacent said proximal end defining a second cross-sectional width that is less than the first cross-sectional width;

an elongate plunger rod including a proximal end, a distal end, and a main body extending between the proximal and distal end, the plunger rod being distally and proximally movable within said chamber, the proximal end including a thumb press, the distal end including a stopper-engaging portion, the plunger rod further including a flexible protrusion between the thumb press and the main body, the protrusion having a cross-sectional width greater than the cross-sectional width of the barrel at the rib and the plunger rod further including a support member including an outer edge disposed proximally adjacent to the flexible protrusion and at least one frangible portion disposed proximally adjacent to the support member and comprising at least four point connections with a first point connection, a second point connection, a third point connection, and a fourth point connection disposed adjacent to the edge of the support member;

the protrusion further including four leaves disposed equidistant from each other and wherein the third point connection and the fourth point connection are misaligned with a third and a fourth leaves, wherein the third point connection and the fourth point connection are disposed adjacent to opposite ends of the outer edge of the support member;

a stopper having a proximal end and a distal end, the stopper attached to the stopper-engaging portion of the plunger rod such that when the distal end of the stopper is in contact with the distal wall of the barrel, the flexible protrusion is permitted to advance distally past the rib in the barrel and lock the plunger rod in the barrel to prevent reuse of the syringe assembly.

2. The syringe assembly of claim 1, wherein the frangible portion comprises at least three point connections which are spaced equidistant from one another.

3. The syringe assembly of claim 1, wherein the frangible portion comprises at least four point connections with a first point connection, a second point connection, a third point

connection, and a fourth point connection, wherein the distance between the first and the second point connections is greater than the distance between the third and the fourth point connections.

4. The syringe assembly of claim 1, wherein the frangible portion comprises at least four point connections with a first and second of the four point connections aligned with a first and second leaves.

5. The syringe assembly of claim 1, wherein the protrusion facilitates distal movement of the plunger rod by flexing in the proximal direction as a force in the distal direction is applied to the plunger rod.

6. The syringe assembly of claim 1, further comprising a gap between the distal end of the stopper and the distal wall of the barrel when the syringe assembly is in an initial position.

7. The syringe assembly of claim 6, wherein the application of a continuous distally directed force to the plunger rod causes the stopper and plunger rod to move together in the distal direction within the barrel until the stopper reaches the distal end of the barrel, thereby allowing the protrusion to advance distally past the rib in the barrel and lock the plunger rod in the barrel to prevent reuse of the syringe assembly.

8. The syringe assembly of claim 1, wherein application of a proximally directed force to the plunger, after the protrusion has advanced distally past the rib, causes the frangible portion of the plunger rod to break.

9. The syringe assembly of claim 1, wherein the two or more point connections are adapted to withstand application of a force on the plunger rod in the distal direction and break upon application of a force in the proximal direction after the flexible protrusion has advanced distally past the rib.

10. The syringe assembly of claim 9, wherein the force required to move the plunger rod in a proximal direction after the flexible protrusion has advanced distally past the rib exceeds the force required to break the two or more point connections.

11. The syringe assembly of claim 1, wherein the stopper-engaging portion comprises a visual indicator being fully visible via a gap between stopper and the distal end of the main body when the stopper-engaging portion is proximally moved relative to the stopper.

12. The syringe assembly of claim 11, wherein the visual indicator is not visible when the stopper-engaging portion is distally moved relative to stopper to allow the stopper to cover the stopper-engaging portion and block visibility of the visual indicator.

13. A syringe assembly comprising:

a barrel including a cylindrical sidewall having an interior surface with a first cross-sectional width defining a chamber for retaining fluid, an open proximal end and a distal end including a distal wall having an opening therethrough in fluid communication with said chamber, said sidewall including a rib adjacent said proximal end defining a second cross-sectional width that is less than the first cross-sectional width;

an elongate plunger rod including a proximal end, a distal end, and a main body extending between the proximal and distal end, the plunger rod being distally and proximally movable within said chamber, the proximal end including a thumb press, the distal end including a stopper-engaging portion, the plunger rod further including a flexible protrusion between the thumb press and the main body, the protrusion having a cross-sectional width greater than the cross-sectional width of the barrel at the rib and the plunger rod further including a support member having a proximally facing surface having a surface area disposed proximally adjacent to the flexible protrusion and at least one frangible portion disposed proximally adjacent to the support member, the frangible portion comprising two or more point connections collectively defining a point connection surface having a surface area that is attached to the proximally facing surface such that the ratio of the surface area of the proximally facing surface to the surface area of the point connection surface is at least 1:200, said two or more point connections comprise a distal end, a proximal end and a body portion extending from the distal end to the proximal end, the body portion having a circular cross-section defining a cross-sectional width;

a stopper having a proximal end and a distal end, the stopper attached to the stopper-engaging portion of the plunger rod such that when the distal end of the stopper is in contact with the distal wall of the barrel, the flexible protrusion is permitted to advance distally past the rib in the barrel and lock the plunger rod in the barrel to prevent reuse of the syringe assembly.

14. The syringe assembly of claim 13, wherein the cross-sectional width of the body portion of two or more point connections is constant from the distal end to the proximal end.

15. The syringe assembly of claim 13, wherein the cross-sectional width of the two or more point connections decreases from the distal end to the proximal end.

16. The syringe assembly of claim 13, wherein the body portion comprises a distal portion having a first cross-sectional width, a proximal portion having a second cross-sectional width that is less than the first cross-sectional width, and a transition portion disposed between the distal portion and the proximal portion, the transition portion having a transitional cross-sectional width that decreases from the distal portion to the proximal portion.

17. The syringe assembly of claim 13 further comprising a gap between the distal end of the stopper and the distal wall of the barrel when the syringe assembly is in an initial position.

18. The syringe assembly of claim 17, wherein the stopper-engaging portion of the plunger rod is connected to the stopper such that application of a continuous distally directed force to the plunger rod causes the stopper and plunger rod to move together in the distal direction within the barrel until the stopper reaches the distal end of the barrel, thereby allowing the protrusion to advance distally past the rib in the barrel and lock the plunger rod in the barrel to prevent reuse of the syringe assembly.

19. The syringe assembly of claim 13, wherein application of a proximally directed force to the plunger, after the protrusion has advanced distally past the rib, causes the frangible portion of the plunger rod to break.

20. The syringe assembly of claim 13, where the main body of the plunger rod comprises a proximal end and a distal end, the distal end including a disc disposed between the main body and the stopper-engaging portion of the plunger rod and application of a continuous proximally directed force on the plunger rod causes the rib to engage the disc and the frangible portion of the plunger rod to break.

21. The syringe assembly of claim 13, wherein the stopper-engaging portion comprises a visual indicator being fully visible via a gap between stopper and the distal end of the main body when the stopper-engaging portion is proximally moved relative to the stopper.

22. The syringe assembly of claim 21, wherein the visual indicator is not visible when the stopper-engaging portion is distally moved relative to stopper to allow the stopper to cover the stopper-engaging portion and block visibility of the visual indicator.