

What is claimed is:

1. A drug delivery device comprising:
 - a housing having an opening;
 - a drug storage container including a delivery member having an insertion end configured to extend at least partially through the opening during a delivery state;
 - a removable cap including an outer portion and an inner portion, the outer portion being configured to be removably coupled with the housing such that the removable cap has a storage position where the removable cap is coupled with the housing and at least partially covering the opening and a removed position where the removable cap is not coupled with the housing; and
 - wherein a gap separates at least a portion of the inner portion and at least a portion of the outer portion such that the at least a portion of the outer portion is allowed to bend with respect to the at least a portion of the inner portion if the at least a portion of the outer portion is subjected to an external force.
2. The drug delivery of claim 1, wherein the outer portion at least partially surrounds the inner portion.
3. The drug delivery device of any one of claims 1 or 2, wherein the removable cap has a first axial opening configured to receive the housing and a second axial opening.
4. The drug delivery device of claim 3, wherein the outer portion at least partially surrounds the first axial opening and the second axial opening.
5. The drug delivery device of any one of claims 1 to 4, wherein the gap is a radial gap.
6. The drug delivery device of any one of claims 1 to 5, wherein the removable cap comprises at least one support member disposed between the inner portion and the outer portion, the at least one support member being coupled with at least one of the inner portion and the outer portion.
7. The drug delivery device of claim 6, wherein the at least one support member is coupled with the inner portion and the outer portion.
8. The drug delivery device of any one of claims 6 or 7, wherein the at least one support member comprises a plurality of support members arranged at a respective circumferential positions around the inner portion.
9. The drug delivery device of any one of claims 1 to 8, comprising at least one side opening formed in the outer portion and communicating with the gap.
10. The drug delivery device of claim 9, wherein the at least one side opening is at least partially formed in a distally directed end surface of the outer portion.
11. The drug delivery device of claim 9, wherein the at least one side opening is proximal to a distally directed end surface of the outer portion.

12. The drug delivery device of any one of claims 9 to 11, wherein the at least one side opening comprises a plurality of side openings arranged at respective circumferential positions around the outer portion.

~~13. The drug delivery device of any one of claims 1 to 12, comprising a removable sterile barrier configured to be removably coupled with the drug storage container such that the removable sterile barrier has a storage position where the removable sterile barrier is coupled with the drug storage container and at least partially covering the insertion end of the delivery member and a removed position where the removable sterile barrier is not coupled with the drug storage container.~~

~~14. The drug delivery device of claim 13, the removable sterile barrier comprises a rigid needle shield.~~

~~15. The drug delivery device of any one of claims 13 or 14, wherein the inner portion of the removable cap is coupled with and/or defines a gripper configured to engage the removable sterile barrier such that when the removable cap is removed from the housing the gripper removes the removable sterile barrier from the drug storage container to uncover the insertion end of the delivery member.~~

~~16. The drug delivery device of claim 15, wherein the gripper is configured to rotate with respect to the removable sterile barrier.~~

~~17. The drug delivery device of any one of claims 1 to 16, wherein the external force is applied to the removable cap in a direction that is generally parallel to a longitudinal axis of the removable cap and/or housing; and/or the removable cap is configured such that the external force induces at least one bending moment in at least one of a proximal end of the removable cap or a distal end of the removable cap.~~

~~18. The drug delivery device of any one of claims 1 to 17, wherein the removable cap is made at least partially of a resilient material.~~

~~19. The drug delivery device of claim 18, wherein the resilient material comprises a polypropylene random copolymer.~~

~~20. The drug delivery device of any one of claims 1 to 19, wherein the removable cap is configured such that the external force induces at least one bending moment in at least one of a proximal end of the removable cap and a distal end of the removable cap.~~

~~21. The drug delivery device of any one of claims 1 to 20, wherein at least a portion of a distal end of the removable cap has a non-circular cross-section in a plane perpendicular to a longitudinal axis of the removable cap.~~

~~22. The drug delivery device of claim 21, wherein the non-circular cross-section is generally square-shaped.~~

~~23. The drug delivery device of any one of claims 21 or 22, wherein at least a portion of a proximal end of the removable cap has a circular cross-section in a plane perpendicular to a longitudinal axis of the removable cap.~~

~~24. The drug delivery device of any one of claims 1 to 23, wherein the housing comprises a housing camming feature and the removable cap comprises a cap camming feature.~~

~~25. The drug delivery device of claim 24, wherein the cap camming feature and the housing camming feature are configured to translate rotational motion into axial motion such that, upon rotational movement of the removable cap with respect to the housing, the cap camming feature and/or the housing camming feature urge the removable cap along a longitudinal axis of the housing and/or removable cap.~~

~~26. The drug delivery device of any one of claims 1 to 25, comprising:~~

~~a plunger moveable in a distal direction with respect to the drug storage container to expel a drug from the drug storage container through the delivery member during the delivery state; and~~

~~a plunger biasing member configured to urge the plunger in the distal direction.~~

~~27. The drug delivery device of 26, comprising a guard positioned adjacent to the opening and configured to move with respect to the housing.~~

~~28. The drug delivery device of claim 27, wherein the guard is operably coupled with the plunger biasing member such that a relative movement between the guard and the housing along the longitudinal axis of the housing and/or removable cap permits release of the plunger biasing member.~~

~~29. The drug delivery device of any one of claims 1 to 28, wherein the drug delivery device is an autoinjector.~~

~~30~~14. A drug delivery device comprising:

a housing having an opening;

a drug storage container including a delivery member having an insertion end configured to extend at least partially through the opening during a delivery state;

a removable cap including a proximal end and a distal end, the proximal end being configured to be removably coupled with the housing such that the removable cap has a storage position where the removable cap is coupled with the housing and at least partially covering the opening and a removed position where the removable cap is not coupled with the housing; and

wherein the removable cap is configured such that an external force applied to the removable cap induces at least one bending moment in at least one of the proximal end of the removable cap and the distal end of the removable cap.

~~31~~15. The drug delivery device of claim ~~14~~30, wherein the at least one bending moment comprises a first bending moment in the proximal end of the removable cap and a second bending moment in the distal end of the removable cap.

~~32. The drug delivery device of any one of claims 30 or 31, comprising a removable sterile barrier configured to be removably coupled with the drug storage container such that the removable sterile barrier has a storage position where the removable sterile barrier is coupled with the drug storage container and at least partially covering the insertion end of the delivery member and a removed position where the removable sterile barrier is not coupled with the drug storage container.~~

~~33. The drug delivery device of claim 32, wherein the removable sterile barrier comprises a rigid needle shield (RNS).~~

~~34. The drug delivery device of any one of claims 32 or 34, wherein the removable cap comprises a gripper configured to engage the removable sterile barrier such that when the removable cap is removed from the housing the gripper removes the removable sterile barrier from the drug storage container to uncover the insertion end of the delivery member.~~

~~35. The drug delivery device of claim 34, wherein the gripper is configured to rotate with respect to the removable sterile barrier.~~

~~36. The drug delivery device of any one of claims 34 or 35, wherein the at least one bending moment comprises a third bending moment in the gripper.~~

3716. The drug delivery device of any one of claims 3014 ~~to~~ 3615, wherein the at least one bending moment is associated with at least a portion of the proximal end of the removable cap bending at least partially around a first bending axis.

3817. The drug delivery device of claim 3716, wherein the at least a portion of the proximal end of the removable cap comprises an annular wall.

3918. The drug delivery device of any one of claims 3716 or 3817, wherein the at least one bending moment is associated with at least a portion of the distal end of the removable cap bending at least partially around a second bending axis.

~~40. The drug delivery device of any one of claims 37 to 39, insofar as dependent any of claims 5 to 7, wherein the at least one bending moment is associated with at least a portion of the gripper of the cap bending at least partially around a third bending axis.~~

~~41. The drug delivery device of any one of claims 30 to 40, wherein one or more of the first bending axis, the second bending axis, and the third bending axis is generally perpendicular to a longitudinal axis of the housing and/or removable cap.~~

4219. The drug delivery device of any one of claims 3014 to 4418, wherein the external force is applied to the removable cap in a direction that is generally parallel to a longitudinal axis of the removable cap and/or housing.

~~43. The drug delivery device of any one of claims 30 to 42 wherein the removable cap is made at least partially of a resilient material.~~

~~44. The drug delivery device of claim 43, wherein the resilient material includes a polypropylene random copolymer.~~

4520. The drug delivery device of any one of claims 14 to 19, wherein the removable cap comprises an outer portion and an inner portion, and wherein a gap separates at least a portion of the inner portion and at least a portion of the outer portion such that the at least a portion of the outer portion is allowed to bend with respect to the at least a portion of the inner portion if the at least a portion of the outer portion is subjected to the external force.

~~46. The drug delivery device of any one of claims 30 to 45, wherein at least a portion of the distal end of the removable cap has a non-circular cross-section in a plane perpendicular to a longitudinal axis of the removable cap.~~

- ~~47. The drug delivery device of claim 46, wherein the non-circular cross-section is generally square-shaped.~~
- ~~48. The drug delivery device of any one of claims 46 or 47, wherein at least a portion of the proximal end of the removable cap has a circular cross-section in a plane perpendicular to a longitudinal axis of the removable cap.~~
- ~~49. The drug delivery device of any one of claims 30 to 48, wherein the housing comprises a housing camming feature and the removable cap comprises a cap camming feature.~~
- ~~50. The drug delivery device of claim 49, wherein the cap camming feature and the housing camming feature are configured to translate rotational motion into axial motion such that, upon rotational movement of the removable cap with respect to the housing, the cap camming feature and/or the housing camming feature urge the removable cap along a longitudinal axis of the housing and/or removable cap.~~
- ~~51. The drug delivery device of any one of claims 30 to 50, comprising:~~
- ~~a plunger moveable in a distal direction with respect to the drug storage container to expel a drug from the drug storage container through the delivery member during the delivery state; and~~
 - ~~a plunger biasing member configured to urge the plunger in the distal direction.~~
- ~~52. The drug delivery device of 51, comprising a guard positioned adjacent to the opening and configured to move with respect to the housing.~~
- ~~53. The drug delivery device of claim 52, wherein the guard is operably coupled with the plunger biasing member such that a relative movement between the guard and the housing along the longitudinal axis of the housing and/or removable cap permits release of the plunger biasing member.~~
- ~~54. The drug delivery device of any one of claims 30 to 53, wherein the drug delivery device is an autoinjector.~~