

CLAIMS

1. A catheter device, comprising:
 - an interlock surface;
 - a catheter adapter;
 - a cannula capture mechanism comprising:
 - an outer housing;
 - an inner housing comprising an interlock component, wherein at least a portion of the inner housing is disposed within the outer housing, wherein the inner housing comprises a plurality of arms;
 - an interlock surface;
 - a catheter adapter; and
 - a cannula that extends into the inner housing, wherein the cannula comprises a distal tip,
 - wherein in response to the cannula being retracted proximally with respect to the inner housing and the catheter adapter such that the distal tip is disposed proximal to a distal end of the inner housing, the plurality of arms are configured to move inwardly towards each other, wherein in response to the plurality of arms moving inwardly towards each other, the interlock component is configured to separate from the interlock surface and the outer housing is configured to decompress in a distal direction from a compressed state to a decompressed state to bias the plurality of arms of the inner housing together to prevent the cannula from exiting the distal end of the inner housing.

2. The catheter device of claim 1, wherein when the cannula is exposed from the distal end of the inner housing, the plurality of arms of the inner housing are splayed radially outward and the outer housing is in the compressed state.

3. The catheter device of claim 1, wherein an inner diameter of the distal end of the outer housing is approximately equal to an outer diameter of a distal portion of the inner housing when the plurality of arms are biased together.

4. The catheter device of claim 1, wherein the plurality of arms extend distally from a proximal end of the inner housing.

5. The catheter device of claim 1, wherein the cannula comprises a cannula feature, wherein when the cannula is retracted proximally within the inner housing, the cannula feature is configured to contact a proximal end of the inner housing to prevent the cannula from exiting the proximal end of the inner housing.

6. The catheter device of claim 1, wherein the outer housing comprises a spring portion, wherein the spring portion is compressible along a longitudinal axis aligned with the cannula.

7. The catheter device of claim 1, wherein an inner surface of the catheter adapter or a surface of a component contained within the catheter adapter comprises the interlock surface, wherein interlock surface and the interlock component interact secure the inner housing within the catheter adapter when the cannula is exposed from the distal end of the inner housing.

8. The catheter device of claim 7, wherein the inner surface of the catheter adapter is configured to separate from the inner housing to release the inner housing from the catheter adapter when the cannula is retracted proximally within the inner housing.

9. The catheter device of claim 1, further comprising a septum activator, wherein the septum activator is disposed within an inner lumen of the catheter adapter, wherein an inner surface of the septum activator is configured to secure the inner housing within the catheter adapter when the cannula is exposed from the distal end of the inner housing.

10. The catheter device of claim 9, wherein the inner surface of the septum activator is configured to separate from the inner housing to release the inner housing from the septum activator when the cannula is retracted proximally within the inner housing.

11. A catheter device, comprising:
a catheter adapter; and
a cannula capture mechanism, comprising:

an outer housing;

an inner housing, wherein at least a portion of the inner housing is disposed within the outer housing; and

a cannula that extends into the inner housing, wherein when the cannula is exposed from a distal end of the inner housing, a distal portion of the inner housing has a first diameter, wherein when the cannula is retracted proximally within the inner housing, the distal portion of the inner housing has a second diameter and a distal end of the outer housing is configured to decompress in a distal direction and slide distally over the distal portion of the inner housing within the catheter adapter to seal the distal end of the inner housing, wherein the first diameter is greater than the second diameter.

12. The catheter device of claim 11, wherein when the cannula is retracted proximally within the inner housing, the outer housing is configured to decompress.

13. The catheter device of claim 11, wherein the inner housing comprises a plurality of arms, wherein when the cannula is exposed from the distal end of the inner housing, the cannula is configured to bias the plurality of arms apart.

14. The catheter device of claim 13, wherein the distal portion of the inner housing comprises at least a portion of the plurality of arms.

15. The catheter device of claim 13, wherein the plurality of arms extend distally from a proximal end of the inner housing.

16. The catheter device of claim 11, wherein the cannula comprises a cannula feature, wherein when the cannula is retracted proximally within the inner housing, the cannula feature is configured to contact a proximal end of the inner housing to prevent the cannula from exiting the proximal end of the inner housing.

17. The catheter device of claim 11, further comprising a catheter adapter, wherein an inner surface of the catheter adapter is configured to secure the inner housing within the catheter adapter when the cannula is exposed from the distal end of the inner housing and to separate from the inner housing to release the inner housing from the catheter adapter when the cannula is retracted proximally within the inner housing.

18. The catheter device of claim 11, further comprising a septum activator, wherein the septum activator is disposed within an inner lumen of the catheter adapter, wherein an inner surface of the septum activator or septum is configured to separate from the inner housing from the septum activator when the cannula is retracted proximally within the inner housing.

19. A catheter device, comprising:

cannula capture mechanism comprising:

an outer housing configured to decompress in a distal direction between a compressed and a decompressed state;

an inner housing, wherein the inner housing includes a plurality of interlock components, wherein the plurality of interlock components are disposed on the outer surface of the inner housing such that an outer diameter of the inner housing is increased at the plurality of interlock components; and

a cannula that extends into the inner housing, wherein when the cannula is exposed from a distal end of the inner housing, the plurality of interlock components interact with a plurality of interlock surfaces formed in another surface of the catheter device, wherein when the cannula is retracted proximally within the inner housing, the inner housing contracts radially inward causing the plurality of interlock components to be separated from the plurality of interlock surfaces and the outer housing to move to the decompressed state and extend distally over a distal portion of the inner housing to prevent the cannula from exiting the distal end of the inner housing.