CLAIMS

1. An interventional medical device for retrieving and securing an obstruction within a vessel lumen, the device comprising:

a shaft having a flexibility to navigate through tortuous anatomy, the shaft having a distal portion and a proximal portion;

a capturing structure located at a distal portion of the shaft comprising a plurality of struts, the capturing structure having a reduced profile for positioning in or adjacent to the obstruction and an expanded profile, such that when expanded into the obstruction, the struts at least partially enmesh with the obstruction such that subsequent movement of the capturing structure permits dislocation of at least a portion of the obstruction from the lumen;

an eversible cover having a fixed section affixed relative to a proximal end of the capturing structure, a free section extending in a proximal direction from the fixed section and a cover wall extending from the fixed section to the free section, where the eversible cover is expandable, the eversible cover being axially compliant such that when the shaft is moved proximally within the lumen, the friction of the eversible cover against the vessel lumen causes the eversible cover to evert over the capturing structure allowing for the free section of the cover to be distal to the fixed end of the capturing structure and where the eversible cover self-collapses after eversion.

2. The medical device of claim 1, where the eversible cover, capturing structure, and shaft are a unitary structure.

3. The medical device of claim 1, where the eversible cover comprises a plurality of wires where each wire located at an end of the free section loops back to the cover causing the wires at the end of the free section to be continuous.

4. The medical device of claim 1, where at least a portion of the cover wall adjacent to the distal end has a set shape that is everted upon expansion.

5. The medical device of claim 1, further comprising a catheter body, where in a delivery configuration, the shaft, capturing structure and eversible cover are located within the catheter body and where the capturing structure is advanceable in and out of a distal end of the catheter body.

6. The medical device of claim 1, where the eversible cover comprises a plurality of layers forming the cover wall.

7. The medical device of claim 1, where the free section of the eversible cover partially restricts about the shaft without being attached to the shaft.

8. The medical device of claim 1, where a portion of the cover wall extends distally beyond the fixed section when the eversible cover is expanded.

9. The medical device of claim 1, where the fixed section of the eversible cover comprises a pre-set shape to reduce a force required to evert the evertable cover.

10. The medical device of claim 1, where the cover wall is layered in an undulating pattern upon deployment.

11. The medical device of claim 1, where the capturing structure comprises an elongated stent structure.

12. The medical device of claim 1, where the capturing structure comprises a device selected from a group consisting of a filter, an artherectomy device, a rotational cutter, an aspiration device, stent based retrievers and retrieval baskets.

13. The medical device of claim 1, where the cover is self expanding.

14. The medical device of claim 1, where a portion of the cover at or adjacent to the distal opening comprises a bulbous shape.

15. The medical device of claim 1, where the cover comprises a first porous section having a first porosity and at least a second porous section having a second porosity, where the first and second porosity are different such that the ability of fluid to flow through the first porous section and second porous section differs.

16. The medical device of claim 15, where the first porous section comprises a first braid density and the second porous section comprises a second braid density.

17. The medical device of claim 15, where the first porous section comprises an additional braid layer.

18. The medical device of claim 15, where the first porous section prevents fluid from flowing therethrough.

19. The medical device of claim 15, where the first porous section is distal to the second porous section and where the first porosity is greater than the second porosity.

20. The medical device of claim 15, where the first porous section comprises a circumferential area of the cover.