

WHAT IS CLAIMED IS:

1. An expandable device for implanting within vasculature, comprising:
a central core comprising a number of struts that form a number of cells, the cells forming a circumference encircling the central core;
wherein the central core is capable of expanding from an unexpanded state radially outward to an expanded state;
wherein when the central core is an expanded state, the central core has a controlled inner diameter; and
a plurality of appendages that extend away from the central core, each appendage is formed by at least one strut and is independent from the other appendages;
wherein each appendage is capable of independently expanding from an unexpanded state radially outward to an expanded state such that an apex of each appendage extends radially outward beyond an outer circumference of the central core.
2. The expandable device as in claim 1, wherein the controlled inner diameter of the central core in the expanded state is between 15 and 35 mm.
3. The expandable device as in claim 1 or 2, wherein the controlled inner diameter of the central core in the expanded state is: 15mm, 16mm, 17mm, 18mm, 19mm, 20mm, 21mm, 22mm, 23mm, 24mm, 25mm, 26mm, 27mm, 28mm, 29mm, 30mm, 31mm, 32mm, 33mm, 34mm, or 35mm.
4. The expandable device as in claim 1, 2, or 3, wherein the length of the central core is longer in the unexpanded state as compared to an expanded state.
5. The expandable device as in any of claims 1-4, wherein a width or thickness of at least one strut varies.
6. The expandable device as in any of claims 1-5, wherein at least one appendage is formed by a single strut.
7. The expandable device as in any of claims 1-6, wherein at least one

appendage is formed by at least two struts that connect at the apex of the appendage.

8. The expandable device as in any of claims 1-7, wherein at least one appendage forms a V-shape.

9. The expandable device as in any of claims 1-8, wherein at least one appendage forms a Y-shape.

10. The expandable device as in any of claims 1-9, wherein at least one appendage has an orifice at the apex.

11. The expandable device as in any of claims 1-10, wherein at least one appendage has a hook at the apex.

12. The expandable device as in any of claims 1-11 further comprising a radiopaque portion within the central core or an appendage.

13. The expandable device as in any of claims 1-12, wherein the central core and appendages are made of a high radial strength material.

14. The expandable device as in claim 13, where the high radial strength material is cobalt chromium or stainless steel.

15. The expandable device as in any of claims 1-12, wherein the central core and appendages are made of a self-expanding material.

16. The expandable device as in claim 15, where the self-expanding material is nitinol.

17. The expandable device as in any of claims 1-16, wherein a cover is incorporated within the central core.

18. The expandable device as in claim 17, the cover is secured to the struts

of the central.

19. The expandable device as in claim 17 or 18, the cover is impermeable to blood.

20. The expandable device as in any of claims 17, 18, or 19, wherein the cover is a biocompatible fabric.

21. The expandable device as in any of claims 17, 18, or 19, wherein the cover is a bioprosthetic tissue.

22. The expandable device as in any of claims 17-21, wherein the cover is further incorporated within the plurality of appendages and includes sealing portions that are capable of engaging an inner wall at a site of deployment.

23. The expandable device as in any of claims 1-22, wherein the central core is configured to engage a prosthesis.

24. The expandable device as in any of claims 1-23, wherein the central core includes a valve seat configured to situate a prosthetic valve.

25. The expandable device as in claim 24, wherein the outer perimeter of the prosthetic valve is compatible with the inner perimeter of the central core.

26. The expandable device as in claims 24 or 25, wherein the outer diameter of the prosthetic valve is between 15mm and 35mm.

27. The expandable device as in claims 24, 25, or 26, wherein the outer diameter of the prosthetic valve is: 15mm, 16mm, 17mm, 18mm, 19mm, 20mm, 21mm, 22mm, 23mm, 24mm, 25mm, 26mm, 27mm, 28mm, 29mm, 30mm, 31mm, 32mm, 33mm, 34mm, or 35mm.

28. The expandable device as in any of claims 1-27, wherein, when the central core and the plurality of appendages are in a crimped state, the central core

and the plurality of appendages are configured to be inserted within a catheter.

29. The expandable device as in any of claims 1-28, wherein, when in the expanded state, the apex of each appendage is capable of engaging an inner wall at a site of deployment.

30. The expandable device as in claim 29, wherein the inner wall is a luminal wall of a vasculature.

31. The expandable device as in claim 30, wherein the vasculature at the site of deployment is dilated.

32. The expandable device as in claim 31, wherein the vasculature at the site of deployment is experiencing an aneurysm.