CLAIMS

1. An apparatus, the apparatus comprising:

an anchor-handling device, and wherein the anchor-handling device comprises a housing, shaped to define a channel having an anchor-storage zone and a proximal opening, and

a holder, shaped to define a space for receiving the anchor-handling device, the holder comprising a coupling configured to reversibly couple the anchor-handling device to the holder.

2. The apparatus according to claim 1, wherein the coupling comprises a male coupling configured to protrude into the space defined by the holder.

3. The apparatus according to claim 2, wherein the coupling comprises a detent.

4. The apparatus according to claim 2, wherein the anchor-handling device is shaped so as to define a female coupling, the female coupling being configured to receive the male coupling of the holder in order to facilitate reversible locking of the anchor-handling device to the holder.

5. The apparatus according to claim 4, wherein the anchor-handling device comprises a detent, the detent being movable responsively to force applied thereto by the male coupling of the holder in order to facilitate reversible locking of the anchor-handling device to the holder.

6. The apparatus according to claim 5, wherein the anchor-handling device comprises a depressible element coupled to the detent, wherein a depressible element is pushable by the operating physician in order to apply the force to the detent.

7. The apparatus according to claim 4, further comprising a tissue anchor stored in the anchor-storage zone.

8. The apparatus according to claim 7, wherein the tissue anchor is configured such that, while stored in the anchor-storage zone, the tissue anchor is movable out of the anchor-storage zone toward the proximal opening only in response to a proximally-directed force being applied to the tissue anchor, the proximally-directed force being greater than a pre-determined threshold force.

9. The apparatus according to claim 7, wherein the tissue anchor is dimensioned to fit snugly in the anchor-storage zone.

10. The apparatus according to claim 7, further comprising a retaining member, the retaining member:

having a longitudinal axis,

having a retaining state in which the retaining member is configured to retain the tissue anchor in the anchor-storage zone, and

being configured, by moving in response to a proximally-directed force applied to the tissue anchor, to allow the tissue anchor to leave the anchor-storage zone in response to the proximally-directed force, the proximally-directed force being greater than a pre-determined threshold force.

11. The apparatus according to claim 10, further comprising a pivot coupled to the retaining member, the pivot comprising a support pillar couplable to the tissue anchor, wherein the pivot pivots the support pillar and the tissue anchor away from the longitudinal axis of the retaining member.

12. The apparatus according to claim 11, wherein the tissue anchor is shaped so as to define a lumen, and wherein the support pillar is shaped so as to define a rod that fits within the lumen of the tissue anchor.

13. The apparatus according to claim 10, wherein the retaining member is shaped to define a cradle at a proximal end thereof, the cradle defining first and second slanted surfaces, the first

and second surfaces being configured to abut against the tissue anchor such that the anchor fits snugly in the anchor-storage zone.

14. The apparatus according to claim 13, wherein the first and second slanted surfaces adjoin to form an apex of the cradle.

15. The apparatus according to claim 13, wherein the first and second slanted surfaces form a generally “V”-shape.

16. The apparatus according to claim 7, wherein:

the housing is configured to define a plurality of channels, each of the plurality of channels having a respective anchor-storage zone and a respective proximal opening, and

the apparatus comprises a plurality of tissue anchors, slidable through a respective channel and configured to be stored in a respective anchor-storage zone.

17. The apparatus according to claim 16, wherein the apparatus comprises a plurality of retaining members, each retaining member configured to retain a respective tissue anchor in the respective anchor-storage zone, and to allow the respective tissue anchor to leave the respective anchor-storage zone in response to a proximally-directed force applied to the respective tissue anchor.

18. The apparatus according to claim 10, further comprising an anchor driver, and wherein in the retaining state, the anchor driver is slidable through at least a part of the channel and reversibly lockable to the tissue anchor.

19. The apparatus according to claim 18, wherein:

the housing is shaped to define a chamber that is in fluid communication with the channel, the chamber having a longitudinal axis, and

at least part of the retaining member is configured to slide within the chamber in response to the proximally-directed force applied to the tissue anchor.

20. The apparatus according to claim 19, wherein the retaining member comprises a pin configured to slide through the chamber.

21. The apparatus according to claim 20, wherein:

the housing is shaped to define first and second cavities that are in fluid communication with the chamber,

at least a portion of the retaining member is resilient,

the pin is shaped so as to define first and second legs that are compressible toward each other and toward the longitudinal axis of the chamber,

each of the first and second legs is shaped to define a respective detent, and

the apparatus is dimensioned such that when the retaining member allows the tissue anchor to leave the anchor-storage zone, further proximal movement of the retaining member causes the respective detents of the first and second legs to move into the respective first and second cavities.

22. The apparatus according to claim 21, wherein the first and second cavities and the respective detents of the first and second legs are dimensioned such that when each detent is disposed within the respective first and second cavities, a distally-directed force required to return the apparatus to the retaining state is more than twice as great as the threshold force.

23. The apparatus according to claim 20, wherein:

the housing is shaped to define first and second cavities that are in fluid communication with the chamber,

at least a portion of the retaining member is resilient,

the pin is shaped so as to define first and second legs that are compressible toward each other and toward the longitudinal axis of the chamber,

each of the first and second legs is shaped to define a respective detent,

in the retaining state, the resilience of at least the portion of the retaining member holds the detents of the first and second legs within the respective first and second cavities, and

the retaining member is configured to deform in response to the proximally-directed force applied to the tissue anchor, such that the first and second legs compress toward each

other and the respective detents of the first and second legs exit the respective first and second cavities.

24. The apparatus according to claim 23, wherein:

the housing is shaped to define third and fourth cavities that are in fluid communication with the chamber, and

the apparatus is dimensioned such that when the retaining member allows the tissue anchor to leave the anchor-storage zone, further proximal movement of the retaining member causes the respective detents of the first and second legs to move into the respective third and fourth cavities.

25. The apparatus according to claim 18, wherein the anchor driver comprises:

at a distal end thereof, an anchor-engaging head introducible through the opening of the housing and actuatable to be reversibly coupled to the tissue anchor;

at a proximal end thereof, a handle comprising an adjuster configured to actuate the anchor-engaging head; and

an elongate advanceable element:

disposed between the distal end of the anchor driver and the proximal end of the anchor driver, and

configured to be transcatheterally advanced through vasculature of a subject.

26. The apparatus according to claim 25, wherein the anchor-engaging head has a longitudinal axis, and wherein the head is shaped so as to define a tissue-anchor engaging slot configured to engage a proximal end of the tissue anchor, the slot being angled at a nonzero angle with respect to the longitudinal axis.

27. The apparatus according to claim 25, wherein the anchor-engaging head is articulatable with respect to the elongate advanceable element.

28. The apparatus according to claim 27, further comprising a coupling pin coupled to a distal end of the elongate advanceable element, wherein the anchor-engaging head is shaped so as to define at least one slotted opening, and wherein the coupling pin is moveable within

the slotted opening to facilitate articulating between the anchor-engaging head and the elongate advanceable element.

29. The apparatus according to claim 28, wherein the slotted opening is shaped so as to define an extreme section and a main section that is wider than the extreme section, and wherein:

when the coupling pin is disposed within the extreme section, movement of the anchor-engaging head with respect to the elongate advanceable element is restricted, and

when the coupling pin is disposed within the main section, movement of the anchor-engaging head with respect to the elongate advanceable element is facilitated.

30. An apparatus for use with a tissue anchor, the apparatus comprising:

an anchor-handling device comprising a housing, shaped to define a channel having an anchor-storage zone and a proximal opening; and

a retaining member disposed within the channel of the anchor-handling device, the retaining member:

having a retaining state in which the retaining member is configured to retain the tissue anchor in the anchor-storage zone, and

being configured, by moving in response to a proximally-directed force applied to the tissue anchor, to allow the tissue anchor to leave the anchor-storage zone in response to the proximally-directed force, the proximally-directed force being greater than a pre-determined threshold force,

wherein the retaining member is shaped to define a cradle at a proximal end thereof, the cradle defining first and second slanted surfaces, the first and second surfaces being configured to abut against the tissue anchor such that the anchor fits snugly in the anchor-storage zone.

31. The apparatus according to claim 30, wherein the first and second slanted surfaces adjoin to form an apex of the cradle.

32. The apparatus according to claim 30, wherein the first and second slanted surfaces form a generally “V”-shape.

33. Apparatus for use with a tissue anchor, the apparatus comprising:

an anchor-handling device comprising a housing, shaped to define a channel having an anchor-storage zone and a proximal opening;

a retaining member disposed within the channel of the anchor-handling device, the retaining member:

having a longitudinal axis,

having a retaining state in which the retaining member is configured to retain the tissue anchor in the anchor-storage zone, and

being configured, by moving in response to a proximally-directed force applied to the tissue anchor, to allow the tissue anchor to leave the anchor-storage zone in response to the proximally-directed force, the proximally-directed force being greater than a pre-determined threshold force; and

a pivot coupled to the retaining member, the pivot comprising a support pillar couplable to the tissue anchor, the pivot being configured to pivot the support pillar and the tissue anchor away from the longitudinal axis of the retaining member.

34. The apparatus according to claim 33, wherein the anchor is shaped so as to define a lumen, and wherein the support pillar is shaped so as to define a rod that fits within the lumen of the tissue anchor.