CLAIMS

What is claimed is:

1. A delivery system comprising:

a delivery catheter;

an occlusion device;

a handle coupled with the delivery catheter, the handle comprising a spring-loaded release mechanism movable from a first position to a second position to cause withdrawal of a release wire from the occlusion device,

wherein the release wire is coupled with a delivery wire holder that is coupled to a spring assembly,

wherein the spring assembly comprises a damper ring and an extension spring, and a spring force associated with linear contraction of the extension spring is dampened by a drag force associated with rotational motion of the damper ring along a helical track in a bore.

2. The delivery system of claim 1, wherein the occlusion device comprises a self-expandable member.

3. The delivery system of claim 2, further comprising a half band coupled with the self-expandable member.

4. The delivery system of claim 3, wherein the release wire is threaded through the half band and holds the self-expandable member in a wound-down static state prior to movement of the spring-loaded release mechanism from the first position.

5. The delivery system of claim 4, wherein movement of the spring-loaded release mechanism from the first position to the second position withdraws the release wire from the half band causing the self-expandable member to expand.

6. The delivery system of claim 4, wherein movement of the spring-loaded release mechanism from the first position to the second position withdraws a distal end of the release wire into a distal end of the delivery catheter.

7. The delivery system of claim 1, further comprising a first release mechanism, and movement of the first release mechanism from a third position to a fourth position withdraws a rack that is coupled with the delivery catheter to withdraw the delivery catheter from over the occlusion device.

8. The delivery system of claim 1, wherein the spring-loaded release mechanism is a push button, and movement of the push button from the first position to the second position allows the spring assembly to withdraw the delivery wire holder and cause withdrawal of the release wire from the occlusion device.

9. The delivery system of claim 1, wherein the bore and helical track are formed from a casing of the handle.

10. The delivery system of claim 1, wherein the damper ring comprises one or more lugs that travel within a matching quantity of paths in the helical track.

11. The delivery system of claim 1, wherein a drag force coefficient increases as the damper ring travels axially within the bore.

12. The delivery system of claim 1, wherein a pitch of the helical track is tightened along an axial length of the bore.

13. The delivery system of claim 1, wherein an inside diameter of the bore is reduced along an axial length of the bore.

14. The delivery system of claim 13, wherein the damper ring includes slots around a circumference of a tubular body of the damper ring.

15. The delivery system of claim 1, wherein a pitch of the helical track is tightened along an axial length of the bore, an inside diameter of the bore is reduced along the axial length of the bore, and the damper ring includes slots around a circumference of a tubular body of the damper ring.

16. The delivery system of claim 1, wherein a surface roughness of the helical track increases along an axial length of the bore.

17. The delivery system of claim 1, further comprising a dampening grease within the helical track, wherein a viscosity of the dampening grease increases along an axial length of the bore.

18. The delivery system of claim 1, further comprising an elastic band that couples the delivery wire holder to the handle to provide an increase in a drag force coefficient as the extension spring linearly contracts.

19. The delivery system of claim 8, wherein the release wire and a core wire are coupled with the delivery wire holder.

20. The delivery system of claim 19, wherein movement of the push button from the first position to the second position allows the spring assembly to withdraw the delivery wire holder and cause simultaneous withdrawal of the release wire and the core wire from the occlusion device.