

CLAIMS

What is claimed:

1. A probe delivery device, comprising:
a housing having a proximal end and a distal end, the housing forming a compartment and a fluid pathway; and
a probe delivery mechanism housed in the compartment, the probe delivery mechanism including a probe that extends from the compartment and into the fluid pathway, the probe delivery mechanism being configured to advance the probe through the distal end of the housing and to retract the probe.
2. The probe delivery device of claim 1, wherein the fluid pathway extends from the proximal end of the housing to the distal end of the housing.
3. The probe delivery device of claim 1, wherein the housing forms a probe channel that extends from the compartment to the fluid pathway.
4. The probe delivery device of claim 3, further comprising:
a seal that isolates the probe channel from the fluid pathway, the probe extending through the seal.
5. The probe delivery device of claim 3, wherein the probe channel forms the fluid pathway.

6. The probe delivery device of claim 1, wherein the probe delivery mechanism comprises a spool and an advancement wheel, wherein the advancement wheel extends out from the housing, and wherein, when the advancement wheel is rotated, the spool rotates to thereby cause the probe to advance or retract.

7. The probe delivery device of claim 6, wherein the probe is wound around a spool drum of the spool.

8. The probe delivery device of claim 6, wherein the advancement wheel and the spool are geared to cause the spool to rotate a different amount relative to an amount of rotation of the advancement wheel.

9. The probe delivery device of claim 1, wherein the probe delivery mechanism comprises a spool around which the probe is wound, the spool further comprising an advancement wheel that extends out from the housing.

10. The probe delivery device of claim 9, wherein the probe delivery mechanism further comprises a primary wheel that is positioned proximal to the spool, and wherein the probe extends proximally from the spool, wraps around the primary wheel and then extends into the fluid pathway.

11. The probe delivery device of claim 10, wherein the probe delivery mechanism further comprises one or more secondary wheels that are adjacent to the primary wheel, the probe passing between and contacting the primary wheel and the one or more secondary wheels.

12. The probe delivery device of claim 1, wherein the probe delivery mechanism comprises a first guide wheel and a second guide wheel, the probe passing between and contacting the first guide wheel and the second guide wheel.

13. The probe delivery device of claim 12, wherein the probe delivery mechanism further comprises an advancement wheel that extends out from the housing, wherein, when the advancement wheel is rotated, the first guide wheel rotates to cause the probe to be advanced or retracted.

14. The probe delivery device of claim 1, wherein the probe delivery mechanism comprises a rack mechanism and a pinion.

15. The probe delivery device of claim 1, wherein the probe delivery mechanism comprises an advancement wheel and a shaft.

16. The probe delivery device of claim 1, wherein the probe delivery mechanism comprises a sliding member having an actuator portion that extends out from the housing and a wheel around which the probe is routed.

17. A probe delivery device, comprising:

a housing having a proximal end and a distal end, the housing forming a compartment and a fluid pathway; and

a probe delivery mechanism housed in the compartment, the probe delivery mechanism including a spool around which a probe is wound such that rotation of the spool causes the probe to be advanced or retracted.

18. The probe delivery device of claim 17, wherein:

the spool extends out from the housing;

the probe delivery mechanism includes an advancement wheel that extends out from the housing and the spool is rotated by the advancement wheel;

the probe delivery mechanism includes a primary wheel that is positioned proximal to the spool, the probe being routed around the primary wheel; or

the spool is a pinion.

19. A probe delivery device, comprising:

a housing having a proximal end and a distal end, the housing forming a compartment, a fluid pathway that extends from the proximal end to the distal end and a probe channel that is isolated from the fluid pathway; and

a probe delivery mechanism housed in the compartment, the probe delivery mechanism including a probe that extends through the probe channel and into the fluid pathway, the probe delivery mechanism being configured to advance the probe through the distal end of the housing and to retract the probe.

20. The probe delivery device of claim 19, wherein the probe delivery mechanism extends out from the compartment.