CLAIMS

1. A steerable device (1) configured to be advanced in the lumen of a tubular element, said device comprising:

- a flexible axially elongated member (2) having proximal and distal ends,
- at least one actuating means (3, 30) arranged alongside the periphery of said flexible axially elongated member (2),
- at least one fastening means (4) configured to fasten at least partially the at least one actuating means (3, 30) to the flexible axially elongated member (2) distal end, said fastening means being in direct contact with the at least one actuating means (3,30),
- at least one anti-return means (5, 51, 52, 53, 54, 55, 56, 57) configured to keep the at least one actuating means (3,30) from sliding alongside the periphery of the flexible axially elongated member (2) distal end,

characterized in that the at least one anti-return means (5, 51, 52, 53, 54, 55, 56, 57) and the at least one fastening means (4) are in axial abutting contact so as to prevent the at least one actuating means (3, 30) from sliding once actuated.

2. The steerable device according to claim **1,** wherein the at least one actuating means (3, 30) is made of a shape memory alloy such as NiTi alloy.

3. The steerable device according to any one of claims **1** or **2,** wherein the at least one actuating means (3) comprises a spring or a wire (30).

4. The steerable device according to any one of claims **1** to **3,** wherein the at least one flexible axially elongated member (2) is wire or blade shaped.

5. The steerable device according to any one of claims **1** to **4,** wherein the flexible axially elongated member (2) has a cross-section profile under a form selected from star, circular, semicircular, square, rectangular, triangle, pyramidal or any combinations thereof.

6. The steerable device according to any one of claims **1** to **5,** wherein the fastening means (4) is a ligation around the flexible axially elongated member (2).

7. The steerable device according to any one of claims **1** to **6,** wherein the anti-return means (5) is a tube (56), either glue filled or crimped, the actuating means (3, 30) going through said tube (56).

8. The steerable device according to any one of claims **1** to **6,** further comprising a second anti-return means (5) made integral with the flexible axially elongated member (2) so as to maintain the fastening means (4) in place.

9. The steerable device according to claim **8,** wherein the second anti-return means (5) is a recess built into the flexible axially elongated member (2) and configured to host the at least one fastening means (4).

10. The steerable device according to any one of claims **1** to **6** or **8** or **9,** wherein the anti-return means (51, 52, 53, 54, 55) is made integral with the actuating means (3, 30).

11. The steerable device according to claim **10**, wherein the at least one anti-return means (5) is a loop (51) encapsulating at least partially the at least one fastening means (4) or said loop (51) being an abutment for the at least one fastening means (4).

12. The steerable device according to claim **10**, wherein the at least one anti-return means (5) is a knot (52), a weld (53) or any local reinforcement (54) located at the at least one actuating means (3, 30) distal end.

13. The steerable device according to claim **10**, wherein the at least one anti-return means (5) is a groove (55) built into the actuating means (3, 30) and configured to host the at least one fastening means (4).

14. The steerable device according to claim **13**, wherein the groove (55) is obtained by indentation.

15. The steerable device according to any one of claims **1** to **14** wherein the at least one actuating means (3, 30) is inside an electrically isolating material such as a tube or a coating.

16. The steerable device according to any one of claims **1** to **15** wherein the at least one actuating means (3, 30) is arranged alongside the external periphery of the flexible axially elongated member (2).

17. Assembly method for steerable device according to any one of claims **1** to **16** comprising the steps of:

- providing a flexible axially elongated member (2) having proximal and distal ends,
- arranging at least one actuating means (3, 30) alongside the periphery of said flexible axially elongated member (2),
- providing at least one anti-return means (5) configured to keep the at least one actuating means (3,30) from sliding alongside the periphery of the flexible axially elongated member (2) distal end,
- fastening the at least one actuating means (3, 30) to the flexible axially elongated member (2) distal end with at least one fastening means (4),

characterized in that the at least one anti-return means (5) and the at least one fastening means (4) are in axial abutting contact so as to prevent the at least one actuating means (3, 30) from sliding once actuated.

18. Assembly method according to claim **17** wherein the at least one actuating means (3) is a wire (30), the at least one fastening means (4) is a ligation and the at least one anti-return means (57) is obtained by increasing the contact pressure between the wire (30) and the ligation (4) ,with said ligation going alternatively up and under the wire so as to ligate longitudinally partial parts of the wire with the flexible axially elongated member (2).