CLAIMS

1. An occluder, characterized in that the occluder comprises a first occluding portion and a second occluding portion, and the first occluding portion and the second occluding portion are connected by a connecting portion; and

the first occluding portion and the second occluding portion are both composed of a mesh structure, the second occluding portion is provided with a lacing member, the lacing member is arranged in a surrounding manner and passes through meshes at an end of the second occluding portion in sequence, and a limiting member is arranged on the lacing member, the limiting member comprises a plurality of limiting segments, and the plurality of limiting segments are connected and enclosed on the lacing member to form a closed pattern.

2. The occluder according to claim 1, wherein the first occluding portion is further provided with a lacing member, the lacing member is arranged in a surrounding manner and passes through meshes at an end of the first occluding portion in sequence; and the closed pattern formed by connection and enclosure of the plurality of limiting segments on the lacing member comprises any one of a star shape, a tic-tac-toe shape or a triangle.

3. The occluder according to claim 1, wherein the limiting member comprises an enclosure and two or more extensions, the enclosure is connected end to end to form a closed pattern, one end of the extension is arranged on the enclosure, and the other end extends away from the enclosure and is arranged on the lacing member, and the two or more extensions are arranged at intervals along a circumference of the enclosure to fix the enclosure on the lacing member.

4. An occluder manufacturing device, characterized in that the occluder manufacturing device is configured to manufacture the occluder according to any one of claims 1 to 3, and the occluder manufacturing device comprises a columnar body, wherein a first end of the columnar body is provided with a plurality of first positioning members ($A1_1$, $A1_2$...$A1_n$) and a plurality of second positioning members ($A2_1$, $A2_2$...$A2_n$), and the second positioning member at the first end of the columnar body is located between two adjacent first positioning members of the first end of the columnar body; and a second end of the columnar body is further provided with a plurality of first positioning members ($B1_1$, $B1_2$...$B1_n$) and a plurality of second positioning members ($B2_1$, $B2_2$...$B2_n$); and the second positioning member at the second end

of the columnar body is located between two adjacent first positioning members of the second end of the columnar body; and

the occluder manufacturing device is suitable for an occluder weaving method for manufacturing the occluder according to any one of claims 1 to 3, and the occluder weaving method comprises: fixing a single wire on $A1_1$, and passing the single wire through all the first positioning members and the second positioning members in an order of $A1_1$, $B1_1$, $A2_1$, $B2_1$...$A1_n$, $B1_n$, $A2_n$, $B2_n$ to form a weaved body, wherein the single wire located between the first end of the columnar body and the second end of the columnar body is wound along an outer circumference of the columnar body, wherein, during a weaving process, the single wire is interwoven and passed through a weaved paths up and down to form a mesh structure; fixing a middle portion of the weaved body, and squeezing two ends of the weaved body toward the middle portion of the weaved body to form an occluder having the first occluding portion and the second occluding portion.

5. The occluder manufacturing device according to claim 4, wherein a detachable connection structure is provided between at least one of the first positioning member and the second positioning member and the columnar body to adjust a distance between two adjacent first positioning members and a distance between two adjacent second positioning members;

and/or, a sliding connection structure is provided between at least one of the first positioning member and the second positioning member and the columnar body to adjust a distance between adjacent first positioning member and second positioning member;

and/or, the distance between two adjacent first positioning members is between 1mm and 10mm;

and/or, the distance between two adjacent second positioning members is between 1mm and 10mm;

and/or, the distance between the adjacent first positioning member and second positioning member is between 2mm and 10mm;

and/or, a height of the first positioning member is between 1mm and 10mm;

and/or, a height of the second positioning member is between 1mm and 10mm.

6. An occluder system, characterized in that the occluder system comprises: the occluder according to any one of claims 1 to 3, a conveying and cutting device; and a first auxiliary line, wherein one end of the first auxiliary line is arranged on an end surface of the first occluding portion of the occluder away from the second occluding portion of the occluder, the other end

of the first auxiliary line passes through the second occluding portion through the limiting member of the second occluding portion and is connected to the conveying and cutting device, and the first auxiliary line is provided with two or more clamping parts, the clamping parts are configured to pass through the second occluding portion through the limiting member under an action of external force, and clamp with the limiting member when the external force disappears.

7. The occluder system according to claim 6, wherein the occluder system further comprises:

a second auxiliary line, wherein the second auxiliary line is connected to the second occluding portion and is configured to drive the occluder to move under the action of external force; and

the conveying and cutting device is connected in advance with the occluder through the first auxiliary line and the second auxiliary line.

8. The occluder system according to claim 7, wherein the conveying and cutting device comprises a first tube body, a second tube body, a third tube body, a conveying member, a first cutting member and a handle, one end of the conveying member is fixed on the handle, and the other end of the conveying member passes through the second tube body and the third tube body in sequence and then is connected to the first tube body; the first auxiliary line extends into an end of the first tube body, exits through the first tube body from a side wall of the first tube body, and then is located between the conveying member and the second tube body; the second auxiliary line extends into the end of the first tube body, exits through the first tube body from the side wall of the first tube body, and then is located between the conveying member and the third tube body; one end of the first cutting member is arranged on the handle, and the other end of the first cutting member passes through the second tube body and the third tube body in sequence and then is located in the first tube body, and the first cutting member is configured to move relative to the first tube body under the drive of the handle to cut the first auxiliary line and the second auxiliary line.

9. The occluder system according to claim 8, wherein the cutting member comprises a driving member and a cutting head, the cutting head is movably arranged in the first tube body, one end of the driving member is movably arranged on the handle, and the other end of the driving member passes through the second tube body and the third tube body in sequence and

then extends into the first tube body to connect with the cutting head, and the driving member is configured to move relative to the handle under the drive of the handle, thereby driving the cutting head to move relative to the first tube body.

10. The occluder system according to any one of claims 6 to 9, wherein a first end of the clamping part is closer to the first occluding portion than a second end of the clamping part, and a distance between an outer wall of the first end of the clamping part and the first auxiliary line is greater than a distance between an outer wall of the second end of the clamping part and the first auxiliary line.

11. The occluder system according to any one of claims 6 to 10, wherein an angle between an outer wall of the clamping part and the first auxiliary line is between 10° and 80°; and/or, the first end of the clamping part is recessed toward the second end of the clamping part to form a recessed portion, and an angle between a side wall of the recessed portion and the first auxiliary line is between 0° and 75°; and/or, the first end of the clamping part is recessed toward the second end of the clamping part to form a recessed portion, and the recessed portion makes the first end of the clamping part sharp-pointed; and/or, the clamping part is in a shape of a fishbone barb.

12. The occluder system according to claim 8 or 9, wherein an end cap is provided at an end of the first tube body, and a channel is provided on the end cap, and the first auxiliary line and the second auxiliary line are both extended into the first tube body through the channel and exit through the first tube body through a side wall of the first tube body.

13. The occluder system according to claim 8 or 9, wherein at least three identification members are arranged on the second tube body, and the at least three identification members comprise a first identification member, a second identification member and a third identification member arranged at intervals; and

when the occluder system is in use, and the first identification member moves to a set position, the first occluding portion and the second occluding portion are both in a retracted state; when the second identification member moves to a set position, the first occluding portion is in a released state, and the second occluding portion is in a retracted state; and when the third identification member moves to a set position, the first occluding portion and the second occluding portion are both in a released state.

14. A retrievable occluder system, characterized in that the retrievable occluder system comprises: an occluder having a tubular third section and a first section and a second section capable of switching between tubular and disc-shaped forms, wherein two ends of the third section are respectively connected to the first section and the second section; and

a connecting mechanism, wherein a recovery tube and a connecting tube are sequentially sleeved from inside to outside, wherein the recovery tube can move along a length direction of the connecting mechanism; an operating mechanism, having a gripping member capable of dragging the recovery tube to move; a molding auxiliary line, wherein one end of the molding auxiliary line is fixed to an end of the second section away from the third section, and the other end of the molding auxiliary line is fixed to the operating mechanism; and one end of the connecting tube is fixed to the operating mechanism, and the other end of the connecting tube is detachably connected to the occluder.

15. The retrievable occluder system according to claim 14, wherein the molding auxiliary line is provided with a node at one end close to the occluder, wherein the node can pass through and be stuck at an outer closed end of the first section; and/or the node is any one of a knot, a fishbone line or a spring fastener,

preferably, the retrievable occluder system further comprises a recovery line, the recovery line is wound around an end of the second section away from the third section and passes through the first section and the third section, and two ends of the recovery line are fixed on the operating mechanism; the connecting mechanism further comprises a line-restraining tube, and the connecting tube is sleeved in the line-restraining tube;

and/or, the line-restraining tube further comprises a second through hole to facilitate insertion of the molding auxiliary line,

preferably, the retrievable occluder system further comprises a withdrawal line, the withdrawal line is wound around an end of the first section away from the third section, and two ends of the withdrawal line are fixed on the connecting tube; and heat shrink tube is provided at both ends of the withdrawal line to fix the withdrawal line.