CLAIMS

1. A device for tissue repair comprising

a base plate having a first surface and a second surface opposing the first surface;

an aperture arranged on a portion of the base plate, the aperture configured to receive a suture;

a plurality of anchor members extending from the first surface of the base plate, each of the plurality of anchor members having an end configured to penetrate the tissue,

wherein each of the plurality of anchor members is spaced apart from another anchor member.

2. The device of claim 1, further comprising a central shaft extending from the first surface of the base plate, the central shaft having the aperture arranged on the portion of the base plate,

wherein a length of the central shaft is shorter than, same as, or longer than a length of each of the plurality of anchor members;

wherein the central shaft comprises a partial circle, or a full circle;

wherein the central shaft is pivotable with respect to the portion of the base plate; and/or

wherein a surface area of the central shaft is greater than a surface area of the suture, along a longitudinal axis of the device.

3. The device of any one of claims 1 to 2, wherein the plurality of anchor members each comprise a rectangular frame extending from the base plate, wherein a length of the rectangular frame forms the end configured to penetrate the tissue, optionally, further comprising, two rectangular frames joining each other at a breath to form a V-shape; and/or

wherein the plurality of anchor members each comprise, a first portion extending from the first surface of the base plate, a second portion extending from an end of the first portion and towards a central axis of the base plate.

4. The device of any one of claim 1 to 2, wherein the plurality of anchor members each comprise an elongate portion extending perpendicular from the base plate, or at an angle to the base plate.

5. The device of claim 4, further comprising a set of teeth arranged along a length of the elongate portion;

wherein the elongate portion comprises a pointed tip which forms the end configured to penetrate the tissue;

wherein the elongate portion comprises a beveled tip which forms the end configured to penetrate the tissue;

wherein the elongate portion comprises an arrowhead tip which forms the end configured to penetrate the tissue, optionally, further comprising, a first part having a first thickness, and a second part positioned adjacent to the first part and proximal to the arrowhead tip of the shaft, the second part having a second thickness greater than the first thickness; or

wherein the elongate portion comprises a first fluke which forms the end configured to penetrate the tissue, optionally, further comprising a second fluke arranged along the length of the elongate portion;

wherein the elongate portion further comprises, a sickle-head tip which forms the end configured to penetrate the tissue, a third fluke arranged on an end of the sickle-head tip, optionally, further comprising a fourth fluke arranged along the length of the elongate portion.

6. The device of any one of claims 4 to 5, wherein the elongate portion is configured to move towards a central axis of the base plate in response to a force applied on the length of the elongate portion, and to move away from the central axis of the base plate in response to release of the force; or

wherein an end of the elongate portion is configured to crimp towards a central axis of the base plate, in response to a force applied against the end of the elongate portion.

7. The device of any one of claims 1 to 6, wherein the plurality of anchor members are arranged along a perimeter of the base plate, or wherein the plurality of anchor members are arranged to be spaced apart from a perimeter of the base plate; and/or

wherein the base plate further comprises a plurality of through-holes configured to receive the plurality of anchor members, and wherein the plurality of anchor members are configured to be attachable to the plurality of through-holes on the base plate; and/or

wherein the base plate further comprises one or more mounting brackets extending from the second surface of the base plate.

8. The device of any one of claims 1 to 7, wherein the base plate comprises a partial circle, or a full circle; or

wherein the base plate comprises a first segment, a second segment, and a third segment; wherein the first, second and third segments are connected to each other at the portion of the base plate having the aperture.

9. The device of claim 8, wherein the first segment and the second segment is spaced apart by a first angle, wherein the second segment and the third segment is spaced apart by a second angle, wherein the first segment and the third segment is spaced apart by the second angle, wherein the first and second segments are identical to each other, and wherein the first angle differs to the second angle; or wherein the first segment and the second segment is spaced apart by a third angle, wherein the second segment and the third segment is spaced apart by the third angle, wherein the first segment and the third segment is spaced apart by the third angle, and wherein the first, second and third segments are identical to each other; and/or

wherein the third segment comprises, a first bar extending from the portion of the base plate having the aperture, a second bar extending from an end of the first bar in a direction perpendicular to the first bar, and wherein the second bar comprises a slot arranged on a first surface of the second bar; and/or

wherein the third segment is pivotable with respect to the first and second segments of the base plate.

10. The device of any one of claims 8 to 9, further comprising a gate arranged to connect an end of the first segment to an end of the second segment optionally, the gate being configured to extend towards an interface where the first and second segments are connected and comprising a knob positioned at the interface where the first and second segments are connected.

11. A kit of parts of a tissue repair assembly comprising

a device for tissue repair comprising

a base plate having a first surface and a second surface opposing the first surface;

an aperture arranged on a portion of the base plate, the aperture configured to receive a suture;

a plurality of anchor members extending from the first surface of the base plate, each +of the plurality of anchor members having an end configured to penetrate the tissue,

wherein each of the plurality of anchor members is spaced apart from another anchor member.

12. The kit of claim 11, further comprising an applicator comprising

a fastener, the fastener having an effector arranged along a length of the fastener, the effector dimensioned and sized to hold the base plate of the device;

a platform arranged opposite the fastener, the platform having a positioning area comprising a plurality of holes for receiving the plurality of anchor members of the device;

wherein the fastener is connected along a length of the platform via a first pivotable interface,

wherein an application of a force on the fastener is configured to cause the fastener to move towards the positioning area.

13. The kit of claim 12, wherein the effector comprises

a first beam, a second beam and a third beam, the first and second beams extending from a part of the third beam, wherein the first beam and the second beam are each configured to hold a first segment and a second segment of the base plate, wherein the first beam, the second beam and the third beam are dimensioned to form an opening, the opening configured to receive a third segment of the base plate, and wherein the application of the force on the fastener is configured to cause the effector to move towards an end of the fastener to hold the first, second and third segments of the base plate of the device; or

a first plate configured to hold a third segment of the base plate; a first clasp arranged on the first plate, the first clasp configured to slide along the length of the fastener or part thereof, wherein the application of the force on the fastener is configured to cause the first clasp to move towards the first pivotable interface, and to cause the first plate to move towards an end of the fastener to hold the third segment of the base plate of the device; or

a second plate having a protrusion dimensioned to receive a slot arranged on a third segment of the base plate; a second clasp arranged on the second plate, the second clasp

configured to slide along the length of the fastener or part thereof, wherein the application of the force on the fastener is configured to cause the second clasp to move towards the first pivotable interface, and to cause the second plate to move towards an end of the fastener to hold the slot arranged on the third segment of the base plate of the device.

14. The kit of any one of claims 11 to 13, further comprising an installation device comprising

a first module dimensioned to fit between the fastener and the platform of the applicator, the first module comprising a first component configured to receive the base plate of the device;

a second module configured to be positioned on the first component of the first module,

wherein the second module is configured to align the first component to the fastener of the applicator, and

wherein the application of the force on the fastener is configured to move the fastener towards the first module, such that the effector moves towards the end of the fastener to hold at least one of the first, second or third segments of the base plate of the device.

15. The kit of claim 14, wherein the first module of the installation device further comprises, a second component arranged opposite the first component, the second component connected to the first component via a second pivotable interface, wherein the second pivotable interface is configured to fit within the first pivotable interface connecting the fastener along the length of the platform; and/or

wherein the second module of the installation device further comprises, a wire loop connected to a part of the second module, the wire loop configured to receive the suture; a hole arranged on the second module, the hole configured to receive the wire loop and the suture, wherein the hole on the second module is configured to be in alignment with the aperture of the base plate of the device, and wherein the second module is configured to be removable from the first component of the first module, such that the wire loop and the suture threads through the hole of the second module.

16. A method of manufacturing a device for tissue repair, comprising the steps of:

providing a base plate having a first surface and a second surface opposing the first surface;

forming an aperture on a portion of the base plate, the aperture configured to receive a suture;

providing a plurality of anchor members extending from the first surface of the base plate, each of the plurality of anchor members having an end configured to penetrate the tissue,

wherein each of the plurality of anchor members is spaced apart from another anchor member.

17. The method of claim 16, wherein providing the base plate comprises the steps of:

providing a first segment, a second segment, and a third segment;

connecting the first, second and third segments to each other at the portion of the base plate having the aperture.

18. The method of claim 17, wherein providing the third segment comprises the steps of:

providing a first bar extending from the portion of the base plate having the aperture,

providing a second bar extending from an end of the first bar in a direction perpendicular to the first bar, and

providing a slot arranged on a first surface of the second bar.

19. The method of claim 17 or 18, comprising the step of integrally molding the connection between the anchor members, the first segment, and the second segment as a single body.

20. The method of claim 18 or 19, comprising the step of integrally molding the first bar and second bar as a single body.