

CLAIMS

What is claimed is:

1. A surgical fastener assembly comprising:
 - one or more arrays of fasteners, each of said fasteners comprising a head portion opposite to a sharp portion;
 - a fastener head holding member, each of said head portions of said fasteners being held by said fastener head holding member;
 - a receiver member aligned with each of said one or more arrays of fasteners; and
 - a fluid actuator for each of said one or more arrays of fasteners, each of said fluid actuators being contractible and expandable, and wherein each of said fluid actuators is configured to provide a force against its corresponding array of fasteners to propel said sharp portions of said fasteners towards said receiver member and also configured to provide a force to free said head portions from said fastener head holding member.
2. The surgical fastener assembly according to claim 1, wherein said fastener head holding member is a flexible support member.
3. The surgical fastener assembly according to claim 1, wherein said fastener head holding member comprises a socket shaped to complement a shape of said head portion.
4. The surgical fastener assembly according to claim 1, wherein each of said fluid actuators when expanded provides said force to propel said sharp portions of said fasteners towards said receiver member and said force to free said head portions from said fastener head holding member.
5. The surgical fastener assembly according to claim 1, wherein each of said fluid actuators when expanded provides said force to propel said sharp portions of said fasteners towards said receiver member and when contracted provides said force to free said head portions from said fastener head holding member.
6. The surgical fastener assembly according to claim 1, further comprising a cutting element disposed adjacent said one or more arrays of fasteners.
7. The surgical fastener assembly according to claim 6, wherein said fluid actuator is coupled to said cutting element.
8. The surgical fastener assembly according to claim 6, wherein said receiver member is disposed in an anvil jaw that is formed with a slot for said cutting element to pass through.
9. The surgical fastener assembly according to claim 1, wherein said fastener head holding member comprises two parallel flexible wires.

10. The surgical fastener assembly according to claim 2, further comprising a biasing member configured to apply an urging force on said flexible support member.
11. The surgical fastener assembly according to claim 1, wherein said cutting element comprises first and second blade assemblies that are movable with respect to each other.
12. The surgical fastener assembly according to claim 1, wherein said fluid actuator comprises an inflatable and deflatable balloon.
13. The surgical fastener assembly according to claim 1, further comprising a clamp fluid actuator coupled to said one or more arrays of fasteners and operative to move said one or more arrays of fasteners.
14. The surgical fastener assembly according to claim 1, wherein said support member comprises a holder in which each of said fasteners is received with an interference fit, a snug fit, a snap fit, a gel or an adhesive.
15. The surgical fastener assembly according to claim 14, wherein said holder comprises one or more guides.
16. A method of fastening tissues comprising:
 - placing a tissue between said fasteners and said receiver member of the surgical fastener assembly of claim 1; and
 - expanding said fluid actuator to apply a force on said fasteners to drive the sharp portions of said fasteners into said tissue.