

CLAIMS

1. Apparatus, comprising:
 - a percutaneously-implantable implant;
 - an adjustment device, comprising:
 - an adjustment mechanism, coupled to the implant, and configured to change a dimension of the implant upon actuation of the adjustment mechanism; and
 - a lock:
 - having a locked state in which the lock inhibits actuation of the adjustment mechanism,
 - having an unlocked state in which the adjustment mechanism is actuatable, and
 - reversibly movable between the locked state and the unlocked state;
 - a longitudinal guide member; and
 - an adapter:
 - coupled to the guide member,
 - comprising a fastener that couples the adapter to the adjustment device, and is intracorporeally decouplable from the adjustment device,
 - configured to be percutaneously delivered while coupled to the adjustment device, and
 - comprising an unlocking mechanism, configured such that, while the adapter is coupled to the adjustment device, actuation of the unlocking mechanism moves the lock between the locked state and the unlocked state;
 - wherein the actuation of the unlocking mechanism moves the lock from the locked state to the unlocked state by the unlocking mechanism pressing on a depressible portion of the lock; and
 - wherein the unlocking mechanism comprises a pin disposed in a channel, and the actuation of the unlocking mechanism that moves the lock from the locked state to the unlocked state comprises sliding of the pin within the channel.

2. The apparatus according to claim 1, wherein the fastener is shaped to define at least part of the channel.
3. The apparatus according to claim 2, wherein:
 - the adjustment device is shaped to define a first screw thread, and
 - the fastener (i) is shaped to define a second screw thread that couples the fastener to the adjustment device by engaging the first screw thread, and (ii) is intracorporeally decouplable from the adjustment device by the second screw thread being unscrewed from the first screw thread.
4. The apparatus according to claim 1, wherein the lock is biased to be in the locked state in the absence of the pressing of the depressible portion.
5. The apparatus according to claim 1, further comprising an adjustment tool, wherein the adjustment tool:
 - is percutaneously advanceable along the guide member to the adapter, subsequently to implantation of the implant,
 - comprises an adjustment-mechanism interface, dimensioned to interface with the adjustment mechanism,
 - comprises an adapter interface, dimensioned to interface with the adapter, and
 - comprising an force applicator, and
 - is configured:
 - to move the lock into the unlocked state by, while the adapter is coupled to the adjustment device, actuating the unlocking mechanism by applying, with the force applicator, a force to the unlocking mechanism, and
 - to actuate the adjustment mechanism via the interface between the adjustment-mechanism interface and the adjustment mechanism.
6. The apparatus according to claim 5, wherein the tool is configured to decouple the adapter from the adjustment device.

7. The apparatus according to claim 6, wherein the adjustment-mechanism interface and the adapter interface are independently controllable.

8. The apparatus according to claim 6, wherein the tool is configured to decouple the adapter from the adjustment device independently of actuating the unlocking mechanism.

9. The apparatus according to claim 5, wherein the force applicator is axially slidable with respect to the adapter, and is configured to actuate the unlocking mechanism by applying an axial force to the unlocking mechanism.

10. The apparatus according to claim 9, wherein:
the adapter comprises a trunk that is shaped to define the channel,
the unlocking mechanism comprises the channel, and the pin disposed and slidable within the channel, and
the force applicator is configured to actuate the unlocking mechanism by sliding the pin within the channel by applying an axial force to the pin.

11. The apparatus according to claim 10, wherein the trunk is shaped to define a lateral opening, the pin comprises an appendage that protrudes laterally out of the opening, and the adapter interface is dimensioned to be slidable over a proximal portion of the trunk to a sufficient extent that the force applicator reaches the appendage.

12. The apparatus according to claim 11, wherein a transverse cross-section of the proximal portion of the trunk has an external shape that is non-circular, and the tool is configured to decouple the adapter from the adjustment device by applying torque to the trunk via the adapter interface.

13. The apparatus according to claim 11, wherein a distal portion of the adapter interface is angled such that, in response to sliding of the adapter interface axially over the proximal portion of the trunk, the adapter interface automatically assumes a pre-determined rotational orientation with respect to the trunk.

14. The apparatus according to claim 13, wherein the distal portion of the adapter interface is angled such that in the pre-determined rotational orientation the force applicator is aligned with the appendage.

15. The apparatus according to claim 11, wherein the force applicator is angled such that, in response to sliding of the adapter interface axially over the proximal portion of the trunk, the adapter interface automatically assumes a pre-determined rotational orientation with respect to the trunk.

16. The apparatus according to claim 15, wherein the distal portion of the adapter interface is angled such that in the pre-determined rotational orientation the force applicator is aligned with the appendage.

17. The apparatus according to claim 16, wherein, while the adapter interface assumes the pre-determined rotational orientation in which the force applicator is aligned with the appendage, the non-circular shape of the proximal portion of the trunk inhibits the adapter interface from rotating further in response to further sliding of the adapter interface axially over the trunk.

18. The apparatus according to claim 11, wherein the trunk is shaped to define one or more shoulders that are angled such that, in response to sliding of the adapter interface axially over the shoulders, the adapter interface automatically assumes a pre-determined rotational orientation with respect to the trunk.

19. The apparatus according to claim 18, wherein the distal portion of the adapter interface is angled such that in the pre-determined rotational orientation the force applicator is aligned with the appendage.

20. Apparatus, comprising:

a percutaneously-implantable implant;

an adjustment device, comprising:

an adjustment mechanism, coupled to the implant, and configured to change a dimension of the implant upon actuation of the adjustment mechanism; and

a lock:

having a locked state in which the lock inhibits actuation of the adjustment mechanism,

having an unlocked state in which the adjustment mechanism is actuatable, and

reversibly movable between the locked state and the unlocked state;

a longitudinal guide member;

an adapter:

coupled to the guide member,

comprising a fastener that couples the adapter to the adjustment device, and is intracorporeally decouplable from the adjustment device,

configured to be percutaneously delivered while coupled to the adjustment device, and

comprising an unlocking mechanism, configured such that, while the adapter is coupled to the adjustment device, actuation of the unlocking mechanism moves the lock between the locked state and the unlocked state; and

an adjustment tool, wherein the adjustment tool:

is percutaneously advanceable along the guide member to the adapter, subsequently to implantation of the implant,

comprises an adjustment-mechanism interface, dimensioned to interface with the adjustment mechanism,

comprises an adapter interface, dimensioned to interface with the adapter, and comprising an force applicator, and

is configured:

to move the lock into the unlocked state by, while the adapter is coupled to the adjustment device, actuating the unlocking mechanism by applying, with the force applicator, a force to the unlocking mechanism, and

to actuate the adjustment mechanism via the interface between the adjustment-mechanism interface and the adjustment mechanism.