

WHAT IS CLAIMED IS:

1. An apparatus comprising:
 - a cylindrical housing having a hinge;
 - a flapper attached to the hinge, wherein the flapper can rotate around the hinge from a first flapper position to a second flapper position;
 - a slidable element within the cylindrical housing, wherein the slidable element is slidable from a first slidable position to a second slidable position, and wherein the slidable element engages with the flapper at the first slidable position and prevents the flapper from moving to the second flapper position, and wherein the slidable element allows the flapper to move to the second flapper position from the first flapper position when the slidable element is disengaged from the flapper; and
 - at least one latching mechanism attached to the slidable element, wherein the at least one latching mechanism is movable from a first latching mechanism position to a second latching mechanism position, and wherein the slidable element is at the first slidable position when the at least one latching mechanism is at the first latching mechanism position, and wherein the slidable element is at the second slidable position when the at least one latching mechanism is at the second latching mechanism position.
2. The apparatus of claim 1, wherein the flapper prevents fluid flow through the apparatus when the flapper is in the second flapper position.
3. The apparatus of claim 1, wherein the at least one latching mechanism is attached to a support structure, wherein the support structure is a rigid element that prevents radially inward motion of the at least one latching mechanism.
4. The apparatus of claim 1, wherein the slidable element is a slidable tubular, and wherein a surface area of the flapper is greater than a cross-sectional area of the slidable tubular.
5. The apparatus of claim 1, further comprising a support structure, wherein the support structure is an elastic element that props the at least one latching mechanism in a radially outward direction.

6. The apparatus of claim 1, further comprising a beveled end attached to the cylindrical housing.
7. The apparatus of claim 1, further comprising at least one locking profile attached to the cylindrical housing, wherein the locking profile is at a first locking position when the slidable element is at the first slidable position and when the slidable element is at the second slidable position.
8. The apparatus of claim 1, further comprising a second cylindrical housing, wherein the at least one latching mechanism is outside a surface of the second cylindrical housing.
9. The apparatus of claim 8, further comprising a solid connector that attaches the slidable element to the at least one latching mechanism, wherein at least a portion of the solid connector is inside of a guided passage of the second cylindrical housing, and wherein at least a portion of the slidable element is inside an inner volume of the second cylindrical housing.
10. A system comprising:
 - an outer safety valve (OSV) positioned downhole, wherein the OSV comprises at least one OSV latching profile on an inner wall of the OSV; and
 - an insertable safety valve (ISV) positioned inside of the OSV, wherein the ISV comprises,
 - a cylindrical housing having a hinge,
 - a flapper attached to the hinge, wherein the flapper can rotate around the hinge from a first flapper position to a second flapper position,
 - a slidable element within the cylindrical housing, wherein the slidable element is slidable from a first slidable position to a second slidable position, and wherein the slidable element engages with the flapper at the first slidable position and prevents the flapper from moving to the second flapper position, and wherein the slidable element allows the flapper to move to the second flapper position from the first flapper position when the slidable element is disengaged from the flapper, and
 - at least one ISV latching mechanism attached to the slidable element, wherein the at least one ISV latching mechanism is movable from a first latching profile position to a second latching profile position, and wherein the slidable element is at the first slidable position when the at least one ISV latching mechanism is at the first latching profile position, and wherein the slidable element is at the second

slidable position when the at least one ISV latching mechanism is at the second latching profile position, and wherein the at least one ISV latching mechanism is latched with the at least one OSV latching profile.

11. The system of claim 10, wherein the OSV includes a hollow control line connector to connect to a control line.
12. The system of claim 10, wherein the OSV includes an electronic control line connector to connect to a control line, wherein the control line transmits at least one of an electrical signal and an optical signal.
13. The system of claim 10, wherein the OSV includes a signal receiver to receive at least one of an electromagnetic signal and an acoustic signal.
14. The system of claim 10, wherein the OSV comprises at least one OSV anchoring profile, and wherein the ISV is attached to a lock mandrel having a lock mandrel key, and wherein the at least one OSV anchoring profile is anchored with the lock mandrel key.
15. The system of claim 10, wherein the at least one OSV latching profile and the at least one ISV latching mechanism form a latching locking set, wherein at least one component of the at least one OSV latching profile or the at least one ISV latching mechanism is radially compressible.
16. A method comprising:
 - lowering an insertable safety valve (ISV) into an outer safety valve (OSV) having at least one OSV latching profile on an inner wall of the OSV, wherein the ISV comprises
 - a cylindrical housing having a hinge,
 - a flapper attached to the hinge, wherein the flapper can rotate around the hinge from a first flapper position to a second flapper position,
 - a slidable element within the cylindrical housing, wherein the slidable element is slidable from a first slidable position to a second slidable position, and wherein the slidable element engages with the flapper at the first slidable position and prevents the flapper from moving to the second flapper position, and wherein the slidable element allows the flapper to move to the second flapper position from

the first flapper position when the slidable element is disengaged from the flapper, and
at least one ISV latching mechanism attached to the slidable element, wherein the at least one ISV latching mechanism is movable from a first latching profile position to a second latching profile position, and wherein the slidable element is at the first slidable position when the at least one ISV latching mechanism is at the first latching profile position, and wherein the slidable element is at the second slidable position when the at least one ISV latching mechanism is at the second latching profile position, and wherein the at least one ISV latching mechanism is latched with the at least one OSV latching profile; and
cycling the OSV to latch the at least one OSV latching profile to at least one ISV latching profile, wherein cycling the OSV comprises moving the at least one OSV latching profile from a first OSV latching profile cycling position to a second OSV latching profile cycling position, wherein the moving of the at least one OSV latching profile latches the OSV latching profile to the at least one ISV latching profile.

17. The method of claim 16, further comprising moving the at least one OSV latching profile from a first OSV latching profile position to a second OSV latching profile position, wherein the moving of the at least one OSV latching profile induces the flapper to move from the first flapper position to the second flapper position.

18. The method of claim 16, further comprising anchoring an ISV anchoring profile attached to the ISV to an OSV lock mandrel profile attached to the OSV.

19. The method of claim 16, wherein cycling the OSV comprises:
changing a pressure in a control line connected to the OSV from a first pressure to a second pressure, wherein changing the pressure to the second pressure moves the OSV latching profile to the second OSV latching profile cycling position; and
changing the pressure in the control line connected to the OSV from the second pressure to the first pressure, wherein changing the pressure to the first pressure moves the OSV latching profile to the first OSV latching profile cycling position.

20. The method of claim 16, wherein cycling the OSV comprises transmitting at least one signal to a signal receiver of the OSV, wherein the at least one signal comprise at least one of an electrical signal, an optical signal, an electromagnetic signal, and an acoustic signal.