CLAIMS

That which is claimed is:

1. A downhole tool positionable within a wellbore, the downhole tool comprising:

a tubing string positionable downhole in the wellbore and having an outer surface that defines an inner region and an outer region of the tubing string;

a release latch positioned within ~~an~~the inner region of the tubing string, the release latch having a restrained position and a released position, the release latch being coupled to a ball valve mechanism for actuating the ball valve mechanism in the released position; ~~and~~

a primary piston positioned within the inner region of the tubing string and coupled to a spring to exert a force in a first direction, the primary piston being movable a predetermined amount in a second direction to move the release latch from the restrained position to the released position in response to an application of a predetermined amount of pressure over a predetermined amount of time from a surface of the wellbore~~.~~;

~~2. The downhole tool of claim 1, wherein the second direction is opposite the first direction.~~

~~3. The downhole tool of claim 1, further comprising:~~

a locking piston coupled to a second spring; and

a locking mechanism positioned between the primary piston and ~~a~~the locking piston ~~for~~, the locking piston positionable in a restrained position to aid in preventing ~~movement of~~ the primary piston from moving the predetermined amount in the second direction in response to an application of pressure from the surface of the wellbore that is greater than the predetermined amount ~~of pressure~~, wherein a shoulder of the locking mechanism is engaged with a portion of the locking piston in the restrained position.

~~4.~~2. The downhole tool of claim 1, wherein the second direction is opposite the first direction.

3. The downhole tool of claim 1, further comprising a latch coupled to a third spring and having a surface that engages with a surface of the locking mechanism in response to the application of pressure that is greater than the predetermined amount of pressure.

~~5.~~4. The downhole tool of claim ~~4~~3, wherein the latch includes a surface that engages with a surface of the locking piston in response to the application of pressure that is greater than the predetermined amount of pressure.

~~6.~~5. The downhole tool of claim ~~4~~3, further comprising a projection on the locking mechanism that engages with an end of the locking piston and a surface of the latch in response to the application of pressure that is greater than the predetermined amount of pressure.

~~7.~~6. The downhole tool of claim 1, wherein the spring coupled to the primary piston has a spring force selected to prevent the primary piston from moving the predetermined amount in the second direction in response to an application of pressure that is less than the predetermined amount of pressure.

7. The downhole tool of claim 1, wherein the predetermined amount of pressure is a predetermined pressure range.

8. An actuation assembly positionable within a wellbore, the actuation assembly comprising:

———a primary piston coupled to a first spring and positionable in a first position in which the primary piston is coupled to a release latch for restraining the release latch from actuating a ball valve mechanism;

———a locking piston coupled to a second spring; and

———a locking mechanism positioned between the primary piston and the locking piston; wherein the locking mechanism is moveable between (i) a restrained position for preventing the primary piston from moving a predetermined amount in a first direction via at least in part the engagement of a shoulder of the locking mechanism with a portion of the locking piston in response to an application of pressure from a surface of the wellbore that is greater than a predetermined amount of pressure ~~and (ii) an unrestrained position.~~ for preventing the ball valve mechanism from actuating and (ii) an unrestrained position for permitting the

primary piston to move the predetermined amount in the first direction in response to an application of pressure from the surface being the predetermined amount of pressure for actuating the ball valve mechanism.

9. The actuation assembly of claim 8, wherein the predetermined amount of pressure is a predetermined pressure range.

10. The actuation assembly of claim 9, wherein the first spring coupled to the primary piston has a spring force selected to permit the piston to move the predetermined amount in the first direction in response to the application of pressure from the surface of the wellbore that is within the predetermined pressure range for a predetermined period of time.

~~11. The actuation assembly of~~ 11. The actuation assembly of claim 10, wherein the first spring has a spring force selected to compress the first spring a predetermined amount in response to an application of pressure from the surface of the wellbore that falls within the predetermined pressure range for the predetermined period of time for uncoupling the release latch from the primary piston.

12. The actuation assembly of claim 9, further comprising a latch positionable in a locked position in which the latch contacts a surface of the locking mechanism for maintaining the locking mechanism in the restrained position in response to the application of pressure from the surface of the wellbore that is greater than the predetermined amount of pressure.

~~12.~~13. The actuation assembly of claim ~~11~~12, further comprising a third spring coupled to the latch for maintaining the latch in the first position in response to the application of pressure from the surface of the wellbore that is greater than the predetermined amount of pressure.

~~13.~~14. The actuation assembly of claim ~~12~~13, wherein the locking mechanism is held in the restrained position by a surface of the latch and a surface of the locking piston in response to the application of pressure from the surface of the wellbore that is greater than the predetermined amount of pressure.

~~14. The actuation assembly of~~

15. The actuation assembly of claim 13, wherein the second and third springs have a combined spring force that is greater than the predetermined pressure range for maintaining the

locking mechanism in a released position in which an end of the primary piston can extend longitudinally beyond an end of the locking mechanism.

16. The actuation assembly of claim 9, wherein the first spring has a spring force selected to compress the first spring a predetermined amount in response to an application of pressure from the surface of the wellbore that falls within a predetermined pressure range for uncoupling the release latch from the primary piston.

~~15. The actuation assembly of claim 10, wherein the first spring has a spring force selected to compress the first spring a predetermined amount in response to an application of pressure from the surface of the wellbore that falls within the predetermined pressure range for the predetermined period of time for uncoupling the release latch from the primary piston.~~

~~16. The actuation assembly of claim 12, wherein the second and third springs have a combined spring force that is greater than the predetermined pressure range for maintaining the locking mechanism in a released position in which an end of the primary piston can extend longitudinally beyond an end of the locking mechanism.~~

17. A method of actuating a tool positioned downhole in a wellbore, the method comprising:

———applying a pressure from a surface of the wellbore to the tool downhole;

———moving a primary piston a predetermined amount in response to the pressure being within a predetermined pressure range; ~~and~~

———maintaining a locking mechanism in an unrestrained position in response to the pressure being within the predetermined pressure range such that the locking mechanism permits the primary piston to move the predetermined amount, wherein the locking mechanism has a restrained position in which it prevents the primary piston from moving the predetermined amount in response to the pressure being greater than the predetermined pressure range; and

releasing a latch coupled to a ball valve mechanism in response to the primary piston moving the predetermined amount for actuating the ball valve mechanism.

18. The method of actuating ~~a~~the tool positioned downhole in a wellbore of claim 17, wherein the pressure from the surface is maintained for a predetermined amount of time.

19. The method of actuating ~~a~~the tool positioned downhole in a wellbore of claim 18, further comprising:

———moving a locking mechanism in a first direction toward an outer surface of the tool in response to the primary piston moving the predetermined amount.

20. The method of actuating ~~a~~the tool positioned downhole in a wellbore of claim 19, wherein the locking mechanism is positionable in a restrained position in which it is restrained at least in part by a shoulder of the locking mechanism being engaged with a projection for preventing the primary piston from moving the predetermined amount in response to an application of pressure from the surface that is greater than the predetermined pressure range.