What is claimed is:

1. A well tool for use in a tubing string extending to a subterranean location in a hydrocarbon well, comprising:

an elongated, tubular-shaped body for assembly in the tubing string, the tubular body isolating the exterior from the interior of the body;

at least one valve on the body having a valve element movable between an open and a closed position to permit and prevent flow through the valve;

a tubular piston mounted on the body for longitudinal movement with respect to the body, the piston operably associated with the valve element to move the valve element;

a variable volume chamber in an annular space between the body and the piston, a passageway in the body providing fluid communication between the chamber and the exterior of the body; and

seals between the body and piston sealing pressure within the chamber during longitudinal movement of the piston, and at least one of said seals is unidirectional, preventing flow of the fluids out of the chamber and permitting flow into the chamber.

2. The valve according to claim 1 wherein the valve element is a flapper-type valve element, selectively permitting and blocking longitudinal flow through the body and tubular string.

3. The valve according to claim **1** wherein the valve element is a ball-type valve element, selectively permitting and blocking longitudinal flow through body and tubular string.

4. The valve according to claim **1** wherein the valve has an element that controls flow through a passageway between the exterior and interior of the body.

5. The valve according to claim **1** wherein said at least one valve comprises at least two valves.

6. The valve of claim **5** wherein the at least two valves comprise at least one valve for controlling longitudinal flow through the body and tubular string and at least one valve for controlling flow between the exterior and interior of the body.

7. The valve of claim **1** wherein the at least one seal is an annular seal mounted in a groove surrounding the piston, and wherein at least one recess is formed in one wall of the groove.

8. The valve of claim **1** wherein the valve when in the closed position permits flow through the valve in a first direction and prevents flow through the valve in the opposite direction.

9. The valve of claim **1** additionally comprising at least one frangible pin, connecting the piston to the body to prevent longitudinal movement of the piston in the body.

10. The valve of claim **1** additionally comprising a frangible partition, closing the at least one passageway.

11. The valve of claim **4** additionally comprises a second port in the body. permitting flow between the exterior and interior of the body and wherein said valve element is a tubular member that moves longitudinally between a position that blocks and a position that opens the at least one second passageway in the body.

12. A valve for use in a tubing string at a subterranean location in a hydrocarbon well, comprising:

an elongated tubular-shaped body for assembly in the tubing string, the tubular body isolating the exterior from the interior of the body, first and second oppositely facing shoulders in the body;

at least one valve on the body, having a valve element movable between the open and a closed position to permit and prevent flow through the valve;

a tubular piston mounted on the body for longitudinal movement in the body from a first to a second position, the piston, when in the first position, contacting the first shoulder and, in the second position, contacting the second shoulder, the piston operably associated with the valve element to move the valve element;

a variable volume chamber in an annular space between the body and piston;
a passageway in the body providing fluid communication between the chamber and the exterior of the body; and

seals between the body and piston, sealing pressure within the chamber during axial movement of the piston.

13. The valve of claim **12** wherein the second shoulder is generally frusto conical–shaped.

14. The valve of claim **13** wherein the valve has a contact surface thereon for contacting the second shoulder and has a corresponding shape to the second shoulder.

15. The valve according to claim **12** wherein the valve is a flapper-type valve element, selectively permitting and blocking longitudinal flow through the body and tubular string.

16. The valve according to claim **12** wherein the valve element is a ball-type valve element, selectively permitting and blocking longitudinal flow through the body and tubular string.

17. The valve according to claim **12** wherein the valve has an element that controls flow through a passageway between the exterior and interior of the body.

18. The valve according to claim **12** wherein the at least one valve comprises at least two valves.

19. The valve of claim **12** wherein the at least one seal is an annular seal mounted in a groove surrounding the piston, and wherein at least one recess is formed in one wall of the groove.

20. The valve of claim **12** additionally comprises a second port in the body, permitting flow between the exterior and interior of the body, and wherein said valve element is a tubular member that moves longitudinally between a position that blocks and a position that opens the at least one second passageway in the body.

CLAIMS:

1. A well tool (10) for use in a tubing string (14, 16) extending to a subterranean location in a hydrocarbon well, comprising:

an elongated, tubular-shaped body (100, 200, 300, 400, 500) for assembly in the tubing string (14, 16), the tubular body isolating the exterior (20) from the interior of the body;

at least one valve (802, 600) on the body having a valve element movable between an open and a closed position to permit and prevent flow through the valve;

a tubular piston (600, 700) mounted on the body for longitudinal movement with respect to the body, and

a variable volume chamber (214) in an annular space between the body and the piston, a passageway (212) in the body providing fluid communication between the chamber (214) and the exterior (20) of the body;

characterised in that the piston is operably associated with the valve element to move the valve element; and

seals (602, 230) between the body and piston seal pressure within the chamber (214) during longitudinal movement of the piston (600, 700), and at least one (602) of said seals is unidirectional, preventing flow of the fluids out of the chamber and permitting flow into the chamber.

2. A tool according to claim 1, wherein the valve element is a flapper-type valve element (802), selectively permitting and blocking longitudinal flow through the body and tubular string.

3. A tool according to claim 1, wherein the valve element is a ball-type valve (900) element, selectively permitting and blocking longitudinal flow through body and tubular string.

4. A tool according to claim 1, wherein the piston controls flow through a passageway (620) between the exterior and interior of the body.

5. A tool according to claim 1, wherein said at least one valve comprises at least two valves (802, 600).

6. A tool according to claim 5, wherein the at least two valves comprise at least one valve (802) for controlling longitudinal flow through the body and tubular string and at least one valve (600) for controlling flow between the exterior and interior of the body.

7. A tool according to claim 1, wherein the at least one seal (602) is an annular seal mounted in a groove (610) surrounding the piston (600, 700), and wherein at least one recess (608) is formed in one wall of the groove (610).

8. A tool according to claim 1, wherein the valve when in the closed position permits flow through the valve in a first direction and prevents flow through the valve in the opposite direction.

9. A tool according to claim 1, additionally comprising at least one frangible pin (304), connecting the piston (600, 700) to the body to prevent longitudinal movement of the piston in the body.

10. A tool according to claim 1, additionally comprising a frangible partition, closing the at least one passageway (212) in the body providing fluid communication between the chamber and the exterior of the body.

11. A tool according to claim 4, additionally comprises a second port in the body permitting flow between the exterior and interior of the body and wherein said valve element is a tubular member (600) that moves longitudinally between a position that blocks and a position that opens the at least one second passageway in the body.

12. A tool according to any of claims 1, 2, 3, 4, 5, 7 and 11, further comprising:

first and second oppositely facing shoulders (306, 110) in the body;

the tubular piston being mounted on the body for longitudinal movement in the body from a first to a second position, the piston, when in the first position, contacting the first shoulder (306) and, in the second position, contacting the second shoulder (110).

13. A tool according to claim 12, wherein the second shoulder (110) is generally frusto conical-shaped.

14. A tool according to claim 13, wherein the valve has a contact surface (630) thereon for contacting the second shoulder and has a corresponding shape to the second shoulder.