

WHAT IS CLAIMED IS:

1. An equalizing device for use with a safety valve, comprising:
a tubular having a central bore extending axially there through, the tubular having a ball seat;
a ball positioned proximate the ball seat, the ball configured to move from a first position engaged with the ball seat to a second position disengaged from the ball seat to equalize pressure across a safety valve; and
an arced ring positioned radially outside the ball and arced at least partially around the tubular, the arced ring configured to keep the ball engaged with the ball seat when in the first position and maintain the ball radially outside the ball seat when in the second position.
2. The equalizing device as recited in claim 1, further including an outer housing substantially surrounding the arced ring.
3. The equalizing device as recited in claim 2, wherein the outer housing is a ported retainer ring.
4. The equalizing device as recited in claim 3, wherein the ported retainer ring includes one or more fluid filters.
5. The equalizing device as recited in claim 1, wherein the arced ring has a first end located proximate the ball, and a second end physically attached to an outer surface of the tubular.
6. The equalizing device as recited in claim 5, wherein the first end of the arced ring includes chamfers for engaging the ball, and wherein the second end of the arced ring is physically attached to the outer surface of the tubular by a pin.
7. The equalizing device as recited in claim 1, wherein the ball integrally forms part of a first end of the arced ring.
8. The equalizing device as recited in claim 7, wherein the ball is a first ball and the arced ring further includes a second ball that integrally forms a part of a second end of the arced ring.

9. The equalizing device as recited in claim 1, further comprising a garter compression spring positioned radially about the arced ring.

10. The equalizing device as recited in claim 1, further including a ramp member positioned radially inside of the ball, the ramp member configured to move the ball from the first position to the second position as the ramp member moves axially along the tubular.

11. A safety valve for use within a wellbore, comprising:

a housing;

a flow tube extending axially through the housing, the flow tube configured to convey subsurface production fluids there through;

a valve closure mechanism disposed proximate a downhole end of the flow tube;

an equalizing device configured to equalize pressure across the valve closure mechanism, the equalizing device proximate to the valve closure mechanism, the equalizing device including:

a tubular having a central bore extending axially there through, the tubular having a ball seat;

a ball positioned proximate the ball seat, the ball configured to move from a first position engaged with the ball seat to a second position disengaged from the ball seat to equalize pressure across the safety valve; and

an arced ring positioned radially outside the ball and arced at least partially around the tubular, the arced ring configured to keep the ball engaged with the ball seat when in the first position and maintain the ball radially outside the ball seat when in the second position; and

an actuator associated with the housing, the actuator configured to axially slide the flow tube to move the valve closure mechanism between a closed state and an open state after the equalizing device has equalized the pressure.

12. The safety valve as recited in claim 11, further including an outer housing substantially surrounding the arced ring.

13. The safety valve as recited in claim 12, wherein the outer housing is a ported retainer ring.

14. The safety valve as recited in claim 13, wherein the ported retainer ring includes one or more fluid filters.
15. The safety valve as recited in claim 11, wherein the arced ring has a first end located proximate the ball, and a second end physically attached to an outer surface of the tubular.
16. The safety valve as recited in claim 15, wherein the first end of the arced ring includes chamfers for engaging the ball, and wherein the second end of the arced ring is physically attached to the outer surface of the tubular by a pin.
17. The safety valve as recited in claim 11, wherein the ball integrally forms part of a first end of the arced ring.
18. The safety valve as recited in claim 17, wherein the ball is a first ball and the arced ring further includes a second ball that integrally forms a part of a second end of the arced ring.
19. The safety valve as recited in claim 11, further comprising a garter compression spring positioned radially about the arced ring.
20. The safety valve as recited in claim 11, wherein the flow tube includes a ramp member near the distal end thereof and positioned radially inside of the ball, the ramp member configured to move the ball from the first position to the second position as the ramp member moves axially along the tubular.
21. A method for equalizing pressure across a valve closure mechanism of a safety valve, the method comprising:
- placing a safety valve within a wellbore, the safety valve including;
 - a housing;
 - a flow tube extending axially through the housing, the flow tube having a ramp member on an outer surface thereof and configured to convey subsurface production fluids there through;
 - a valve closure mechanism disposed proximate a downhole end of the flow tube;

an equalizing device configured to equalize pressure across the valve closure mechanism, the equalizing device proximate to the valve closure mechanism, the equalizing device including:

- a tubular having a central bore extending axially there through, the tubular having a ball seat;

- a ball positioned proximate the ball seat, the ball configured to move from a first position engaged with the ball seat to a second position disengaged from the ball seat to equalize pressure across the safety valve; and

- an arced ring positioned radially outside the ball, the arced ring configured to keep the ball engaged with the ball seat when in the first position and maintain the ball radially outside the ball seat when in the second position; and

- an actuator associated with the housing and coupled to the flow tube; and

- powering the actuator to axially move the flow tube along the tubular, such that the ramp member moves the ball from the first position to the second position to substantially equalize pressure across the valve closure mechanism.