

CLAIMS

1. An apparatus for providing tension to a riser, the apparatus comprising:
a platform having a bore therethrough;
a tubular member extending through the bore;

an annular upper latch member connected to an outer diameter of the tubular member, the upper latch member having a downward facing latch recess on a bottom surface; and

a retractable lower latch ring connected to the platform, the lower latch ring being movable in a plane generally perpendicular to an axis of the bore from an open position to a latch position, the open position allowing the upper latch member to pass through the lower latch ring and the latch position stopping downward axial movement of the upper latch member relative to the lower latch ring, the lower latch ring having a cylindrical guide extending upward in an axial direction and having an outer diameter that is less than an inner diameter of the latch recess when the lower latch ring is in the latch position so that the cylindrical guide can fit inside the latch recess.

2. The apparatus according to claim 1, further comprising a downward and inward facing tapered surface extending downward from the latch recess.
3. The apparatus according to claim 2, wherein the tapered surface centers the upper latch member on the lower latch ring when the cylindrical guide enters the latch recess.
4. The apparatus according to claim 1, further comprising an annular lock ring recess on each of an outer diameter surface of the cylindrical guide and an inner diameter surface of the upper latch member, and a resilient lock ring initially positioned in one of the annular lock ring recesses, the lock ring expanding to engage the other annular lock ring recess when the cylindrical guide is positioned inside the upper latch member.
5. The apparatus according to claim 4, wherein the resilient ring is a c-ring.
6. The apparatus according to claim 4, wherein the lock ring is initially positioned in the annular lock ring recess of the upper latch member.
7. The apparatus according to claim 4, wherein, when the resilient ring engages the latch recess, the resilient ring prevents the upper latch member from moving axially upward.
8. The apparatus according to claim 1, wherein the upper latch member threadingly engages the outer diameter of the tubular member.

9. The apparatus according to claim 1, wherein the upper latch member is a solid member free of moving parts.
10. The apparatus according to claim 1, further comprising a hydraulic actuator connected to the lower latch ring, the hydraulic actuator causing the lower latch ring to move between the open and the latch positions.
11. A method for tensioning a riser, the method comprising the steps of:
- (a) connecting an upper tension latch to a tension joint, the upper tension latch having a downward facing annular receptacle and the tension joint being a segment of a riser assembly;
 - (b) passing the tension joint downward through an inner diameter of a lower latch assembly to determine the desired amount of tension, then tensioning the riser assembly by drawing the tension joint upward through the lower latch assembly;
 - (c) moving the lower latch assembly in a plane generally perpendicular to an axis of the upper tension latch from an open position to a latch position, the inner diameter of the lower latch assembly being less than an outer diameter of the upper tension latch when the lower latch assembly is in the latch position; and
 - (d) lowering the tension joint onto the lower latch assembly until a portion of the lower latch assembly occupies the annular receptacle and engages a downward facing surface at the uppermost portion of the annular receptacle to prevent further downward movement of the tension joint.
12. The method of claim 11, wherein step (c) comprises positioning a c-ring on the upper tension latch.
13. The method of claim 12, wherein the c-ring prevents upward movement of the tension joint.
14. The method of claim 11, wherein the upper tension latch further comprises an inward and downward facing taper and step (d) further comprises the step of the taper contacting the lower latch assembly to center the upper tension latch as the tension joint is lowered onto the lower latch assembly.
15. The method of claim 11, wherein the upper tension latch is threadingly connected to the tension joint, and wherein step (b) further comprises the step rotating the upper tension latch on the tension joint to axially move the upper tension latch to a position that will maintain a predetermined amount of tension after step (d).

16. The method of claim 11, further comprising a hydraulic actuator connected to the lower latch assembly and wherein step (c) further comprises the step of the hydraulic actuator causing the lower latch assembly to move from the open to the latch position.

17. An apparatus for providing tension to a riser, the apparatus comprising:

a platform having a bore therethrough;

a tubular member extending through the bore;

an annular upper latch member connected to an outer diameter of the tubular member, the upper latch member having a downward facing latch recess on a bottom surface and a downward and inward facing tapered surface extending downward from the latch recess;

a retractable lower latch ring connected to the platform, the lower latch ring being movable in a plane generally perpendicular to an axis of the bore from an open position to a latch position, the open position allowing the upper latch member to pass through the lower latch ring and the latch position stopping downward axial movement of the upper latch member relative to the lower latch ring, the lower latch ring having a cylindrical guide extending upward in an axial direction and having an outer diameter that is less than an inner diameter of the latch recess when the lower latch ring is in the latch position so that the cylindrical guide can fit inside the latch recess; and

an actuator connected to the lower latch ring, the actuator moving the lower latch ring between the open and latch positions.

18. The apparatus according to claim 17, wherein the latch recess comprises a resilient lock ring and the cylindrical guide comprises an annular lock ring recess an outer diameter surface, the lock ring engaging the lock ring recess when the cylindrical guide is positioned inside the upper latch member.

19. The apparatus according to claim 18, wherein, when the resilient ring engages the annular lock ring recess, the resilient ring prevents the upper latch member from moving axially upward.

20. The apparatus according to claim 17, wherein the tapered surface centers the upper latch member on the lower latch ring when the cylindrical guide enters the latch recess.