WHAT IS CLAIMED IS:

1. A wellhead assembly comprising an outer wellhead member (11) having a bore (13), the bore (13) having a first profile portion (15) and an annular recess (23), a tubular inner wellhead member (29) adapted to be lowered into the bore (13) of the outer wellhead member (11), characterized by:

a centralizer/overpull ring (45) positioned on the inner wellhead member (29), the centralizer/overpull ring (45) having a lower band portion (57) and a plurality of resilient finger members (59) extending upwardly therefrom, the plurality of resilient finger members (59) each being separated from one another by a slot (60) and biased to expand outward to engage the bore (13) of the outer wellhead member (11) to center the inner wellhead member (29) within the bore (13) as the inner wellhead member (29) is lowered through the bore (13), wherein the recess (23) of the outer wellhead member (11) is adapted to receive the plurality of resilient finger members (59) and oppose axial movement of the centralizer/overpull ring (45) to enable an upward test pull of the inner wellhead member (29).

2. The wellhead assembly of claim 0, wherein the wellhead assembly further comprises:

the upper ends (65) of the plurality of resilient finger members (59) having a conical taper and the recess (23) having a conical taper that is substantially geometrically complimentary to the conical taper of the upper ends (65) of the plurality of resilient finger members (59), the conical tapers abuttingly contacting one another in an overpull position.

3. The wellhead assembly of claim 0, wherein the wellhead assembly further comprises:

a retainer ring (43) positioned on the inner wellhead member (29) above the centralizer/overpull ring (45), the lower end (49)of the retainer ring having a conical taper that is substantially geometrically complimentary to the conical taper of the upper ends (65) of the plurality of resilient finger members (59) such that the retainer

ring (43) limits the extent to which the plurality of resilient finger members(59) extend radially outward from the inner wellhead member (29).

4. The wellhead assembly of claim 0, wherein the conical taper of the upper ends (65) of the plurality of resilient finger members (59) and the conical taper of the recess (23) are angled between 30 degrees and 60 degrees relative to an axis of the bore (13) of the outer wellhead member (11).

5. The wellhead assembly of claim 0, wherein the wellhead assembly further comprises:

the upper ends (65) of the plurality of resilient finger members (59) having a cylindrical taper and the recess (23) having a cylindrical taper that is substantially geometrically complimentary to the cylindrical taper of the upper ends (65) of the plurality of resilient finger members (59), the cylindrical tapers abuttingly contacting one another in an overpull position.

6. The wellhead assembly of claim 0, wherein the wellhead assembly further comprises:

a retainer ring (43) positioned on the inner wellhead member (29) above the centralizer/overpull ring (45), the lower end (49) of the retainer ring (43) having a cylindrical taper that is substantially geometrically complimentary to the cylindrical taper of the upper ends (65) of the plurality of resilient finger members (59) such that the retainer ring (43) limits the extent to which the plurality of resilient finger members (59) extend radially outward from the inner wellhead member (29).

7. The wellhead assembly of claim 0, wherein the cylindrical taper of the upper ends (65) of the plurality of resilient finger members (59) and the cylindrical taper of the recess (23) are angled between 30 degrees and 60 degrees relative to an axis of the bore (13) of the outer wellhead member (11).

8. The wellhead assembly of claim 0, wherein the centralizer/overpull ring (45) is fixed axially relative to the inner wellhead member (29).

9. The wellhead assembly of claim 0, wherein the centralizer/overpull ring (45) is carried in a cavity (47) on the inner wellhead member (29) and has an outer diameter greater than the inner diameter of the first profile portion (15), but retracts inward into the cavity (47) when moving past the first profile portion (15).

10. A method of assembling a wellhead assembly, the method including:

providing an outer wellhead member (11) having a bore (13), the bore (13) having a first profile portion (15) and an annular recess (23), a tubular inner wellhead member (29), and a resilient retractable and expandable centralizer/overpull ring (45) positioned on the inner wellhead member (29);

lowering the inner wellhead member (29) into the outer wellhead member (11) with the centralizer/overpull ring (45) in an expanded run-in position;

retracting the centralizer/overpull ring (45) into a recess (47) on the inner wellhead (29) due to contact of the centralizer/overpull ring (45) with the bore (13) as the inner wellhead member (29) is lowered into the outer wellhead member (11); and

when the inner wellhead member (29) has reached a desired position within the outer wellhead member (11), expanding the centralizer/overpull ring (45) into the recess (23) of the outer wellhead member (11).

11. The wellhead assembly of claim 0, wherein the centralizer/overpull ring (45) comprises:

a lower band portion (57) and a plurality of resilient finger members (59) extending upwardly therefrom; and wherein the method further comprises:

applying an upward force on the inner wellhead member (29) once the inner wellhead member (29) is properly positioned within the outer wellhead member (11), thereby engaging the plurality of resilient finger members (59) with the recess (23) of the outer wellhead member (11), thus opposing further axial movement of the centralizer/overpull ring (45) relative to the outer wellhead member (11), thereby indicating proper location of the inner wellhead member (29).

12. The method of claim 0, wherein the centralizer/overpull ring (45) further comprises a conical taper on the upper ends (65) of the plurality of resilient finger members (59); and wherein the recess (23) comprises a conical taper, substantially geometrically complimentary to the conical taper of the upper ends (65) of the plurality of resilient finger members (59); and the method further comprises:

abuttingly engaging the conical taper of the upper ends (65) of the plurality of resilient members (59) and the conical taper of the recess (23) when the upward force is applied to the inner wellhead member (29) when the inner wellhead member (29) is properly positioned within the outer wellhead member (11).

13. The method of claim 0, further comprising:

providing a retainer ring (43) on the inner wellhead member (29) above the centralizer/overpull ring (45); and

engaging the retainer ring (43) with the centralizer/overpull ring (45) to limit to extent to which the centralizer/overpull ring (45) is radially expandable outwardly from the inner wellhead member (29).

14. The method of claim 0, further comprising:

providing a load ring (35) on the inner wellhead member (29) above the centralizer/overpull ring (45); and

engaging the load ring (35) with the first profile portion (15) of the outer wellhead member (11) simultaneously with expanding the centralizer/overpull ring (45) into the recess (23) of the outer wellhead member (11).

CLAIMS

WHAT IS CLAIMED IS:

1. A wellhead assembly comprising:

an outer wellhead member having a bore defining a longitudinal axis, the bore having a first profile portion and an annular recess;

a tubular inner wellhead member adapted to be lowered into the bore of the outer wellhead member; and

a centralizer/overpull ring positioned on the inner wellhead member, the centralizer/overpull ring having a lower band portion and a plurality of resilient finger members extending upwardly therefrom, the plurality of resilient finger members each being separated from one another by a longitudinal slot extending from the lower band portion to upper ends of the plurality of resilient finger members, and the plurality of resilient finger members each being biased to expand outward with respect to the lower band portion to engage the bore of the outer wellhead member to center the inner wellhead member within the bore as the inner wellhead member is lowered through the bore, wherein the recess of the outer wellhead member is adapted to receive the plurality of resilient finger members and oppose axial movement of the centralizer/overpull ring to enable an upward test pull of the inner wellhead member.

2. The wellhead assembly of claim 1, wherein the wellhead assembly further comprises:

the upper ends of the plurality of resilient finger members having a conical taper and the recess having a conical taper that is substantially geometrically complimentary to the conical taper of the upper end of the plurality of resilient finger members, the conical tapers abuttingly contacting one another in an overpull position.

3. The wellhead assembly of claim 2, wherein the wellhead assembly further comprises:

a retainer ring positioned on the inner wellhead member above the centralizer/overpull ring, the lower end of the retainer ring having a conical taper that is substantially geometrically complimentary to the conical taper of the upper ends of the plurality of resilient finger members such that the retainer ring limits the extent to which the plurality of resilient finger members extend radially outward from the inner wellhead member.

4. The wellhead assembly of claim 3, wherein the conical taper of the upper ends of the plurality of resilient members and the conical taper of the recess are angled between 30 degrees and 60 degrees relative to the longitudinal axis of the bore of the outer wellhead member.

5. The wellhead assembly of claim 1, wherein the wellhead assembly further comprises:

the upper ends of the plurality of resilient finger members having a cylindrical taper and the recess having a cylindrical taper that is substantially geometrically complimentary to the cylindrical taper of the upper ends of the plurality of resilient finger members, the cylindrical tapers abuttingly contacting one another in an overpull position.

6. The wellhead assembly of claim 5, wherein the wellhead assembly further comprises:

a retainer ring positioned on the inner wellhead member above the centralizer/overpull ring, the lower end of the retainer ring having a cylindrical taper that is substantially geometrically complimentary to the cylindrical taper of the upper ends of the plurality of resilient finger members such that the retainer ring limits the extent to which the plurality of resilient finger members extend radially outward from the inner wellhead member.

7. The wellhead assembly of claim 6, wherein the cylindrical taper of the upper ends of the plurality of resilient finger members and the cylindrical taper of the recess are angled between 30 degrees and 60 degrees relative to the longitudinal axis of the bore of the outer wellhead member.

8. The wellhead assembly of claim 1, wherein the centralizer/overpull fixed axially relative to the inner wellhead member.

9. The wellhead assembly of claim 1, wherein the centralizer/overpull ring is carried in a cavity on inner wellhead member and has an outer diameter greater than the inner diameter of the first profile portion, but retracts inward into the cavity when moving past the first profile portion.

10. A wellhead assembly comprising:

an outer wellhead member having a bore defining a longitudinal axis, the bore having a first profile portion and an annular recess;

a tubular inner wellhead member adapted to be lowered into the bore of the outer wellhead member;

a centralizer/overpull ring positioned on the inner wellhead member, the centralizer/overpull ring comprising a lower band portion and a plurality of resilient finger members extending upwardly therefrom, the plurality of resilient finger members each being separated from one another by a longitudinal slot extending from the lower band portion to upper ends of the plurality of resilient finger members, and the plurality of resilient finger members each being biased to expand outward with respect to the lower band portion to engage the bore of the outer wellhead member to center the inner wellhead member within the bore as the inner wellhead member is lowered through the bore, wherein the recess of the outer wellhead member is adapted to receive the plurality of resilient finger members and oppose axial movement of the centralizer/overpull ring to enable an upward test pull of the inner wellhead member; and

a retainer ring positioned on the inner wellhead member above the centralizer/overpull ring and adapted to limit the extent to which the plurality of resilient finger members extend radially outward from the inner wellhead member.

11. The wellhead assembly of claim 10, wherein the wellhead assembly further comprises:

the upper ends of the plurality of resilient finger members having a conical taper and the recess having a conical taper that is substantially geometrically complimentary to the conical taper of the upper ends of the plurality of resilient finger members, the conical tapers abuttingly contacting one another in an overpull position.

12. The wellhead assembly of claim 11, wherein the retainer ring has a conical taper that is substantially geometrically complimentary to the conical taper of the upper ends of the plurality of resilient finger members such that a portion of the conical taper of the retainer ring abuttingly contacts a portion of the conical taper of the upper ends of the plurality of resilient finger members when the plurality of resilient finger members are fully extended radially outward.

13. The wellhead assembly of claim 12, wherein the conical taper of the upper ends of the plurality of resilient finger members and the conical taper of the recess are angled at between 30 degrees and 60 degrees relative to the longitudinal axis of the bore of the outer wellhead member.

14. The wellhead assembly of claim 13, wherein the centralizer/overpull ring is fixed axially relative to the inner wellhead member.

15. The wellhead assembly of claim 14, wherein the centralizer/overpull ring is carried in a cavity on inner wellhead member and has an outer diameter greater than the inner diameter of the first profile portion, but retracts inward into the cavity when moving past the first profile portion.

16. A method of assembling a wellhead assembly, the method comprising:

providing an outer wellhead member having a bore, the bore having a first profile portion and an annular recess; a tubular inner wellhead member; and a resilient retractable and expandable centralizer/overpull ring positioned on the inner wellhead member, wherein the centralizer/overpull ring comprises a lower band portion and a plurality of resilient finger members extending upwardly therefrom;

lowering the inner wellhead member into the outer wellhead member with the centralizer/overpull ring in an expanded run-in position;

retracting the centralizer/overpull ring into a recess on the inner wellhead member due to contact of the centralizer/overpull ring with the bore as the inner wellhead member is lowered into the outer wellhead member;

when the inner wellhead member has reached a desired position within the outer wellhead member, expanding the centralizer/overpull ring into the recess of the outer wellhead member;

applying an upward force on the inner wellhead member once the inner wellhead member is properly positioned within the outer wellhead member to engage the centralizer/overpull ring with the recess of the outer wellhead member thereby engaging the plurality of resilient finger members with the recess of the outer wellhead member; and

verifying an opposition to upward axial movement of the inner wellhead member due to the engagement of the centralizer/overpull ring with the recess of the outer wellhead member, thereby indicating proper location of the inner wellhead member.

17. The method of claim 16, wherein the centralizer/overpull ring further comprises a conical taper on the upper ends of the plurality of resilient finger members; and wherein the recess comprises a conical taper, substantially geometrically complimentary to the conical taper of the upper ends of the plurality of resilient finger members; and the method further comprises:

abuttingly engaging the conical taper of the upper ends of the plurality of resilient members and the conical taper of the recess abuttingly contact one another when the upward force is applied to the inner wellhead member when the inner wellhead member is properly positioned within the outer wellhead member.

18. The method of claim 16, further comprising:

providing a retainer ring on the inner wellhead member above the centralizer/overpull ring; and

engaging the retainer ring with the centralizer/overpull ring to limit to extent to which the centralizer/overpull ring is radially expandable outwardly from the inner wellhead member.

19. The method of claim 16, further comprising:

providing a load ring on the inner wellhead member above the centralizer/overpull ring; and

engaging the load ring with the first profile portion of the inner wellhead member simultaneously with expanding the centralizer/overpull ring into the recess of the outer wellhead member.