CLAIMS

1. A wellhead assembly having an axis, comprising:

   an outer tubular wellhead member;

   an inner tubular wellhead member, the inner tubular wellhead member being operable to land within the outer tubular wellhead member, defining a seal pocket between the inner tubular wellhead member and the outer tubular wellhead member;

   a seal ring located in the seal pocket;

   a ratcheted retainer releasably connected to the seal ring and composed of a different material from the seal ring;

   an annular energizing ring selectively urging the seal ring into sealing engagement with the outer tubular wellhead member and the inner tubular wellhead member,

   a recess located on one of an outer diameter of the annular energizing ring and a radially inner diameter of the ratcheted retainer;

   a ratchet clip located within the recess, the ratchet clip having a clip profile on a radially outward surface of the ratchet clip, and wherein the recess and the ratchet clip extend less than a full circumferential distance around the outer diameter of the annular energizing ring or the radially inner diameter of the ratcheted retainer; and

   a retainer profile on the ratcheted retainer or the annular energizing ring, the retainer profile selectively engaged with the clip profile of the ratchet clip.

2. The assembly according to claim 1, wherein the seal ring has a general u-shape in cross section.

3. The assembly according to claim 1, wherein the ratchet clip is biased toward the retainer profile to retain the clip profile in engagement with the retainer profile.

4. The assembly according to claim 1, wherein:

the clip profile comprises a plurality of axially spaced clip teeth extending circumferentially around a portion of the annular energizing ring; and

the retainer profile comprises a plurality of axially spaced retainer teeth extending a full circumference of the seal ring, the retainer teeth being sized and spaced to mate with the clip teeth.

5. The assembly according to claim 1, wherein:

the clip profile comprises a plurality of axially spaced and circumferentially extending clip teeth, each of the clip teeth having an upper surface substantially normal to the axis and a sloped downward facing shoulder; and

the retainer profile comprises a plurality of axially spaced and circumferentially extending retainer teeth, each of the retainer teeth having a lower surface substantially normal to the axis and a sloped upward facing shoulder.

6. The assembly according to claim 1, wherein the ratchet clip comprises a clip outer leg and a clip inner leg and the radially outward surface of the ratchet clip having the clip profile is located on the clip outer leg.

7. The assembly according to claim 1, wherein:

the ratchet clip comprises a curved plate member having an outer surface, an inner surface, and two axially extending sides;

the radially outward surface of the ratchet clip having the clip profile is located on the outer surface; and

a support member protrudes from the inner surface along a height of each of the axially extending sides.

8. The assembly according to claim 1, wherein the ratchet clip has a top end and a bottom end, each of the top end and bottom end extending from a radially inner surface to the radially outward surface, and each of the top end and bottom end having an end surface that slopes downward from the radially inner surface to the radially outward surface.

9. The assembly according to claim 1, wherein:

the ratchet clip has a recessed slot open to a radially outward surface of the ratchet clip, and a bore that extends through ratchet clip at the recessed slot,

a retainer extends through the recessed slot and the bore and into the annular energizing ring; and

the bore has a greater axial height than radial width to allow axial movement of the ratchet clip relative to the retainer.

10. The assembly according to claim 1, wherein the recess of the annular energizing ring has an upper shoulder and a lower shoulder, each of the upper shoulder and the lower shoulder sloping downwards in a radially outward direction.

11. A wellhead assembly having an axis, comprising:

an outer tubular wellhead member;

an inner tubular wellhead member, the inner tubular wellhead member being operable to land within the outer tubular wellhead member, defining a seal pocket between the inner tubular wellhead member and the outer tubular wellhead member;

a seal ring located in the seal pocket, wherein the seal ring has an inner leg and an outer leg circumscribing a portion of the inner leg;

an annular energizing ring having a lower end insertable between the inner and outer legs of the seal ring, so that when the lower end of the energizing ring is inserted between the inner and outer legs of the seal ring, the inner leg of the seal ring is urged radially into sealing engagement with the inner tubular wellhead member and the outer leg of the seal ring is urged radially into sealing engagement with the outer tubular wellhead member, the annular energizing ring further having a recess located on an outer diameter of the annular energizing ring, the recess extending less than a full circumferential distance around the outer diameter of the annular energizing ring;

a ratchet clip located within the recess of the annular energizing ring, the ratchet clip having circumferentially extending clip teeth on a radially outward surface of the ratchet clip; and

a ratcheted retainer releasably connected to the seal ring and composed of a different material from the seal ring, the ratcheted retainer having circumferentially extending retainer teeth on a radially inner diameter of the ratcheted retainer selectively mated with the circumferentially extending clip teeth of the ratchet clip.

12. The assembly according to claim 11, wherein the seal ring has a general u-shape in cross section and the outer leg has an extended portion that extends axially upward beyond the inner leg.

13. The assembly according to claim 12, wherein the ratcheted retainer is attached to the extended portion of the outer leg.

14. The assembly according to claim 11, wherein:

the clip teeth each have an upper surface substantially normal to the axis and a sloped downward facing shoulder; and

the retainer teeth each have a lower surface substantially normal to the axis and a sloped upward facing shoulder.

15. The assembly according to claim 11, further comprising a retainer member retaining the ratchet clip within the recess.

16. The assembly according to claim 11, wherein the ratchet clip is biased to retain the retainer teeth in engagement with the clip teeth.