What is claimed is:

1. A wellhead assembly (11) comprising:

an outer tubular wellhead member (13) with a bore (17) having an axis (19) and a sealing surface (15) extending an axial distance along an inner diameter surface of the bore (17);

wickers (21) in the sealing surface (15) circumscribing the bore (17) along an axially undulating path;

an inner tubular member (41) in the outer tubular wellhead member (13); and

a seal element (47) between the inner tubular wellhead member (41) and the outer tubular wellhead member (13) and urged against the wickers (21) to form a sealing interface.

2. The wellhead assembly (11) of Claim 1, wherein the axial position of each wicker (21) varies sinusoidally.

3. The wellhead assembly (11) of Claim 2, wherein each wicker of the plurality of wickers is substantially parallel to adjacent wickers.

4. The wellhead assembly (11) of Claim 1, wherein the wickers (21) are equidistantly spaced from each adjacent wicker (21).

5. The wellhead assembly (11) of Claim 1, further comprising wickers (55) in a sealing surface on an outer diameter surface of the inner tubular member (41), the wickers (55) circumscribing the inner tubular member (41) along an axially undulating path.

6. The wellhead assembly (11) of Claim 1, further comprising partial wickers (32) in the sealing surface (15), wherein each partial wicker (32) extends along a portion of the circumference of the bore (17) and follows an axially undulating path.

7. The wellhead assembly (11) of Claim 6, wherein partial wickers (32) are proximate axial ends of the sealing surface (15).

8. The wellhead assembly (11) of Claim 6, wherein each of the partial wickers (32) are substantially similar.

9. The wellhead assembly (11) of Claim 6, wherein adjacent partial wickers (32) are equidistantly spaced from each other.

10. A wellhead assembly (11) comprising:

an outer tubular wellhead member (13) with a bore (17) having an axis (19) and a sealing surface (15) extending an axial distance along an inner diameter surface of the bore (17);

wickers (21) in the sealing surface (15) circumscribing the bore (17) along an axially undulating path;

partial wickers (32) in the sealing surface (15), wherein each partial wicker (32) extends along a portion of the circumference of the bore (17) and follows an axially undulating path;

an inner tubular member (41) in the outer tubular wellhead member (13); and

a seal element (47) between the inner tubular wellhead member (41) and the outer tubular wellhead member (13) and urged against the wickers (21) to form a sealing interface.

11. The wellhead assembly (11) of Claim 10, further comprising wickers (55) in a sealing surface on an outer diameter surface of the inner tubular member (41), the wickers (55) circumscribing the inner tubular member (41) along an axially undulating path.

12. The wellhead assembly (11) of Claim 11, further comprising partial wickers in the sealing surface on the outer diameter surface of the inner tubular member (41), wherein each partial wicker extends along a portion of the outer diameter surface and follows an axially undulating path

13. The wellhead assembly (11) of Claim 10, wherein the axial position of each wicker (21) varies sinusoidally.

14. The wellhead assembly (11) of Claim 10, wherein each wicker (21) of the plurality of wickers (21) is substantially parallel to adjacent wickers (21).

15. A method of forming a wellhead assembly (11) comprising:

(a) providing an outer tubular wellhead member (13) having a bore (17), an axis (19), and an inner surface of the outer tubular wellhead member (13) having wickers (21) that circumscribe the bore (17) and vary axially in position around the circumference of the bore (17);

(b) inserting an inner tubular wellhead (41) member in the outer tubular wellhead member (13);

(c) inserting an annular seal (47) in an annulus (52) between the outer tubular wellhead member (13) and the inner tubular wellhead member (41); and

(d) urging the seal (47) against the wickers (21) so that the wickers (21) deform the seal (47) and create a barrier in the annulus (52).

16. The method of Claim 15, wherein step (a) further comprises providing each wicker (21) with a sinusoidally varying axial position.

17. The method of Claim 15, wherein step (a) further comprises providing wickers (55) on an outer circumference of the inner tubular wellhead member (41).

18. The method of Claim 15, wherein step (a) further comprises providing partial wickers on the outer tubular wellhead member (13), wherein the partial wickers extend along a portion of the circumference of the bore (17).

CLAIMS:

1. A wellhead assembly comprising:

an outer tubular wellhead member with a bore having an axis and a sealing surface extending an axial distance along an inner diameter surface of the bore;

wickers in the sealing surface circumscribing the bore along an axially undulating path;

an inner tubular member in the outer tubular wellhead member; and

a seal element between the inner tubular wellhead member and the outer tubular wellhead member and urged against the wickers to form a sealing interface.

2. The wellhead assembly of Claim 1, wherein the axial position of each wicker varies sinusoidally.

3. The wellhead assembly of Claim 1 or Claim 2, wherein each wicker of the plurality of wickers is substantially parallel to adjacent wickers.

4. The wellhead assembly of any preceding Claim, wherein the wickers are equidistantly spaced from each adjacent wicker.

5. The wellhead assembly of any preceding Claim, further comprising wickers in a sealing surface on an outer diameter surface of the inner tubular member, the wickers circumscribing the inner tubular member along an axially undulating path.

6. The wellhead assembly of any preceding Claim, further comprising partial wickers in the sealing surface, wherein each partial wicker extends along a portion of the circumference of the bore and follows an axially undulating path.

7. The wellhead assembly of any preceding Claim, wherein partial wickers are proximate axial ends of the sealing surface.

8. The wellhead assembly of any preceding Claim, wherein each of the partial wickers are substantially similar.

9. The wellhead assembly of any preceding Claim, wherein adjacent partial wickers are equidistantly spaced from each other.

10. A wellhead assembly comprising:

an outer tubular wellhead member with a bore having an axis and a sealing surface extending an axial distance along an inner diameter surface of the bore;

wickers in the sealing surface circumscribing the bore along an axially undulating path;

partial wickers in the sealing surface, wherein each partial wicker extends along a portion of the circumference of the bore and follows an axially undulating path;

an inner tubular member in the outer tubular wellhead member; and

a seal element between the inner tubular wellhead member and the outer tubular wellhead member and urged against the wickers to form a sealing interface.

11. The wellhead assembly of any preceding Claim, further comprising wickers in a sealing surface on an outer diameter surface of the inner tubular member, the wickers circumscribing the inner tubular member along an axially undulating path.

12. The wellhead assembly of any preceding Claim, further comprising partial wickers in the sealing surface on the outer diameter surface of the inner tubular member, wherein each partial wicker extends along a portion of the outer diameter surface and follows an axially undulating path

13. The wellhead assembly of any preceding Claim, wherein the axial position of each wicker varies sinusoidally.

14. The wellhead assembly of any preceding Claim, wherein each wicker of the plurality of wickers is substantially parallel to adjacent wickers.

15. A method of forming a wellhead assembly comprising:

(a) providing an outer tubular wellhead member having a bore, an axis, and an inner surface of the outer tubular wellhead member having wickers that circumscribe the bore and vary axially in position around the circumference of the bore;

(b) inserting an inner tubular wellhead member in the outer tubular wellhead member;

(c) inserting an annular seal in an annulus between the outer tubular wellhead member and the inner tubular wellhead member; and

(d) urging the seal against the wickers so that the wickers deform the seal and create a barrier in the annulus.

16. The method of Claim 15, wherein step (a) further comprises providing each wicker with a sinusoidally varying axial position.

17. The method of Claim 15 or Claim 16, wherein step (a) further comprises providing wickers on an outer circumference of the inner tubular wellhead member.

18. The method of any of Claims 15 to 17, wherein step (a) further comprises providing partial wickers on the outer tubular wellhead member, wherein the partial wickers extend along a portion of the circumference of the bore.

19. A wellhead assembly substantially as herein before described with reference to the accompanying drawings.

20. A method of forming a wellhead assembly substantially as herein before described with reference to the accompanying drawings.