CLAIMS

What is claimed is:

1. A whipstock assembly, comprising:

a whipstock providing a ramped surface and a longitudinal groove defined in the ramped surface;

a lead mill coupled to the whipstock with a shear bolt and providing one or more blades; and

a bearing support arranged within the longitudinal groove and providing opposing sidewalls that define a slot configured to receive one of the one or more blades and thereby prevent the lead mill from rotating with respect to the whipstock.

2. The whipstock assembly of claim 1, wherein the bearing support comprises a material selected from the group consisting of aluminum, bronze, cast steel, mild steel, free machining steel, fiberglass, any derivative thereof, and any combination thereof.

3. The whipstock assembly of claim 1, wherein the opposing sidewalls extend upwardly out of the longitudinal groove and transition into opposing side extensions that rest on the ramped surface and extend in opposing directions away from the slot.

4. The whipstock assembly of claim 1, further comprising:

one or more bumper members arranged within the longitudinal groove and biasing the bearing support against an axial end wall of the longitudinal groove; and

a whipstock plate arranged in the longitudinal groove and supporting the one or more bumper members in engagement with the bearing support.

5. The whipstock assembly of claim 4, wherein the one or more bumper members are made of rubber or an elastomer.

6. The whipstock assembly of claim 1, further comprising a slot bumper arranged within the slot to vertically support the one of the one or more blades.

7. The whipstock assembly of claim 6, wherein the slot bumper is made of rubber or an elastomer.

8. A well system, comprising:

an anchor assembly arranged within a wellbore;

a whipstock assembly extendable within the wellbore to be secured to the anchor assembly, the whipstock assembly including a whipstock that provides a ramped surface and a longitudinal groove defined in the ramped surface, and a lead mill coupled to the whipstock with a shear bolt and providing one or more blades; and

a bearing support arranged within the longitudinal groove and providing opposing sidewalls that define a slot configured to receive one of the one or more blades and thereby prevent the lead mill from rotating with respect to the whipstock.

9. The well system of claim 8, wherein the bearing support comprises a material selected from the group consisting of aluminum, bronze, cast steel, mild steel, free machining steel, fiberglass, any derivative thereof, and any combination thereof.

10. The well system of claim 8, wherein the opposing sidewalls extend upwardly out of the longitudinal groove and transition into opposing side extensions that rest on the ramped surface and extend in opposing directions away from the slot.

11. The well system of claim 8, further comprising:

one or more bumper members arranged within the longitudinal groove and biasing the bearing support against an axial end wall of the longitudinal groove; and

a whipstock plate arranged in the longitudinal groove and supporting the one or more bumper members in engagement with the bearing support.

12. The well system of claim 11, wherein the one or more bumper members are made of rubber or an elastomer.

13. The well system of claim 8, further comprising a slot bumper arranged within the slot to vertically support the one of the one or more blades.

14. A method, comprising:

extending a whipstock assembly into a wellbore, the whipstock assembly including a whipstock that provides a ramped surface and a longitudinal groove defined in the ramped surface, and a lead mill coupled to the whipstock with a shear bolt and providing one or more blades;

applying a torsional load to the whipstock assembly;

assuming the torsional load with a bearing support arranged within the longitudinal groove and providing opposing sidewalls that define a slot configured to receive one of the one or more blades; and preventing the lead mill from rotating with respect to the whipstock with the bearing support.

15. The method of claim 14, wherein applying the torsional load to the whipstock assembly comprises rotating the whipstock assembly to latch into an anchor assembly arranged in the wellbore.

16. The method of claim 14, wherein applying the torsional load to the whipstock assembly comprises rotating the whipstock assembly to bypass a portion of the wellbore.

17. The method of claim 14, wherein assuming the torsional load with the bearing support comprises:

engaging the one of the one or more blades on at least one of the opposing sidewalls; and

transferring the torsional load from the bearing support to the whipstock.

18. The method of claim 14, further comprising:

latching the whipstock assembly into an anchor assembly arranged in the wellbore;

providing an axial load to the lead mill and shearing the shear bolt upon assuming a predetermined axial load;

forcing the bearing support out of engagement with an axial end wall of the longitudinal groove and against one or more bumper members arranged within the longitudinal groove;

removing the axial load on the lead mill; and

urging the bearing support back against the axial end wall of the longitudinal groove with the one or more bumper members.

19. The method of claim 18, wherein the opposing sidewalls extend upwardly out of the longitudinal groove and transition into opposing side extensions that rest on the ramped surface and extend in opposing directions away from the slot, the method further comprising :

rotating the lead mill about a central axis;

advancing the lead mill within the wellbore and thereby riding up the ramped surface of the whipstock; and

milling at least a portion of the bearing support with the lead mill as the lead mill advances up the ramped surface, wherein the side extensions of the bearing support comprises a material selected from the group consisting of aluminum, bronze, cast steel, mild steel, free machining steel, fiberglass, any derivative thereof, and any combination thereof.

20. The method of claim 14, wherein a slot bumper is arranged within the slot, the method further comprising vertically supporting the one of the one or more blades with the slot bumper.