CLAIMS

What is claimed is:

1. A gas turbine engine comprising:

a fan, a first compressor stage and a second compressor stage;

a first turbine stage and a second turbine stage, and wherein said first turbine stage drives said second compressor stage as a high spool, and wherein said second turbine stage drives said first compressor stage as part of a low spool; and

a gear train driving said fan with said low spool, and such that said fan and said first compressor stage rotate in the same direction, and wherein said high spool operates at higher pressures than said low spool.

2. The gas turbine engine of claim 1, further comprising said gear train having a planetary gear, a sun gear, a stationary ring gear, a carrier in which said planetary gear is mounted, and said carrier mounted for rotation about said sun gear and driving said fan.

3. The gas turbine engine of claim 2, wherein a lubricating system is provided for said gear train.

4. The gas turbine engine of claim 3, wherein the lubricating system includes a lubricant input, there being a stationary first bearing receiving lubricant from said lubricant input, said first bearing having an inner first race in which lubricant flows, and a second bearing for rotation within said first bearing, said second bearing having a first opening in registration with said inner first race such that lubricant may flow from said inner first race through said first opening into a first conduit.

5. The gas turbine engine of claim 4, further comprising:

a rotating carrier for supporting a planetary gear wherein said second bearing extends from said rotating carrier about an axis.

6. The gas turbine engine of claim 4, wherein said first conduit lubricates said planetary gears.

7. The gas turbine engine of claim 6, further comprising a first spray bar disposed on said carrier.

8. The gas turbine engine of claim 2, wherein said ring gear having a recess.

9. The gas turbine engine of claim 8, wherein said recess is radially outward of gear teeth on said ring gear.

10. The gas turbine engine of claim 9, wherein said recess is formed by recess portions formed in each of two gear portions which together form said ring gear.

11. The gas turbine engine of claim 1, wherein the fan rotates slower than the first compressor stage.

12. A gas turbine engine comprising:

a fan, a first compressor rotor and a second compressor rotor;

a first turbine rotor and a second turbine rotor, and wherein said first turbine rotor drives said second compressor rotor as a high spool, and wherein said second turbine rotor drives said first compressor rotor as part of a low spool, and a gear reduction driving said fan with said low spool at a reduced speed, and such that said fan and said first compressor rotor rotate in the same direction, and wherein said high spool operates at higher pressures than said low spool; and

a lubrication system for lubricating components across a rotation gap, the lubrication system including a lubricant input, a stationary first bearing receiving lubricant from said lubricant input and having an inner first race in which lubricant flows, and a second bearing for rotation within said first bearing, said second bearing having a first opening in registration with said inner first race such that lubricant may flow from said inner first race through said first opening into a first conduit.

13. The gas turbine engine of claim 12, wherein said first bearing and said second bearing are disposed about an axis.

14. The gas turbine engine of claim 13, wherein said first conduit is parallel to said axis and said opening is perpendicular to said axis.

15. The gas turbine engine of claim 13, further comprising:

a rotating carrier for supporting a planetary gear wherein said second bearing extends from said rotating carrier about an axis.

16. The gas turbine engine of claim 15, wherein said first conduit is parallel to said axis and said first opening is perpendicular to said axis.

17. The gas turbine engine of claim 15, wherein said first conduit lubricates said planetary gears.

18. The gas turbine engine of claim 15, further comprising a first spray bar disposed on said carrier.

19. The gas turbine engine of claim 18, wherein said first bearing has a second inner race and said second bearing has a second opening in registration with said second inner race and a second conduit for passing lubricant to said spray bar.

20. The gas turbine engine of claim 12, wherein said fan rotates slower than the first compressor stage.

21. A gas turbine engine comprising:

a fan, a first compressor stage and a second compressor stage;

a first turbine stage and a second turbine stage, and wherein said first turbine stage drives said second compressor stage as a high spool, and wherein said second turbine stage drives said first compressor stage as part of a low spool;

a gear train driving said fan with said low spool, and such that said fan and said first compressor stage rotate in the same direction, and wherein said high spool operates at higher pressures than said low spool;

said gear train having a planetary gear, a sun gear, a stationary ring gear, a carrier in which said planetary gear is mounted, and said carrier mounted for rotation about said sun gear and driving said fan;

a lubricating system provided for said gear train; and

said ring gear having a recess radially outward of gear teeth on said ring gear.

22. The gas turbine engine of claim 21, wherein said recess is formed by recess portions formed in each of two gear portions which together form said ring gear.

23. The gas turbine engine of claim 21, wherein the fan rotates slower than the first compressor stage.

CLAIMS

1. A gas turbine engine comprising:

a fan, a first compressor stage and a second compressor stage;

a first turbine stage and a second turbine stage, and wherein said first turbine stage drives said second compressor stage as a high spool, and wherein said second turbine stage drives said first compressor stage as part of a low spool; and

a gear train driving said fan with said low spool, and such that said fan and said first compressor stage rotate in the same direction, and wherein said high spool operates at higher pressures than said low spool,

wherein a lubricating system is provided for said gear train and the lubricating system includes a lubricant input, there being a stationary first bearing receiving lubricant from said lubricant input, said first bearing having an inner first race in which lubricant flows, and a second bearing for rotation within said first bearing, said second bearing having a first opening in registration with said inner first race such that lubricant may flow from said inner first race through said first opening into a first conduit.

2. The gas turbine engine of claim 1, further comprising said gear train having a planetary gear, a sun gear, a stationary ring gear, a carrier in which said planetary gear is mounted, and said carrier mounted for rotation about said sun gear and driving said fan.

3. The gas turbine engine of claim 1, further comprising:

a rotating carrier for supporting a planetary gear wherein said second bearing extends from said rotating carrier about an axis.

4. The gas turbine engine of claim 1, wherein said first conduit lubricates said planetary gears.

5. The gas turbine engine of claim 4, further comprising a first spray bar disposed on said carrier.

6. The gas turbine engine of claim 2, wherein said ring gear having a recess.

7. The gas turbine engine of claim 6, wherein said recess is radially outward of gear teeth on said ring gear.

8. The gas turbine engine of claim 7, wherein said recess is formed by recess portions formed in each of two gear portions which together form said ring gear.

9. The gas turbine engine of claim 1, wherein the fan rotates slower than the first compressor stage.

10. The gas turbine engine of claim 1, wherein said first bearing and said second bearing are disposed about an axis.

11. The gas turbine engine of claim 1, wherein said first conduit is parallel to said axis and said opening is perpendicular to said axis.

12. The gas turbine engine of claim 3, wherein said first conduit is parallel to said axis and said first opening is perpendicular to said axis.

13. The gas turbine engine of claim 5, wherein said first bearing has a second inner race and said second bearing has a second opening in registration with said second inner race and a second conduit for passing lubricant to said spray bar.

14. A gas turbine engine comprising:

a fan, a first compressor stage and a second compressor stage;

a first turbine stage and a second turbine stage, and wherein said first turbine stage drives said second compressor stage as a high spool, and wherein said second turbine stage drives said first compressor stage as part of a low spool;

a gear train driving said fan with said low spool, and such that said fan and said first compressor stage rotate in the same direction, and wherein said high spool operates at higher pressures than said low spool;

said gear train having a planetary gear, a sun gear, a stationary ring gear, a carrier in which said planetary gear is mounted, and said carrier mounted for rotation about said sun gear and driving said fan;

a lubricating system provided for said gear train; and

said ring gear having a recess radially outward of gear teeth on said ring gear,

wherein a lubricating system is provided for said gear train and the lubricating system includes a lubricant input, there being a stationary first bearing receiving lubricant from said lubricant input, said first bearing having an inner first race in which lubricant flows, and a second bearing for rotation within said first bearing, said second bearing having a first opening in registration with said inner first race such that lubricant may flow from said inner first race through said first opening into a first conduit.

15. The gas turbine engine of claim 14, wherein said recess is formed by recess portions formed in each of two gear portions which together form said ring gear.

16. The gas turbine engine of claim 14, wherein the fan rotates slower than the first compressor stage.