CLAIMS

1. A gas turbine engine comprising:

a propulsion unit including a fan, and a free turbine connected to drive said fan about a first axis; and

a plurality of core engines, said core engines including at least a compressor, a combustion section, and a turbine, said core engine turbine connected to drive said compressor, and said compressor and said core engine turbine rotating about a second axis; and

said plurality of core engines having an output from said core engine turbines passing over said free turbine.

2. The gas turbine engine as set forth in claim 1, wherein a gear reduction is provided between said free turbine and said fan.

3. The gas turbine engine as set forth in claim 1, wherein said fan delivering propulsion air into a main duct downstream of said fan.

4. The gas turbine engine as set forth in claim 3, wherein an inlet to said core engine is from an ambient inlet separate from said main duct.

5. The gas turbine engine as set forth in claim 3, wherein an inlet duct delivers air from said main duct downstream of said fan across said plurality of core engines.

6. The gas turbine engine as set forth in claim 3, wherein a connecting duct communicates gases downstream of said core engine turbines from said plurality of core engines across said free turbine.

7. The gas turbine engine as set forth in claim 6, wherein gases downstream of said common free turbine are directed back into said main duct.

8. The gas turbine engine as set forth in claim 7, wherein gases directed downstream of said common free turbine are directed into said main duct through struts.

9. The gas turbine engine as set forth in claim 1, wherein said core engines are mounted to rotate about an angle which is generally perpendicular to a rotational axis of said fan.

10. The gas turbine engine as set forth in claim 9, wherein said fan delivering propulsion air into a main duct downstream of said fan.

11. The gas turbine engine as set forth in claim 10, wherein an inlet to said core engine is from an ambient inlet separate from said main duct.

12. The gas turbine engine as set forth in claim 10, wherein an inlet duct delivers air from said main duct downstream of said fan across said plurality of core engines.

13. The gas turbine engine as set forth in claim 12, wherein gases downstream of said common free turbine are directed back into said main duct.

14. The gas turbine engine as set forth in claim 13, wherein gases directed downstream of said common free turbine are directed into said main duct through struts.

15. A method of providing a gas turbine engine comprising the steps of:

(a) providing a propulsion unit incorporating a free turbine and a fan; and

(b) mounting a plurality of core engines to said propulsion unit, with said core engines each including a compressor, a turbine and a combustor, such that said plurality of core engines in combination provide gases to drive said free turbine.

16. The method as set forth in claim 15, wherein said free turbine drives said fan through a gear reduction.

17. The method as set forth in claim 15, wherein an inlet duct tapping air from a main duct downstream of said fan, with said single inlet duct delivering air into said plurality of core engines.

18. The method as set forth in claim 16, wherein said fan delivers propulsion air into a main duct.

19. The method as set forth in claim 18, wherein air delivered into said plurality of core engines coming from an ambient ram inlet.

20. The method as set forth in claim 16, wherein said plurality of core engines receive inlet air from a tap into said main duct.

21. The method as set forth in claim 20, wherein a single connecting duct communicates gases downstream of said plurality of core engines across said free turbine.

22. An aircraft incorporating at least one gas turbine engine comprising:

an aircraft wing mounting a gas turbine engine; and

said gas turbine engine including a propulsion unit including a fan, and a free turbine connected to drive said fan about a first axis, a plurality of core engines, said core engines including at least a compressor, a combustion section, and a turbine, said core engine turbine connected to drive said compressor, and said compressor and said core engine turbine rotating about a second axis, said plurality of core engines having an output from said core engine turbines passing over said free turbine.

Claims

1. A gas turbine engine comprising:

a propulsion unit including a fan, and a free turbine connected to drive said fan about a first axis;

a plurality of core engines, said core engines including at least a compressor, a combustion section, and a turbine, said core engine turbine connected to drive said compressor, and said compressor and said core engine turbine rotating about axes non-coaxial to said first axis;

said plurality of core engines having an output from said core engine turbines passing over said free turbine; and

said propulsion unit being positioned forwardly, and toward an inlet of the gas turbine engine relative to said core engines, and said core engines spaced rearwardly of the propulsion unit, and being separate from said propulsion unit.

2. The gas turbine engine as set forth in claim 1, wherein a gear reduction is provided between said free turbine and said fan.

3. The gas turbine engine as set forth in claim 1, wherein said fan delivering propulsion air into a main duct downstream of said fan.

4. The gas turbine engine as set forth in claim 3, wherein an inlet to said core engines is from an ambient inlet separate from said main duct.

5. The gas turbine engine as set forth in claim 3, wherein an inlet duct delivers air from said main duct downstream of said fan across said plurality of core engines.

6. The gas turbine engine as set forth in claim 3, wherein a connecting duct communicates gases downstream of said core engine turbines from said plurality of core engines across said free turbine.

7. The gas turbine engine as set forth in claim 6, wherein gases downstream of said free turbine are directed back into said main duct.

8. The gas turbine engine as set forth in claim 7, wherein gases directed downstream of said common free turbine are directed into said main duct through struts.

9. A gas turbine engine comprising:

a propulsion unit including a fan, and a free turbine connected to drive said fan about a first axis;

a plurality of core engines, said core engines including at least a compressor, a combustion section, and a turbine, said core engine turbine connected to drive said compressor, and said compressor and said core engine turbine rotating about axes non-coaxial to said first axis;

said plurality of core engines having an output from said core engine turbines passing over said free turbine; and

wherein said core engines are mounted to rotate about axes which are generally perpendicular to said first axis of said fan.

10. The gas turbine engine as set forth in claim 9, wherein said fan delivering propulsion air into a main duct downstream of said fan.

11. The gas turbine engine as set forth in claim 10, wherein an inlet to said core engines is from an ambient inlet separate from said main duct.

12. The gas turbine engine as set forth in claim 10, wherein an inlet duct delivers air from said main duct downstream of said fan across said plurality of core engines.

13. The gas turbine engine as set forth in claim 12, wherein gases downstream of said common free turbine are directed back into said main duct.

14. The gas turbine engine as set forth in claim 13, wherein gases directed downstream of said common free turbine are directed into said main duct through struts.

15. An aircraft incorporating at least one gas turbine engine comprising:

an aircraft wing mounting a gas turbine engine;

said gas turbine engine including a propulsion unit including a fan, and a free turbine connected to drive said fan about a first axis, a plurality of core engines, said core engines including at least a compressor, a combustion section, and a turbine, said core engine turbines connected to drive said compressor, and said compressor and said core engine turbine rotating about axes non-coaxial to said first axis, said plurality of core engines having an output from said core engine turbines passing over said free turbine; and

said propulsion unit being positioned forwardly, and toward an inlet of the gas turbine engine relative to said core engines, and said core engines spaced rearwardly of the propulsion unit, and being separate from said propulsion unit.