CLAIMS:

1. A thermodynamic engine comprising:
    - a thermodynamic expander for expanding a working fluid combined with a second fluid;
    - a separator connected to an exhaust of the expander for separating second fluid from the working fluid;
    - means for passing the second fluid to
        - a heater therefor and thence to
        - a vaporising region;
    - a condenser for condensing the working fluid from gaseous form to a volatile liquid form; and
    - means for passing the condensed working fluid in liquid form to the vaporising region for contact with the reheated second fluid for volatising the working fluid for its work producing expansion in the expander.

2. A thermodynamic engine as claimed in claim 1, wherein the expander is a positive displacement expander.

3. A thermodynamic engine as claimed in claim 1, wherein the expander is a variable displacement expander.

4. A thermodynamic engine as claimed in claim 1, claim 2 or claim 3, wherein the vaporising region is internal to the expander.

5. A thermodynamic engine as claimed in claim 4, wherein the vaporising region is the top dead centre volume of a reciprocating piston and cylinder expander.

6. A thermodynamic engine as claimed in claim 5, wherein the expander is arranged with its cylinder “head” down.

7. A thermodynamic engine as claimed in claim 4, wherein the vaporising region is an inlet region of a turbine.

8. A thermodynamic engine as claimed in claim 1, claim 2 or claim 3, wherein the vaporising region is external to the expander.

9. A thermodynamic engine as claimed in claim 8, wherein the vaporising region is a boiler of a steam engine/turbine and the boiler is adapted for passage of the reheated second fluid into the boiler with the condensed working fluid for intimate contact therewith for heat transfer and vaporisation of the working fluid.

10. A thermodynamic engine as claimed in any preceding claim, wherein, in the case of the second fluid being a liquid, the separator is a liquid/vapour separator arranged on the expander side of the condenser.

11. A thermodynamic engine as claimed in any one of claims 1 to 8, wherein, in the case of the second fluid being a liquid, the separator is a liquid/liquid separator arranged on the side of the condenser remote from the expander.

12. A thermodynamic engine as claimed in any preceding claim, wherein pipework from the exhaust to the separator and from the separator to a collection tank slopes down.

13. A thermodynamic engine as claimed in any preceding claim, including means for heating the second fluid by waste heat.

14. A thermodynamic engine as claimed in any one of claims 1 to 10, including means for heating the second fluid by solar energy.

15. A thermodynamic engine as claimed in any preceding claim, adapted and arranged to use pentane as the working fluid and glycerol (propane-1,2,3-triol) with an optional admixture of propane-1,2-diol as the second fluid.