
United States Patent
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Air vehicle having rotary wing for horizontal as well as vertical flight independent of payload

Abstract

An air vehicle consisting of a rotor hub with one pair of variable camber and variable angle of attack blades, which freely pivot about their hub axle at their aerodynamic center. The hub and each blade contain the fuel for one or more engines on each blade tip. The engines freely pivot about their center of gravity on their blade axle according to the direction of a vane on the outboard engine whose aerodynamic center is aft of the engine pivot axis, allowing both the blades and engines to freely fly into the relative wind as it changes from that of rotary motion to that of the vehicle flight direction, automatically transitioning from vertical flight to conventional flight and back. The air vehicle is independent of payload. It may have an equipment module, payload orientation device and landing gear system. Alternate configurations extend range or facilitate sonic speeds.

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