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(54) Title: WING-IN-GROUND EFFECT VEHICLE

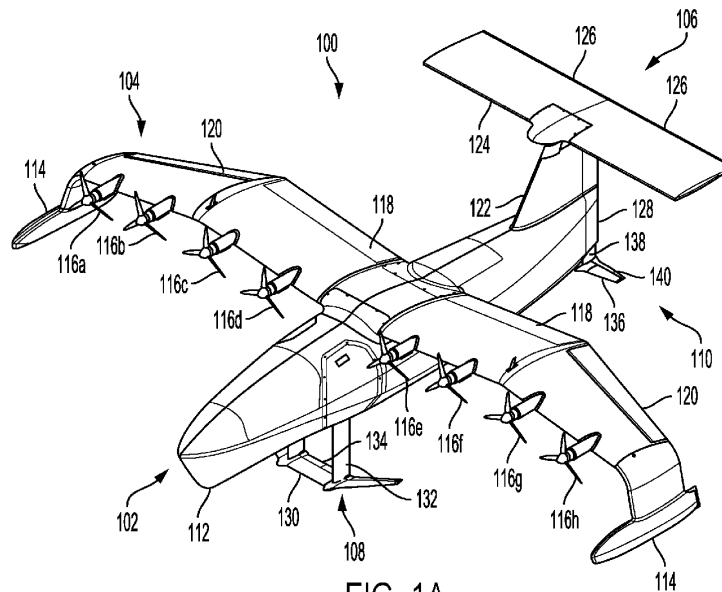


FIG. 1A

(57) Abstract: A wing-in-ground effect vehicle (100) includes (i) a main wing (104) having main wing control surfaces (118, 120); (ii) a tail (106) having tail control surfaces (126); (iii) a blown-wing propulsion system comprising an array of electric motors (116) arranged along the main wing or the tail; (iv) a retractable hydrofoil (108) configured to operate in: (a) an extended configuration in which the retractable hydrofoil extends below a hull (102) of the vehicle for submersion below a water surface and (b) a retracted configuration in which the retractable hydrofoil is retracted at least partially into the hull of the vehicle; and (v) a control system configured to maneuver the vehicle, based on a position, orientation, and velocity of the vehicle it has determined, by (i) causing a change in orientation of the retractable hydrofoil when the retractable hydrofoil is operating in the extended configuration, and (ii) causing a change in orientation of the main wing control surfaces and tail control surfaces when the retractable hydrofoil is operating in the retracted configuration.

[Continued on next page]

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