A flying platform or aircraft with power driven wheels is provided but without conventional drive shafts, gear trains and so on.

9 Claims, 4 Drawing Figures
TRIPHIBIAN MOBILITY PROPULSION DEVICE

The invention described herein may be manufactured, used, and licensed by or for the Government for governmental purposes without the payment to me of any royalty thereon.

Brief Summary:

Conventional hovercrafts use fans for pushing them horizontally along substantially level terrain or water. Their load-carrying decks or cabins tilt out-of-level if they move up an incline. When power is shut off they settle down on the sloping surface and their load-carrying decks tilt out-of-level, possibly causing their cargo to shift or slide off. Most do not have traction and positive drive wheels for use when the going gets tough.

The present invention provides lifting fans for lifting the vehicle in a conventional manner. In addition, turbine-powered wheels are provided to assist in lateral movement of the vehicle or for climbing steep grades. Further, the wheels are adjustable vertically so that the load-bearing deck may be maintained substantially horizontal whether parked on an incline or negotiating a steep incline. In negotiating a steep incline vertical lift from the fans, and traction power from the powered wheels, complement each other to increase the capability of the vehicle.

In the Drawing:

FIG. 1 is a perspective view of the invention above a horizontal surface;

FIG. 2 is a perspective view of the invention moving up an inclined surface;

FIG. 3 is a detailed view of one of the power driven wheels;

FIG. 4 is a detailed view of an air flow control gate for directing the air substantially horizontally, or vertically.

Flying platform or craft 1 preferably has a platform or cabin 2, conventionally powered lift fans 3 and powered wheels 4 mounted for rotation about a generally horizontal axis in any suitable manner, such for example as by gimbal mountings. Wheels 4 are extendable and retractable by conventional apparatus such as pinion 5 engaging teeth on gear rack 6 to extend and retract tubular strut 7. The wheels 4 are preferably spherical in shape, as illustrated in the drawings.

Pressurized gas is fed down through tubular strut 7 and through dome-shaped cap 8 to slidable gate 9 with perforations 10 therein, as illustrated in detail in FIG. 4. The pressurized gas is gated or valved to ports 11 to exhaust somewhat horizontally across the top of wheel 4, or, alternatively, to ports 12, to exhaust downwardly. Wheel 4 has a rough surface, or pockets, illustrated at 13 against which the impinging gas reacts in turbine-like fashion tending to rotate the wheel clockwise, or counterclockwise, depending on the position of gate 9 directing the gas jets through ports 11 or 12.

From the foregoing it will be evident that fans 3 will tend to lift the platform while wheels 4 will tend to propel the vehicle left or right. If desired the wheels may be rotated about the vertical axis of tubular strut 7 by conventional means such as motor 14 and gearing 15. This permits full steerability by turning the wheels in any direction desired.

Further, it will be evident that when gate 9 is positioned to direct compressed gas flow downward through ports 12 the resultant upward thrust will assist in lifting the craft.

Compressed gas for hollow retractable strut 7 may be supplied by any conventional source, turbo-jet engine, or such through conduit 16.

I claim:

1. A vehicle comprising a frame, blowers adapted to exert an upward thrust on said frame, ground-engaging wheels having roughened surfaces and capable of supporting said frame, and means to supply pressurized gas to impinge somewhat tangentially on the surface of at least one of said wheels thereby tending to rotate such wheel and thereby propel said vehicle when said wheel is in contact with a supporting surface such as the earth or water.

2. Apparatus as in claim 1 and means to reverse the gas flow to impinge on the surface from a different direction and rotate said wheel in the opposite direction.

3. The vehicle of claim 2 in which the wheel is of substantially spherical shape, the exterior surface of the spherical wheel being provided with a plurality of indentations to be engaged by the pressurized gas for positive rotation of the wheel.

4. In the vehicle of claim 2, means to independently raise and lower the individual wheels

5. Apparatus as in claim 1 and means to extend some of said wheels to enable earth engagement on an inclined surface while said frame is maintained substantially level.

6. Apparatus as in claim 1 and means to rotate said wheel about a vertical axis to steer said vehicle.

7. The vehicle of claim 1 in which the wheel is of substantially spherical shape, the exterior surface of the spherical wheel being provided with a plurality of indentations to be engaged by the pressurized gas for positive rotation of the wheel.

8. In the vehicle of claim 5, means to independently raise and lower the individual wheels.

9. In the vehicle of claim 1, means to independently raise and lower the individual wheels.

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