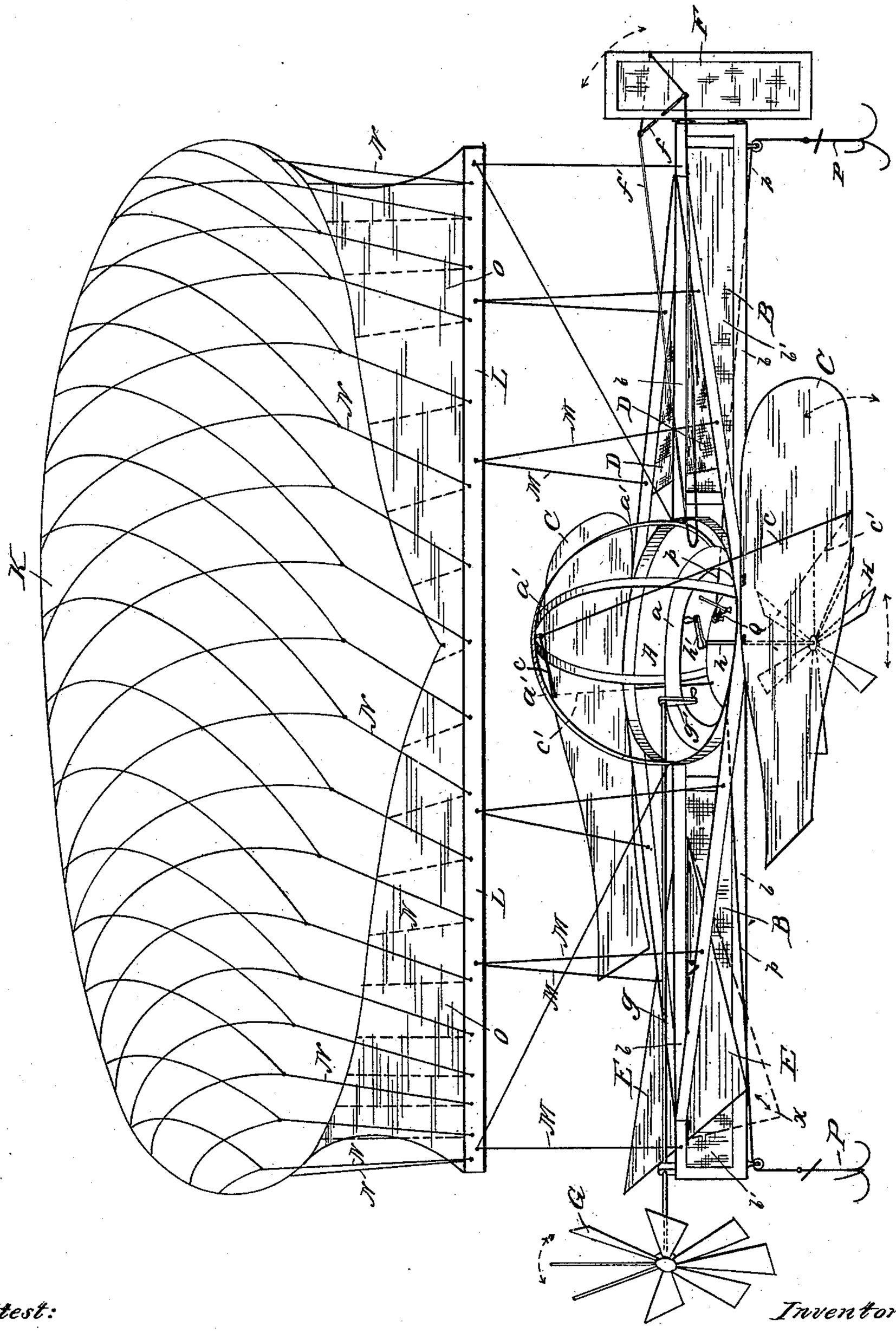
(No Model.)

P. C. CAMPBELL.

AIR SHIP.

No. 362,605. Patented May 10, 1887.



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UNITED STATES PATENT OFFICE.

PETER CARMONT CAMPBELL, OF BROOKLYN, NEW YORK.

AIR-SHIP.

SPECIFICATION forming part of Letters Patent No. 362,605, dated May 10, 1887.

Application filed August 18, 1886. Serial No. 211,228. (No model.)

To all whom it may concern:

Be it known that I, PETER CARMONT CAMPBELL, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Air-Ships, of which the following is a specification.

My invention relates to an improved air-ship, and has for its object to render possible the navigation of the atmosphere by the combined use of a balloon and a flying-machine, utilizing the buoyant force of the atmosphere upon a lighter gas in a balloon and a propeller in the form of a flying-machine, whereby a propelling force may be applied to raise and lower the device or to propel it in a horizontal direction through the air; and it further consists in certain controlling devices whereby its movements through the air may be directed as desired.

The accompanying drawing represents in perspective my improved air-ship.

A is a basket-shaped car, preferably circular in shape, provided with a seat, *a*, extending around and slightly below its rim, and having arched guards *a'* extending upward and meeting at a point above the car.

Extending fore and aft from the car A is arranged a vertical keel, B B, preferably made of a light frame, *b b*, supporting a web, *b'*, of light woven material. Upon the two sides of the car are hinged wings C C, so hinged to the car as to allow a vertical movement at right angles to the car, after the manner of the wings of a bird. These wings C C are preferably made to conform, as near as may be, to the form of the wing of a bird, and their position with regard to the horizontal plane is governed by guy or sheet ropes, passing the one set *c c* from the upper and outer surface of the wings to the upper part of the arched guards over the car and the second set, *c' c'*, to the lower part of the car.

Both fore and aft of the circular body A of the car, and projecting laterally from the keel B B, are arranged triangular guide-wings D D and E E, hinged to the said keel and normally standing out therefrom in a horizontal position, but capable of being swung downwardly with the upper part of the keel as an axis, as shown at *x* in dotted lines. At the forward end of the car and its keel is hinged a vertical rudder, F, after the manner of the rudder of a boat, but of a size to extend both above and below the body of the car, and this rudder is controlled by a cross-head, *f*, and tiller-rope *f'*, extending to the car A. At the rear end of the car, and with its axis in line with the main axis of the car, is mounted a propelling-wheel, G, the driving-shaft *g* being made to extend forward and into the car A and to terminate in a crank, *g'*, by which the propelling-wheel may be rotated.

Beneath the car A is mounted a second propelling-wheel, H, upon a vertical shaft, *h*, which latter is made to extend upward through the bottom of the car, and also fitted with an operating-crank, *h'*.

The car, as above described, is suspended from a balloon, K, of an elongated shape, through an intermediate rigid bar, L, extending over and from end to end of the car by means of suspending-cords M M, extending from the frame of the car to the bar L, and cords N, made fast at one end to the bar L and at the other end to the harness or netting of the balloon. This balloon is of such a size, as compared with the weight of the car and its propelling and steering apparatus, as that its buoyancy when filled with gas will just counteract or balance the force of gravity on the complete device, so that when the said device is ready for use a small power only is necessary to upset said balance to raise or lower the machine in the air. Between the bar L and the balloon, and attached to both, is a web, O, to assist in guiding the device when moving in a horizontal direction, after the manner of the keel of a boat.

To facilitate the landing of the ship, anchors P P are provided, said anchors being preferably suspended one at each end of the keel B B of the car by cords *p p*, running over pulleys secured to the keel and extending to the car A, and then made fast either by cleats or upon a small windlass, as shown at *q*.

What I claim as my invention is—

In air-vehicles, the combination, with a balloon, a keel suspended therefrom, and a car attached at or near the middle of keel, of the

wings C C, hinged to the sides of car and connected therewith by the governing-ropes *c c'*, the triangular guide-wings D D and E E, hinged to keel in front and rear of the car, the vertical hinged rudder F, controlled by a cross-head and tiller-rope extending to the car, and the propellers G H, having shafts extending to and operated by a crank in the car, whereby the said vehicle may be raised, supported, propelled, and guided through the air, as set forth.

Signed at Brooklyn, in the county of Kings and State of New York, this 14th day of August, A. D. 1886.

PETER CARMONT CAMPBELL.

Witnesses:

WARREN C. DICKERSON,

EUGENE PETERS.