

No. 682,970.

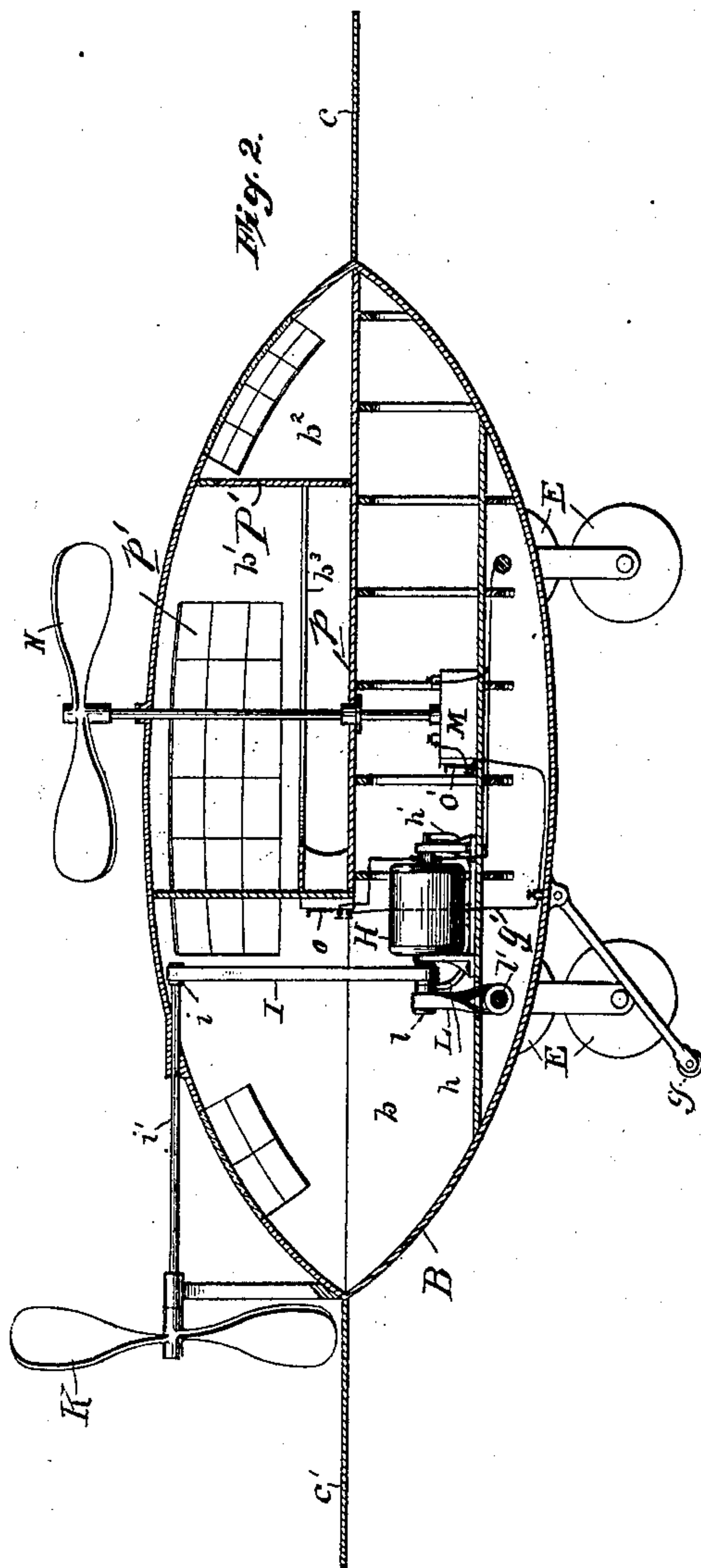
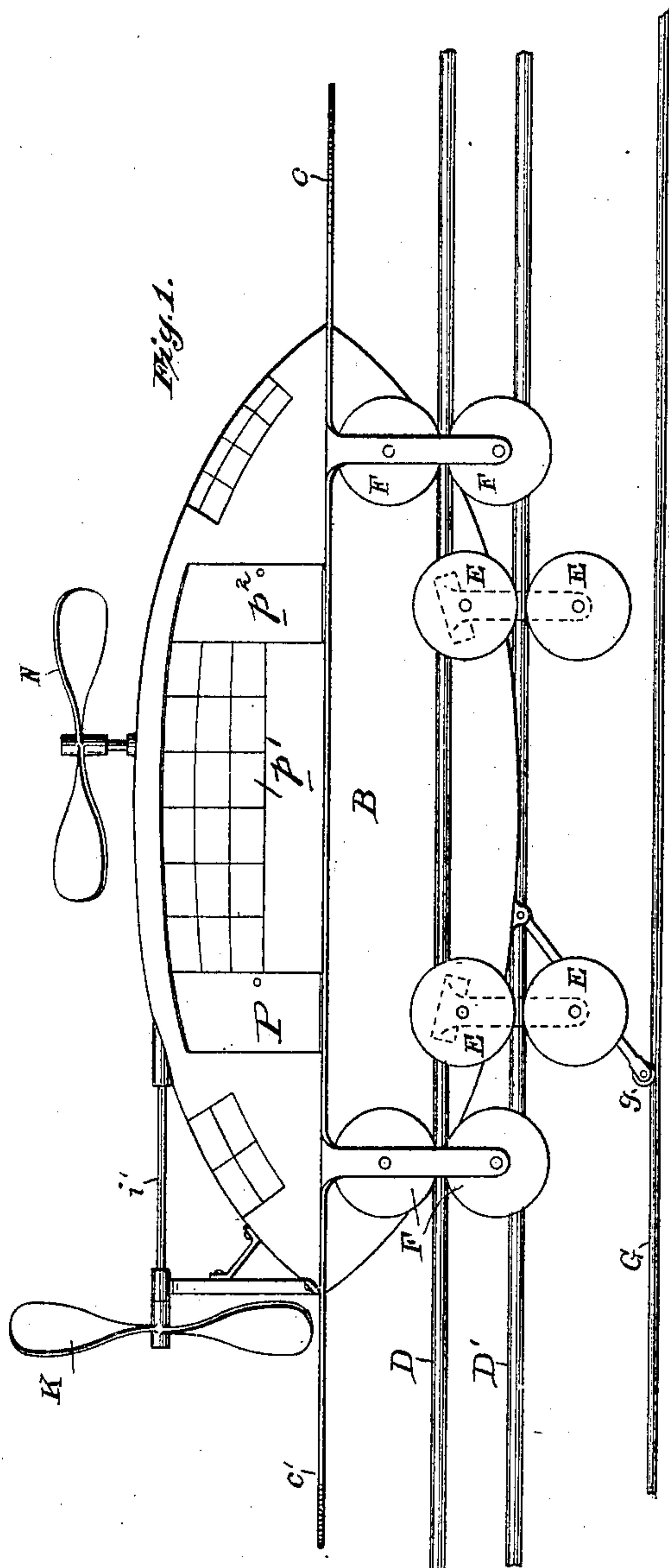
Patented Sept. 17, 1901.

A. BRODBECK.  
AIR CAR.

(Application filed Mar. 16, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses  
H. E. Martague.  
A. C. Emerson.

Inventor;  
Adolf Brodbeck,  
By Milo B. Stevens & Co.,  
Attorneys

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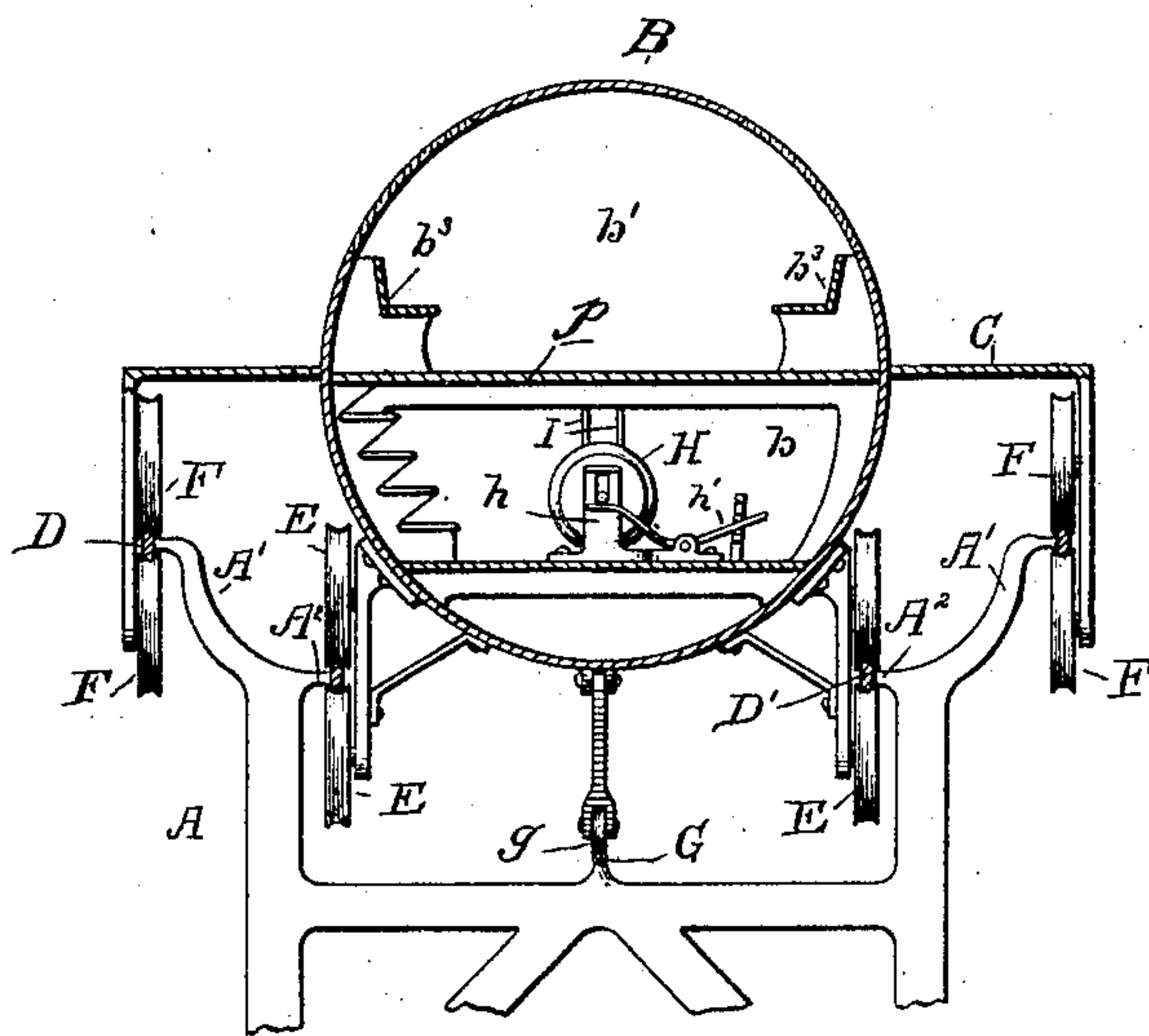
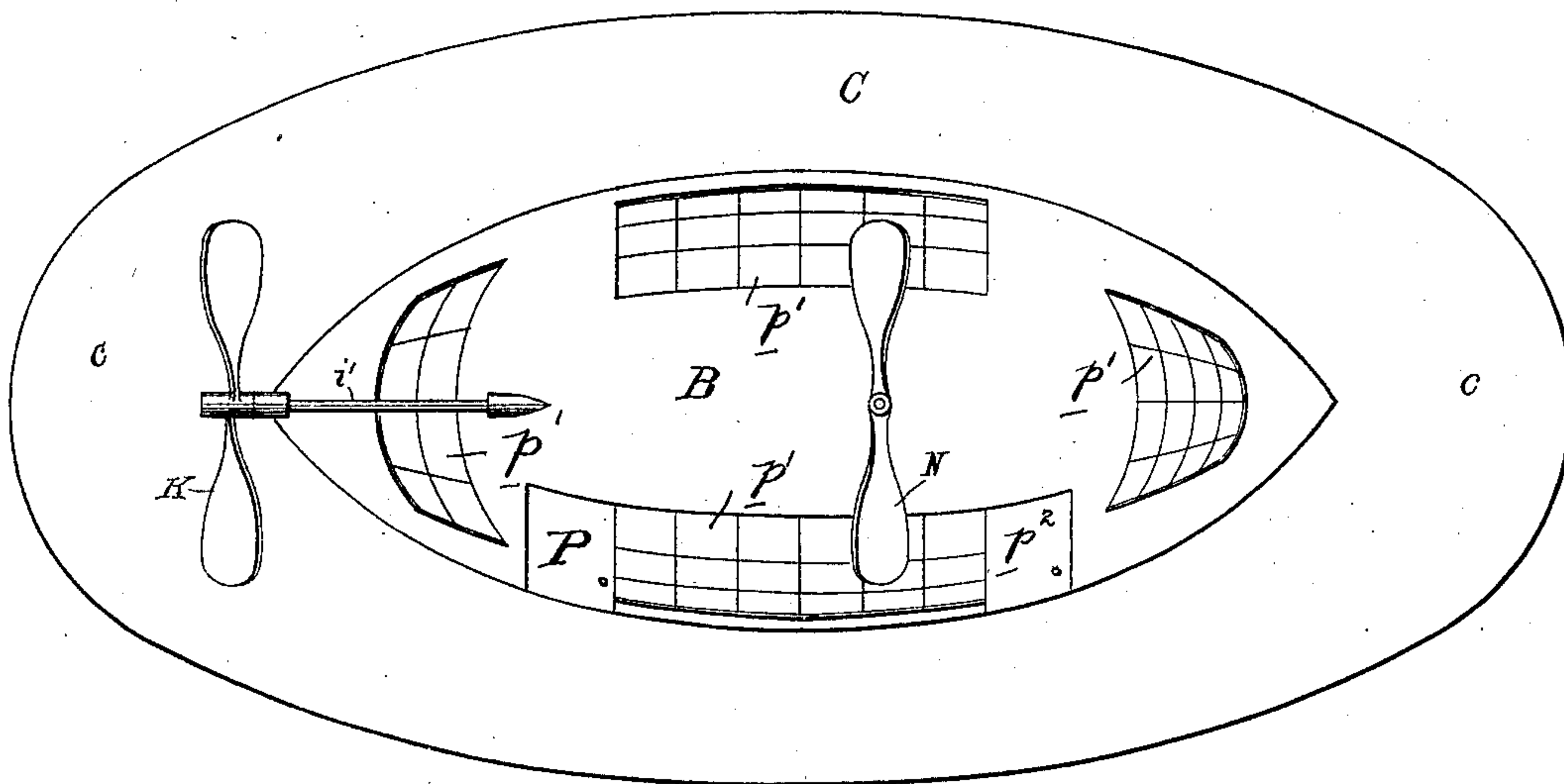
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(No Model.)

**2 Sheets—Sheet 2.**



Witnesses  
H. E. Montague.  
N. C. Armistead.

Inventor,  
Adolf Brodbeck,  
By Milor B. Stevens & Co.,  
Attorney &c.



# UNITED STATES PATENT OFFICE.

ADOLF BRODBECK, OF NASHVILLE, TENNESSEE.

## AIR-CAR.

SPECIFICATION forming part of Letters Patent No. 682,970, dated September 17, 1901.

Application filed March 16, 1901. Serial No. 51,429. (No model.)

*To all whom it may concern:*

Be it known that I, ADOLF BRODBECK, a citizen of the United States, residing at 131 Wharf avenue, Nashville, in the county of Davidson and State of Tennessee, have invented certain new and useful Improvements in Air-Cars; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to an air-car, and particularly to that style of machine adapted to be supported or guided upon rails or cables and operated by suitable motors carried in the body thereof, receiving their power from a suitable source of energy exterior of the car, preferably an electric conductor.

The primary object of the invention is to provide a car of the character designated in such a manner that it will be sufficiently buoyant to relieve the guiding rails or cables of the greater portion of the weight of the car.

The invention also contemplates the employment of novel operating means so arranged that the car may be either propelled by operating mechanism engaging the wheels or rollers adapted to travel upon the rails or cables or by suitable propellers.

Improved details in the construction and operation of the several parts of the machine will be apparent from the detailed description hereinafter when read in connection with the accompanying drawings, forming part hereof, and the appended claims.

In the drawings the preferable embodiment of the invention is illustrated to facilitate clearness and understanding of the same, and when hereinafter referring thereto like reference characters will refer to corresponding parts in the several views.

Figure 1 is an elevational view of the completed structure as it appears in operative condition. Fig. 2 is a longitudinal sectional view thereof. Fig. 3 is a top plan view, and Fig. 4 is a cross-sectional view, of Fig. 2.

Referring more specifically to the draw-

ings, A designates a suitable supporting-standard, one only being shown, but it being obvious that such standards are disposed at suitable distances apart along the line of travel of the machine. The standard is provided with the outwardly-extending arms A' and the inwardly-extending arms A<sup>2</sup>, the latter occupying a plane somewhat lower than that of the former.

B designates an elongated car tapered at both ends, as shown, and divided into the sections b, b', and b<sup>2</sup>. (Best seen in Fig. 4.) The intermediate compartment is to constitute the passenger-room, and suitably disposed around the same are seats b<sup>3</sup>.

Projecting laterally from the sides of the car-body are suitable vanes C, tapered at their forward and rear ends to the points c c'. The peculiar arrangement of these vanes is such that they constitute aeroplanes, tending at all times to impart sufficient buoyancy to the car to retain the same in elevated position, particularly when the car is in motion, so that the weight of the car will not fall upon the supporting or guide rails or cables now to be described. Such guide rails or cables are shown at D D', the former resting upon the arms A' of the standard A and the latter supported at the sides of the arms A' thereof. Adapted to travel upon the rails or cables to support and guide the car are a series of rollers or wheels E and F. Each series comprises two upper and two lower rollers, the former forming antifriction-bearings to support any weight of the car falling thereon and the latter constituting corresponding bearings to confine the car in proper relation to the rails to prevent the car from leaving the same by reason of the buoyancy or upward tendency thereof while in motion. The series F are supported by suitable brackets at the edges of the aeroplanes and travel upon the rails or cables D, and the latter are carried by suitable brackets on the base of the car and travel upon the rails or cables D'.

As a convenient source of power to operate the propelling mechanism of the car an electric conductor G is provided, supported centrally of the standard A intermediate the inner series of rollers on the car. Adapted to contact with this conductor is a trolley-



wheel *g*, connected with a motor *H* in the body of the car through the medium of an auxiliary conductor *g'*. The motor *H* may be of the ordinary or preferred type, designed to be electrically operated, and for purposes to be pointed out the same is adjustable vertically in standards *h* by the adjustments *h'*. A belt *I*, extending around a suitable pulley at one end of the motor-shaft, transmits motion to a pulley *i*, supported above the same, and therethrough imparts a rotary movement to a shaft *i'*, carrying at its end without the car a rear propeller *K*. Passing around a second pulley *l* at the same end of the motor-shaft is a belt *L*, in turn passing around a pulley *l'*, connected by a crank *l''* with one or more of the rollers of one of the series. The belts *I* and *L* are both normally too loose upon their respective pulleys to be effectual in operation, and for the purpose of using either one or the other the motor is adjustable vertically in a manner before explained. By such vertical movement of the motor either the one or the other of the belts is drawn taut around its pulleys, and the operation of the motor will thereupon operate such belt. The connection with the rollers is primarily for the initial movements or starting of the machine, and the propeller is thereafter thrown into operation.

Located at approximately the longitudinal center of the car is a second motor *M* of any desired type, preferably in communication with the source of energy supplying power to the first-mentioned motor. This motor connects with and is designed to rotate the shaft of a horizontally-disposed propeller *N* in an obvious manner. The respective motors are controlled by an operator manipulating the switches *O O'*.

The passenger-section of the car is provided with a flat floor-section *p*, the windows *p'*, and the door *p''*. The section is also provided with the doors *P P'*, communicating with the end chambers of the car, which may be used for storage or some other purposes.

Having thus described the invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. An aerial apparatus comprising a car, supporting or guide rails upon which the car is adapted to run, a source of energy, a motor on the car in communication with said source of energy, a propeller, connections between the propeller and the motor, operative connections between the motor and the supporting or guide rails, and means for imparting motion from the motor to one or the other of said operating means, substantially as described.

2. An aerial apparatus comprising a car, guide or supporting rails upon which the car is adapted to run, a source of energy, a motor on the car in communication with said source of energy, means operated by the motor to propel the car and an aeroplane surrounding the body of the car on a line at substantially the longitudinal center thereof, substantially as and for the purpose described.

3. An aerial apparatus comprising a car, guide or supporting rails upon which the car is adapted to travel, a source of energy, a motor on the car in communication with said source of energy, propelling means operatively connected to said motor, an auxiliary motor carried by the car, supplemental propelling means connected to said last-mentioned motor, substantially as and for the purpose described.

4. An aerial apparatus comprising a car, guide or supporting rails upon which the car is adapted to run, means for propelling the car, an aeroplane surrounding the body of the car, and oppositely-disposed wheels carried by the aeroplane adapted to engage the guide or supporting rails, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ADOLF BRODBECK.

Witnesses:

ANDREW GENNETT,  
A. G. RUTHERFORD.