

No. 786,932.

PATENTED APR. 11, 1905.

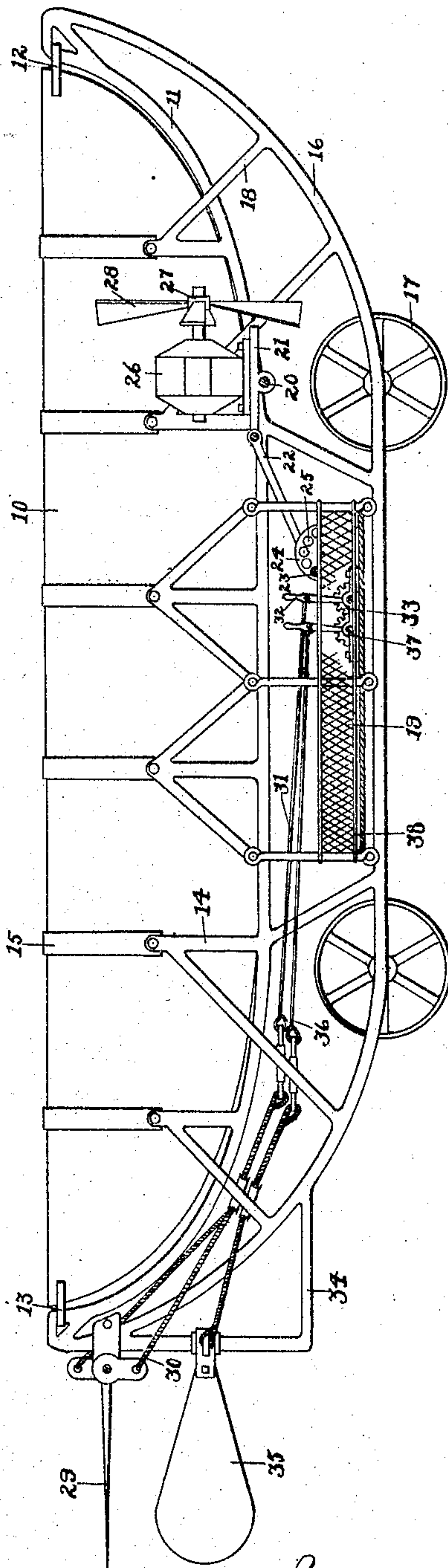
E. F. WOOD.

AIR SHIP.

APPLICATION FILED APR. 7, 1902.

2 SHEETS—SHEET 1.

Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 4.

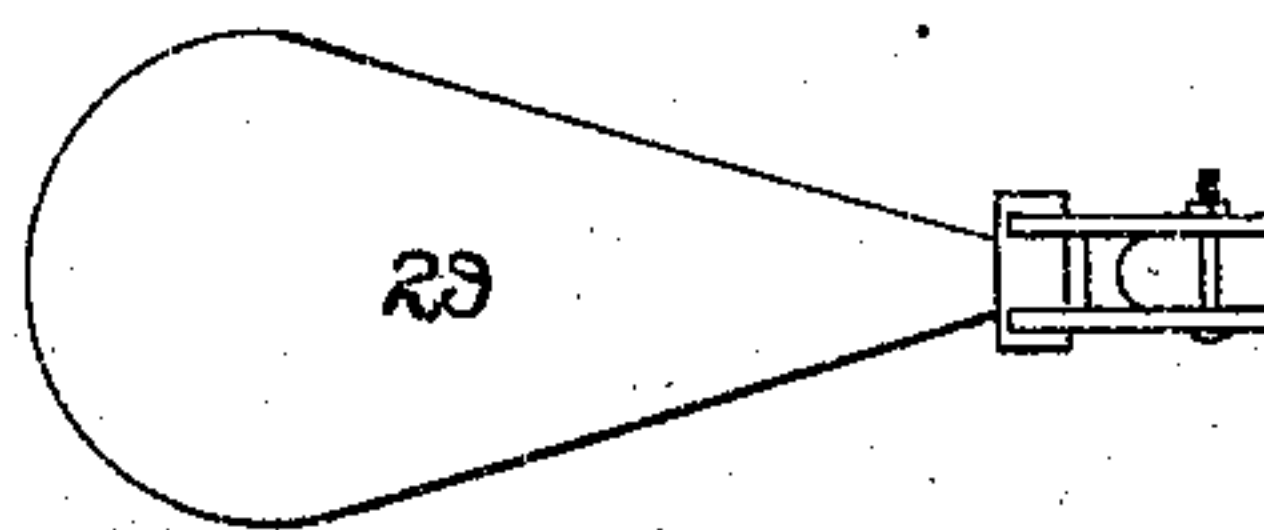


Fig. 3.

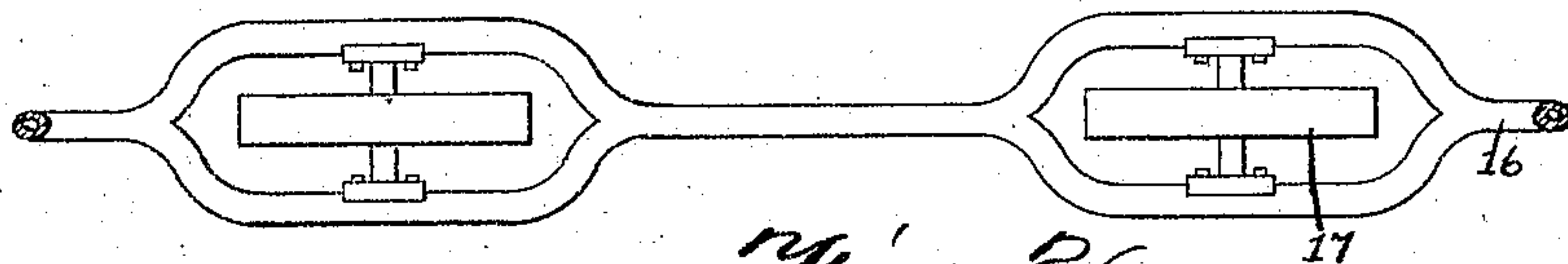
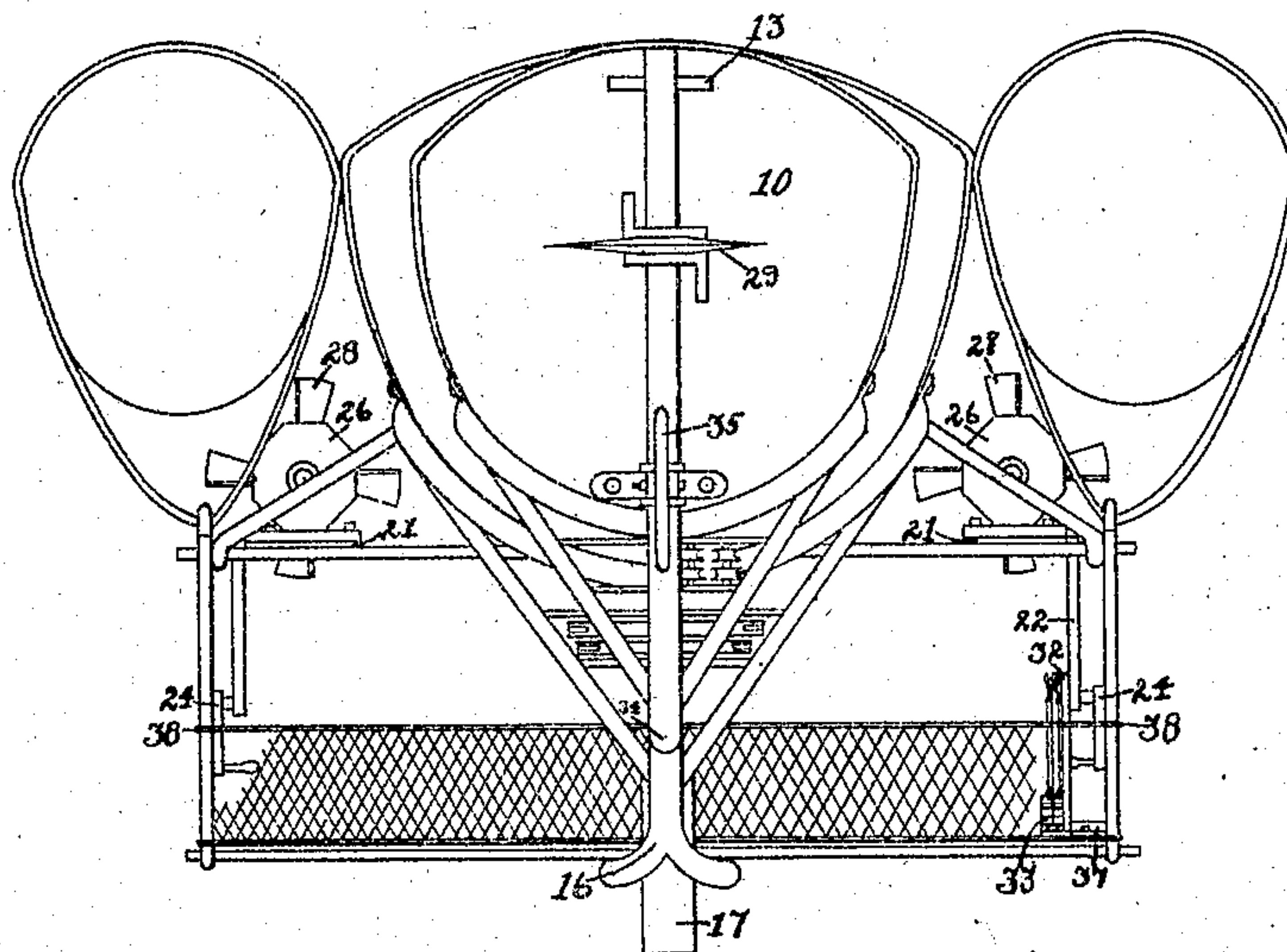


Fig. 2.



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UNITED STATES PATENT OFFICE.

EDWIN F. WOOD, OF COLFAX, IOWA.

AIR-SHIP.

SPECIFICATION forming part of Letters Patent No. 786,932, dated April 11, 1905.

Application filed April 7, 1902. Serial No. 101,675.

To all whom it may concern:

Be it known that I, EDWIN F. WOOD, a citizen of the United States, residing at Colfax, in the county of Jasper and State of Iowa, have
 5 invented certain new and useful Improvements in Air-Ships, of which the following is a specification.

The object of my invention is to provide an air-ship which will produce a minimum amount
 10 of resistance against the air when moving through it by having the top portion of my balloon substantially upright and the lower front and rear portions curved upwardly from the central portion.

15 My object is to afford a greater degree of resistance on the under front surface of the air-ship than on the top portion, thus making it more easy to direct the air-ship upwardly.

20 A further object of my invention is to provide motors attached to the ship in such a way that they can be made to assist in directing the course of the ship at the desire of the operator.

25 A further object is to provide means for allowing the air-ship to move on the ground before it obtains momentum enough to rise upwardly.

30 A further object is to provide rudders, so that the air-ship can be directed upwardly and downwardly, as well as to the right or left, and, further, to provide means for directing the air-ship from the car which is attached to the body portion.

35 A further object is to provide a series of balloons which can be adjusted immediately over the car and comparatively near to it, so that the valves in the balloons can be easily controlled.

40 My invention consists in certain details in the construction, arrangement, and combination of the various parts of the device whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claim, and illustrated in the accompanying drawings, in which—
 45

Figure 1 shows a side elevation of the air-ship, showing the car attached to it and one of the motors attached to the side of the air-ship and a propeller attached to said motor.
 50 Fig. 2 shows a rear end elevation of the air-

ship. Fig. 3 shows in detail a plan view of the wheels attached to the under surface of the air-ship and the way in which these wheels are attached, and Fig. 4 shows in detail a plan view of the upper rudder for directing the
 55 air-ship upwardly or downwardly.

Referring to the accompanying drawings, I have used the reference-numeral 10 to indicate the balloons, of which there are three in number, a central balloon and two side balloons, which form the upper portion of my device. The upper portion of each balloon is substantially flat. The lower portion of each balloon, however, at their forward and rear ends are curved upwardly for the purposes
 65 hereinafter made clear.

Firmly attached to the under surface of the balloons 10 I have provided an upper supporting-bar 11, attached to the front upper portions of the balloons by means of the ring
 70 12 and to the rear upper portions by means of the ring 13. The bar 11 has the upwardly-curved side braces 14 attached thereto and in such a way that they engage the lower portion of the central balloon, said curved braces
 75 being strengthened by inclined braces connected to the same and the lower longitudinal bar.

Attached to each end of the braces 14 and extending around the central balloon are the
 80 straps 15; provided to support the car by means of the balloons, as the outside balloons are firmly attached to the central balloon and also to the car.

Firmly attached to the ends of the upper
 85 bar 11 is a car-supporting bar 16, having the wheels 17, rotatably mounted in it and a portion of said wheels extending below said frame in such a way that the wheels will support the air-ship when it is on the ground. This car-
 90 supporting bar 16 is firmly attached to the bar 11, at each end thereof and throughout the entire length, by means of the braces 18. The car, it will be noted, is suspended from the upper longitudinal bar and is located be-
 95 tween said bars.

Mounted between the bar 11 and the bar 16 is the car 19, so placed that the operator can easily get into it before the balloons start and will give him a sufficient amount of room to
 100

operate his various mechanisms in directing the course of the air-ship.

Pivotaly attached to each side of the bar 11 and in front of the car 19 by means of the
5 pivot 20 is the tilting platform 21, having the rod 22, pivotaly attached to the rear edges thereof, and having the pin 23 attached at right angles to the other end of it and extending above the car 19.

10 Attached to the side of the car for engaging the pin 23 I have provided the circular plate 24, having the openings 25 therein, said openings being designed to receive the pin 23, and thus hold the tilting platform 21 from move-
15 ment and also allow the operator to tilt the rear edge of the platform up or down at his pleasure and be able to hold said platform 21 in any position that is desired by him.

Mounted upon the tilting platform 21 and
20 firmly attached to it is the motor 26, having the propeller 27 rotatably attached to the front portion of it, said propeller having the flanges 28 thereon. The motor is so attached to the tilting platform that by moving the rod
25 22 the propellers will be either moved upwardly or downwardly and assist in directing the air-ship. The front portion of the air-ship will be moved upwardly or downwardly corresponding to the direction of the pro-
30 pellers.

Attached to the rear end of the car-supporting frame 16 is the rudder 29, extending rearwardly from the ship and horizontal to it. It is so attached to the frame 16 that it can be
35 moved upwardly or downwardly, and thus direct the ship in a corresponding direction. To the forward end of said rudder 29 I have firmly attached the directing apparatus 30, which is attached to rods 31 and levers 32, which are
40 pivotaly attached to the car 19, said levers having a lever on the side thereof that can be raised and lowered slightly to engage the cogs 33 at the base of the levers 32, so that the rudder can be held at any desired position.

45 To the rear end of the car-supporting frame 16 I have attached the rudder-bearing frame 34, having the rudder 35 thereon rotatably mounted on said rudder-bearing frame. The rudder on the rudder-bearing frame is ar-
50 ranged in a vertical position relative to the air-ship and capable of movement horizontally, so that the balloons can be directed either to the right or to the left, and thus move the

ship in a corresponding direction. The rudder 35 is operated in the same way as the rudder 29, it being connected to the car by means of the rods 36 and the levers 37. 55

I have provided a railing 38 around the car 19, to which the circular metal plate 24 is attached and which enables the operator to move
60 around in the car without danger of falling out of it.

In practical use and assuming that the operator desires to start the car he fills his balloons with the proper substance and places
65 himself in the car and tilts his propellers upwardly in such a way that they will catch the air and have a tendency to draw the ship into the air. He then starts his propeller running by means of the motor 26 and adjusts his rudders in a desired direction. The car will then
70 be drawn forwardly on the wheels 17 until the drawing forces of the propeller cause the ship to be drawn upwardly. He then directs his ship by means of the rudders and the propellers, it being a decided advantage to have a minimum amount of resistance at the top of the balloons and a great resistance on the lower front portion of them, thus keeping the balloon up in the air more easily. 80

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States therefor, is—

In an air-ship the combination with a frame comprising longitudinally-disposed spaced
85 bars having upturned end portions that are connected at their terminals, a car suspended from the upper bar and located between said bars, upwardly-extending curved braces carried by the upper bar and projecting on opposite sides thereof, inclined braces connecting the lower longitudinal bar and the curved
90 braces, a balloon fitted between the upturned ends of the longitudinal bars and between the ends of the curved braces, connections between the said ends of the longitudinal bars and the ends of the balloon, straps connected to the ends of the upturned braces and passing over the balloon transversely to secure said balloon snugly in said braces, and means mounted on
100 the frame for propelling the ship.

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Witnesses:

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