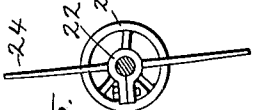
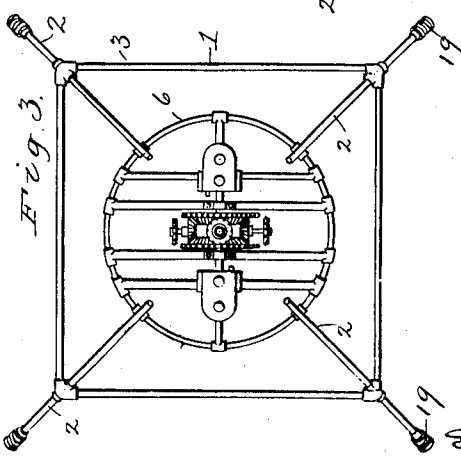
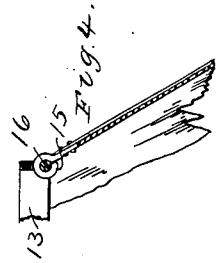
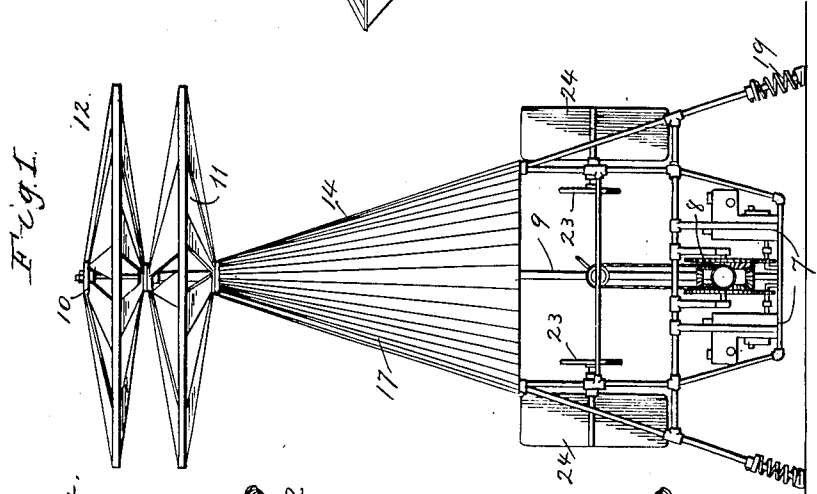
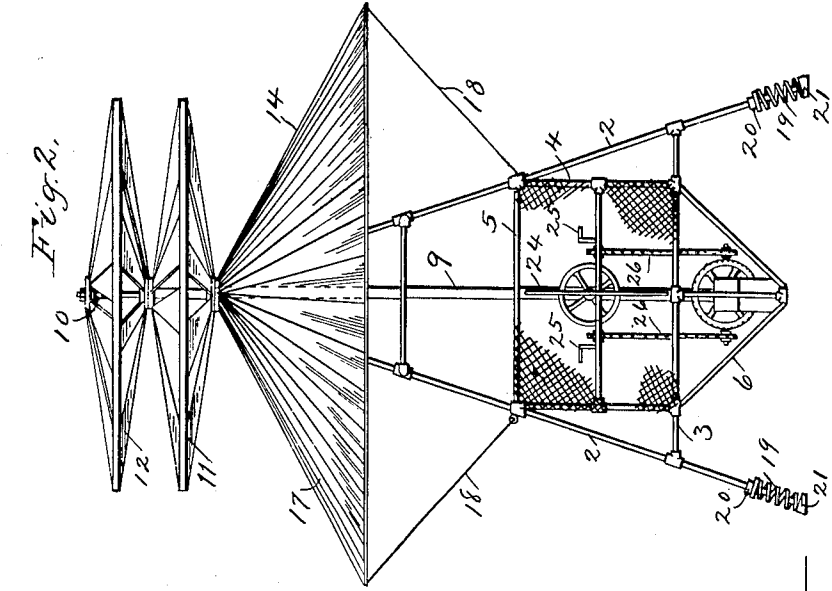


S. A. DAY.
FLYING OR AIR CAR.
APPLICATION FILED MAY 16, 1906.

3 SHEETS—SHEET 1.



Witnesses
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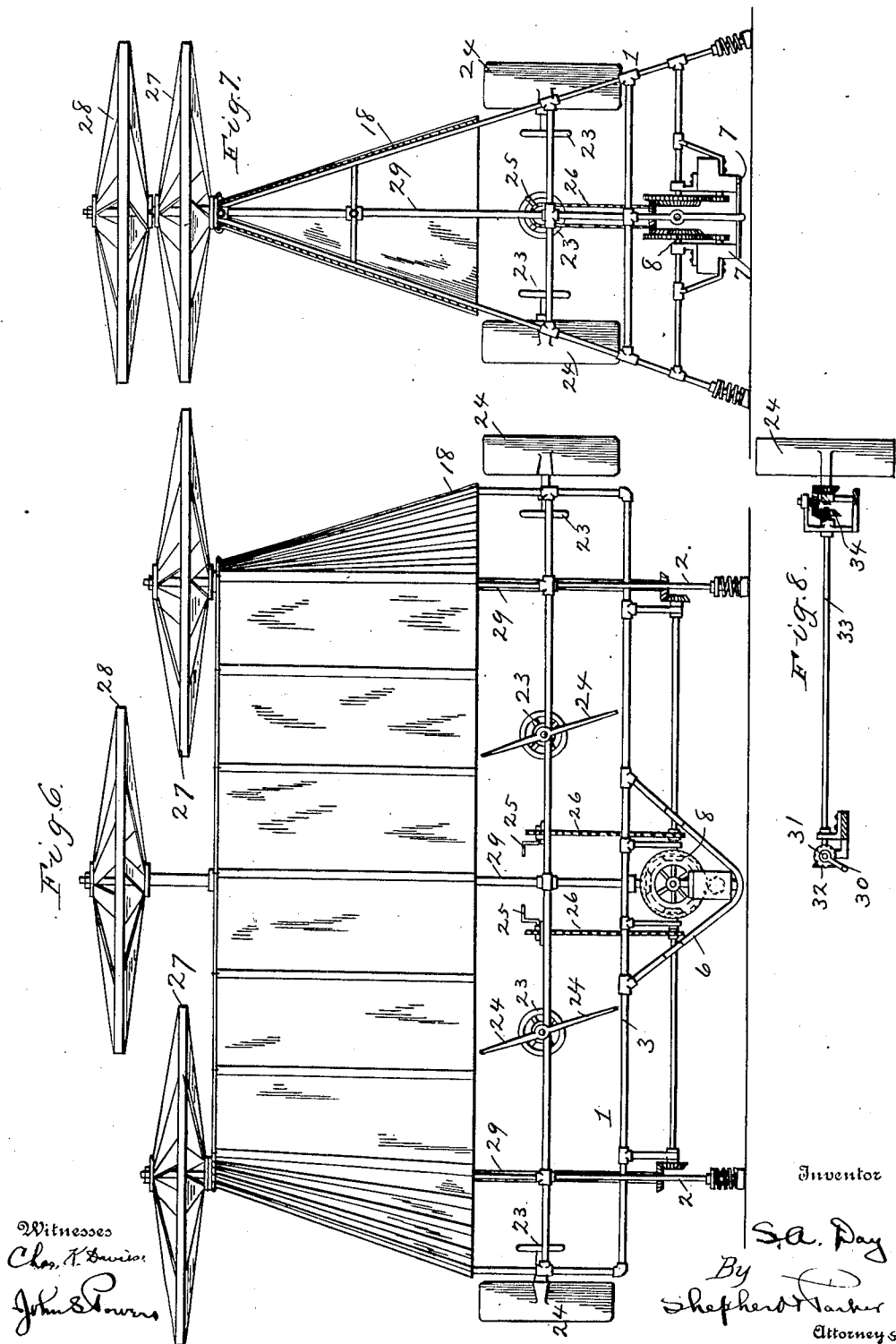
PATENTED JAN. 7, 1908.

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FLYING OR AIR CAR.

APPLICATION FILED MAY 16, 1906.

2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

SELDEN A. DAY, OF PARIS, FRANCE.

FLYING OR AIR CAR.

No. 875,787.

Specification of Letters Patent.

Patented Jan. 7, 1908.

Application filed May 16, 1906. Serial No. 317,232.

To all whom it may concern:

Be it known that I, SELDEN A. DAY, citizen of the United States, residing at Paris, France, have invented certain new and useful Improvements in Flying or Air Cars, of which the following is a specification.

This invention relates to new and useful improvements in flying or air cars, and more particularly to that type in which the flotation is assured by means of propellers and in which the gas bag commonly employed is eliminated.

The invention aims to provide a dirigible car provided with steering means of novel construction and of novel operation, which in the performance of their functions co-act with the propelling means.

The invention particularly comprises a car of the type set forth provided with a series of propellers which exert a lifting influence by generating a downward current of air. This current is utilized in directing the car, and for which purpose a series of adjustable inclined blades or vanes are provided which intercept the downward current of air at an angle, in order to give the car a lateral displacement in the desired direction with relation to its vertical position as controlled by the lifting means.

Means are further provided for directing the downward current of air upon the inclined blades or vanes, and this means comprises a canopy, which in addition to the function above noted, serves the dual function of a covering or awning to protect the occupants of the car from the elements, and of an expansible parachute to compensate for momentum in the downward movement of the car.

In connection with the several novel means above described, the invention has for a subsidiary object the provision of a light framework and of a cover therefor which shall offer the least resistance in the lifting and flight of the car, in order that the car may not be impeded in its elevation and travel by the weight and form of its component parts.

The detailed construction will appear in the course of the following description, in which reference is had to the accompanying drawings forming a part of this specification, like numerals designating like parts throughout the several views, wherein

Figure 1 is an elevation of car constructed in accordance with my invention, Fig. 2 is a

similar view showing the operation of the canopy in its expansible action to serve as a parachute, Fig. 3 is a top plan view, the canopy being removed, Fig. 4 is a detail longitudinal section of the canopy and the supporting collar therefor, Fig. 5 is a detail side elevation of an adjustable steering blade or vane, Fig. 6 is a side elevation of a car similar to that shown in Fig. 1, but of somewhat different shape and embodying a slightly modified adaptation of parts, Fig. 7 is a vertical transverse section of the same, and Fig. 8 is an elevation of an efficient mechanism for adjusting or setting the steering blades or vanes.

In the preferred embodiment of my invention, I employ a light framework 1, formed of tubular metal and comprising supporting corner posts 2 which converge upwardly toward a common meeting point and give the frame 1 the conformation of a pyramid. Secured to the posts 2 at a short distance above their lower ends, is a rectangular frame 3 which forms a support for the superstructure of the car and upon which the floor of the car is secured. A railing or guard entirely surrounds the car and comprises vertical corner posts 4, secured to the posts 2 and frame 3, and top, side bars and end bars 5. Depending from the frame 3 is a substantially inverted cone or cup-shaped basket 6, within which is mounted the motor 7 and the transmission gear 8. The gear 8 is of the differential type and serves to simultaneously drive in opposite directions a hollow shaft 9 and a shaft 10 extending therethrough in interior concentric relation. The shaft 9 carries a propeller 11 and the shaft 10 carries a propeller 12 in superposed relation to the propeller 11 and having its blades disposed at an angle thereto.

The propellers 11 and 12 are arranged in accordance with well known laws of physics, whereby the current developed by the mechanism is impelled in a direction opposite to the direction of travel of the object propelled. The posts 2 have connection at their upper converging ends with an annulus 13, from which a canopy 14 is loosely suspended in any desired manner. A practical embodiment of this feature is shown in Fig. 4, wherein the canopy 14 carries at its upper edge a series of suspension hooks 15 engaging loosely in apertures 16 provided therefor in the annulus 13.

The canopy 14 is constituted of a plurality

of tapered slats 17 disposed in supplemental relation, so that said canopy is provided with sloping sides and has the configuration of a cone. The slats 17 are flexibly connected
 5 with one another in order that they may be capable of ready expansion, as shown in Fig. 2, wherein the canopy is serving its function as a parachute. A series of restraining cables 18 have connection with the lower
 10 edge of the canopy 14 and at desired points upon the frame 1.

The posts 2 are provided severally at their lower ends with cushioning elements for absorbing the shock when the car makes
 15 a landing. The cushioning elements comprise springs 19 carried by adjustable collars 20, sleeved upon the posts 2 and blocks or shoes 21 carried by said springs 19. Mounted upon the side of the car in bearings provided
 20 in the frame 1, are horizontal stub shafts 23, carrying at their inner ends hand wheels 23 and upon their outer ends, rigidly secured steering blades or vanes 24 for controlling the direction of travel of the car. The blades 24
 25 are adjusted at any desired incline by rotation of the hand wheels 23 in the proper direction and are disposed so as to receive the downward currents of air generated by the propellers 11 and 12 in their lifting action.
 30 These currents are deflected outward at an angle upon the blades or vanes 24 by the inclined sides of the canopy 14.

For the purposes of testing the working of the apparatus, or resisting a too rapid descent
 35 when the motor has been cut off too soon, I provide manually operated means for actuating or blocking the propellers 11 and 12 comprising crank shafts 25 carried in the frame 1 and provided with sprockets over
 40 which are trained chains 26 operatively connected to the gearing 8. When the crank shafts are operated by hand, movement is imparted to the gearing 8 and the propellers 11 and 12 are driven in the desired direction.

The construction shown in Figs. 1, 2 and 3 comprises a car formed with equilateral sides and a substantially circular canopy. The construction shown in Figs. 6 and 7 comprises a car of elongated proportions provided
 50 with an oval canopy 18. In the construction shown in Figs. 6 and 7 a modified adaptation of propellers is employed, comprising propellers 27 arranged at each end of the car and the propeller 28 disposed there-
 55 between in superposed relation and overlying the horizontal plane of the propellers 27. The propellers 27 and 28 are severally driven from vertical shafts 29 extending through the car and operatively connected to the gearing
 60 8. The steering blades or vanes 24 are arranged preferably in pairs on each side of the car and singly at each end of the car.

With reference to Fig. 8, a novel adjusting means of steering blades or vanes 24 is illus-
 65 trated, comprising a hand crank 30 provided

with a beveled pinion 31 meshing with a similar pinion 32 carried upon a drive shaft 33 provided with a differential transmission 34 suitably supported at the end thereof and through which motion in the desired direc-
 70 tion is imparted to the blade or vane 24 connected thereto.

In operation the propellers 11 and 12 have a lifting action and raise the car in a substantially vertical line of travel by generat-
 75 ing a downwardly traveling current of air; which being deflected outward upon the inclined side of the canopy 14, and impinging upon the blades 24 which there present themselves at such angles thereto that the down-
 80 ward currents of air upon the same will so operate as to effect a lateral or angular displacement of the car as desired, by which means the car is balanced, steadied and steered.

Having described my invention, what I claim, is:

1. A flying or air car comprising a car body or carriage, rotative means for elevat-
 90 ing said car body or carriage by the generation of downwardly moving air currents, said means rotating on a fixed axis with relation to said body or carriage, and a plurality of independently operable elements for utilizing said air currents to give the car
 95 a lateral displacement to move the same from place to place.

2. A flying or air car, comprising a car body or carriage, rotative means for elevat-
 100 ing said car body or carriage by the generation of downwardly moving air currents, said means rotating on a fixed axis with relation to said body or carriage, and a plurality of independently operable elements for utilizing said air currents to give the car
 105 an angular displacement to turn the same on its vertical axis or change its direction from left to right.

3. A flying or air car, comprising a car body or carriage, rotative means for elevat-
 110 ing said car body or carriage by the generation of downwardly moving air currents, said means rotating on a fixed axis with relation to said body or carriage and a plurality of independently operable elements
 115 for utilizing said air currents to give the car a lateral displacement to move it from one place to another or an angular displacement to turn it on its vertical axis or change its direction of movement from right to left at
 120 the will of the operator.

4. A flying or air car, comprising a car body or carriage, means disposed above said car body or carriage for elevating said car
 125 by the generation of downwardly moving air currents, and one or more independently operable blades or vanes mounted on said car body or carriage for utilizing said down-
 130 wardly moving air currents to control the movement of said car.

5. A flying or air car, comprising a car body or carriage, one or more rotatably mounted shafts extending upward therefrom, rotatable means carried by said shaft or shafts for elevating said car by the generation of downwardly moving air currents, means for rotating said shaft or shafts and elevating means, and independently operable elements carried by said car body and located in the path of movement of said air currents, adapted to utilize the same to control the movement of said car.

6. A flying or air car, comprising a car body or carriage, rotative means, above said car body or carriage, for elevating said car by the generation of downwardly moving air currents, said means rotating on a fixed axis with relation to said car, means for preventing the rotation of said car and independently operable elements for utilizing the downwardly moving air currents to control the movements of said car.

7. A flying or air car comprising a car body or carriage, shafts extending vertically upward therefrom, superimposed propeller wheels secured thereto and adapted to elevate the car by the generation of downwardly moving air-currents, means, in engagement with said shafts to rotate said wheels in opposite directions and independently operable elements located in the path of movement of said air-currents to control the movement of the car.

8. A flying or air car, comprising a car body or carriage, rotative means located above said car body or carriage for elevating said car by the generation of downwardly moving air currents, said means rotating on a fixed axis with relation to said car body

or carriage, blades or vanes for utilizing said air currents to control the movement of said car and means for shielding the occupants of said car body or carriage from said air currents and deflecting them upon said blades or vanes.

9. A flying or air car provided with means for elevating the same by the generation of downwardly moving air currents and an expansible canopy located in the path of said air currents.

10. In a flying or air car provided with means for elevating the same by the generation of downwardly moving air currents and an expansible canopy in the path of said air currents, said canopy being designed to automatically open in case of the too rapid descent of the car.

11. A flying or air car provided with means for moving the same by the generation of downwardly moving air currents and an expansible canopy formed with hinged sections located in the path of said air currents.

12. A flying or air car provided with the means for elevating the same by the generation of downwardly moving air currents and a tent-like canopy located in the path of said air currents, said canopy being formed with flexibly connected sections and designed to automatically open in case of the too rapid descent of the car.

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

SELDEN A. DAY.

Witnesses:

JOHN S. PILLSBURY,
ALLAN MACFARLANE.