

APPLICATION FILED SEPT. 20, 1905.

Patented May 22, 1917.

3 SHEETS—SHEET 1.



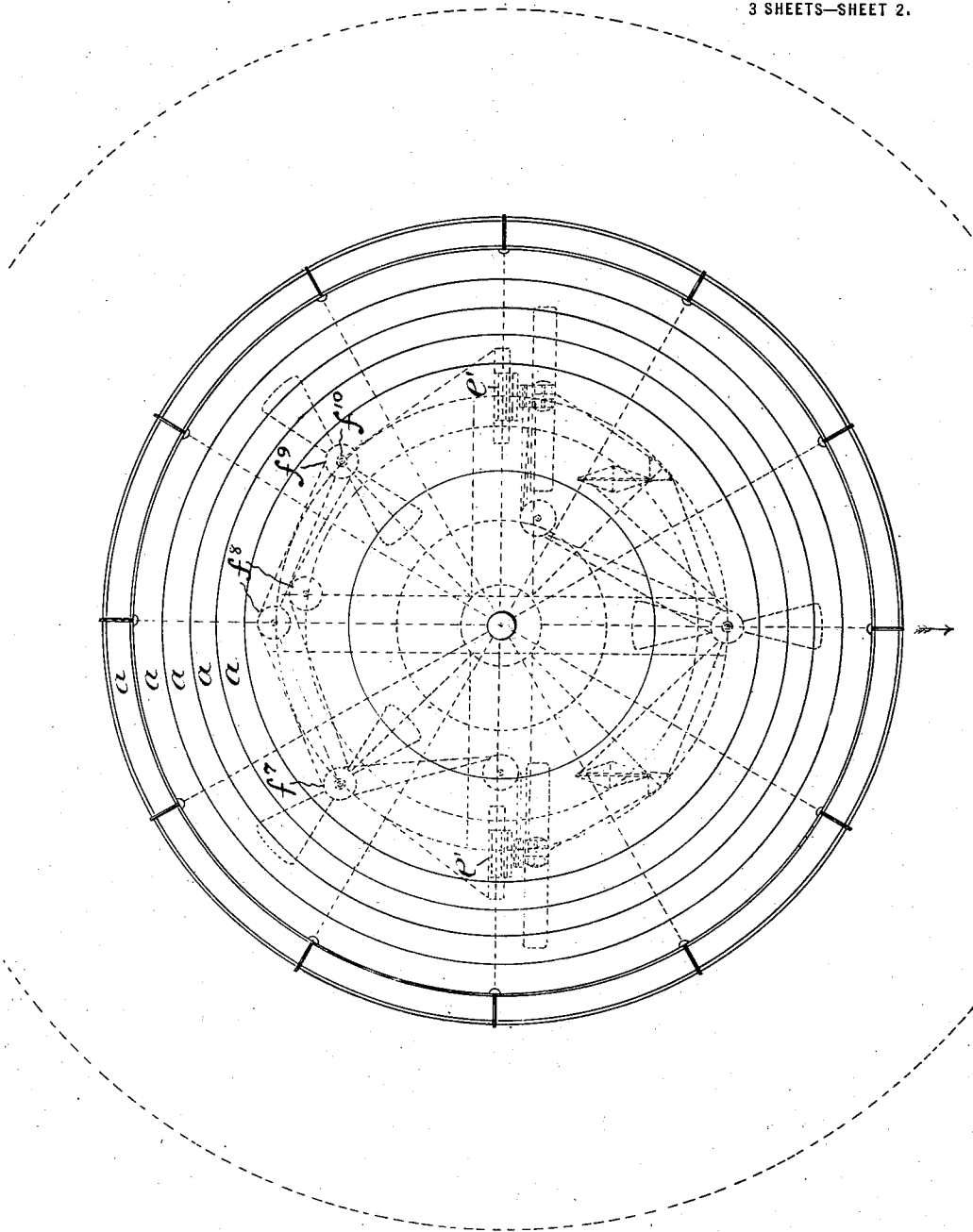
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FLYING MACHINE.
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1,226,985.

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3 SHEETS—SHEET 2.



WITNESSES

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Fig. 2-

INVENTOR

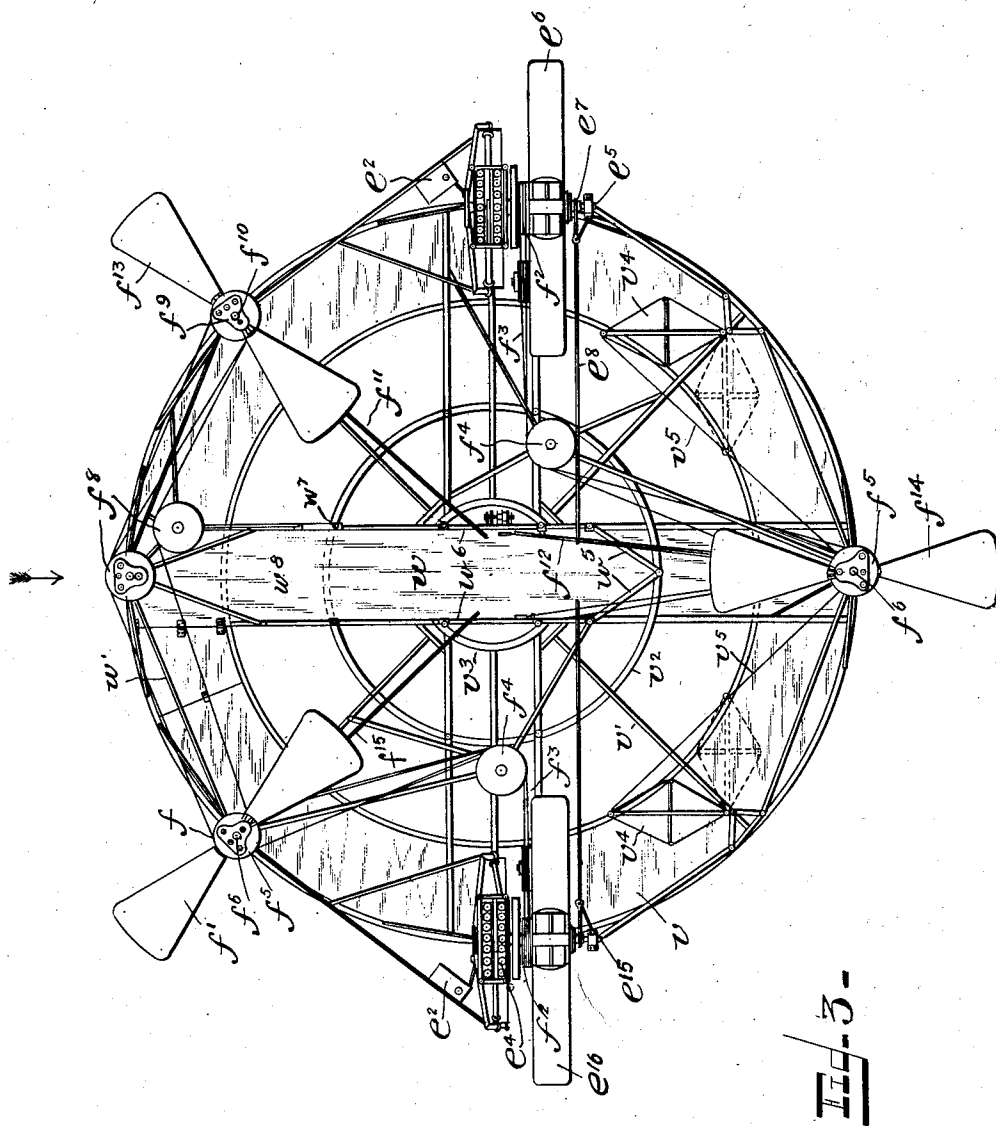
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FLYING MACHINE.
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

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FLYING-MACHINE.

1,226,985.

Specification of Letters Patent.

Patented May 22, 1917.

Application filed September 20, 1905. Serial No. 279,281.

To all whom it may concern:

Be it known that I, GEORGE FRANCIS MYERS, a citizen of the United States, residing at Columbus, county of Franklin, State of Ohio, have invented certain new and useful Improvements in Flying-Machines; and I do hereby 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.

My invention relates to certain new and useful improvements in flying machines, and comprises certain novel constructions and combinations of parts as hereinafter described and specifically pointed out in the claims.

In the accompanying drawings:

Figure 1 represents a front elevation of a machine embodying my invention.

Fig. 2 is a plan view thereof.

Fig. 3 is a plan view and partial section of the lower portion of the machine along the line 5—5 of Fig. 1.

Similar letters of reference indicate similar parts throughout the several views.

Referring to the drawings, it will be noted that, as illustrated herein, the aeroplane consists preferably of a number of annular planes a arranged in series one above the other, and strongly braced by a series of stays b which extend radially from a bottom ring c to the topmost member of the series of planes. The said planes while shown as very narrow, are preferably so related to each other that their diameters lessen from the topmost to the lowermost of the series. In fact this lessening of the diameters of the series of planes is preferably so carried out that, when viewed in plan, the inner diameter of the top plane practically coincides with the outer diameter of the next adjoining plane. In other words, the advancing edge of the topmost plane for instance is forward of the advancing edge of the next lower plane; also the sides of the said topmost plane for instance extend farther to the sides than the sides of the next lower plane. It will also be noted that the forward portion of the lowermost plane v for instance may be attached adjacent to the forward portion of the cross platform or car w ; also that the retreating sides of v as well as the upper planes a, a, a , preferably have a substantially unobstructed space be-

tween the sides thereof into which w preferably extends or projects; also the lower plane v is preferably divided, or constructed in sections, and extends on either side of w .

Below the said planes is preferably located a series of rings i, i' and i'' , and the space below the said rings is covered with fabric j or the like, so as to form a bowl-shape or saucer-shape aeroplane.

The operating portion of the machine preferably consists of the annular plane v , covered as shown, and connected by radial braces v' and a ring v^2 to an inner ring v^6 . This portion may be suspended by suitable suspending rods from the upper structure, and is provided preferably with a walking board or car or carrying place for the operator w upon which the operator may stand, sit or lie; other parts of the same being indicated by w^5, w^6, w^7 and w^8 .

To suitable uprights v^3 are hinged the inner vertical axes of one or more vanes v^4 . Operating ropes v^5 extend from the free vertical edges of the said vanes, so that by pulling upon these ropes the said vanes may be so adjusted that either one or the other, or both, as the case may be, may present its flat surface to the wind, thus turning the machine to the right or left as desired.

The flying machine is preferably provided with two engines oppositely disposed. These engines may conveniently be explosion engines e' having supply tanks e^2 , water tanks e^3 , and radiators e^4 . Upon the shafts e^5, e^{15} , of these engines are loosely mounted the propellers e^6, e^{16} , and clutches e^7 operated by the levers e^8 couple the said propellers to the shafts when desired. These two propellers may be coupled to their shafts simultaneously so as to drive the machine forward, or by operating one of the said propellers and not the other the machine can be steered to the right and left; or the same can be accomplished by driving one of the engines faster than the other.

Stabilizing means are preferably three in number f', f^{13} and f^{14} , and are placed symmetrically or equidistantly about the said platform, or triangularly with respect to each other as shown in the drawings, so that the operator can increase the stability of the machine.

Sheaves f^2 on the shaft e^{15} actuate the ropes f^3 , which pass over the idlers f^4 to sheaves f^5 on the shaft f^6 , and a clutch is

provided upon the said shaft f^6 for operating the said stabilizing means f' when desired. Another sheave f^7 on the shaft f^6 carries the ropes over idlers f^8 to sheave f^9 on the shaft f^{10} , upon which by means of a clutch actuated by the lever f^{11} the left hand stabilizing means f^{13} may be thrown in or out of action; and similarly by actuating the lever f^{15} the opposite stabilizing means f' may be thrown in or out of action; if it be desired to raise one side of the machine more than the other. Preferably the said stabilizing means f' and f^{13} is mounted between the aeroplanes v and j , or v and a ; and is placed on the opposite sides of the longitudinal center line of the car w on lateral extensions projecting outwardly on each side of the said center line; they are mounted away from the said car and away from the said aeroplanes each on a separate lateral projection projecting outwardly on each side of the said center line; the axes of the said stabilizing means being mounted adjacent to the periphery of at least one of the said aeroplanes.

The last mentioned stabilizing means, or fore and aft elevating device, f^{14} for shifting the machine to a higher or lower level may be operated in the same manner as f' if desired, the lever f^{12} effecting the coupling and uncoupling.

Another expedient for shifting the machine to a higher or a lower level, is to operate f^{14} alone, or f' and f^{13} conjointly. Also if it be desired to raise one side of the machine more than the other, f^{14} and f' , or f^{14} and f^{13} may be operated simultaneously. To turn to the right or left, either one or the other of the forwardly driving propellers may be used, as the case may be; or the vanes v^4 may be used.

The operation of the machine is substantially as follows: The machine may be started in several ways, as for instance, it may be dropped from a height by means of a balloon; or a collapsible balloon may be used which might in this case be held inside the said bowl shaped aeroplane the inside thereof forming a nest for the balloon when collapsed, and the outside thereof forming an aeroplane; or the machine may be started in any well known manner, as for instance allowing the machine to slide down an incline with an upturned lower portion; or the machine may be started on wheels.

In this latter case the operator preferably stands on the cross platform w which may form the floor of the car, having all the levers as e^8 and e^9 , which control the clutches of the two motors; the lever f^{12} controlling f^{14} , with which to lift the front end of the machine; and the levers f^{15} and f^{11} which control the lateral stabilizers f' and f^{13} .

After the engines have been started the operator throws in the clutches of both the

forwardly propelling propellers e^6 and e^{16} , and the machine will move rapidly over the ground. As more and more pressure is exerted against the front part of the aeroplanes j , or against the two advancing edges of the aeroplanes a , a , a , the machine will tend to rise; but if the pressure of the impinging air is not sufficient to cause the machine to rise into the air, the operator throws in the lever f^{12} which will put f^{14} into action and thereby lift the forward part of the machine, and giving it the required angle of flight; and thereby lifting the machine off the ground.

The machine being in flight, the operator controls its motion around its three principal axes: around its vertical axis either by slowing down or stopping one or the other of the said forwardly driving propellers, or by the use of the vertical rudders v^4 ; around its transverse axis by operating f^{14} , thereby rectifying the vertical displacement; and around its longitudinal axis by manipulating either f' or f^{13} , if the machine should tip sidewise, both f' and f^{13} being normally out of action. But it will be noted that when the operator places the said lateral stabilizing means in action they will turn the machine on its longitudinal axis only, and have no tendency to turn the machine to the right or left, and therefore he does not have to use his vertical rudder to rectify the same.

If f' and f^{13} should be mounted nearer the forwardly driving propellers, that is nearer the center of gravity of the machine, then they were used as lateral stabilizing means they would be more efficient; but their efficiency as fore and aft stabilizing means would be decreased; therefore they are mounted preferably as described.

As my invention is, in many of its aspects, generic I do not limit myself to the particular construction shown or described, but also contemplate the employment of such equivalents as fairly fall within the scope of the claims.

In this connection I may say that I do not limit myself to a strictly horizontal projection for the aeroplanes, nor to any particular form of propelling or stabilizing means.

Nor do I limit myself for instance to the planes being circular or annular in shape, as any kind or shape of plane may be employed; nor to two engines driving two forwardly driving propellers, and the said propellers may be made reversible, as shown in my companion application Serial No. 210,486, now Patent 995,550; nor to radial uprights for the planes, for the said uprights may be placed parallel as shown in my companion application Serial No. 621,233; nor to the stabilizing means being in propeller form, as I may make them in the form of planes, as also shown and described in the said last mentioned application, where

I speak of planes being used to keep the aerodyne from pitching and rolling.

This application, in part, is a continuation of my application filed January 29, 1897, and serially numbered 621,233.

Having thus described my invention, what I claim is:

1. A flying machine comprising an aeroplane normally inclined to the horizontal, a plurality of stabilizers normally out of action and mounted one on each side of the longitudinal center line of the machine, means for placing the said stabilizers in action, a front and rear tilting device, means for operating the said device motive power, longitudinal shafts rotated by the said motive power, clutches for the said shafts, propellers mounted on the said shafts, and means for operating the said clutches.

2. A flying machine comprising a car, an aeroplane normally inclined to the horizontal, a plurality of stabilizers mounted one on each side of the said car and normally out of action, means for placing the said stabilizers in action, and direct connections comprising a cord between the said stabilizers whereby the same may be operated simultaneously.

3. A flying machine comprising a car, an aeroplane with a free periphery normally inclined to the horizontal and extending outwardly on each side of the longitudinal center line of the said car, a second aeroplane also extending outwardly on each side of the said center line and vertically disposed to the said first mentioned aeroplane, a plurality of openly spaced uprights connecting the said aeroplanes, a plurality of stabilizers normally out of action mounted on axes substantially transverse to the line of flight one on each side of the said center line with substantially all of their active surfaces when in action practically unobstructed to the impinging air from all directions, means for placing the said stabilizers in action, a device for rectifying the vertical displacement, and means for operating the said last mentioned device.

4. A flying machine comprising a car, an aeroplane having a substantially free periphery and normally inclined to the horizontal and extending outwardly on each side of the longitudinal center line of the said car, a second aeroplane vertically disposed to the said first mentioned aeroplane and also extending outwardly on each side of the said center line, openly spaced uprights connecting the said aeroplanes near their peripheries, a shaft having an axis lying outside of the body of each of the said aeroplanes and mounted on one side of the said center line, a similar shaft similarly mounted on the opposite side of the said center line, a stabilizer mounted on each of the said shafts and situated so as to receive

the impinging air from all directions on substantially the whole of the underside thereof when active, means for placing the said stabilizers in action, and connections between the said stabilizers.

5. A flying machine comprising a car, an aeroplane with a substantially free periphery normally inclined to the horizontal and curved longitudinally and extending outwardly on each side of the said car, a second aeroplane mounted below the said first mentioned aeroplane and also extending outwardly on each side of the said car, a plurality of openly spaced uprights connecting the said aeroplanes near their peripheries, a plurality of stabilizers mounted between the said aeroplanes one on each side of the said car and situated so as to receive the impinging air from all directions on substantially the whole of the underside thereof when in action, means for placing the said stabilizers in action, and connections between the said stabilizers.

6. A flying machine comprising a car, an aeroplane with a free periphery normally inclined to the horizontal and curved longitudinally, a second and substantially flat plane, connections between the said planes, a device comprising a stabilizer mounted on one side of the said car between the said planes having an axis lying near the periphery of one of the said planes and situated so as to receive the impinging air from all directions on substantially the whole of the underside thereof when active, another and similar stabilizer similarly mounted on the opposite side of the said car, a device for rectifying the vertical displacement mounted so as to receive the impinging air from all directions on both the top and the bottom thereof when active substantially equally, a device for steering to right and left comprising a vertical rudder, and means for operating all of the said devices.

7. A flying machine comprising a car, an aeroplane with a free periphery normally inclined to the horizontal, a second aeroplane vertically disposed to the said first mentioned aeroplane both of the said aeroplanes extending on each side of the longitudinal center line of the said car, openly spaced uprights connecting the said aeroplanes, a plurality of stabilizers mounted one on each side of the said center line having substantially all of their lower surfaces when active practically unobstructed to the impinging air from all directions and with their axes lying near to the periphery of one of said aeroplanes, and means for placing the said stabilizers in action.

8. A flying machine comprising a car, an aeroplane normally inclined to the horizontal and curved substantially from front to rear, a second aeroplane normally having its advancing edge forward of the advancing

edge of the said first mentioned aeroplane and vertically disposed thereto each of the said aeroplanes extending on each side of the longitudinal center line of the said car
 5 a distance at least equal to the depth of the said aeroplane, a plurality of stabilizers mounted one on each side of the said center line with substantially all of their lower surfaces when active practically unob-
 10 structed to the impinging air from all directions, means for placing the said stabilizers in action, and connections between the said stabilizers.

9. A flying machine comprising a car, a
 15 plurality of superposed aeroplanes having their advancing edges forward one of the other and their edges to their sides retreating rearwardly and having a substantially unobstructed space between the said retreat-
 20 ing sides, a motor, a propeller mounted on the said motor, a shaft mounted one on each side of the said car near the periphery of one of the said aeroplanes, a stabilizer turning on each of the said shafts and situated so as
 25 to receive the impinging air from all directions on the whole of the underside thereof when active, and means for placing the said stabilizers in action.

10. A flying machine comprising a car,
 30 an inclined aeroplane with a substantially free periphery extending on each side of the said car to a width at least equal to the depth of the said aeroplane and having its forward portion attached near to the for-
 35 ward portion of the said car and the retreating sides thereof having a substantially unobstructed space between the same into which the said car extends, a motor, a propeller mounted on the said motor, and
 40 a device for raising one side of the machine more than the other mounted on an axis near the edges of the said aeroplane and having substantially all of its surface on one of its sides active when presented to the im-
 45 pinging air from all directions one on each side of the said car.

11. A flying machine comprising a car, an aeroplane with a substantially free periph-
 50 ery normally inclined to the horizontal mounted on the said car and extending on each side thereof, a second aeroplane also extending on each side of the said car with its advancing edge forward of the advanc-
 55 ing edge of the said first mentioned aeroplane, openly spaced uprights rigidly connecting the same, means for raising one side of the machine more than the other mounted so as to receive the impinging air from all directions on the whole of the
 60 underside thereof when active, means for tilting the machine front and rear mounted so as to receive the impinging air from all directions on the whole of the upper or lower surfaces thereof when in action sub-
 65 stantially equally, means for turning the

machine to the right and left, and means for operating all of the above mentioned means.

12. A flying machine comprising a car, an aeroplane normally not having a strictly
 70 horizontal projection and extending outwardly on each side of the car, a second aeroplane mounted above the said first mentioned aeroplane and also normally not having a strictly horizontal projection and
 75 also extending outwardly on each side of the said car one of the said aeroplanes extending outwardly to a greater distance laterally than the other said aeroplane, openly spaced uprights connecting the said
 80 aeroplane, means for propelling the machine forwardly, means for raising one side of the machine more than the other mounted so as to receive the impinging air on substantially the whole of one of the sides
 85 thereof when in action, means for tilting the machine front and rear mounted so as to receive the impinging air from every direction on substantially the whole of the upper or lower sides thereof when active
 90 substantially equally, means for turning the machine to the right and left mounted so as to receive the impinging air from every direction on substantially the whole of each of its sides thereof when active sub-
 95 stantially equally, and means for operating all of the above mentioned means.

13. A flying machine comprising a car, an aeroplane normally inclined to the hori-
 100 zontal, a propeller mounted on each side of the said car, motive power for driving the said propellers, a pair of lateral stabilizers, also mounted one on each side of the said center line so as to receive the impinging
 105 air from all directions on substantially the whole of their lower surfaces when active, connections between the said stabilizers for operating the same simultaneously, means for rectifying the vertical displacement of the machine, and means for turning the
 110 machine to the right and left.

14. A flying machine comprising a car, an aeroplane with a free periphery normally
 115 inclined to the horizontal and having a substantially unbroken surface from front to rear and extending outwardly on each side of the longitudinal center line of the said car to a distance at least equal to the depth of the said aeroplane, a second aeroplane also extending outwardly on each side of
 120 the said center line, openly spaced uprights connecting the said aeroplanes, means for driving the machine forwardly, a device for raising one side of the machine more than the other comprising a pair of stabilizers
 125 mounted on transverse axes one on each side of the said center line near the lateral edges of the said aeroplanes and having their advancing edges as well as substantially the whole of their under surfaces practically
 130

unobstructed to the impinging air from all directions, a device for rectifying the vertical displacement of the machine mounted so as to receive the impinging air freely when in action from the sides on the top or bottom thereof substantially equally, and a device for turning the machine to the right and left.

15 15. A flying machine comprising a car, a supporting medium with a substantially free periphery normally not having a strictly horizontal projection and having a normally unbroken surface extending outwardly from the longitudinal center line of the said car
20 to a distance at least equal to the depth of the said supporting medium, a second and superposed supporting medium with a substantially free periphery also mounted on each side of the said center line and also
25 normally not having a strictly horizontal projection, a plurality of openly spaced uprights connecting the said supporting mediums near their peripheries, a plurality of forwardly driving propellers mounted one
30 on each side of the said center line, motive power for driving the said propellers, a device for raising one side of the machine more than the other to prevent rolling comprising a pair of stabilizers mounted on
35 transverse axes one on each side of the said center line near the lateral edges of the said supporting mediums, and projecting at least in part beyond the same when in action and having their advancing edges as well as substantially the whole of their under surfaces
40 practically unobstructed to the impinging air, a device for tilting the machine front and rear to prevent pitching mounted so as to receive the impinging air freely when in action from the sides on the top or bottom thereof substantially equally, and a device for turning the machine to the right and left.

45 16. A flying machine comprising a car, an aeroplane with a substantially free periphery normally inclined to the horizontal and having a substantially unbroken normally curved surface extending on each side of the said car to a distance at least equal
50 to the depth of the said aeroplane, a forwardly driving propeller, a motor for driving the said propeller, a device for raising one side of the machine more than the other comprising a plurality of stabilizers substantially independent of the said aeroplane
55 and mounted on transverse axes one on each side of the said car near the edges of the said aeroplane so as to receive the impinging air on substantially the whole of the undersides thereof when in action, a device
60 for tilting the machine front and rear mounted so as to receive the impinging air on both the top or the bottom thereof substantially equally when in action, a device
65 for steering to the right and left comprising

a vertical rudder, the said first and the said last mentioned devices being mounted on opposite sides of a transverse line passing substantially through the center of gravity of the machine and the said second mentioned device being mounted on the same side of the said third mentioned device.

17. A flying machine comprising a car, an aeroplane normally curved longitudinally and having a substantially free periphery normally inclined to the horizontal,
75 means for driving the machine forwardly, motive power for operating the said forwardly driving means, a device mounted on a substantially transverse axis for shifting the machine from its normal position to another position, a second and substantially similar device substantially similarly
80 mounted for shifting the machine from the said normal position to still another position, a third and substantially similar device substantially similarly mounted for shifting the machine from the said normal position to still another position, a fourth device substantially similarly mounted for
85 shifting the machine from the said normal position to still another position, two of the said devices being substantially in line horizontally with the said means for driving the machine forwardly, and means for operating all of the said aforementioned devices.

18. A flying machine comprising a car, an aeroplane with a free periphery normally having a curved and substantially unbroken surface inclined to the horizontal
100 and extending on each side of the said car to a distance at least equal to the depth of the said aeroplane, a second aeroplane constructed in sections vertically disposed below the said first mentioned aeroplane and also extending outwardly on each side of the said car to a distance at least equal to the depth of the said aeroplane, openly spaced uprights connecting the said aeroplanes near their peripheries, means for driving the machine in a forwardly direction, means for operating the said last mentioned means, a plurality of devices for raising one side more than the other, a device
115 for tilting the machine front and rear, a device for turning the machine to the right and left, and means for operating all of the said devices.

19. A flying machine comprising a car, an aeroplane with a free periphery normally inclined to the horizontal and having a normally unbroken surface extending outwardly from the said car to a distance at least equal to the depth of the said aeroplane, a second
120 aeroplane also extending outwardly on each side of the said car, openly spaced uprights connecting the said aeroplanes, a plurality of stabilizers normally out of action and mounted to raise one side of the machine
125

more than the other but not to simultaneously turn the machine to the right and left and so situated as to receive the impinging air from all directions on the whole of the underside thereof when active, means for operating the said stabilizers, the said means also permitting the said stabilizers to always be placed completely out of action when not in use, and means for turning the machine to the right and left.

20. A flying machine comprising a car, an aeroplane with a free periphery normally inclined to the horizontal and having a normally unbroken surface extending outwardly from the said car to a distance at least equal to the depth of the said aeroplane, a plurality of stabilizers mounted in the rear of a line passing substantially through the center of gravity of the machine and situated so as to receive the impinging air from all directions on substantially the whole of the underside thereof when in action, means for operating the said stabilizers to raise one side of the machine more than the other the said means also permitting the said stabilizers to be operated to tilt the machine front and rear, connections between the said stabilizers, and a device for turning the machine to the right and left.

21. A flying machine comprising a car, an aeroplane with a free periphery normally inclined to the horizontal and extending on each side of the said car to a distance at least equal to the depth of the said aeroplane, a plurality of stabilizers for raising one side of the machine more than the other mounted away from the said car and away from the said aeroplane each on a separate lateral extension also projecting outwardly on each side of the said car but independent of the said aeroplane projection, and means for operating the said stabilizers.

22. A flying machine comprising a car, an aeroplane with a free periphery extending outwardly to a distance at least equal to the depth of the said aeroplane, a motor mounted on the said car, a propeller for driving the machine forwardly mounted on the said motor, a plurality of devices for shifting the machine from one position to another mounted on the said aeroplane one on each side of the said car so as to receive the impinging air from all directions on substantially the whole of at least one of the sides thereof, means for operating the said devices through the intermediacy of the said motor, and connections between the said devices.

23. A flying machine comprising a car, an aeroplane normally inclined to the horizontal and normally curved longitudinally, a motor mounted on the said car, a propeller driven by the said motor, means comprising a horizontally disposed stabilizer mounted on one side of the said car and when active

raising one side of the machine more than the other, means comprising a similarly horizontally disposed stabilizer similarly mounted on the opposite side of the said car and when active raising the opposite side of the machine more than the other, means for tilting the machine front and rear, means for turning the machine to the right and left, the said motor and the said propeller and all of the said means being normally encompassed substantially within the outer periphery of the said aeroplane.

24. An aeronautical vehicle having means for accommodating an operator, a plane, a plurality of stabilizing means mounted one on each side of the longitudinal center line of the machine, means for placing the said stabilizing means in action, a front and rear tilting device, means for operating the said device, motive power, longitudinal shafts rotated by the said motive power, clutches for the said shafts, propellers mounted on the said shafts, and means for operating the said clutches.

25. An aeronautical vehicle having means for accommodating an operator, an aeroplane normally inclined to the horizontal and extending outwardly on each side of the longitudinal center line of the machine, a second aeroplane vertically disposed to the said first mentioned aeroplane and also extending outwardly on each side of the said center line, uprights connecting the said aeroplanes, a shaft having an axis lying outside the body of each of the said aeroplanes and mounted on one side of the center line, a similar shaft similarly mounted on the opposite side of the said center line, stabilizing means mounted on each of the said shafts and situated so as to receive the impinging air on substantially the whole of one of the surfaces thereof when active, and means for placing the said stabilizing means in action.

26. An aeronautical vehicle having means for accommodating an operator, an aeroplane normally inclined to the horizontal and curved longitudinally and extending outwardly on each side of the longitudinal center line of the vehicle, a second aeroplane vertically disposed to the said first mentioned aeroplane and also extending outwardly on each side of the said center line, a plurality of openly spaced uprights connecting the said aeroplanes, a plurality of stabilizing means mounted between the said aeroplanes one on each side of the said center line each of the said stabilizing means being mounted so as to receive the impinging air on substantially the whole of one of the sides thereof when in action, means for placing the said stabilizing means in action, and connections between the said stabilizing means.

27. An aeronautical vehicle having means

for accommodating an operator, an aeroplane inclined to the horizontal, a second aeroplane vertically disposed to the said first mentioned aeroplane both of the said
 5 aeroplanes extending on each side of the longitudinal center line of the vehicle, openly spaced uprights spacing the said aeroplanes, a plurality of stabilizing means mounted one on each side of the said center line and
 10 each of the same having substantially all of one of its surfaces when active practically unobstructed to the impinging air and their axes lying near to the periphery of one of the said aeroplanes, and means for
 15 placing the said stabilizing means in action.

28. An aeronautical vehicle with means for accommodating an operator, an aeroplane normally inclined to the horizontal and curved substantially from front to rear,
 20 a second aeroplane normally having its advancing edge forward of the advancing edge of the said first mentioned aeroplane and vertically disposed thereto each of the said aeroplanes extending on each side of the
 25 longitudinal center line of the vehicle a distance at least equal to the depth of the said aeroplane, a plurality of stabilizing means mounted one on each side of the said center line each of the same with substantially all
 30 of one of its surfaces when active practically unobstructed to the impinging air, and means for placing the said stabilizing means in action.

29. An aeronautical vehicle with means
 35 for accommodating an operator, a plurality of superposed aeroplanes having their advancing edges forward one of the other and

their edges to their sides retreating rearwardly and having a substantially unobstructed space between the said retreating
 40 sides, a motor, a propeller mounted on the said motor, a shaft mounted one on each side of the vehicle near the periphery of one of the said aeroplanes, stabilizing means turning on each of the said shafts and each
 45 of the same being situated so as to receive the impinging air on substantially the whole of one of its surfaces when active, and means for placing the said stabilizing means in action.

30. An aeronautical vehicle having means for accommodating an operator, an aeroplane normally inclined to the horizontal and extending on each side of the horizontal
 50 center line of the vehicle, a second aeroplane also extending on each side of the said center line with its advancing edge forward of the advancing edge of the said first mentioned aeroplane, openly spaced uprights
 55 rigidly connecting the same, means for raising one side of the machine more than the other mounted so as to receive the impinging air on substantially the whole of one of its surfaces when active, means for tilting the machine front and rear, means for
 60 turning the machine to the right and left, and means for operating all of the above mentioned means.

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

GEORGE FRANCIS MYERS.

Witnesses:

S. B. MILLER,

THEODORE LEONARD.