

C. E. LAMBURTH.

AIRSHIP.

APPLICATION FILED JUNE 21, 1910.

983,244.

Patented Jan. 31, 1911.

5 SHEETS—SHEET 1.

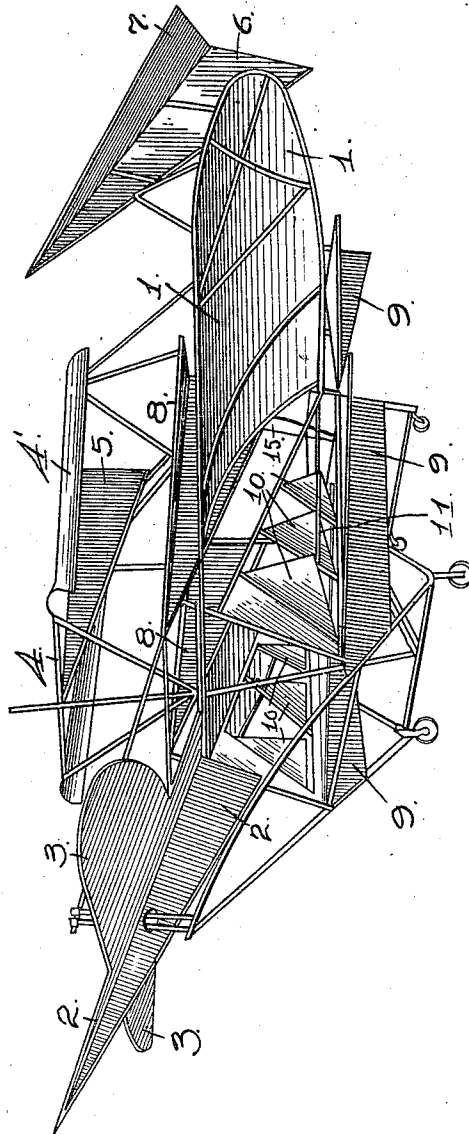


Fig. 1.

Witnesses:
Arthur L. Slee.
C. P. Sonntag

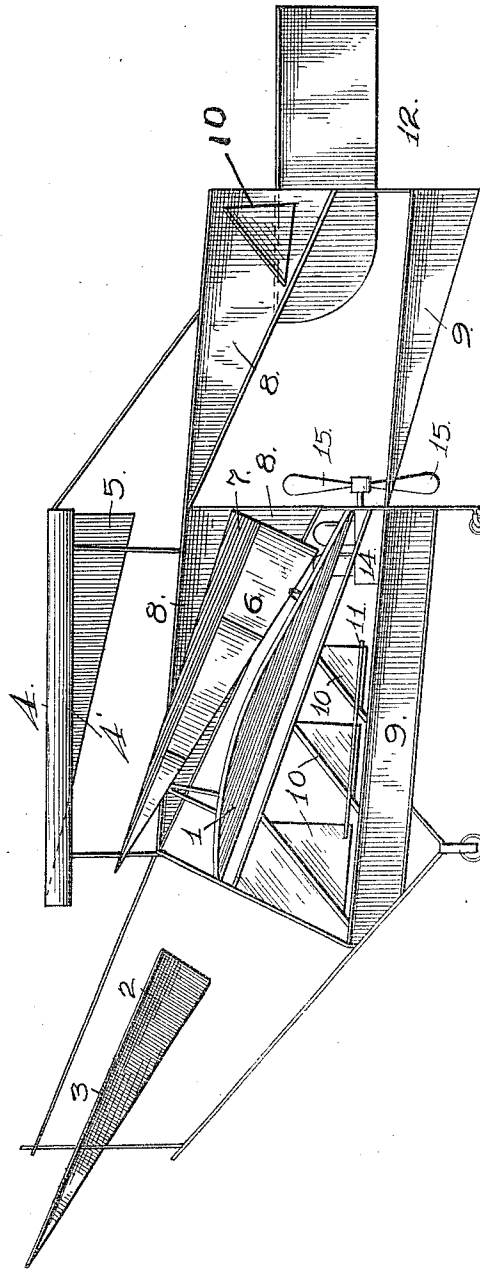
Inventor:
Cassius E. Lamburth
by Lincoln Sonntag
Attorney

983,244.

Patented Jan. 31, 1911.

5 SHEETS—SHEET 2.

Fig. 2.



Witnesses:
Arthur L. Slee.
C. P. Sonntag.

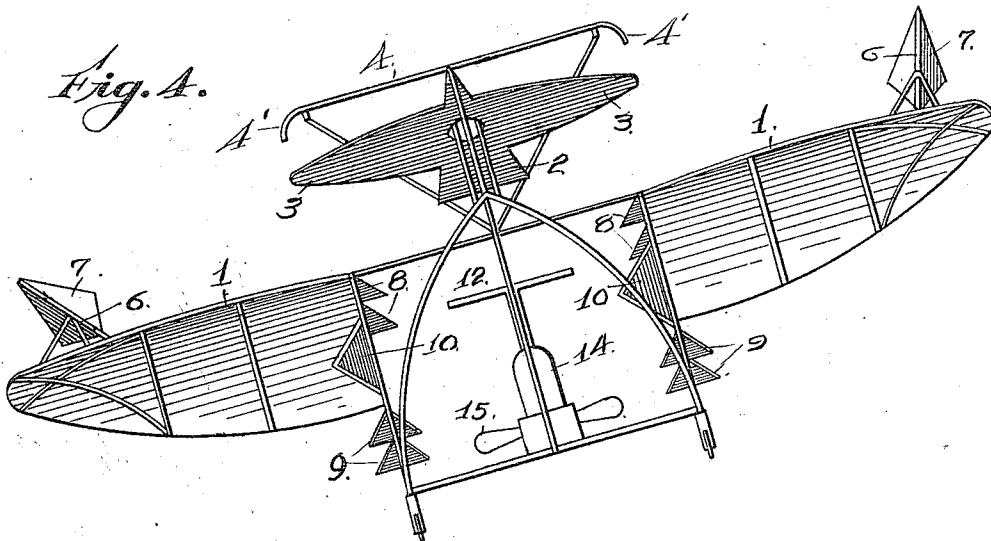
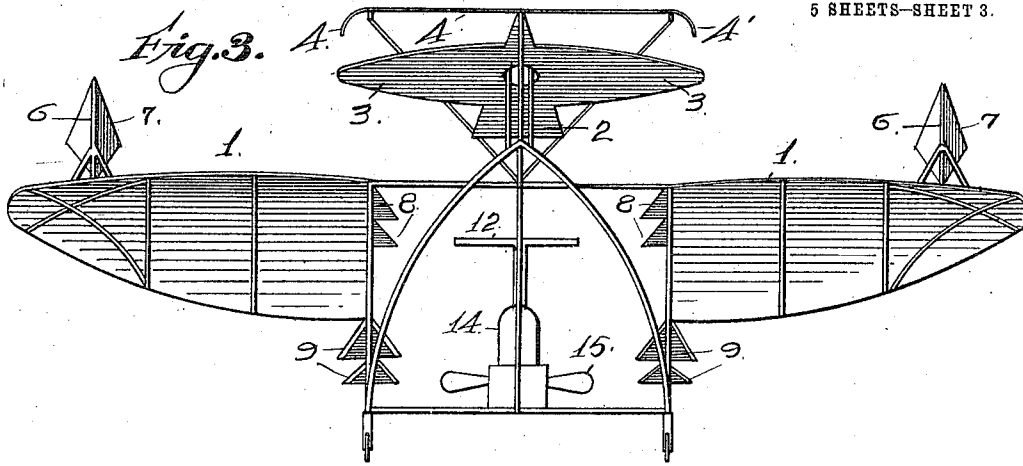
Inventor:
Cassius E. Lambuth
by Lincoln Sonntag,
Attorney.

C. E. LAMBURTH.
AIRSHIP.
APPLICATION FILED JUNE 21, 1910.

983,244.

Patented Jan. 31, 1911.

5 SHEETS—SHEET 3.



Witnesses:
Arthur L. Slier
E. O. Sonntag

Inventor:
Cassius E. Lambuth
by Lincoln Sonntag
Attorney

C. E. LAMBURTH.

AIRSHIP.

APPLICATION FILED JUNE 21, 1910.

983,244.

Patented Jan. 31, 1911.

5 SHEETS—SHEET 4.

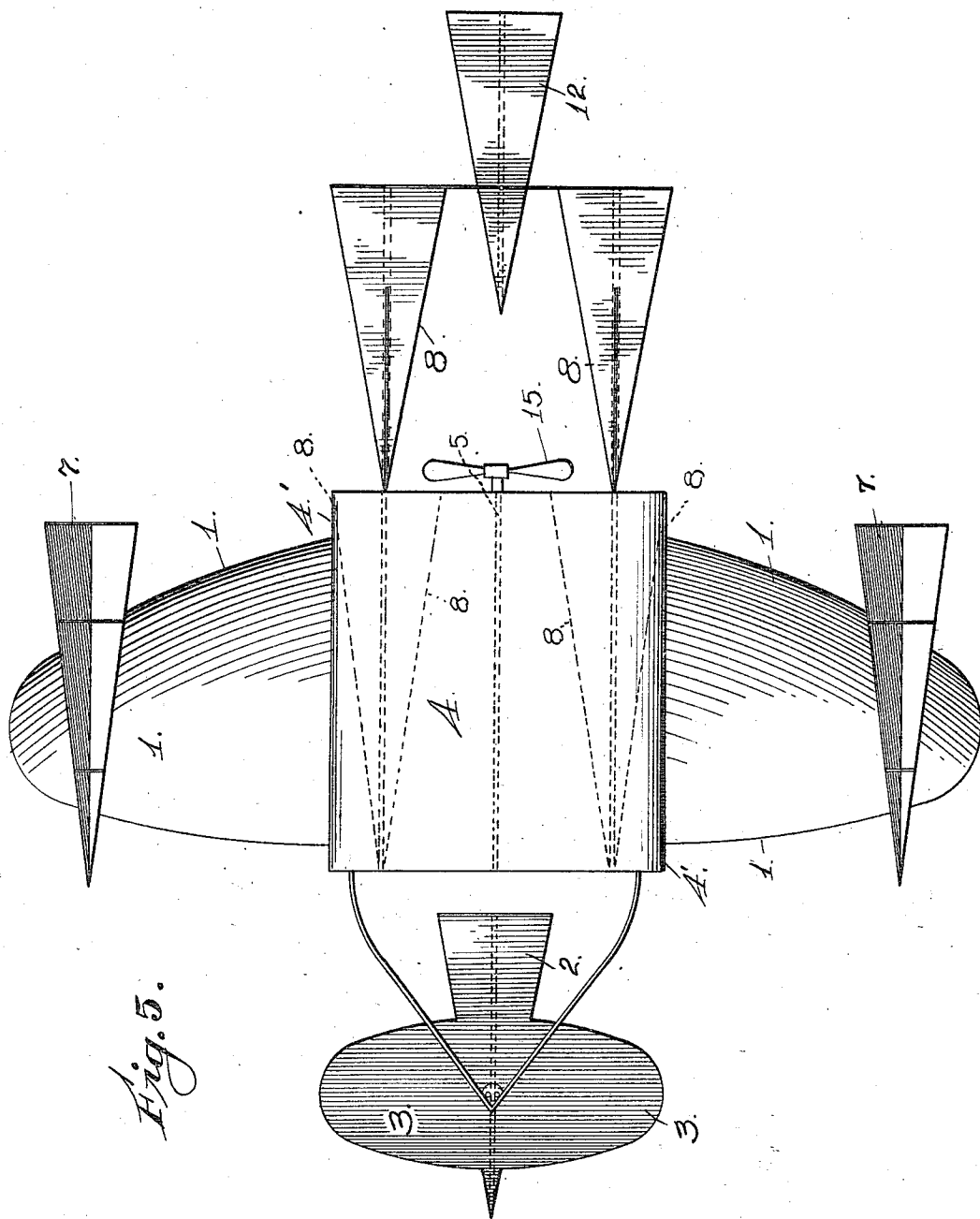


Fig. 5.

Witnesses:

Arthur L. Lee.
E. O. Somtag

Inventor
Cassius E. Lamburth
by Lincoln Somtag
Attorney

C. E. LAMBURTH.
AIRSHIP.
APPLICATION FILED JUNE 21, 1910.

983,244.

Patented Jan. 31, 1911.

5 SHEETS—SHEET 5.

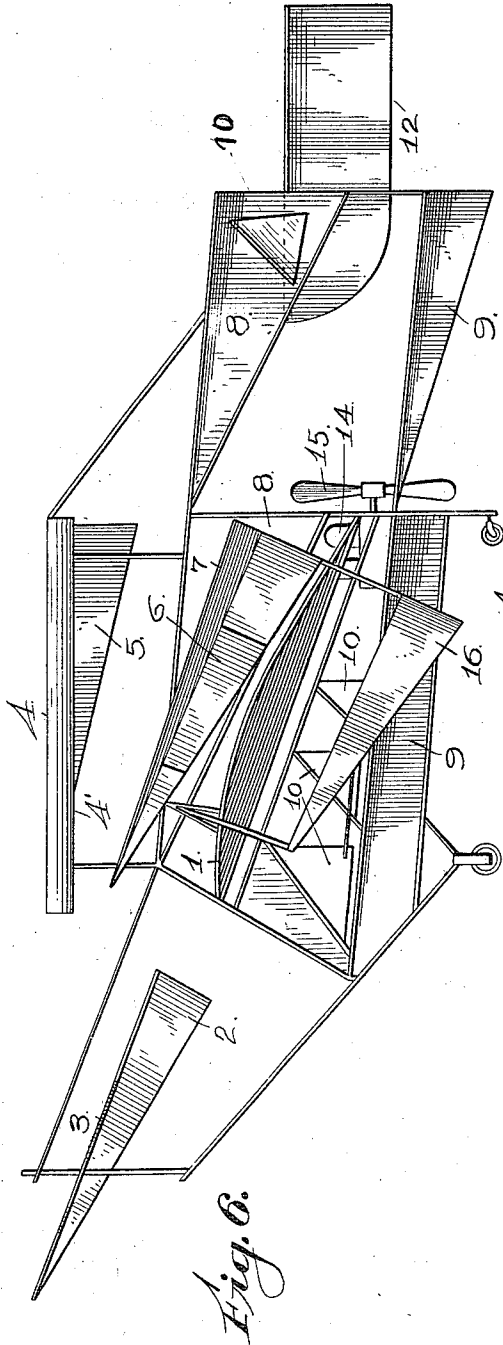


Fig. 6.

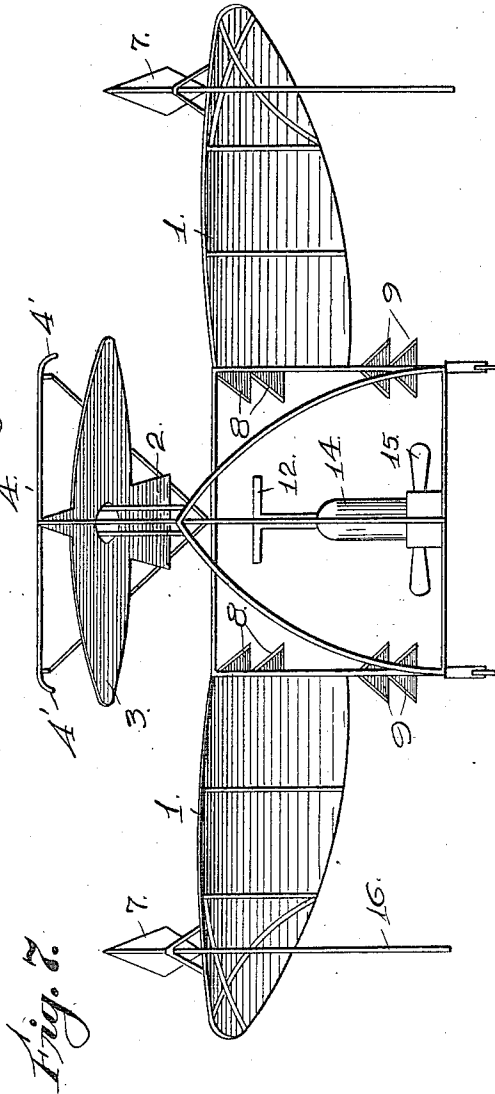


Fig. 7.

Witnesses:
Arthur L. Lee.
C. P. Somtag

Inventor:
Cassius E. Lamburth
by Lincoln Somtag,
Attorney

UNITED STATES PATENT OFFICE.

CASSIUS E. LAMBURTH, OF SAN FRANCISCO, CALIFORNIA.

AIRSHIP.

983,244.

Specification of Letters Patent.

Patented Jan. 31, 1911.

Application filed June 21, 1910. Serial No. 568,157.

To all whom it may concern:

Be it known that I, CASSIUS E. LAMBURTH, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Airships, of which the following is a specification.

My invention relates to improvements in air-ships.

My invention consists of improvements in an air-ship embodying the principle of the Indian arrow or pfeil.

The object of said improvements is to provide an air-ship having great strength, which can be operated at a great speed, and thereby gain increased supporting power, whereby the strain is taken off the front and rear governors or planes, and also the side governors, and transmitted to the neutral axis through the center lines of the wing planes vertically and horizontally, and a further object is to provide an air-ship which will mechanically balance itself without using side planes or governors wherein the weight of the motor and operator tend to right the vessel and the rigid plane on top, and the eight other planes provided maintain a horizontal position so that but one individual can manage and control the machine enabling any other occupant of the vessel to rest himself without assisting in the operation of the same.

Referring to the accompanying drawings illustrating my invention: Figure 1 is a perspective view of an air-ship embodying my improvements. Fig. 2 is a side elevation of said vessel. Fig. 3 is a front view of said air-ship. Fig. 4 is a front view of said air-ship shown at an angle in order to illustrate the position of the planes and for restoring the equilibrium of the vessel. Fig. 5 is a top plan of said air-ship. Fig. 6 is a side elevation of said air-ship showing a modification in the form of a balanced side plane and Fig. 7 is a front view of said ship showing said modification.

In the figures 1 shows one of the main riding wings, each of which extends laterally from each side of the vessel.

2 represents the front rudder having forward extensions 3. The vessel has a top horizontal plane having downwardly curved or warped edges 4' to prevent air from

escaping from the sides and the same is provided with a central vertical plane 5 dividing the top plane into two under planes.

Complementary vertical balancing planes 6 on the outer ends of the main riding wings 1 have inclined V planes 7 for balancing, and said planes 6 and 7 together with plane 16 hereinafter mentioned comprise one separate member of the vessel for simultaneous action.

8 designates two pairs of horizontally disposed T-planes each set tandem, and 9 shows a set of similar planes set on a lower level.

Planes 10 are movable and are triangular in shape, the same being positioned as shown in Fig. 1 and are intended to operate in conjunction with planes 6 when it is desired to restore the equilibrium of the craft.

11 shows a rigid connection between planes 10 in order to cause them to act simultaneously.

12 represents the rear T-shaped rudder.

A suitable engine 14 imparts motion to a propeller 15 which is mounted as shown in Fig. 6.

The parts 3, 2, and part 12 constitute respectively the front and rear governors and the parts 6, 7 and 16 constitute the side governors. The rigid top plane 4 is supported by the under planes 8, as hereinafter explained. The central rib or partition affixed to the underside of the top plane 4 and the planes 8 are intended for the purpose of righting the vessel when it is inclined in either direction, the air pressure on the vertical partitions as shown at 5 and 8 causing the vessel to right itself automatically without warping the wings or requiring movable auxiliaries. By the construction of said vessel as herein described and as shown in case that the engine should fail to work, the vessel will descend lightly to the ground, this effect following from the pressure of the wind from the momentum of the vessel passing through the underside of the rigid plane 4.

A novel feature in the two balancing planes 6 and 7 on the outer end of wing plane 1 is that the upper plane 7 is changed to a lesser angle than a right angle and will maintain a vertical position from the velocity of the air passing on either side while the machine is in flight and by the lower plane 16 on the underside of wing 1 which

will assume such position. The movable planes 6, 7 and 16 being for the control of equilibrium, the top planes 6 and 7 are so formed that when they are turned to one side, the air pressure will be driven along the center line of the plane of planes 6 and 7 and cause the machine to right itself, in which event the planes will be released and again assume the right position. Plane 16 balances planes 6 and 7 and causes the machine to be easily handled.

The six planes on the breast of the vessel marked 10 are used for maintaining the equilibrium of the vessel, when a hot current of air is moving upward against the underside of the wing planes 1 on one side, and a cold current of air is pressing down on the top of the wing 1 on the other side. The last mentioned condition exists when the vessel is traveling parallel with a river; the planes 10 being then extended so that they catch the wind, either outbound or inbound as required, and right the vessel without the use of the wing planes 6, 7 and 16. The planes 10 are hung diagonally as hereinafter explained and are intended to maintain lateral equilibrium, they being controlled by suitable cords and guide pulleys.

The six wings 1 or diagonal planes 10 can be used to stop the speed of the vessel when near the ground, as also the diagonal planes 10 on the rear sides of the vessel, being on the upper planes 8. The diagonal planes 10 can also be used to steer the vessel in case the rear or front rudders become injured as well as for horizontal and vertical guiding.

The movable wings or planes are hung for movement and the rigid planes or wings are braced as shown in the accompanying drawings.

Members 6 and 7 are combined so as to form one plane, 6 being the vertical member and 7 the horizontal member, which is similar in construction to the plane 8 as shown in Fig. 1, the top of the plane 7 catching the wind and righting the ship when depressed.

There are three planes 10 on each side of the vessel between the upper and lower planes 8 and 9 on the front of the same and one plane 10 on each side of the upper plane 8 on the rear of the vessel. The planes 10 are hung diagonally being connected at each end as shown in Fig. 6, and being so hung that the wind striking the upper side of the top of the wing will right the ship without a sudden strain.

The wing planes 1 are placed at such an angle of incidence as to receive the heaviest wind pressure against the vessel to carry the same and the top plane 4 is also placed at a slight angle of incidence for further support of the vessel while the pfeil planes 8 and 9 are placed at a very slight angle of incidence and are intended mostly for stabil-

izers. The movable wings and planes, and the rudders as shown and described can be operated by cords secured thereto.

A seat may be provided for the aviator in front of the engine between the two lower planes 9 from which point the front planes 2 and 3 are operated and the rear rudder is handled by suitable cords which may be attached thereto, and also the equilibrium planes on the breast of the ship marked 10, being on both sides of the ship between the upper plane 8 and the lower plane 9; as also the diagonal planes 10 on the rear upper plane 8 on each side of the ship as may be operated by suitable cords. The stabilizing planes 6, 7 and 16 on the extreme ends of the wings are also operated from such seat by suitable cords or means for controlling the same secured thereto.

The plane 16 shown in Fig. 6 is connected to the upper plane 7 so that plane 16 will act as a counter-balance to said plane 7, the plane 16 extending downwardly from said plane 6 as shown in Fig. 7 on each end of wing 1 as positioned on each side of the vessel.

A post runs from the frame of plane 8 to the underside of plane 4 and a rear diagonal brace from frame of plane 8 to the plane 4 two diagonal braces one on each side running from plane 4 to center between wing planes 1.

The manner of flight of the vessel to which it is adapted is shown in the drawings, Figs. 2, 3, 5 and 6 showing the ship in flight on an even keel and Fig. 4 showing the vessel in flight on an uneven keel with planes 6 and 7 and planes 10 in the act of righting the ship.

I claim:

1. In an air-ship a frame, oppositely extending wings projecting laterally from said frame, a rigid plane at the apex of said frame and having downwardly turning side edges and a central partition projecting downwardly from the said plane; a rear rudder and a front rudder with forward lateral extensions and a plurality of horizontally disposed T-planes.

2. In an air-ship a frame, oppositely extending wings projecting laterally from said frame, a rigid plane at the apex of said frame and having a central partition projecting downwardly from the said rigid plane; a rear rudder and a front rudder having forward lateral extensions, and a plurality of upper horizontally disposed T-planes and a plurality of lower horizontally disposed T-planes.

3. In an air-ship a frame, oppositely extending wings projecting laterally from said frame, a rigid plane at the apex of said frame and having a central partition projecting downwardly from the said rigid plane; a rear rudder and a front rudder hav-

ing forward lateral extensions; a plurality of upper horizontally disposed T-planes carrying diagonal planes, and a plurality of lower horizontally disposed T-planes.

5 4. In an air-ship a frame; oppositely extending wings projecting laterally from said frame, a rigid plane at the apex of said frame and having a central partition projecting downwardly from said rigid plane; 10 a rear rudder and a front rudder having forward lateral extensions; a plurality of upper horizontally disposed T-planes carrying diagonal planes; a plurality of lower horizontally disposed T-planes and a plurality 15 of diagonal planes on the breast of said vessel.

5. In an air-ship a frame; oppositely extending wings projecting laterally from said

frame; a rigid plane at the apex of said frame and having a central partition projecting downwardly therefrom; a rear rudder and a front rudder having forward lateral extensions; a plurality of upper horizontally disposed T-planes carrying diagonal planes; a plurality of lower horizontally 25 disposed T-planes, and a member on the outer end of each of said wings comprising an upper vertical plane having an inclined V-plane and a lower inclined plane.

In testimony whereof I affix my signature, 30 in presence of two witnesses.

CASSIUS E. LAMBURTH.

Witnesses:

JAMES MASON,
M. V. COLLINS.