

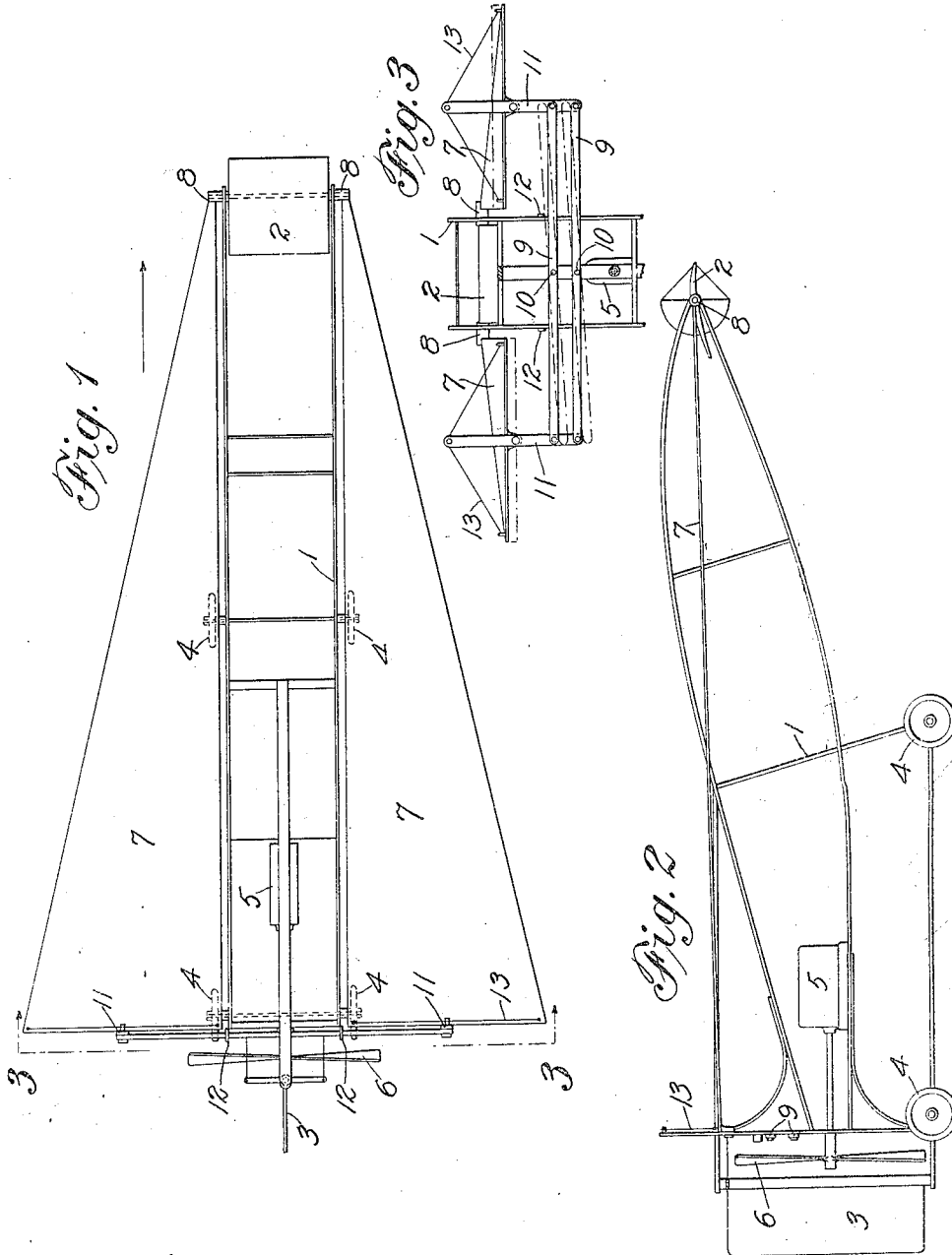
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AIRSHIP.

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AIRSHIP.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HENRY P. RHETT, a citizen of the United States, residing at Hempstead, county of Nassau, and State of New York, have invented a new and useful Improvement in Airships, of which the following is a specification.

This invention relates to an improvement in airships, particularly those of the aeroplane type.

Heretofore, in machines of this general character, means have been employed for restoring lateral equilibrium after the machine has been tilted as for instance by a side gust of wind. In certain machines, this result is effected by means of a pair or set of auxiliary planes, the angles of which are varied by the aviator. In other machines, a portion of the supporting planes are bent by the aviator. The necessity for the strictest attention and a very considerable effort upon the part of the aviator to guard against tilting of the aeroplane, is one of the most serious defects of present machines. It is highly desirable that the lateral equilibrium of aeroplanes be maintained without any effort upon the part of the aviator.

It is one of the objects of the present invention, therefore, to provide means whereby the lateral equilibrium of an aeroplane is automatically maintained and stability assured.

Another object is to provide a device having supporting planes and connections whereby the lateral equilibrium is maintained, without auxiliary planes or other similar devices.

Still another object is to provide a device in which inflexible supporting planes are employed, with connections whereby excessive force acting upon one of the planes will cause the other plane to counteract the action.

Still another object is to provide a device having triangular supporting planes the apices of which are located forward, so that they will enter undisturbed air throughout their fore and aft length.

With these and other objects not specifically mentioned in view, the invention consists in certain constructions and combinations which will be hereinafter fully described and then specifically set forth in the claims hereunto appended.

In the accompanying drawings which form a part of this specification and in

which like characters of reference indicate the same or similar parts, Figure 1 is a plan view of a device constructed in accordance with the invention, and Figs. 2 and 3 are side and rear end elevations of the structure shown in Fig. 1.

In carrying the invention into effect, there is provided a frame for supporting the various parts of the structure, and this frame may vary within wide limits. In the best constructions, however, and as shown, a skeleton frame 1 is employed. This frame carries at its forward end a steering plane 2 of well known construction. The frame also carries at its rear end a rudder 3 also of well known construction. A set of landing wheels 4 are mounted in the lower part of the frame. A motor 5 is mounted in the frame, and this motor drives a propeller 6 located just forward of the rudder 3. That part of the structure shown which has just been described differs in no material way from other similar structures well known in the art, and since a more detailed description of this part of the device is not necessary to a full understanding of the present invention, it is omitted in the interest of brevity and clearness.

A pair of supporting planes are provided and carried by the frame 1, and these supporting planes may vary within wide limits. As shown, a pair of inflexible supporting planes 7, 7 is employed, and these planes are triangular in form and positioned with the apices of the triangles forward. This form of plane enters undisturbed air throughout its fore and aft length. The apices of the triangular planes are pivoted at 8 to the forward part of the frame 1, and the planes are nowhere rigidly connected with the frame. The point 8 is the only place where the planes are connected directly with the frame. It will be noted, therefore, that although these planes are inflexible they are capable of swinging about the center at 8.

By an inspection of Fig. 3, it will be seen that the rear part of the planes is lower than the forward part; that is to say, the planes are inclined from the horizontal to afford the necessary lifting surface, and that under normal conditions, full lines in Fig. 3 the angles of incidence of the two planes are equal. When, however, a sudden gust of wind strikes the under side of only one of the planes, the machine must tilt unless this

action is prevented. Assuming for instance that a gust of wind strikes the plane on the right in Fig. 3, swinging it upward to the position indicated by the broken line, it will be seen that its angle of incidence is changed while a tilting action of the whole structure is begun. To overcome this action, it is necessary to increase the angle of incidence of the other plane a corresponding amount in order to increase its lifting power to counterbalance the increased force acting upon the right plane. Mechanism is therefore provided connecting the planes whereby a movement of one plane will produce a reverse movement of the other, and this mechanism may vary within wide limits. As shown, however, a parallel motion mechanism is provided for this purpose, and this mechanism includes a pair of parallel bars 9, 9, pivoted at 10, 10 to the frame 1. To the free ends of these bars are pivotally secured a pair of links 11, 11, which are also secured to the rear ends of the planes 7, 7. The movement of the bars is limited by stops 12, 12, stationarily secured to the frame and overlying the upper bar 9. The upper ends of the links 11, 11, project above the planes 7, 7, and to their upper ends are secured stay wires 13, leading to the inner and outer edges of the planes 7, 7.

In the operation of the device, the attention of the aviator is unnecessary, for when a gust of wind strikes one plane, reducing its angle of incidence, the angle of incidence of the other plane is automatically increased in direct proportion by means of the parallel motion mechanism, and lateral equilibrium is restored.

Changes and variations may be made in the structure by means of which the invention is carried into effect. The invention, therefore, is not to be restricted to the precise details of the structure shown and described.

What is claimed is:

1. In an airship, the combination with a frame, of a pair of supporting planes pivotally carried by the frame, a pair of parallel

bars, pivoted to the frame, and a pair of links connecting the free ends of the bars with the planes.

2. In an airship, the combination with a frame, of a pair of inflexible supporting planes pivotally carried by the frame, a pair of parallel bars pivoted to the frame, and a pair of links connecting the free ends of the bars with the planes.

3. In an airship, the combination with a frame, of a pair of swinging inflexible supporting planes carried by the frame, a pair of parallel bars pivoted to the frame, and a pair of links connecting the free ends of the bars with the planes.

4. In an airship, the combination with a frame, of a pair of triangular supporting planes pivotally carried by the frame, a pair of parallel bars pivoted to the frame, and a pair of links connecting the free ends of the bars with the planes.

5. In an airship, the combination with a frame, of a pair of inflexible triangular supporting planes pivotally carried by the frame, a pair of parallel bars pivoted to the frame, and a pair of links connecting the free ends of the bars with the planes.

6. In an airship, the combination with a frame, of a pair of triangular supporting planes pivotally carried by the frame, with the apices of the triangles forward, a pair of parallel bars pivoted to the frame, and a pair of links connecting the free ends of the bars with the planes.

7. In an airship, the combination with a frame, of a pair of supporting planes pivotally carried by the forward part of the frame, a pair of parallel bars pivoted to the rear end of the frame, and a pair of links connecting the free ends of the bars with the rear ends of the planes.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY P. RIETT.

Witnesses:

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