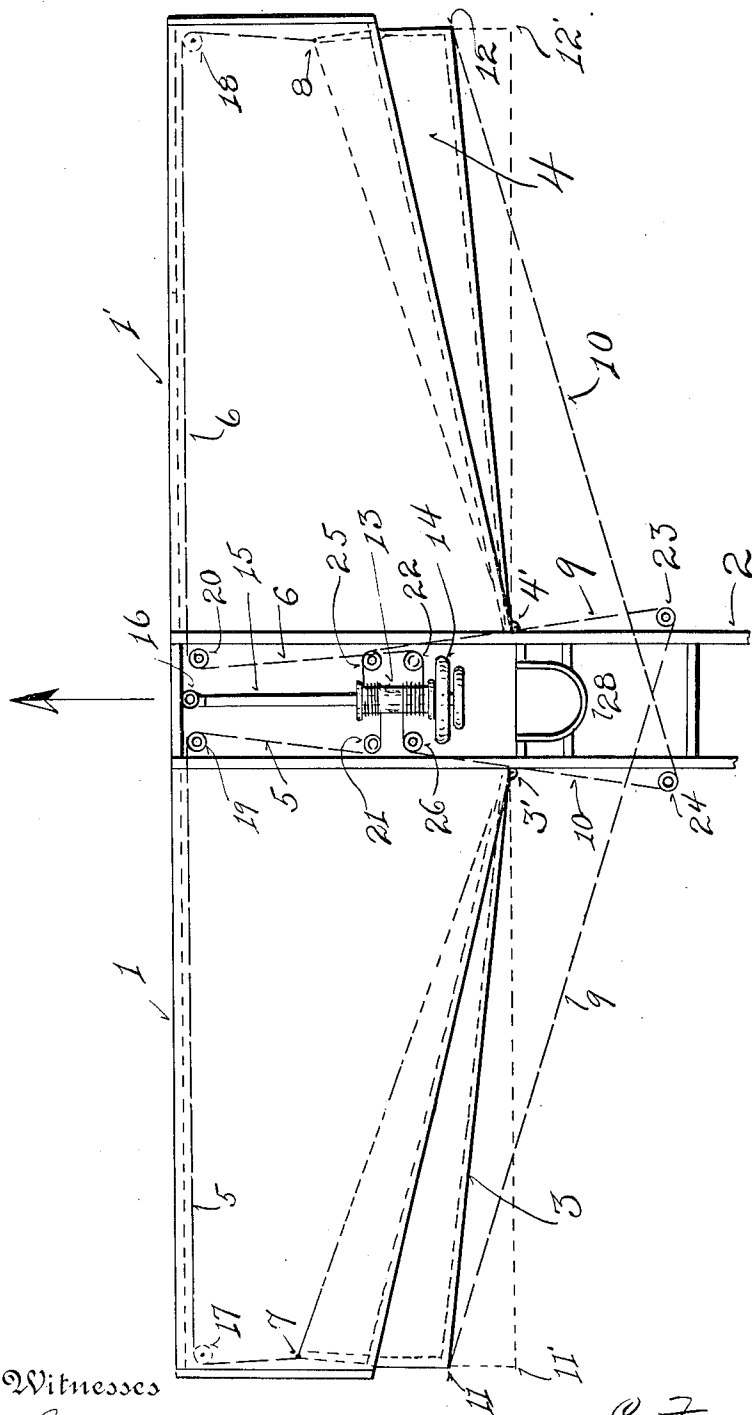


C. F. JENKINS.
FLYING MACHINE.
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1,085,263.

Patented Jan. 27, 1914.



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FLYING-MACHINE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES FRANCIS JENKINS, a citizen of the United States, residing at Washington, District of Columbia, have invented certain new and useful Improvements in Flying-Machines, of which the following is a specification.

This invention relates to that class of apparatus known as flying machines, and has for its main object a more effective method of maintaining lateral stability.

Heretofore lateral stability in flight has been maintained by warping the rear edges of the main planes or changing the angle of ailerons, *i. e.*, small auxiliary planes hinged at the after edge of the main planes, or between them. The objection to either method is that that edge of the planes which is drawn down to elevate the lower outer end of the wing makes a sharper angle than the other and thus creates a drag on that end, with a consequent tendency to alter the course of the machine. To counteract this tendency the tail is arranged to be pulled over toward the opposite side to neutralize this drag and thus keep the machine on its course.

The object of the present invention is to obviate or at least to minimize the tendency of the machine to go off its course when it is desired to bring the machine back to an even keel. This is accomplished by increasing the supporting surface of one wing and at the same time decreasing the supporting surface of the other wing.

A second object is to employ a rather wide plane as an aid in rising from the ground, which plane can later be decreased; both objects being illustrated in the accompanying drawing, showing in plan view so much of a flying machine as is necessary to a clear understanding of the invention. In this view, 1 and 1' are the planes of the machine; 2 the framework extending rearward to support a tail; 3 and 4 the movable auxiliary stabilizing planes hinged at 3' and 4'; 5 a forward control cord, attached to the auxiliary plane 3 at 7; 6 a forward control cord attached to auxiliary plane 4 at 8; 9 a rear control cord for auxiliary plane 3 and attaching at 11; and 10 a rear control cord, attached to auxiliary plane 4 at 12; 13 is a drum to which the cords (all shown by broken lines) are both attached; 14 a hand-wheel for rotating the drum; 15 a shaft hinged at 16

and upon which the drum 13 is free to rotate; cord 5 passes over supporting pulleys 17, 19, and 21; cord 9 over pulleys 23 and 25; cord 6 over pulleys 18, 20, and 22; and cord 10 over pulleys 24 and 26. 28 is a driver's seat. The cords operating each wing or auxiliary plane are wound oppositely upon the drum so that one is wound and the other unwound to precisely the same extent when the drum is rotated, whereby the corresponding wing is swung in one direction or the other according to the direction of rotation. Each plane may be actuated by a single cord having its middle portion wound about the drum and its ends attached to opposite sides of the corresponding wing, but as a one-piece cord is not essential the drawing is made to represent equally well two cords or a one-piece cord.

The operation of the device is as follows: Assuming that the machine is in free flight, and that the left end is low, the handwheel 14, with its attached drum, is swung toward the left side, which thus lengthens the control cords 5 and 10, and shortens the cords 6 and 9. This pulls the auxiliary plane 3 out and the plane 4 inward, thus increasing the supporting surface at the left and decreasing the surface at the right, bringing the left end up and letting the right end down. As the machine comes up on an even keel again the handwheel is brought to the middle position and the machine rides evenly. Obviously, a reverse action would bring up the right side if it were low, and this were desired. To assist in getting off the ground, and before starting, both auxiliary planes are extended to their full width, *i. e.*, to 11' and 12', by turning the handwheel to the right, clockwise. After getting up, the handwheel is turned to the left, counterclockwise. This pulls both planes in an equal amount, tending to increase the speed of the machine, and without disturbing the lateral balance.

The main planes are composed of upper and lower surface members, preferably of metal, with the auxiliary plane between and enveloped by them.

No propeller or engine is shown as neither forms any part of this invention, nor is believed to add anything to a clear understanding of it.

The drawing is conventional, and so familiar to those skilled in the art that it is

believed the arrow is not absolutely needed to show direction although it is added for the sake of clearness.

I claim—

5 An aeroplane comprising a body portion, a propeller, stationary entering planes, auxiliary planes telescoping longitudinally within the entering planes from the rear of said entering planes, and means for simul-

taneously telescoping or expanding, or 10 telescoping and expanding said planes.

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

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Witnesses:

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