

D. BLASER.
FLYING MACHINE.
APPLICATION FILED FEB. 1, 1913.

1,064,600.

Patented June 10, 1913.

3 SHEETS-SHEET 1.

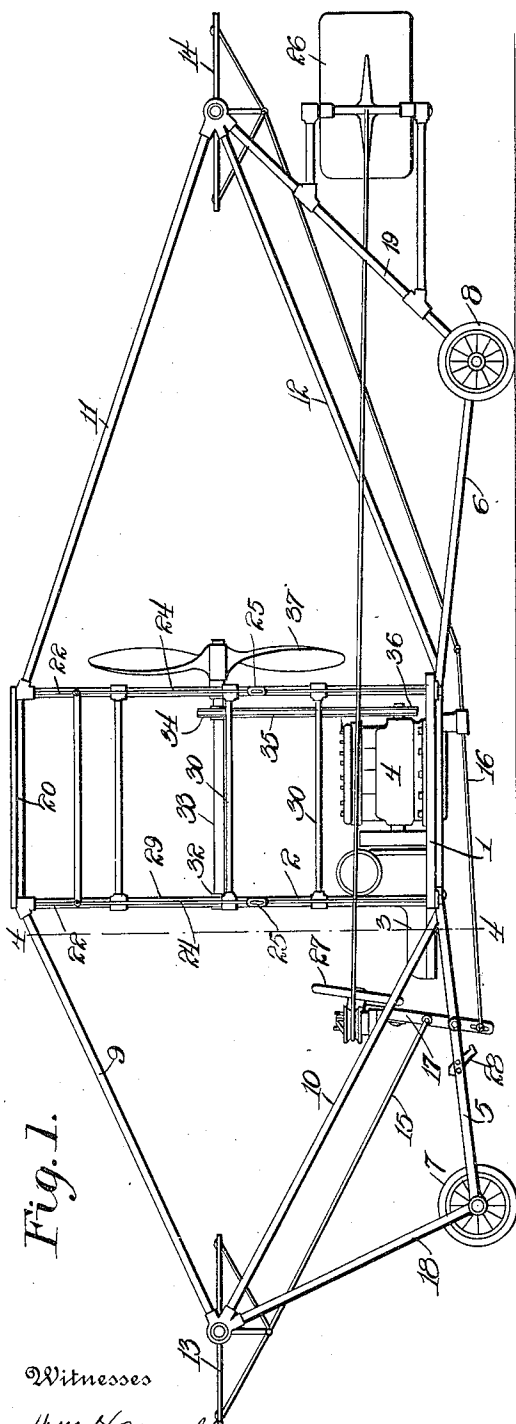


Fig. 1.

Witnesses

W. H. Mulligan.

A. C. Hines.

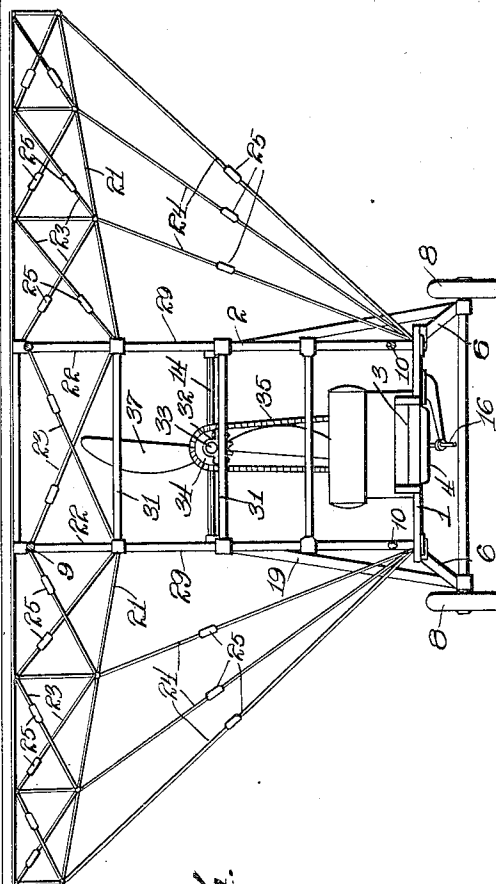


Fig. 4.

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3 SHEETS—SHEET 2.

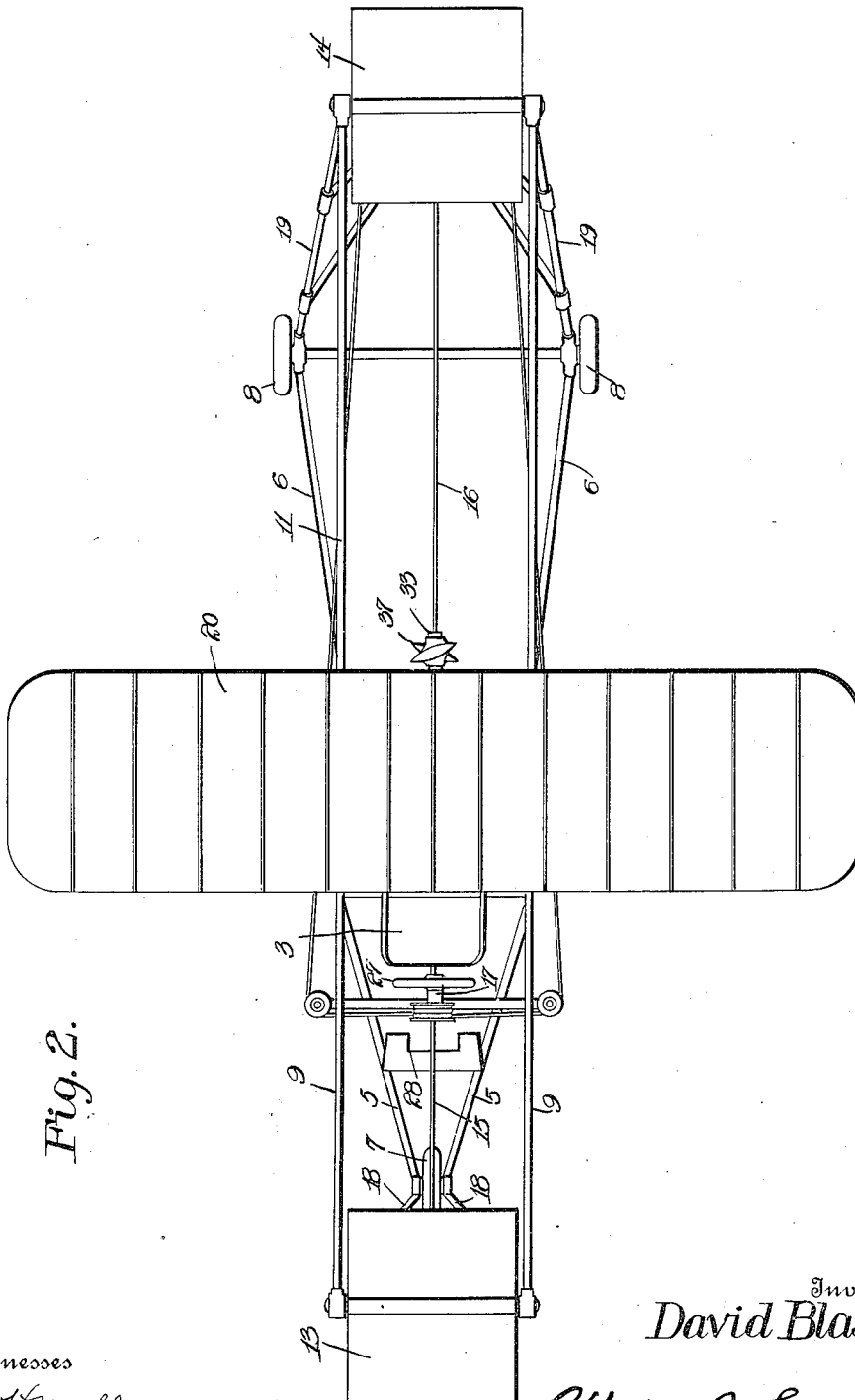


Fig. 2.

Witnesses

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3 SHEETS—SHEET 3.

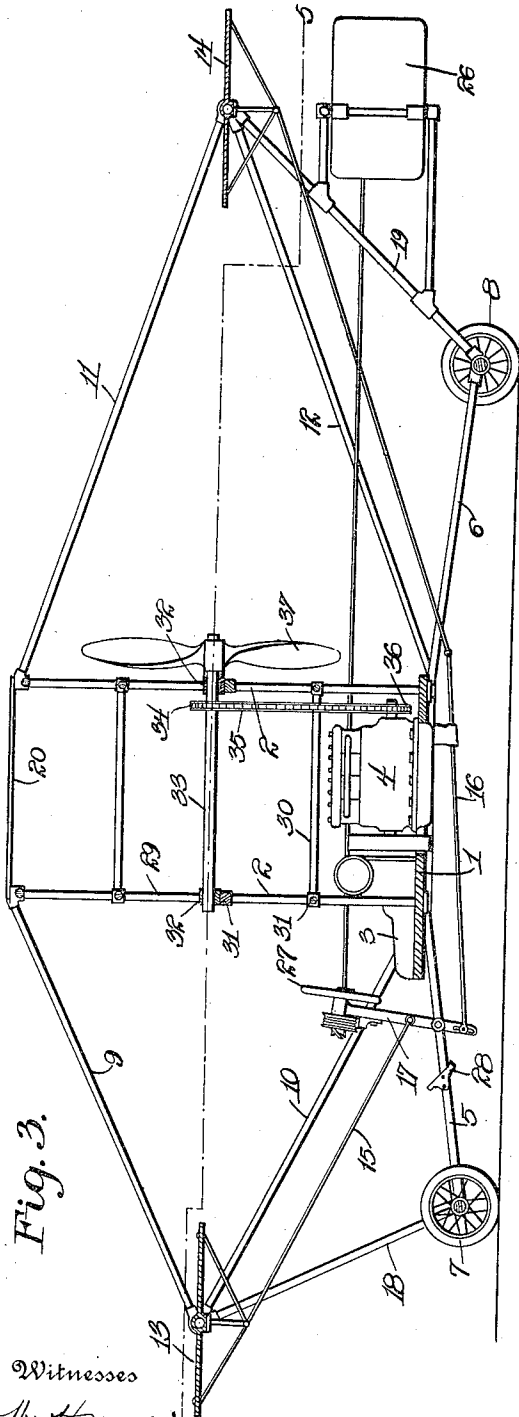


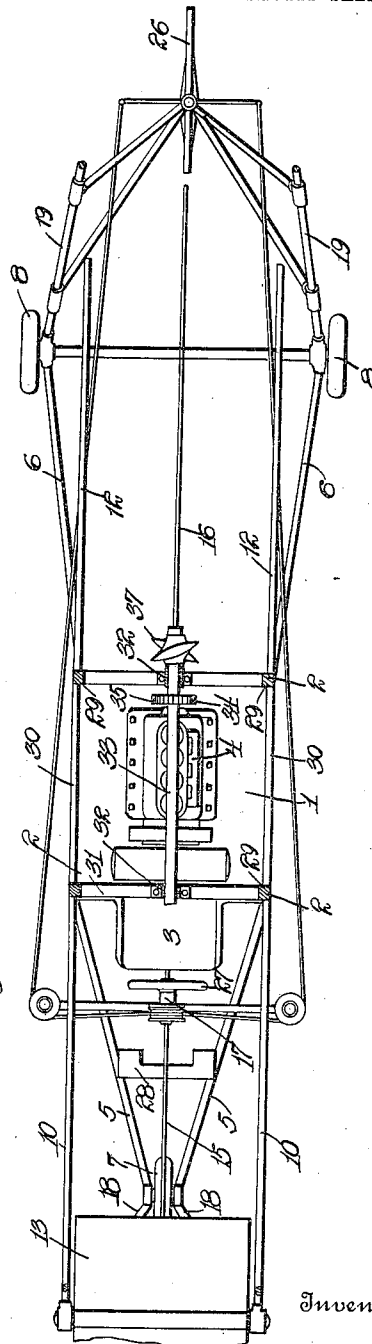
Fig. 3.

Witnesses

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Fig. 5.



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UNITED STATES PATENT OFFICE.

DAVID BLASER, OF MILAN, ILLINOIS.

FLYING-MACHINE.

1,064,600.

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To all whom it may concern:

Be it known that I, DAVID BLASER, a citizen of the United States, residing at Milan, in the county of Rock Island and State of Illinois, have invented new and useful Improvements in Flying-Machines, of which the following is a specification.

This invention relates to flying machines of the aeroplane class, and its object is to provide an aerial vehicle of this character in which the structural organization and relative arrangement of the parts is such as to secure great stability and sensitiveness to control when the vehicle is in flight, as well as to produce a machine which will not lose its balance and turn over in the air.

The invention consists of the features of construction, combination and arrangement of parts hereinafter fully described and claimed, reference being had to the accompanying drawings in which,—

Figure 1 is a side elevation of a flying machine constructed in accordance with my invention. Fig. 2 is a top plan view of the same. Fig. 3 is a vertical longitudinal section. Fig. 4 is a sectional front elevation on line 4—4 of Fig. 1. Fig. 5 is a sectional plan view on line 5—5 of Fig. 3.

Referring to the drawings, 1 designates a car or platform, from which rises a main frame 2, and which supports the aviator's seat 3 and driving motor 4. From the car or platform project suitable extensions 5 and 6 carrying front and rear ground wheels 7 and 8, respectively. Also from said main frame extend upper and lower pairs of bars 9 and 10 and 11 and 12 respectively, forming head and tail frames. As shown, the bars 9 and 10 converge and are connected at their outer ends in line with the horizontal transverse center of the main frame 2 and support a front horizontal rudder 13, while the bars 11 and 12 similarly converge at their outer ends in line with the horizontal transverse center of the main frame and support a rear horizontal rudder 14. These rudders are coupled by connections 15 and 16 to a steering post 17 pivoted to move in a fore and aft direction, whereby the rudders may be simultaneously adjusted. The extensions 5 and 6 are respectively coupled to the head and tail frames by braces 18 and 19.

Carried by the main frame 2 is a supporting plane or surface 20 of any suitable form and construction, and extending laterally

from the main frame below the wings of said supporting plane are stay bars 21, which are preferably inclined outwardly and upwardly as shown, and are connected with the supporting plane by struts 22 and braces 23, the wings of the plane and stay bars being further reinforced from the main frame by braces 24, thus supporting and staying the plane in a staunch and rigid manner. The braces 23 and 24 may be of the wire type in common use, provided with tensioning turn buckles or devices 25. Arranged at a suitable point upon the machine is a vertical rudder 26 coupled by cables or other suitable connections to a steering wheel 27 mounted on the steering post 17, in advance of which is disposed a foot rest 28 mounted upon the front extension 5, said foot rest being arranged in convenient proximity to the aviator's seat 3.

In a machine having a supporting surface of, say, 20 foot spread or length between its lateral margins, an upright frame structure 2 of a height of 10 feet, width of 4 feet and fore and aft depth of 5 feet, the last dimension conforming to the fore and aft width of the plane 20, is generally employed, and in a machine of these dimensions the front horizontal rudder 13 is disposed at a distance of about 10 feet in advance of the main frame, while the rear horizontal rudder 14 is disposed at a somewhat greater distance, say about 14 feet from the main plane. These relative dimensions and arrangement of the parts with respect to each other provides a machine in which the vertical extent of the main frame is not excessive or sufficient to render the machine top heavy, while at the same time enabling the driving motor 4 and other elements of the load weight to be arranged below the supporting surface 20 at such a distance therefrom as to cause the car and load weight thereon to serve the function of a pendulum, whereby the machine is inherently balanced under all conditions and prevented from losing its stability. This balancing effect is promoted by making the horizontal rudders 13 and 14 of approximately the same width as the main frame and arranging them in line with the horizontal transverse center of said frame, or at a point equidistantly between the lifting factor *i. e.*, the supporting surface 20, and the stabilizing factor, namely the car 1 and its load weight. The horizontal rudders, therefore,

when in normal position cooperate with the load weight to maintain accurate fore and aft stability, so that any adjustment of said rudders will result in an immediate and sensitive vertical steering action, the stabilizing action of the load weight alone being sufficient to maintain lateral stability against the pressures of side currents of air, or other conditions giving an excess pressure upon one wing of the supporting surface from that upon the other at any time when the machine is in flight.

The main frame may be of any suitable construction, but as shown consists of four upright corner posts 29 connected by longitudinal and transverse bars 30 and 31. Carried by said frame are bearings 32 in which is journaled a propeller shaft 33 carrying a pulley or sprocket wheel 34 driven by a belt or chain 35 from a pulley or sprocket wheel 36 on the shaft of the motor 4. The propeller shaft extends longitudinally in the plane of the longitudinal axis of the machine and also in the horizontal plane of the rudders 13 and 14, or is arranged at a point substantially equidistant between the supporting surfaces 20 and car 1 and carries at its rear end a propeller 37, which is thus arranged to deliver its thrust power in a horizontal plane coincident with the normal plane of travel of the front and rear rudders and in the central horizontal transverse line of the machine, by which the impulse of the driving pressure is transmitted in a plane where it will not affect the stabilizing action of the load weight and rudders or tend in any manner to disturb the equilibrium of the machine, but rather at a point where the resistance of the driving impulse is added to that of the pendulum load weight to assist in maintaining the stability of the machine against any deflection from a balanced position, either horizontally or vertically.

Preferably, but not necessarily, the horizontal rudders are of a width conforming to the width of the main frame, and the rear horizontal rudder is disposed at a somewhat greater degree from the rear frame than the front horizontal rudder, the rudder 13 being at a point about 10 feet in

advance and the rudder 14 at a point of about 14 feet in rear of the frame in a machine of the dimensions set forth, by which the rear horizontal rudder is caused to overcome that tendency of the machine to tilt upwardly and rearwardly beyond its established angle of incidence when the machine is in flight.

By thus disposing the parts of the machine so that the ordinary elements employed will operate to render the machine inherently self-balancing, any danger of the machine overturning or tilting to a dangerous extent will be avoided, without rendering the machine top heavy and without the necessity of using auxiliary or extraneous balancing devices, the advantages of which will be appreciated.

I claim:—

A flying machine embodying a car, an elongated vertical frame rising from the car, a supporting surface carried by said frame, head and tail frames carried by the vertical frame, steering means including horizontal rudders mounted upon said head and tail frames at distances in front and rear of the frame corresponding substantially to the height of said frame, said rudders corresponding substantially in width with the width of the frame, a longitudinally extending propeller shaft mounted at an intermediate point upon the frame in horizontal alinement with said rudders and in the vertical plane of the longitudinal axis of the machine, an aviator's seat at the front of the car, a motor mounted upon the car in rear of said seat, a propeller mounted upon said shaft and arranged to deliver its thrust power in a horizontal plane coincident with the normal plane of travel of the horizontal rudders and in the central horizontal transverse line of the machine, and a driving connection between the motor and the propeller shaft.

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

DAVID BLASER.

Witnesses:

GOTLIEB BLASER,
JOHN HARTMANN.