

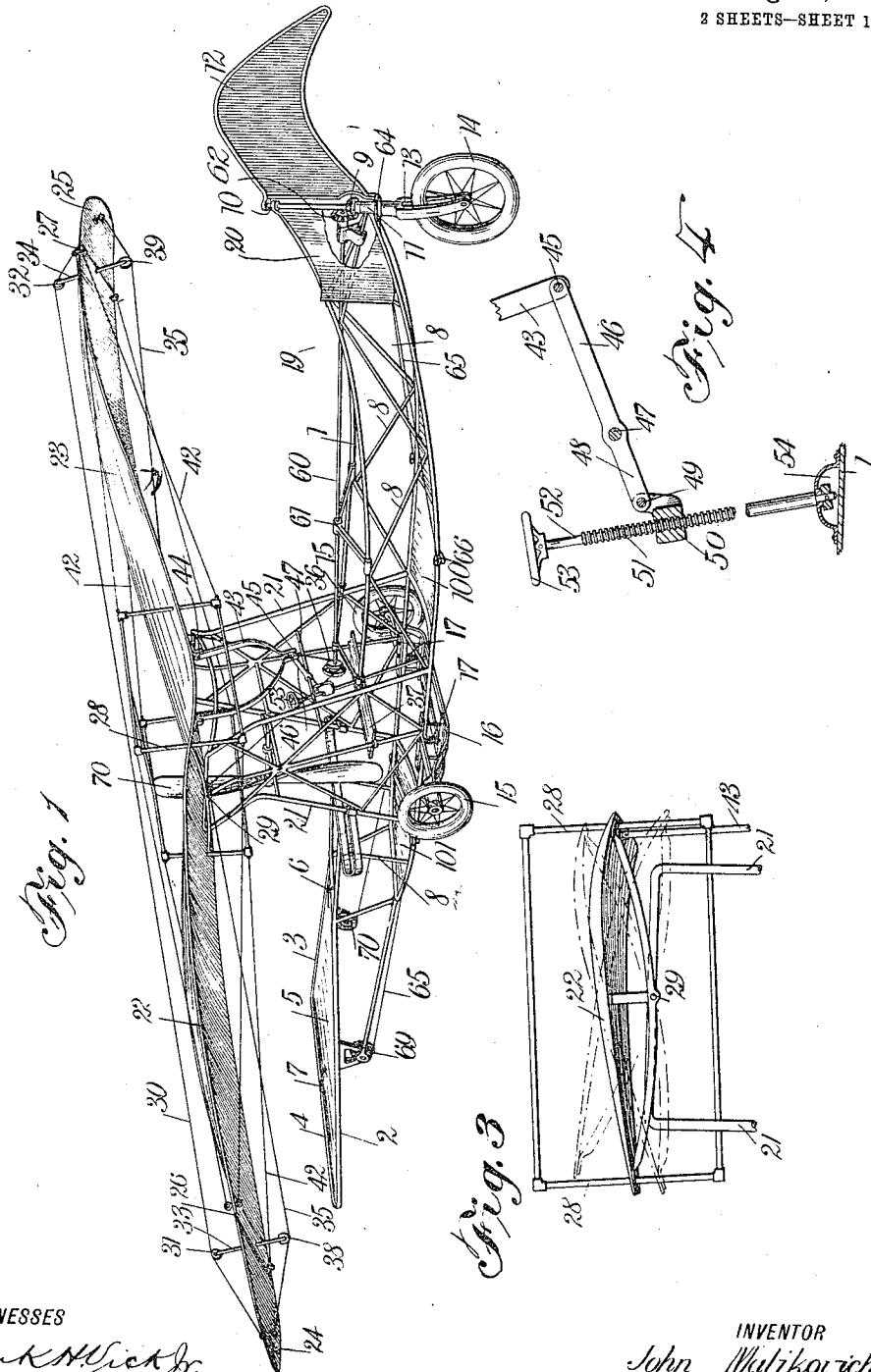
J. MALJKOVICH.
FLYING MACHINE.

APPLICATION FILED JUNE 24, 1911.

1,036,287.

Patented Aug. 20, 1912.

2 SHEETS—SHEET 1.



WITNESSES

Frank H. Vick Jr.
L. J. Gallagher.

INVENTOR

John Maljkovich

BY

Wm. L. Les

ATTORNEYS

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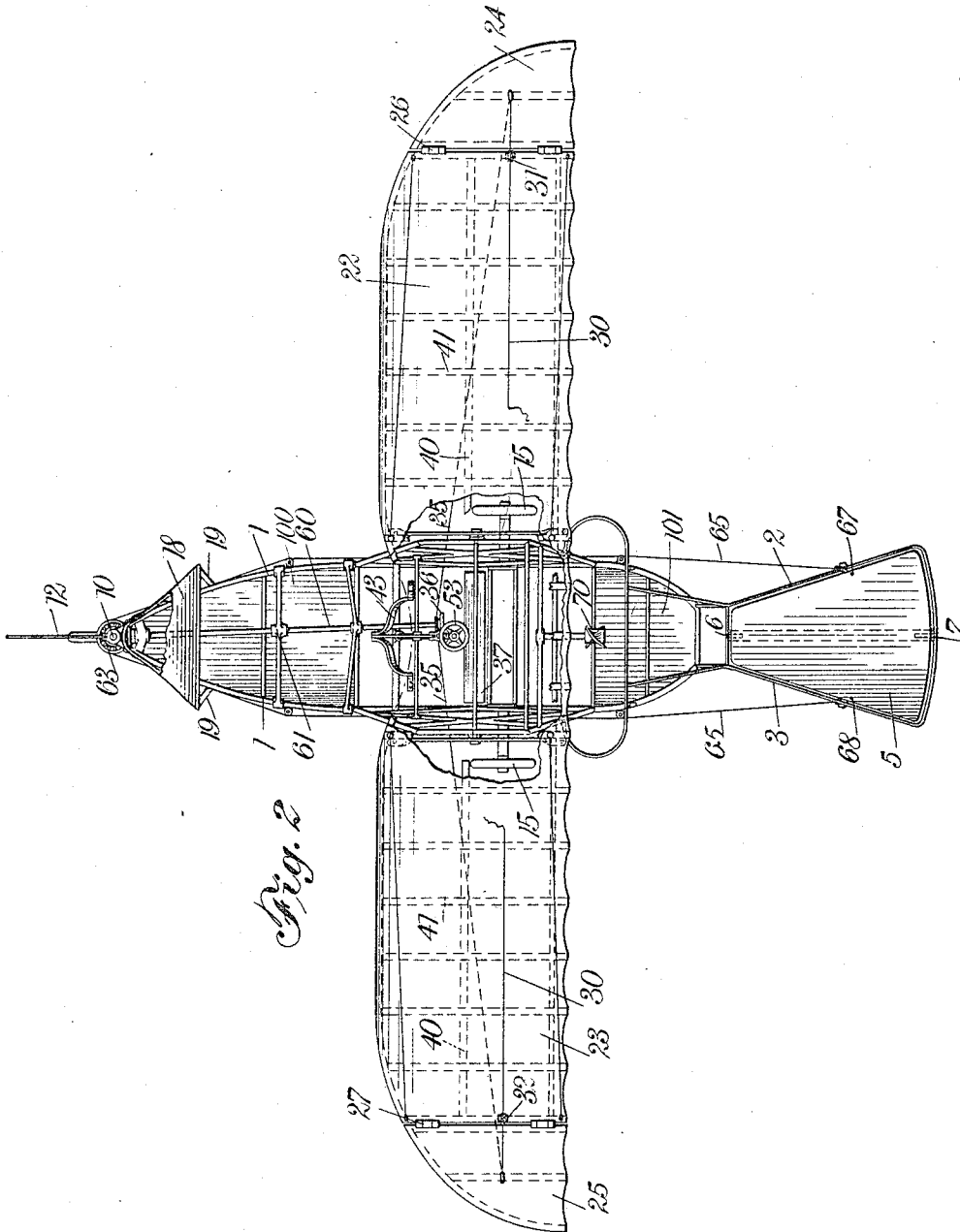


Fig. 2

WITNESSES
Frank O. Vico Jr.
L. J. Gallagher.

INVENTOR
John Maljkovich.
BY Munn & Co
ATTORNEYS

UNITED STATES PATENT OFFICE.

JOHN MALJKOVICH, OF NEW YORK, N. Y.

FLYING-MACHINE.

1,036,287.

Specification of Letters Patent.

Patented Aug. 20, 1912.

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To all whom it may concern:

Be it known that I, JOHN MALJKOVICH, a subject of the King of Hungary, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Flying-Machine, of which the following is a full, clear, and exact description.

My invention relates to heavier-than-air flying machines, and the object of the invention is to provide a new and improved form of machine having transversely-extending planes thereon, together with ailerons at the outer ends of the planes, together with rudders at the front and rear of the machine, the construction and operation being such that the ailerons and rudders cooperate in guiding the machine.

The principal object of my invention is to provide a new and improved form of flying machine having planes thereon which extend on opposite sides of the frame of the machine, each of these frames being curved in cross section, together with ailerons pivotally carried at the outer end of each of the planes, the ailerons being plane in cross section.

A further object of my invention is to provide a new and improved form of flying machine having transversely-extending curved planes thereon, the planes being mounted and being provided with suitable means cooperating with other means operable by the driver, whereby the planes may be moved in order to elevate or lower the machine when in flight.

A further object of my invention is to provide a new and improved form of heavier-than-air flying machine, which shall consist of few parts, and the shape and construction of which will render it efficient in service and of maximum strength, the elements thereof being such that a device may be produced which can be disposed of at a low price.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a perspective view of the machine; Fig. 2 is a plan view thereof, partly in section; Fig. 3 is a partial side view, showing curved formation of the planes, together with the frames supporting the planes;

Fig. 4 is a partial side view of the operating means for elevating and lowering the planes.

The machine comprises any suitable form of longitudinally-extending frame 1, preferably of the outline shown in Fig. 1, the opposite sides of the frame, at the forward portion thereof, approaching each other whereby a bow is formed. The rear part of the frame is provided with longitudinally-extending members 2, 3, together with an end connecting member 4, there being a horizontal rudder 5 pivotally supported, as at 6, 7, within the opening between these members. The parts of the frame are braced by diagonally-extending members 8 of any suitable form of construction and dimension, capable of resisting strain when in flight.

The bow of the machine is provided with a vertically-extending post 9, which is suitably supported, as at 10 and 11, by the frame of the machine, there being a forward vertically-extending rudder 12 secured to this post, so that turning of the post will also turn the rudder. The lower end of the post is provided with a fork 13, within which a suitable wheel 14 is mounted, in order to permit the machine to be drawn along the ground, there being other wheels 15 secured to opposite sides of the frame 1, these wheels being preferably mounted on frames 16, resiliently supported from the main frame of the machine by springs 17.

At the forward end of the frame 1, and immediately in rear of the forward rudder 12 is a fixed horizontal plane 18, secured in any suitable manner to the top of the frame, the material of the plane being extended downwardly on each side of the frame as at 20; the rear portions of the downwardly extended sides are slightly offset from the frame and are maintained in such position by any suitable means such as braces 19.

Extending longitudinally of the frame 1 and secured to the lower members thereof on each side of an intermediate portion are the supporting planes 100, 101; it will be observed that at the outer end of each of these planes 100, 101, there is a movable element, in one instance the forward vertically mounted rudder 12, and in the other instance the rear horizontally mounted rudder 5.

Rising above the main frame 1 and at substantially the central portion thereof, is another frame 21, preferably rectangular

in shape, supporting adjacent its top the transversely-extending planes 22, 23, which together form a single elevating and supporting plane not unlike the wings of a bird, each side of the planes between the center and outer end being curved transverse, as shown particularly in Fig. 3, the outer end portions, however, of each plane being preferably flat, whereby suitable ailerons 24, 25 may be pivotally supported thereon, as at 26, 27. The plane is maintained in rigid position and is carried by a suitable stationary frame 28, which is secured to a substantially central portion of the plane, the plane and the frame 28 being pivotally supported as at 29 to the upwardly extending frame 21. This plane, together with the frame 28, is movable as a unit about the points of pivotal support 29, and each of the ailerons 24, 25 is movable at the ends of the plane; extending longitudinally of the plane and on the upper side is a connecting member 30, which may be a wire or other suitable element connected at its ends to the upper side of each of the ailerons and supported in position above the plane by suitable guides 31, 32, which may consist of rollers pivotally mounted at the ends of the uprights 33, 34. Extending along the under side of the plane 22, 23, and secured to the under side of each of the ailerons 24, 25 is another connecting member 35, the central portion of which is wrapped around a suitable wheel 36 adjacent the operator's seat 37, this member being maintained in a suitable taut position, so that turning of the wheel in either direction will move the ailerons up and down by means of the members 30, 35; this member 35 may be supported as at 38, 39 by means similar to that supporting the member 30. In order to strengthen and give rigidity to the plane 22, 23, it is provided with suitable longitudinally extending braces 40, transversely-extending braces 41 of suitable shape being also provided. The ends of the plane are maintained in position by suitable tie wires 42, extending both above and below the frame, as shown particularly in Fig. 1.

The plane 22 and 23 is moved about its points of pivotal support 29 by any suitable means, the following, however, being the preferred construction: A bifurcated member 43 is pivotally attached at 44 to the under side of the plane, the lower end 45 of this member being pivotally secured to an arm 46, suitably mounted on a transverse member 47, carried by the upright frame 21, the lower end 48 of the arm being pivotally secured at 49 to a collar 50, having a threaded interior engaging with screw-threads 51 and an upright post 52, having a hand-wheel 53 thereon, the lower end of the post being secured by any suitable means to a bracket 54, carried by the lower part of the frame 1. As the handle 53 is turned, the

collar 50 is moved upwardly or downwardly along the post 52, thereby elevating or lowering the forward edges of the plane, whereby the machine is elevated or lowered. The forward propeller 12 and the rear propeller 5, together with the ailerons 24 and 25, are designed to act together, and to effect such a result any suitable form of means, engaging all of these parts, may be provided, the following means, however, being what I consider the most desirable: Extending longitudinally of the machine is a rod 60, supported in suitable bearings 61, carried by the main frame 1, the forward end of this rod having a gear 62 thereon, meshing with another gear 63 carried by the post 9, so that turning of the rod will turn the post and with it the forward rudder 12. Adjacent the fork 13 is a suitable guide, such as a peripheral groove 64, around which a continuous wire or cord 65 passes, being suitably guided at opposite sides of the frame 1 by any suitable means, such as rollers 66, the ends of this wire or cord 65 being secured to opposite side portions of the rear rudder 5, as at 67, 68, pulleys 69, 70 being provided to change the direction of motion. The wheel or pulley 36 carried at the rear end of the rod 60 has been previously described, together with the connecting member 35. It will be obvious that turning the wheel or pulley 36 in either direction will turn the post 9, and with it the forward rudder 12, the turning of the post also actuating the rear rudder 5, the ailerons 24 and 25 being moved simultaneously by reason of the engagement of the member 35 with the wheel or pulley on the rod 60.

In order to propel the machine any form of motive power may be used, suitable for the purpose, and any desirable form of propeller 70 which may be conveniently mounted in the rear of the upright frame 21, as shown in Fig. 1. The wheel 53 and the post 52, together with the wheel or pulley 36, are preferably mounted adjacent the front of the driver's seat 37, so that in the operation of the machine the parts therefor are accessible.

Previous to flying, the machine is guided over the ground by means of the wheels 14, 15, the forward motion being imparted by means of the propeller 70, the elevation of the machine being effected by turning the plane 22, 23 about the points of pivotal support 29, and the guiding of the machine while in flight being effected by the rudders 12 and 5, as well as by the ailerons 24 and 25, these ailerons also tending to assist in the balancing of the machine during such guidance. Turning the wheel 36 clockwise will depress the aileron 24 and raise the aileron 25, at the same time turning the forward rudder 12 to the right and raising the right side of the rear rudder 3; such

construction and operation afford a heavier-than-air flying machine which, at extended parts, is provided with movable means which are operable to not only guide the machine in flight but also to balance it, the result being that a more reliable construction is afforded, thereby providing a safer machine.

From an inspection of the drawings, it will be observed that the general configuration of my machine is similar to that of a bird in flight; the forward rudder 12 corresponds to the head, and the rear rudder 5 to the tail; the parts 22, 23, with their intermediate transversely curved portions are analogous to the wings while the surface of the body is represented by the horizontal supporting planes 100, 101. The end portions of each part of the machine being movable, the operation of the machine is facilitated and the control thereof is improved.

Of course, it is obvious that various changes may be made in the proportion of the parts and their relation to each other, in building machines of different sizes, made up of parts of different dimensions, without departing from the spirit and scope of my invention, as defined in the following claims.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent:—

1. A flying machine comprising a suitable frame, a vertically mounted rudder at the front of the frame, a horizontally mounted rudder at the rear of the frame, means connecting the said rudders, means carried by

the frame and comprising a rod engaging the forward rudder for turning the same, transversely-extending planes on the machine, a frame for supporting the said planes, the planes being pivotally mounted on the said frame, ailerons pivotally carried at the outer end of each of the planes, means connecting the said ailerons and the said rod whereby operation of the rod moves the rudders and the ailerons.

2. A flying machine comprising a supporting frame, a rudder at the forward end of the frame and pivotally supported thereon, another rudder at the rear of the frame and pivotally supported thereon, connecting means between the two rudders, a rod carried by the frame and in engagement with the forward rudder, transversely-extending planes carried by the said frame and pivotally supported thereon, each of the said planes being curved in cross-section, ailerons pivotally supported by the outer ends of the planes, connecting means between the said ailerons, a member of the connecting means being in engagement with the said rod, whereby the turning of the rod will move the rudders and also the ailerons, there being other means carried by the frame for moving the said planes about their points of pivotal support.

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

JOHN MALJKOVICH.

Witnesses:

PHILIP D. ROLLHAUS,
LAURENCE J. GALLAGHER.