C. F. JENKINS.

FLYING MACHINE.

APPLICATION FILED SEPT. 2, 1910.

1,067,432.

Patented July 15, 1913.

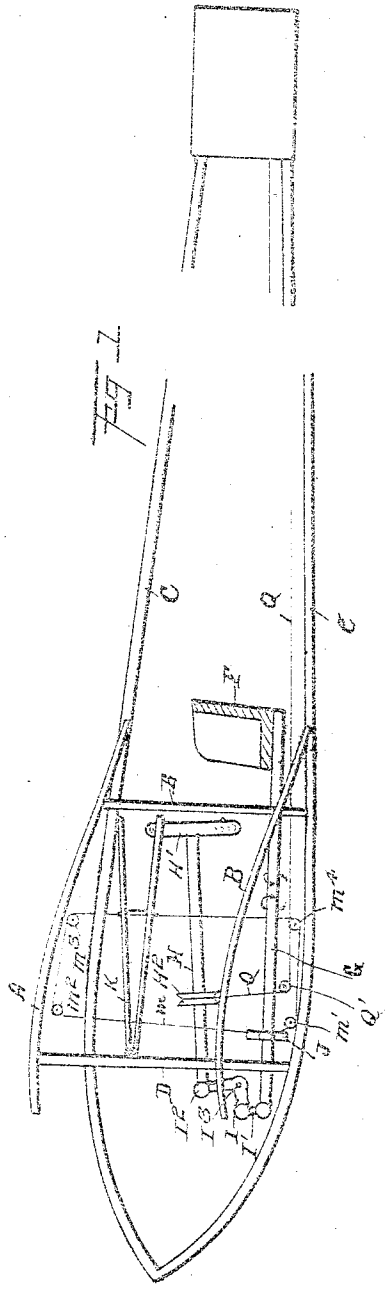


Fig. 1.

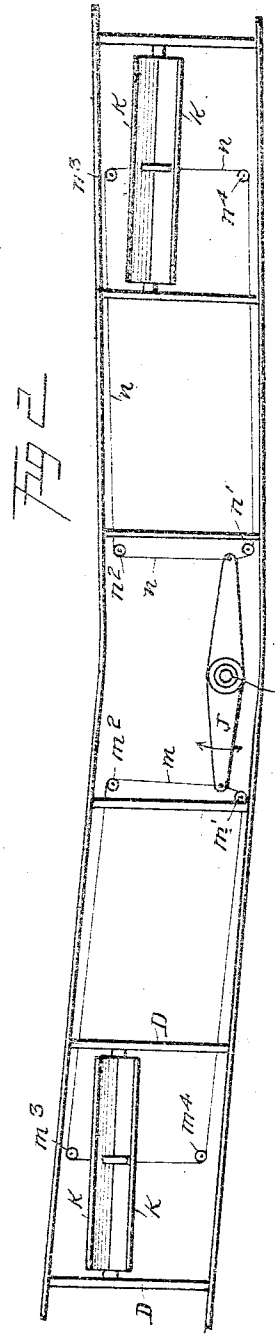


Fig. 2.

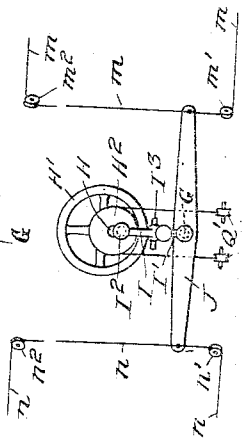


Fig. 3.

WITNESSES:

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FLYING-MACHINE.

1,067,432. Specification of Letters Patent. Patented July 15, 1913.

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To all whom it may concern:

Be it known that I, CHARLES FRANCIS JENKINS, 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 principal object devices for maintaining lateral equilibrium without affecting the steering in any manner.

A further object is such a construction of the stabilizing planes as will afford the promptest possible response.

Heretofore it has been usual to pull down the rear edge of the main plane (or of the ailerons or balancing planes) on the low side of the machine when it has lost its equilibrium, and to let go the other. This, besides straightening up the machine, has a tendency to retard the low side of the machine and throw it around off its course. To counteract this tendency the rear rudder is so connected as to be simultaneously moved to neutralize this turning effect.

The main object of this invention is to recover the equilibrium of the machine without any tendency to affect the steering. The devices employed for this purpose are shown in the accompanying drawings, in which—

Figure 1 is a longitudinal elevation of the machine, and Fig. 2 a rear elevation with certain parts left off for clearness. Fig. 3 shows in front elevation mechanism for operating the balancing wings.

In the figures, A represents the upper and B the lower main planes of the machine; C the longitudinal framing; D and E vertical framing; F the driver's seat; G an oscillating rod on which the seat is mounted; H the steering column of the machine; I a bell-crank one member of which through universal joints attaches to the steering column and the other end to the seat rod; J a lever also mounted on the seat-rod; K ailerons or balancing planes one at each end of the main planes. A link I′ connects the seat rod G to one arm of the bell-crank, which is pivoted at I^2, the joints being universal, to allow desired relative movement of the parts. The steering column H is connected similarly to the other arm of the bell-crank at I^2 and is mounted to slide longitudinally and to rotate, both movements being produced by a hand wheel H′. To this column is fixed a pulley H^2 from which wires Q lead around pulleys Q′ and thence to a rear steering device, which is thus actuated by the rotation of the hand wheel.

The operation of the device is as follows: The machine being in free flight, and assuming that by reason of a gust or other cause the machine tips raising the right and depressing the left plane, the driver leans toward the high side and this rotates the seat rod G raising the left end and depressing the right end of the lever J and through the medium of the wires m passing around suitable pulleys m', m^2, m^3, m^4 pulls down the aileron at the left and through the medium of the wires n which pass around pulleys n', n^2, n^3, n^4 pulls up the aileron on the right bringing the machine back to a level keel. As the machine straightens up the driver sits more straight and presently the ailerons are brought to normal position. Obviously the machine could be brought to equilibrium in similar manner if the other end of the main planes should rise, by the driver leaning the other way, etc. Pulling backward on the steering column moves the forward end of the bell-crank (the end attached to the seat-rod) upward and this raises the seat-rod and likewise the lever J. This action equally and similarly affecting the wires m and n, draws down the rear edges of both ailerons and tends to raise the machine bodily, while pushing forward on the steering wheel has an opposite effect, that is, causes the machine to descend. The balancing planes may, therefore, both be brought down together, or they may be oppositely raised and lowered, that is, one moved upward and the other downward. The movement of one of the balancing planes above and the other below a longitudinally horizontal plane through the machine, has an exactly equal effect on the ends of the main planes, one to rise and the other to fall, so that the center line of the machine does not rise or fall, nor does this affect the steering in any manner, because the retarding effect of the aileron on the low side is exactly counterbalanced by the retarding effect of the aileron on the high side. The steering to the right and left is effected through the rear rudder and the wires Q attached to the pulley on the steering column, but this is not a part of the invention claimed in this application.

The form of controlling planes described

and illustrated in this application, a form which might be used for steering as well as balancing, has been found to be most prompt in responding to the will of the operator, for but a slight movement in either direction brings one or the other of the faces of the plane into prompt and effective action.

What I claim, is—

The combination with a frame, main supporting wings, and balancing wings near the outer ends, respectively, of said planes, of a rear steering vane, balancing wings hinged at their front edges between the outer end portions, respectively, of said planes, a longitudinal ce al seat rod arranged to swing vertically and having oppositely projecting lateral arms, a rotary and sliding steering column arranged to actuate said vane in rotating, means whereby sliding said column compels variation in the elevation of the arm-bearing portion of said rod, and wires connecting the arms to the wings and compelling both to move in the direction of the movement of the arms.

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

CHARLES FRANCIS JENKINS.

Witnesses:

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