

R. E. MITTON.
AEROPLANE CONTROL.
APPLICATION FILED JAN. 13, 1919.

1,332,743.

Patented Mar. 2, 1920.
3 SHEETS—SHEET 1.

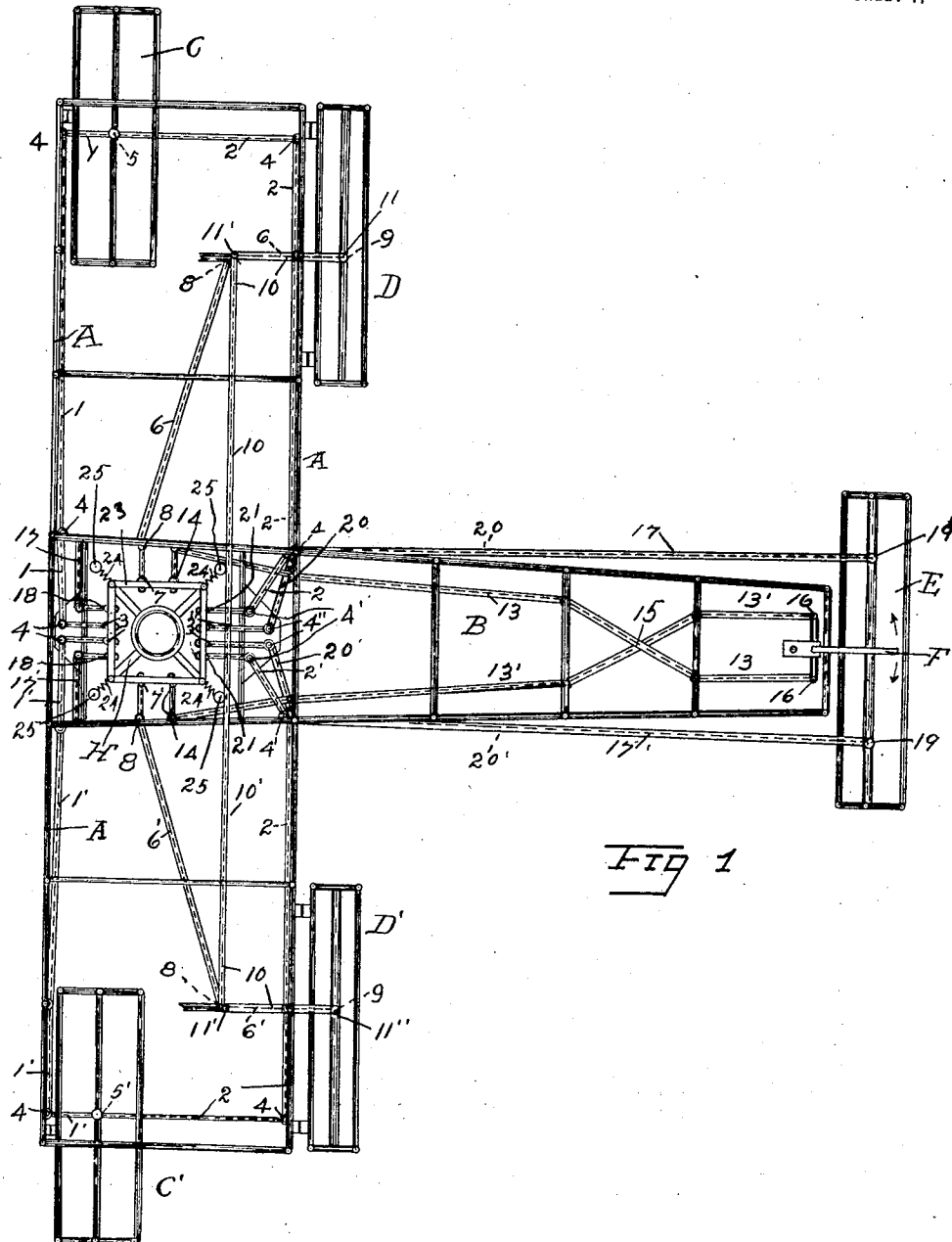


FIG 1

Witnesses
Sherman Wallace,
Vera Jones.

Inventor
Robert. E. Mitton.

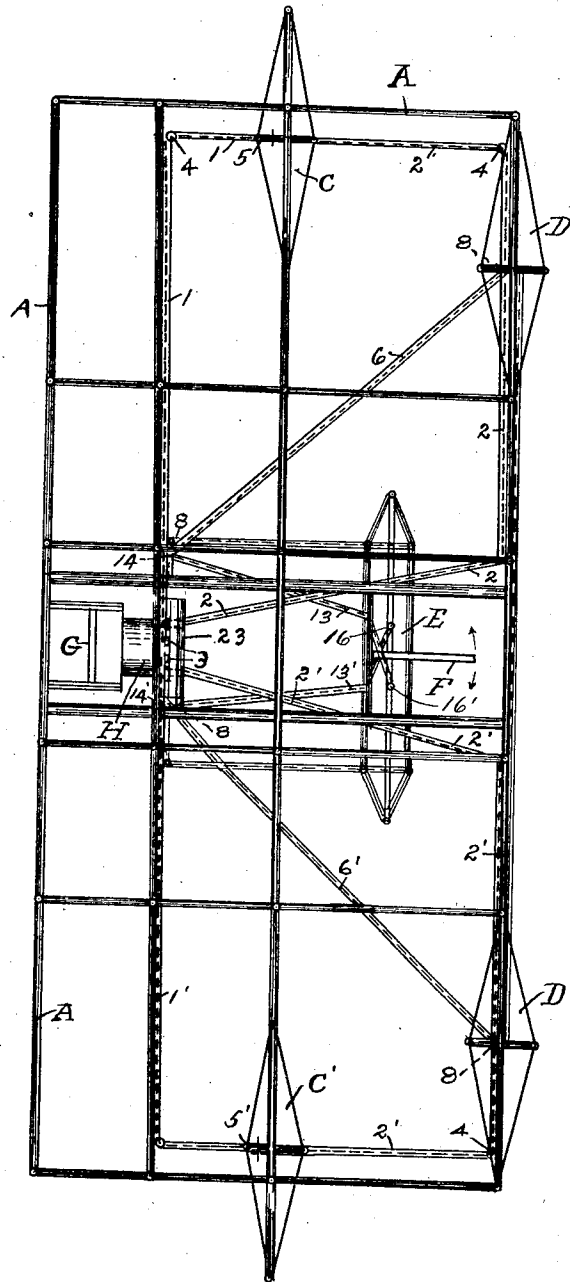
By F. L. Horspool,
Attorney

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3 SHEETS—SHEET 2.

FIG 2



Witnesses
J. Sherman Wallace.
Vera Jones

Inventor
Robert E. Mitton

By F. L. Horapool,
Attorney

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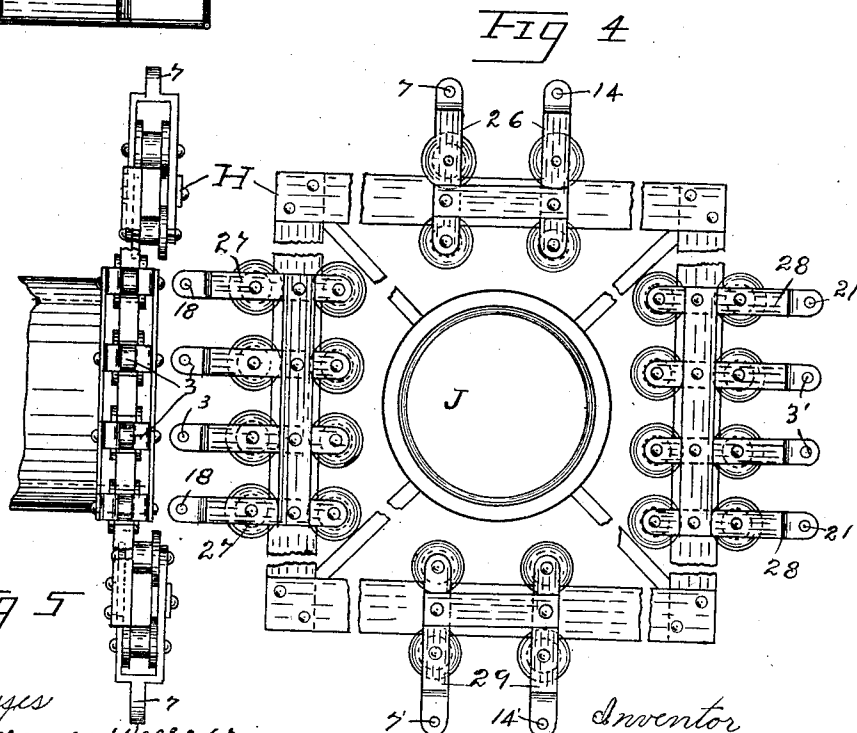
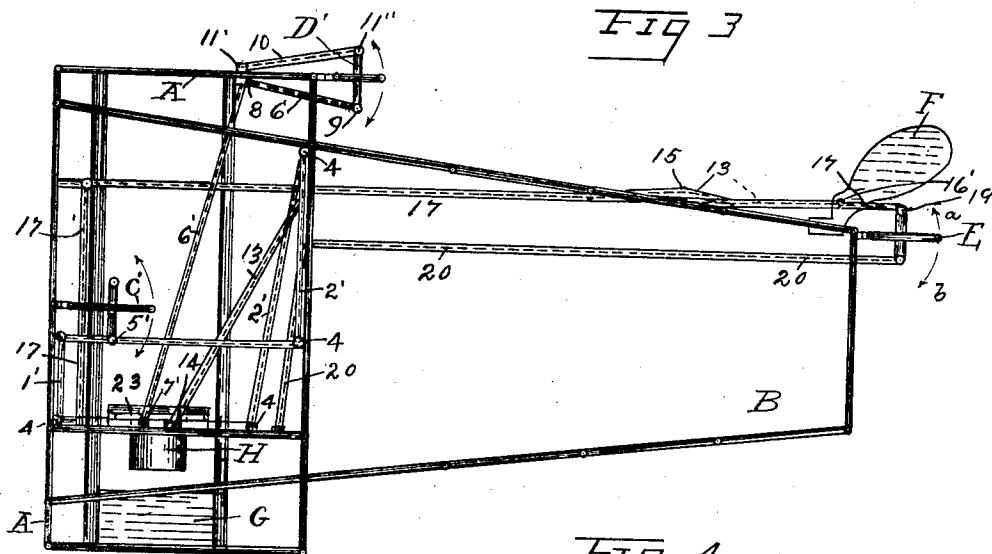


Fig 5

Witnesses
J. Sherman Wallace.
Vera Jones

Inventor
Robert E. Mitton

By F. L. Horspool
Attorney

UNITED STATES PATENT OFFICE.

ROBERT E. MITTON, OF SALT LAKE CITY, UTAH.

AEROPLANE CONTROL.

1,332,743.

Specification of Letters Patent.

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Application filed January 13, 1919. Serial No. 270,961.

To all whom it may concern:

Be it known that I, ROBERT E. MITTON, a citizen of the United States, residing at Salt Lake City, in the county of Salt Lake and State of Utah, have invented a new and useful Improvement in Aeroplane Control, of which the following is a specification.

My invention relates to an aeroplane control that can be applied to all makes of aeroplanes and the like.

One object of my invention is to provide an aeroplane control constructed in such a manner that the aeroplane is kept under control by the natural equilibrium of the pilot's body.

Another object of my invention is to provide an aeroplane control in such a manner that the aeroplane will follow every movement of the pilot's body.

Another object of my invention is to provide an aeroplane control, whereby the pilot is never in danger of forgetting how to operate the different stabilizing parts of the aeroplane.

With these and other objects in view, my invention consists of the following parts, to be hereinafter described and pointed out in the claim.

In the accompanying drawings, the frame work of the aeroplane is all that is shown. The engine, stay wires, covering and propeller are removed to show the workings of my invention.

Figure 1, is a plan view of an aeroplane showing my invention applied.

Fig. 2, is a front view of Fig. 1.

Fig. 3, is an end view of Fig. 1.

Fig. 4, is an enlarged drawing of the body control showing the arrangements of the rollers to which the wires are attached that control the movements of the aeroplane.

Fig. 5, is a side view of Fig. 4.

Similar letters and numerals refer to like parts throughout the several views of the drawings.

A denotes the frame, B the fuselage, C and C' the front elevators, D and D' the ailerons, E the rear elevator, F the rudder, G the seat upon which the pilot rests, H the body control, 1, 1', 2 and 2' are wires running from 3 and 3' on the body control H and along the frame A and held into place by pulleys 4 and 4' which are secured to the frame A, and the other end of the wires are secured to the front elevator C and C' at 5 and 5'.

6 and 6' are the wires attached at 7 and 7' to the body control H, and passing through pulleys 8 secured to the side of the frame A, the other end of the wires are secured at 9 to the under side of the aileron D and D'.

10, is a wire running from the top 11 of the aileron D, through pulleys 11' on top of the frame A and to the top 11'' of the aileron D' thus connecting the ailerons D and D'. 13 and 13' are wires connecting at 14 and 14' to the body control H and running along the fuselage B and secured thereto by means of pulleys, the wires crossing one another at 15 to the opposite side and connecting at 16 and 16' to the rudder F.

17 and 17' are wires connected at 18 and 18' to the body control H and running along the frame A, then out to the rear elevator E and secured thereto to the top of brackets 19 and 19'. The two wires operate the rear elevator E upward in the direction of the arrow a.

20 and 20' are wires connecting at 21 and 21' to the body control H and running along the frame A to the rear elevator E there to the bottom of 19 and 19'. These wires are for lowering the elevator E in the direction of the arrow b. 23 is a guard over the rollers on the body control H to prevent the pilot from getting his hands in contact with the rollers 26, 27, 28, and 29. At each corner of the body control H are springs 24 which are secured to uprights 25, thus holding the body control in an upright position. The opening J in the body control H is to inclose the pilot's body, leaving his arms free at all times.

The body control is constructed with a frame upon which is mounted four sets of rollers 26, 27, 28, and 29, see Fig. 4. These are so constructed that the wires attached to the set 27 and 28 will not be pulled when the body control is moved to the right or left. The rollers are so arranged that the wires attached to the set 26 and 29 will not be pulled when the body control is moved backward or forward.

In the operation of my invention, the aeroplane is operated by the movement of the pilot's body, to the right, to the left, backward or forward, to the left and forward, to the left and backward, to the right and forward, to the right and backward.

The results of these movements are as follows. In the movement to the right, wire 6 is pulled depressing the left aileron D', and

raising the right aileron D, wire 13 is also pulled exposing the right side of the rudder F to air pressure with the result that the aeroplane banks and turns to the right.

5 In the movement to the left, wire 6' is pulled depressing the right aileron D and raising the left aileron D', wire 13' is pulled exposing the left side of the rudder F to air pressure. The result aeroplane banks and turns to the left.

10 In the movement forward, the wires 2 and 2' are pulled raising the front elevators C and C'. Wires 20 and 20' are pulled depressing the rear elevator E. The result, aeroplane heads downward.

15 In the movement backward, the wires 1 and 1' are pulled depressing the front elevators C and C'. Wires 17 and 17' are pulled raising the rear elevator E. The result, aeroplane heads upward.

20 In the movement to the right and forward, wire 6' is pulled depressing the left aileron D' and raising the right aileron D. The wire 13' is pulled exposing right side of rudder to air pressure. Wires 20 and 20' are pulled depressing the rear elevator E. Wires 2 and 2' are pulled raising the front elevators C and C'. Result, aeroplane banks and heads downward in a spiral to the right.

30 In the movement to the left and forward, wire 6 is pulled depressing the right aileron D and raising the left aileron D'. The wire 13 is pulled exposing left side of rudder F to air pressure. Wires 20 and 20' are pulled depressing the rear elevator E. Wires 2 and 2' are pulled raising the front elevators C and C'. Result, aeroplane banks and heads downward in a spiral to the left.

40 In the movement to the right and backward, wire 6' is pulled depressing the left aileron D' and raising the right aileron D. Wire 13' is pulled exposing right side of rudder F to air pressure. Wires 1 and 1' are pulled depressing the front elevators C and C'. Wires 17 and 17' are pulled raising the rear elevator E. Result, the aeroplane banks and climbs upward in a spiral to the right.

50 In the movement to the left and backward, wire 6 is pulled depressing the right aileron D and raising the left aileron D'. Wire 13 is pulled exposing left side of rudder F to air pressure. Wires 1 and 1' are pulled depressing front elevators C and C'. Wires 17 and 17' are pulled raising rear elevator E. Result, aeroplane banks and climbs upward in a spiral to the left.

60 With my invention the pilot is never in danger of forgetting how to operate the dif-

ferent stabilizing parts of the aeroplane, as he has no foot pedals, hand levers, or control pillar to remember. Every control wire on the aeroplane is attached to the body control H which fits around the waist of the pilot, and is secured thereto by straps not shown, thus giving him instant control of the whole aeroplane under any and all circumstances and leaving his hands and feet free.

70 The wires are so arranged that the pilot can in a very short time operate the aeroplane by instinct and without a second's hesitation, practically without thought, extract himself from predicaments, which, with the present controls would be very serious and require lightning brain work.

For an example of emergency control, we will take the nose spin first.

75 If the aeroplane was spinning from left to right and going straight to the earth, the pilot with the old control would find it somewhat awkward to get at his various levers and pedals. With my control all the pilot would have to do would be to lean backward and to the left about ten inches and the aeroplane would immediately right itself.

80 In case of a high wind pressure on the stabilizing planes the hands may be used to grasp the uprights 25 and his feet can be braced sidewise.

85 To volplane to the earth the pilot simply has to lean slightly forward and to the left or right, shut off his engine and the aeroplane takes a gentle spiral to the earth.

90 If the pilot is leaning in any direction and he suddenly relaxes, the aeroplane will not pursue the course it was running, but will immediately straighten up and go straight ahead, retaining the altitude it was at when the relaxation occurred.

95 While I have only shown one body control on the aeroplane, many more can be used for instructing the student.

What I claim, is:

100 An aeroplane control operated by the movements of the pilot's body, the body control secured to the pilot's body, the rollers mounted on said body control, the wires attached to said rollers, said wires for controlling the stabilizing parts of the aeroplane, the pulleys secured to the frame of the aeroplane for supporting the said wires, the springs for supporting said body control in an upright position.

R. E. MITTON.

Witnesses:

EDWARD KREHBIEL,
CHARLES D. HURST.