V. P. FLEISS.

AEROPLANE.

APPLICATION FILED FEB. 27, 1911.

1,001,941.

Patented Aug. 29, 1911.

2 SHEETS—SHEET 1.

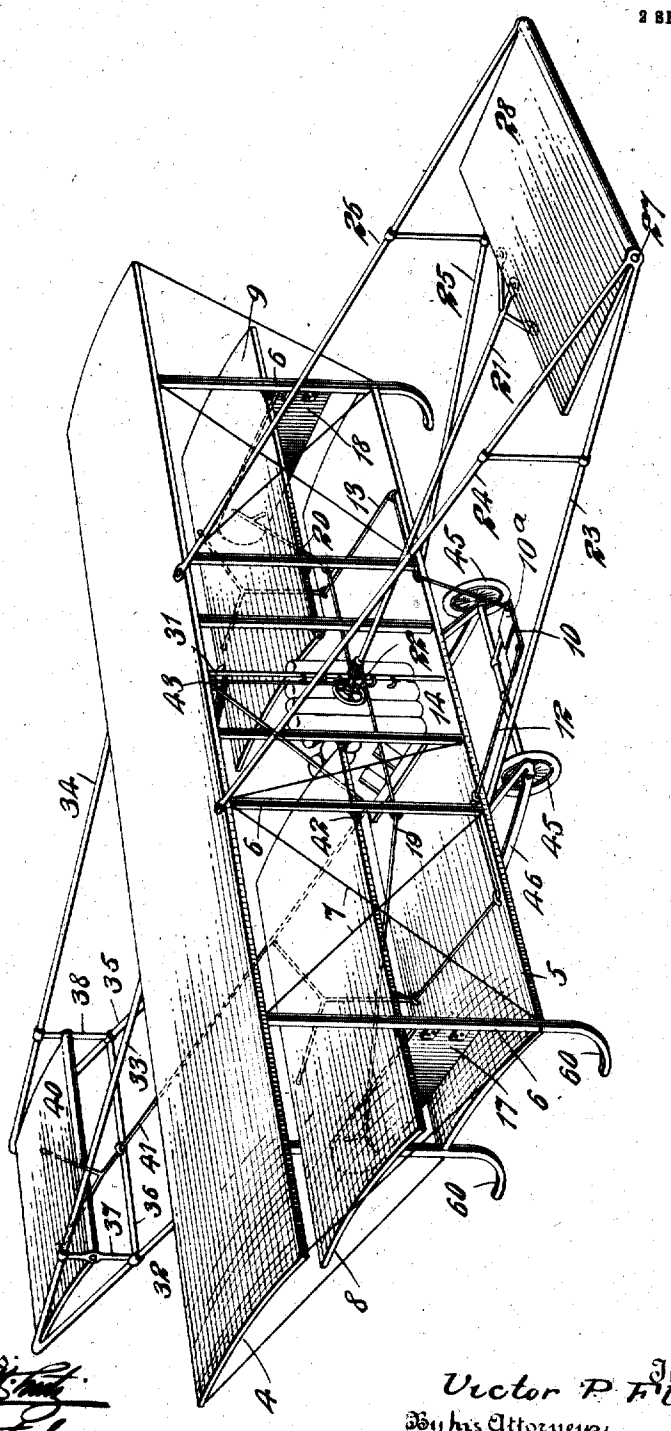

Fig. 1.

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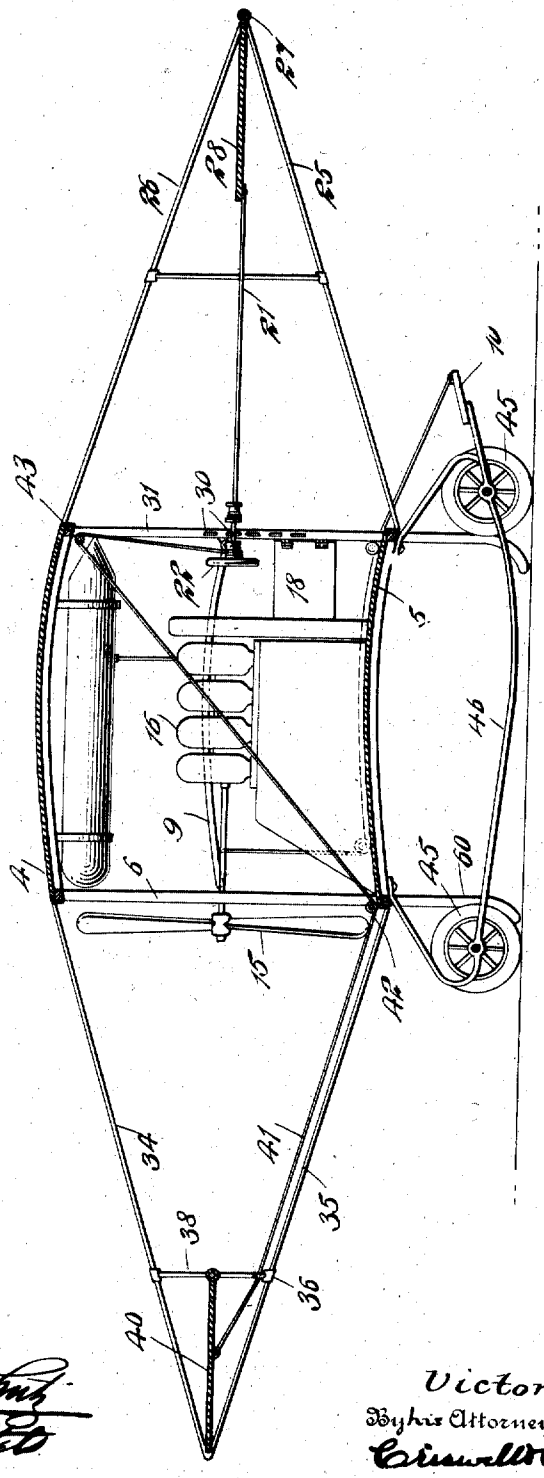
2 SHEETS—SHEET 2.

Fig. 2.



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AEROPLANE.

1,001,941. Specification of Letters Patent. Patented Aug. 29, 1911.

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To all whom it may concern:

Be it known that I, VICTOR P. FLEISS, a subject of the Emperor of Austria-Hungary, and a resident of Lakewood, county of Ocean, and State of New Jersey, have invented certain new and useful Improvements in Aeroplanes, of which the following is a full, clear, and exact description.

The principal object of this invention is to provide an aeroplane in which one of the main supporting planes can be tilted, for the purpose of controlling the forward movement of the car, either upward or downward.

A further object is to provide a shiftable supporting plane, that may extend transversely and which is arranged adjacent one or more transverse supporting planes, and which said plane may be formed of a plurality of sections, that can be tilted, either separately or together.

A still further object is to provide a transverse supporting plane that is arranged intermediate of other supporting planes, and in which one of the upper planes is longer or overhangs the intermediate plane, while the lower plane is shorter than, and is itself overhung by the intermediate plane.

A still further object is to provide an intermediate plane of the character set forth, that is divided into two planes longitudinally, and the inner ends are offset a distance considerably less than the length of each of the members, for the purpose of providing space at the center of the car for the operator and for the propelling mechanism.

Another object of the invention is to provide extensions of the frame of the car, both at the front and at the rear, which extensions are provided with wings or blades that are each mounted to swing on a transverse axis; and which wings may be provided with means for operating them from the driver's seat on the car.

With these and other objects in view, the invention will be hereinafter more particularly described with reference to the accompanying drawings, which form a part of this specification, and will then be pointed out in the claim at the end of the description.

In the drawings representing one embodiment of my invention, Figure 1 is a perspective view of the machine and Fig. 2 is a longitudinal vertical section through the car.

The car is shown comprising a plurality of transversely extending planes, of which three are shown; there being an upper plane 4, a lower plane 5, that is connected with the upper plane by post 6, both at the front and at the rear of these planes. Suitable tie wires 7 are also shown for supporting the structure. Intermediate of these two planes is arranged a plane member, that is shown as formed of two sections 8 and 9, whose inner ends are spaced a comparatively short distance apart, and which distance is considerably less than the length of either of these sections. These sections are supported to swing or tilt up and down, and are shown as pivoted to the front post 6, but may be secured to these posts, and made to flex. The rear edges of these two sections are not connected to the frame, but are free to shift up and down. Suitable means is provided for operating these sections of the middle plane independently, from the place on the car occupied by the driver. A pair of treadles 10 and 10^a are shown supported to swing, and treadle 10 is connected to a flexible member 12 that passes rearward and is secured to the movable section 8, or where pivoted as shown, the air will tend to keep them horizontal. The plane section 9 is connected with the treadle 10^a by a flexible member or cord 13. This treadle is in position to be engaged by the feet of the operator, who can sit on the portion 14 of the lower plane 5. If these sections 8 and 9 are flexible, the treadle device will serve to bend them downward and they will flex upward when the treadle is released. The downward movement of these sections 8 and 9 will offer a resistance to the air as the car is driven forward by suitable means, such as a propeller 15 driven by the motor 16, and the car will be caused to ascend in its forward movement.

The three plane members are shown as of unequal length, the lower plane 5 being shorter than the plane member formed of the sections 8 and 9; that is, the outer ends of these sections project beyond the ends of the lower plane 5. And the upper plane 4 may be of still greater length than the intermediate plane formed by the sections 8 and 9; the end portions of the upper plane overhanging the sections of the middle plane. This variation of the length of these three planes is for the purpose of increasing the supporting capacity, and will

also have the effect of overcoming the tendency of the machine to drop or fall when the motor is stopped.

It will be observed that the two sections 8 and 9 form practically a continuous plane, the inner ends being spaced apart a comparatively short distance, for the purpose of providing room for the motor, and for the operator, at the center of the car.

Vertical rudders or wings are also provided, a rudder 17 being shown hinged to an outer front post 6, and extending rearward, at one side of the car; while a similar rudder 18 is arranged to swing rearward from an upright 6 at the other side of the car. These rudders may be controlled by flexible members 19 and 20 that have their extremities secured to a longitudinally extending shaft 21. The latter is provided with a hand wheel 22 in position to be grasped by the operator of the car. By swinging these rudders the car can be steered to turn to one side or the other, as desired. The machine is also provided with planes or wings at the front, and at the rear, for the purpose of assisting the control of the car, to fly upward or downward, or assist in maintaining it in a horizontal path.

The car is shown provided with a forward extension comprising bars 23 and 24 on one side, and bars 25 and 26 on the other side, that are connected by a cross bar 27 at the front. A wing or plane 28, is mounted to swing on this cross bar up and down, and may be controlled by being connected to the shaft 21. This shaft can be moved up and down by the operator grasping the wheel 22, and it can be held in several positions by resting the shaft on hooks or arms 30 carried by a vertical post 31.

A rear extension from the frame is provided, comprising bars 32 and 33 on one side and bars 34 and 35 on the other side, whose rear portions are connected by a cross bar 36 that connects the lower bars 32 and 35 a short distance in front of their ends. A pair of short uprights 37 and 38 extend between the side bars at the ends of the cross bar, and this bar serves to support at its front edge a wing or plane 40, whose rear edge is free to swing up or down. This wing 40 is shown as provided with controlling means to operate it at the same time that the front wing 28 is operated. A flexible member 41 extends forward from the wing 40 along the lower portion of the frame extension, passes around a guide 42, thence upward around a guide 43 at the top of the car, and then passes downward and is connected to the shaft 21. By this means it will be seen that when the shaft or handle is lowered, this flexible member 42 will be pulled, and the rear plane will be drawn downward or bend, and a reverse movement of the shaft will permit the plane to return to its normal position. By this means the two wings will swing up and down simultaneously and serve to control the forward movement of the car, or upward, or downward, or assist in maintaining it in a horizontal position.

The car may be provided with wheels 45, of which four are shown mounted on a kind of truck frame 46, for the purpose of permitting the car to run along the ground in starting and in stopping. And suitable skid devices may be used, by extending the posts 6 downward and curving them rearward, as at 60.

From this arrangement it will be seen that the car is provided with a plane member, that serves for the purpose of causing it to glide through the air when propelled and is formed in sections that can be adjusted for the purpose of changing the direction of movement of the car. By having a series of planes of unequal length, and the intermediate plane formed in sections and arranged to be tilted, a much greater stability is provided, and the car operates in a better manner, and is less likely to capsize from abnormal conditions of the atmosphere, or from other causes. And the forward and rearward extensions with the adjustable wings serve to cause direction of movement of the car to be easily and quickly changed.

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

In an aeroplane, the combination of a frame member, a plurality of transversely extending planes, the frame member having a forward extension, and a rear extension, a cross bar connecting the ends of the forward extension, a wing pivotally mounted on said cross bar, said wing having its rear edge arranged to move up and down, said rear extension comprising rearwardly extending bars 32, 33 and bars 34, 35 parallel thereto, uprights 37, 38 connecting said parallel, bars at points removed from the ends of said parallel bars, a wing pivotally mounted at its inner edge on said uprights and having its outer edge arranged to move up and down, and means for operating said wings.

This specification signed and witnessed this 24th day of February A. D. 1911.

VICTOR P. FLEISS.

Witnesses:
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