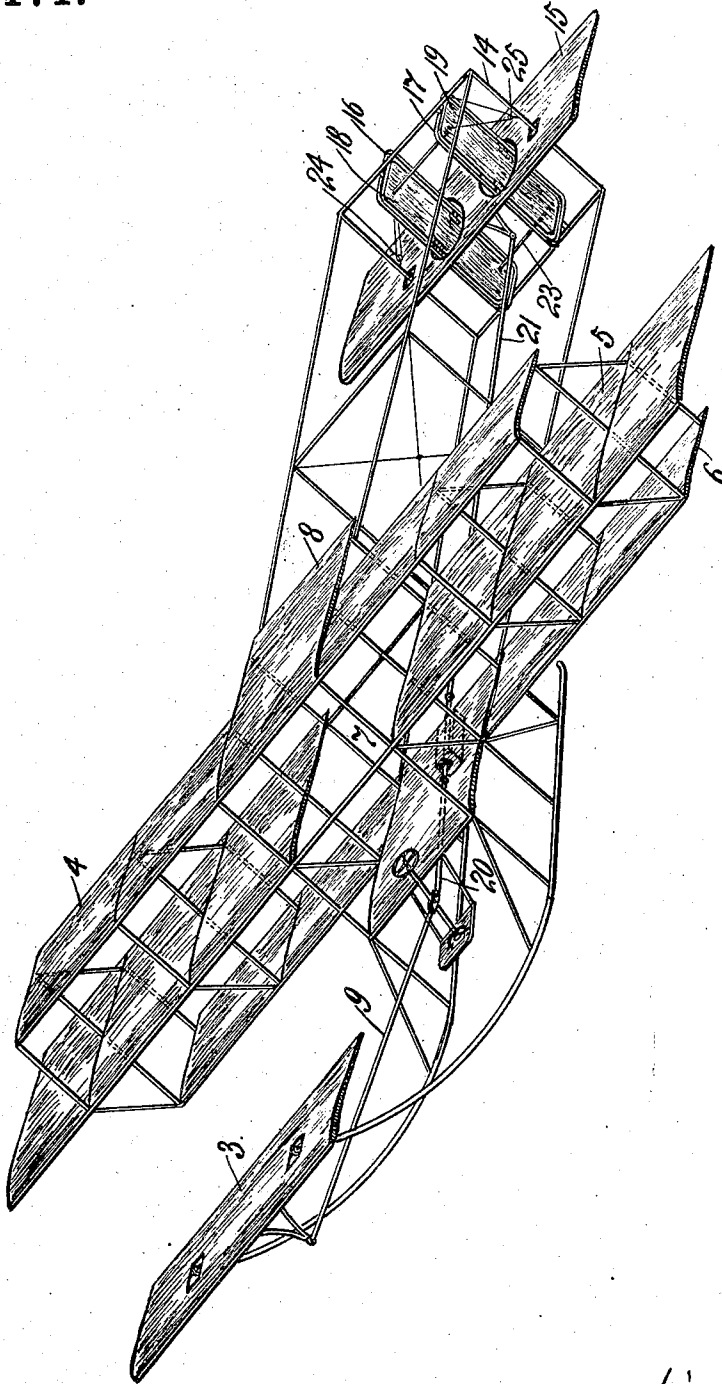


E. P. VINCENT.
AERONAUTIC DEVICE.
APPLICATION FILED MAY 28, 1910.

996,171.

Patented June 27, 1911.



WITNESSES:
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ERNEST PETER VINCENT, OF NEW YORK, N. Y.

AERONAUTIC DEVICE.

996,171.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ERNEST PETER VINCENT, a subject of the King of Denmark, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Aeronautic Devices, of which the following is a specification, reference being had therein to the accompanying drawing:

My invention relates to improvements in aeronautical devices and has particular reference to an aeroplane having three main supporting surfaces arranged in a staggered position.

In the accompanying drawing I have illustrated in perspective an aeroplane showing an application of my invention.

According to my invention I prefer to employ three main supporting surfaces arranged substantially as illustrated in the drawing, the central surface being about twice as deep from front to back as the upper and lower surfaces, the upper surface extending over the front of the central surface, and the lower surface extending beneath the rear of said central surface. The front control or elevating surface is also preferably constructed after the manner of the main supporting surface and the framework of the machine is preferably mounted upon skids as shown. It will be seen that the rear control comprises a pair of vertical frames so mounted as to swing upon vertical axes, said frames containing a pair of vertical surfaces so mounted as to swing upon horizontal axes. From this it will be seen that the rudders are capable of movement upon both vertical and horizontal axes and in addition to this the usual horizontal surface may be combined therewith.

4 is the upper main supporting surface, 5 the central main supporting surface, and 6 the lower main supporting surface. The central main supporting surface may be cut away at its central portion as shown at 7 in which case the central portion of the upper main supporting surface may be extended forwardly as shown at 8. With this arrangement of the supporting surfaces it will be found that they can be placed closer together and will give a greater lifting effect at the same time improving the possibilities of construction. The front and elevating surface is indicated with the reference characters 3. The rear control may be entirely mounted in the rectangular frame 14 trans-

versely of the machine and within this frame may be mounted the horizontal surface 15 and the rear vertical frames 16 and 17 carrying the rudder surfaces 18 and 19 respectively. The front and rear horizontal surfaces may be suitably connected by rods 9, 20 and 21 or by cable or other suitable means. The rudder surfaces 18 and 19 are also preferably connected by the rod such as 22 and the vertical frames are also preferably connected by a rod 23. Suitable pulleys such as 24 and 25 may also be mounted in the outer frame and cords or wires such as 26 and 27 may be passed through the same connecting the surfaces 18 and 19 to the frames 16 and 17 respectively. A cord or wire 28 may then be connected at the points where the rod 23 connects the vertical frames and by operating this cord or wire it will be found that as the vertical frames 16 and 17 rotate in their bearings the rudder surfaces 18 and 19 will also rotate in their bearings at right angles thereto. Thus it will be found that when it is desired to turn the machine while in flight, the surface of the rudder will be so presented as to minimize the falling tendency of the tail.

Of course it will be understood that various modifications may be made without departing from the spirit of the invention as set forth in the claims.

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

1. In an aeroplane, three main supporting surfaces mounted upon a framework, one of said surfaces between and of greater depth from front to rear than the other of said surfaces, one of said surfaces above and the other of said surfaces below said surface of greater depth, and said upper surface mounted over the forward portion and said lower surface mounted beneath the rearward portion of said surface of greater depth.

2. In an aeroplane, three main supporting surfaces mounted upon a framework, one of said surfaces between and of greater depth from front to rear than the other of said surfaces, one of said surfaces above and the other of said surfaces below said surface of greater depth, and said upper surface mounted over the forward portion and said lower surface mounted beneath the rearward portion of said surface of greater depth, a central portion cut away from said

surface of greater depth, and said upper and lower surfaces of greater depth from front to rear at said central cut away portion.

5 3. In an aeroplane, three main supporting surfaces mounted upon a framework, one of said surfaces between and of greater depth from front to rear than the other of said surfaces, one of said surfaces above and the
10 other of said surfaces below said surface of greater depth, and said upper surface mounted over the forward portion and said lower surface mounted beneath the rearward portion of said surface of greater depth, and
15 rudder surfaces being adapted to turn simultaneously upon a vertical and upon a horizontal axis.

4. In an aeroplane, three main supporting surfaces mounted upon a framework, one
20 of said surfaces between and of greater depth from front to rear than the other of said surfaces, one of said surfaces above and the other of said surfaces below said surface of greater depth, and said upper surface
25 mounted over the forward portion and said lower surface mounted beneath the rearward portion of said surface of greater depth, and rudder surfaces being adapted to turn simultaneously upon a vertical and upon a
30 horizontal axis, in combination with a horizontal surface.

5. In an aeroplane, main supporting surface and three front surfaces mounted upon a framework and adapted to be rotated upon
35 a horizontal axis, one of said front surfaces between and of greater depth from front to rear than the other of said surfaces, one of said surfaces above and the other of said surfaces below said surface of greater depth,
40 and said upper surface mounted over the forward portion and said lower surface mounted beneath the rearward portion of said surface of greater depth.

6. In an aeroplane, three main supporting
45 surfaces mounted upon a framework, one of

said surfaces between and of greater depth from front to rear than the other of said surfaces, one of said surfaces above and the other of said surfaces below said surface of greater
50 depth, and said upper surface mounted over the forward portion and said lower surface mounted beneath the rearward portion of said surface of greater depth, uprights from the rear of said upper surface to the center
55 of said surface of greater depth and to the front of said lower surface, uprights from the front of said upper surface to the front of said surface of greater depth, and said uprights from the rear of said lower surface
60 to the rear of said surface of greater depth.

7. In an aeroplane, three main supporting surfaces mounted upon a framework, one of said surfaces between and of greater
65 depth from front to rear than the other of said surfaces, one of said surfaces above and the other of said surfaces below said surface of greater depth, and said upper surface mounted over the forward portion and
70 said lower surface mounted beneath the rearward portion of said surface of greater depth, uprights from the rear of said upper surface to the center of said surface of greater depth and to the front of
75 said lower surface, uprights from the front of said upper surface to the front of said surface of greater depth, and uprights from the rear of said lower surface to the rear of said surface of greater depth,
80 and stays from the rear of said upper surface to the rear of said surface of greater depth, and stays from the front of said lower surface to the front of said surface of greater depth.

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

ERNEST PETER VINCENT.

Witnesses:

LOUISE ENDERLE,
THOMAS A. HILL.