

C. B. MELOTT.
AERONAUTIC APPARATUS.
APPLICATION FILED APR. 2, 1910.

Patented Apr. 29, 1913.
2 SHEETS—SHEET 1.

1,060,273.

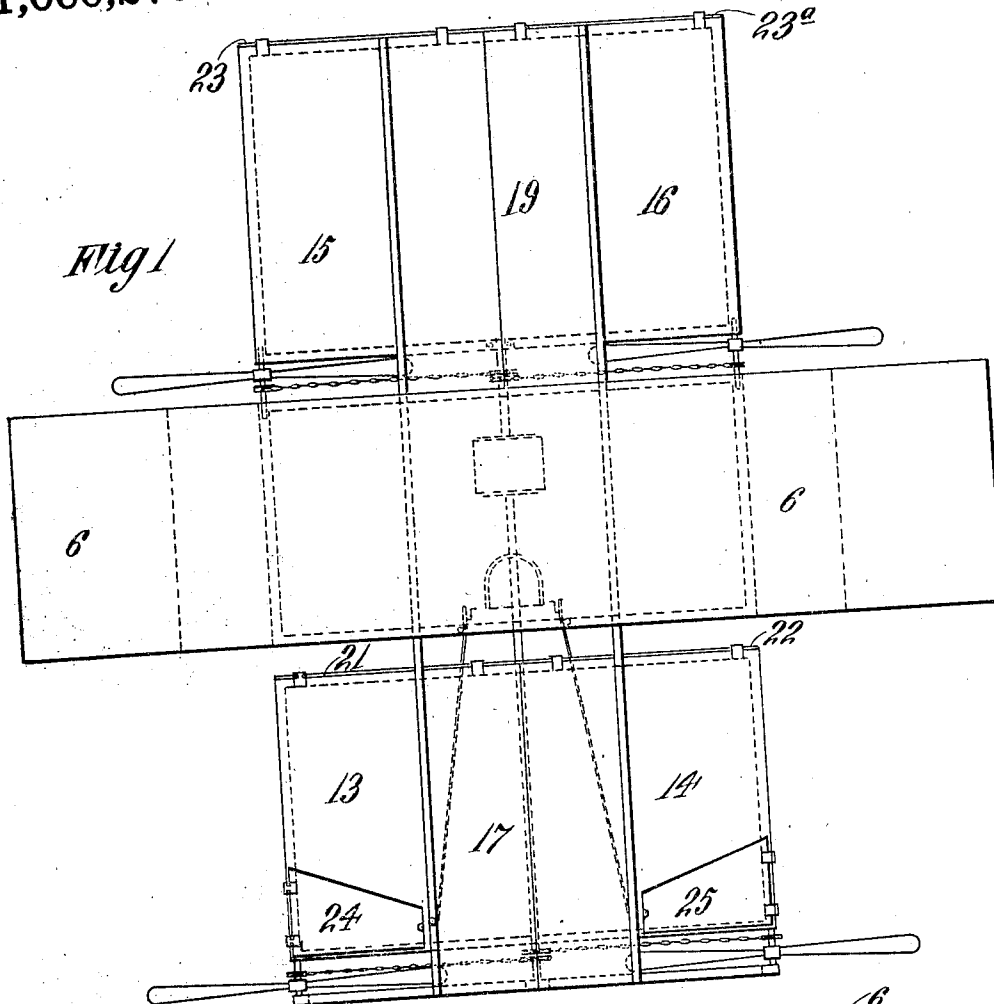
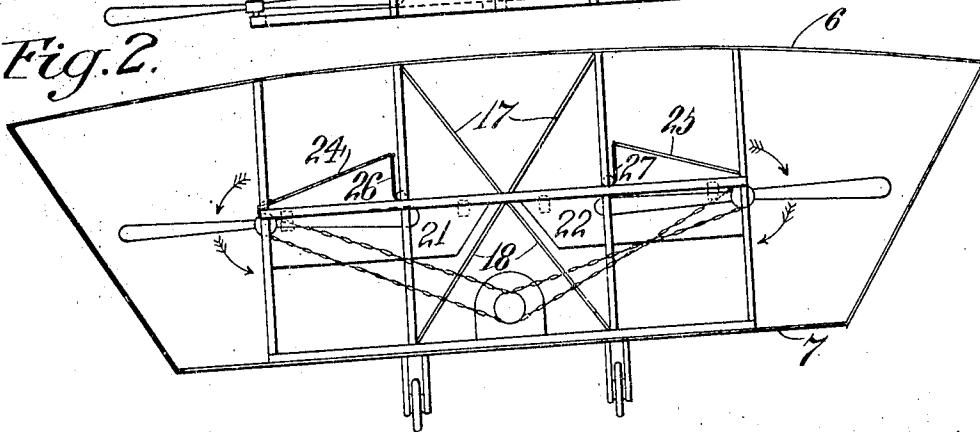


Fig. 2.



Witnesses:
Louise Enderle
Harry P. Engstrom

Chester B. Melott, Inventor
By his Attorney *Shaw & Hill*

1,060,273.

Fig 3

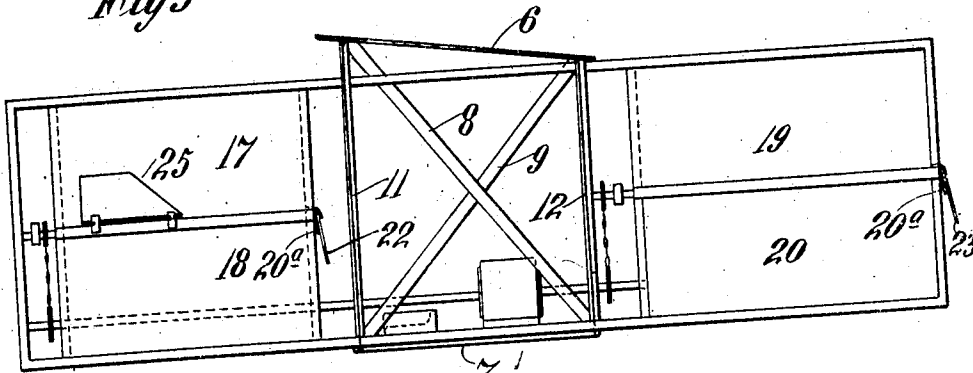


Fig 4

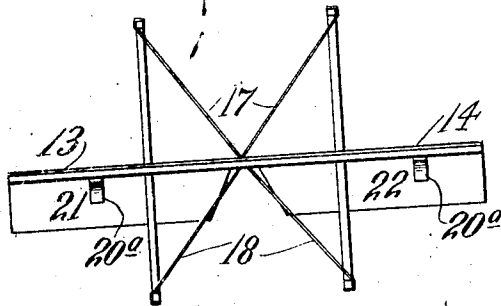
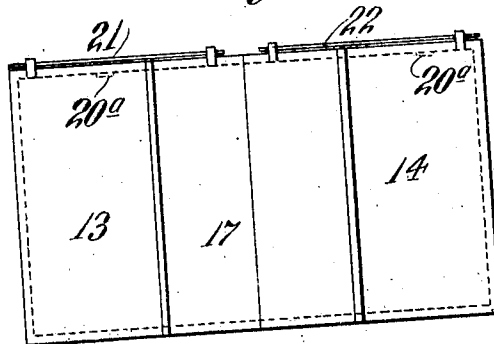


Fig 5



Witnesses:
Louise Enderle.
Amy P. J. J. J.

Chester B. Melott, Inventor

By his Attorney
Shoujaro Hill

UNITED STATES PATENT OFFICE.

CHESTER B. MELOTT, OF YONKERS, NEW YORK.

AERONAUTIC APPARATUS.

1,060,273.

Specification of Letters Patent.

Patented Apr. 29, 1913.

Application filed April 2, 1910. Serial No. 553,023.

To all whom it may concern:

Be it known that I, CHESTER B. MELOTT, a citizen of the United States, residing at Yonkers, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Aeronautic Apparatus, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to improvements in aeronautic apparatus and is particularly adapted for and is illustrated in the accompanying drawings in application to an aeroplane although it will be readily understood from the following that the invention may be adapted for use in combination with lighter-than-air and other types of machines.

In the accompanying drawings, Figure 1 is a plan view of an aeroplane showing the application of my invention. Fig. 2 is a front elevation of the same. Fig. 3 is a side elevation. Fig. 4 an elevation of part of the front section and Fig. 5 a plan view of the same.

6 and 7 are the main planes of the machine extending transversely across the center of the same and held in position by cross braces such as 8 and 9, the material of which the planes are composed being drawn taut by tightening up on the wires 11 and 12 which increases the horizontal of the braces 8 and 9 thereby stretching the covering. The vertical braces are of a length equal to the distance of separation of the planes after the same are drawn taut. The machine is also provided with fore and aft supporting planes immediately astern of the propellers, the forward planes being indicated by the reference characters 13 and 14 and the rear supporting planes being indicated by the reference characters 15 and 16. Above and below these planes are also preferably mounted what might be called stability planes such as 17 and 18 in the front of the machine and 19 and 20 in the back of the machine. The propellers are preferably mounted upon axes substantially in line with the outer edges of the supporting planes 13 to 16 inclusive and are revolved in opposite directions.

21 and 22 are guiding planes or rudders suitably hinged to the back of the front section of the machine as shown and 23—23^a are similar rudders at the stern of the machine being adapted to control the machine

and normally held down by a light spring such as 20^a.

24 and 25 are rudders preferably fastened in the front section of the machine as shown and are secured by the wires or cables 26 and 27 and may be used for steering the machine to the right or left. The currents of air discharged by the propellers strike these rudders in their raised position and thus serve to turn the machine.

The propellers are preferably located adjacent to the fore and aft supporting planes substantially as shown in order that the currents of air set in motion by the propellers as the same are discharged astern may be utilized. All forms or types of screw propellers in displacing the atmosphere horizontally for propulsion and flight by screw thrust, communicate a certain amount of cyclonic or revolving action to the atmosphere so discharged. The velocity of backward displacement and the revolving force communicated to the atmosphere so displaced vary according to the speed, angle or pitch of the propeller blades and the amount of slip developing due to the resistance of the load. Propellers of low pitch develop the least amount of slip and the greatest amount of screw thrust and consequently communicate the least amount of cyclonic or revolving action to the atmosphere they displace, while a similar propeller with high pitch blades revolving at a corresponding speed develops a greater amount of slip under a similar load with decreased screw thrust, but communicates a greatly increased cyclonic action or revolving force to the atmosphere discharged by the propeller. It is the high pitched type of propellers I prefer to employ in connection with the forward and rear supporting planes referred to which are so placed as to resist by their undersurfaces the upward revolutions of the cyclonic or revolving atmosphere at its greatest lifting angle. From this it will be seen that the longitudinal beam and lateral balance of the machine may be controlled by the operation of the planes or rudders 21, 22, 23 and 23^a. It will also be seen that the rudders 24 and 25 controlled by the operator by the cords or wires 26 and 27 control the machine laterally while in flight. The rudders 21 to 23^a inclusive may be allowed to elevate more or less on either side or corner of the machine

to restore balance. The propellers discharging astern impart a revolving cyclonic movement to the air particles acted upon, which upward revolving movement is taken off by the underside of the lifting planes 13 to 16 inclusive while the air is driven astern in the usual manner and produces a vacuous sustaining condition on the upward side of said planes. The arrangement of the so-called stability or keel planes 17 and 18 and 19 and 20, while giving additional supporting surface to the machine, also serve to minimize the rolling tendency and liability of the machine to become unbalanced due to the extra surface presented by the falling side and a correspondingly decreased surface exposed by the elevated side.

The planes 6 and 7 of the main transverse biplane are of unequal lengths, the difference in their respective lengths being that of the distance or space between the two planes, the upper plane being the longest, so that its center of lift may be made to control the center of lifts of the lower or shorter plane.

Of course it will be understood that various other 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 aeronautical apparatus, supporting and controlling surfaces, propelling means having an axis parallel to the line of flight, some of said surfaces extending radially from said axis and adjacent to said propelling means so as to resist the cyclonic action of the air set in motion thereby, and means for adjusting some of said radial surfaces substantially around said axis.

2. In an aeronautical apparatus, supporting and controlling surfaces, propelling means having an axis parallel to the line of flight, some of said surfaces extending radially from said axis and in the direction of the upwardly rotating side of said propelling means and adjacent to the plane of rotation of the same, other surfaces at an angle to each other above said first men-

tioned surfaces, and surfaces at an angle to each other below said first mentioned surfaces.

3. In an aeronautical apparatus, front and back supporting surfaces, propelling means having axes substantially parallel to the line of flight, said front and back supporting surfaces radiating from said axes so as to resist the cyclonic action imparted to the air by said propelling means, an upper and a lower transverse supporting surface, said upper transverse supporting surface extending laterally beyond said lower transverse supporting surface, and surfaces fore and aft of said transverse surfaces at an angle to the other of said surfaces and parallel with the line of flight, and controlling surfaces adjacent to said propelling means and radiating from the axes thereof in combination with means for adjusting said controlling surfaces upon said axes.

4. In an aeronautical apparatus, front and back supporting surfaces, propelling means having axes substantially parallel to the line of flight, said front and back supporting surfaces radiating from said axes so as to resist the cyclonic action imparted to the air by said propelling means, an upper and a lower transverse supporting surface, said upper transverse supporting surface extending laterally beyond said lower transverse supporting surface and surfaces fore and aft of said transverse surfaces at an angle to the other of said surfaces and parallel with the line of flight, and controlling surfaces adjacent to said propelling means and radiating from the axes thereof in combination with means for adjusting said controlling surfaces upon said axes, and rudders at the rear edges of said front and back supporting surfaces, and means in combination therewith for operating the same.

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

CHESTER B. MELOTT.

Witnesses:

LOUISE ENDERLE,
THOMAS A. HILL.