G. W. THOMPSON.

FLYING MACHINE.

APPLICATION FILED NOV. 8, 1907.

922,972. Patented May 25, 1909.

Fig. 1.

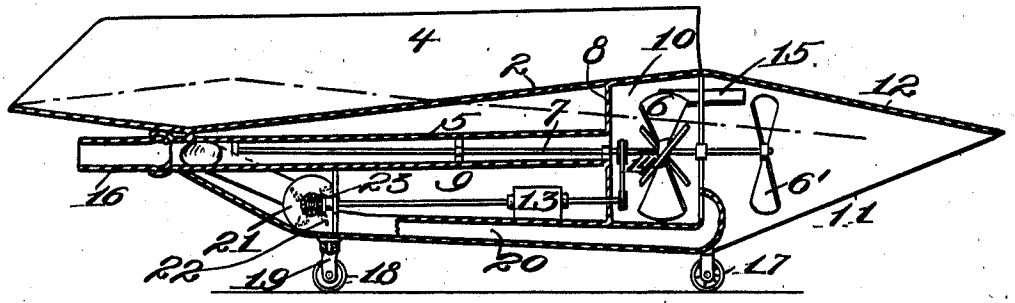


Fig. 2.

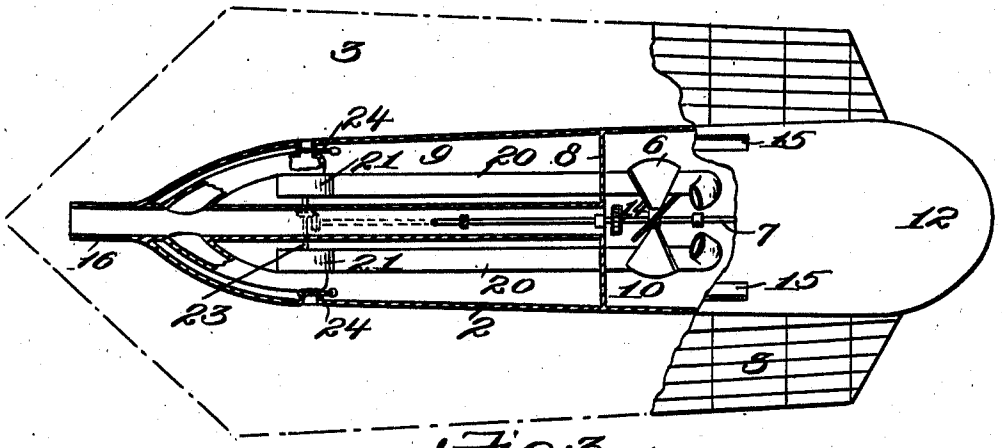
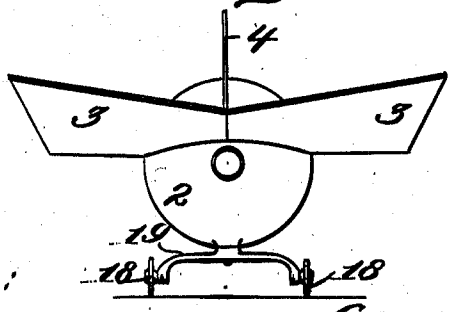


Fig. 3.



Witnesses:
C. E. Kesler
H. B. Kesler

Inventor
George W. Thompson
By James L. Norris
Atty

UNITED STATES PATENT OFFICE.

GEORGE W. THOMPSON, OF KINGSTON, OKLAHOMA.

FLYING-MACHINE.

No. 922,972. Specification of Letters Patent. Patented May 25, 1909.

Application filed November 8, 1907. Serial No. 401,329.

To all whom it may concern:

Be it known that I, GEORGE W. THOMPSON, a citizen of the United States, residing at Kingston, Oklahoma, have invented new and useful Improvements in Flying-Machines, of which the following is a specification.

This invention relates to flying machines or, as they are sometimes known, air ships, and the object of the invention is to provide an effective apparatus of this type which is provided with means for navigating the air and for causing its ascent and descent at will, the apparatus also having means for readily steering the same.

The invention includes other advantageous features which with the foregoing will be set forth at length in the following description wherein is outlined that form of embodiment of the invention which I have selected for illustration in the drawings accompanying and forming a part of this specification.

Referring to said drawings: Figure 1 is a longitudinal central sectional view of a flying machine including my invention. Fig. 2 is a horizontal sectional view of the machine, and Fig. 3 is a front elevation of the same.

Like characters refer to like parts throughout the several figures of the drawings.

The air ship includes in its make-up a hollow body as 2, two side planes or wings as 3, and a vertically disposed fin as 4, the functions of which will hereinafter be set forth. Said three parts may be made of wood or light metal framing or a combination of such materials, covered with canvas or other suitable fabric, whereby strength and lightness are obtained.

The body 2 incloses a motor which may be of any desirable type, and propelling means, and, while said body may be of any suitable shape, it is shown as being approximately of ovoid form and somewhat elongated, by virtue of which the pressure of the outside air will be approximately uniformly applied to the outer surface of said body to thereby aid in holding the same steady when the ship or machine is traveling through the air with the small or reduced end thereof in front. The forward or front end of the body 2 is open and in the opening is fitted the forward end of a tube as 5 which latter may be of light metal or any other material suitable for the purpose. Through this tube 5 air currents are drawn by propellers as 6 and 6′ located in the body 2 near the portion thereof of greatest diameter. Said propellers 6 and 6′ are fastened suitably to the shaft 7 which extends through the tube 5 and is rotatively supported by hangers therein. The tube or duct 5 extends from the forward end of the body 2 nearly to the forward section of the propeller 6. The body 2 contains a partition as 8 located slightly in advance of the propellers 6 and 6′, and this partition or wall 8 divides the body 2 into a front chamber 9 and a rear chamber 10. The rear end of the tube or duct 5 is sustained in an air-tight manner within an opening in said wall or partition 8, whereby the latter effectually separates the two chambers 9 and 10, the propellers 6 and 6′ being located in said chamber 10.

The side planes or wings 3 extend practically the complete length of the machine or ship; they are transversely alined and are substantially in transverse alinement with the propeller shaft 7. The forward portions of these lateral planes or wings 3 are disposed at an angle in an upward forward direction and the reason of this will hereinafter appear. The rear portion of the body is cut away as at 11 on a downward forward inclination whereby there will be formed an exhaust opening for the air; such air being diverted in a downward direction by the overhanging downwardly inclined rear portion or hood 12 of the body 2.

The motor for operating the propellers 6 and 6′ is denoted by 13 and it is supported upon the bottom of the machine interiorly thereof substantially amidships and is connected in any desirable way with the propeller shaft 7, for example, by gearing 14. When the motor is in action the propellers 6 and 6′, through the intermediate parts, will be driven so as to suck air from the rear open end of the duct 5, the air being drawn rearwardly by the propeller and being directed against the inclined rear portion 12 which uplifts the rear end of the ship, the front end of the ship being uplifted by the pressure of air acting against the inclined front portions of the side planes or wings 3.

The fin 4, as indicated, is vertically disposed and it extends from the front of the ship toward but short of the rear enlarged end thereof. This fin, when the ship is soaring, holds the ship or vessel in an upright position and effectually prevents lateral or side motion thereof.

I have shown as formed in the body 2

above the planes or wings 3 the openings 15, such openings being located in adjacence to the blades of the propeller 6. Air is drawn by the propeller through these openings so as to cause sufficient suction thereat to help steady and aid in elevating the intermediate part of the ship.

I have jointed to the forward end of the tube or duct 5 a swinging tube 16 which in practice will be provided with connections extending into the interior of the ship and which connections will be manipulated for swinging the tube 16 sidewise for the purpose of steering or guiding the ship. When the longitudinal axis of the tube 16 is in coincidence with that of the tube 5 the ship will be propelled straight ahead. By swinging the tube 16 sidewise the path of the ship can be varied in accordance with the direction in which said tube 16 is swung.

At the rear portion of the ship and on the under side thereof are the wheels 17 the axle of which is supported by suitable bearings on the ship. In front of these wheels 17 are wheels as 18 carried by a yoke as 19 swiveled to the under side of the ship. When the ship is at rest these several wheels are on the ground and, when it is desired to start the ship, the propellers 6 and 6′ are set in motion thereby advancing the ship along the ground with the wheels 17 and 18 in contact therewith. When sufficient momentum has been obtained the ship will rise. Just before the ship alights the propellers 6 and 6′ are rapidly driven so as to impart an accelerated forward motion to the ship, whereby the latter can strike the ground gently.

Within the ship or body 2 are situated two auxiliary ducts each denoted by 20. These ducts 20 connect with the main duct 5 near the front end thereof and extend in a general rearward direction and are adapted to deliver air currents against the propeller 6, the rear terminal or delivery ends of said auxiliary ducts or tubes 20 being curved for this purpose. The ducts 20 are intersected substantially centrally of their lengths by casings as 21 which contain exhaust fans as 22 carried by a shaft 23 extending transversely of the ship and geared to the shaft of the motor 13 whereby said fans 22 can be operated from said motor. Under ordinary circumstances I can navigate the ship by the use of the duct or tube 5, but the efficiency of said ship is materially increased by the use of the two fans 22 located, as understood, at opposite sides of the main duct 5. The ducts, tubes, or flues 20 in practice are located in the interior of the body near the bottom thereof. The two fans 22 when in action draw some of the air from the duct 5, propel the same in a rearward direction, and deliver it against the propeller 6 or into the space between the propeller 6 and the companion propeller 6′.

It will be seen that the purpose of the propeller 6 is to drive as large a volume of air as possible rearwardly against the auxiliary propeller 6′ and the said propeller 6 takes up the air fed thereto through the tubes 20, the latter, as shown by Fig. 2, having their rear terminals directed inwardly toward the center of the propeller 6 and the air forced through the tubes 20 in addition to the air sucked through the duct 5 will give a large amount of air adjacent to the propeller 6, but the latter is driven with considerable force from the motor 13 or overcomes any tendency of check of its operation by the air driven through the tubes 20, the fans 21 in the said tubes being considerably smaller than the propeller 6 and having less force. The object of this concentration of air in and about the propeller 6 is to give a greater volume to the current which is forced rearwardly and thrown by the auxiliary propeller 6′ against the hood 12 to establish the buoyancy necessary at the rear end of the machine to carry out the operation sought. The openings controlled by the dampers 24 permit air to enter to either one or both of the fans, and when one damper is closed and the other allowed to remain open, the air on the side of the machine adjacent to the open damper will be drawn into the corresponding pipe 20 and the drawing action or suction on the air through the portion of the conduit leading forwardly to and communicating with the main conduit at the front extremity of the machine will be materially reduced and the remaining fan having the closed damper will then operate with full force alone through the said forward extremity of the main conduit. The forward extremity of the side of the machine having the one damper open will move with greater facility in turning the machine owing to the relief of the normal air pressure at said side of the machine and the tendency of the forward extremity to be drawn in the direction from which the air is taken. When both dampers 24 are closed, both fans 21 will operate to draw air into and from the forward extremity of the main central conduit, and under these conditions the machine will be kept in a straight course and the air forced rearwardly through the pipes or conduits 20 and delivered to the blades of the propeller in a manner as hereinbefore specified.

What I claim is:

1. A flying machine comprising a substantially ovoid hollow body, side planes fastened to the exterior of the body and extending longitudinally thereof, the front portions of said planes being inclined forward and upward, a vertically disposed fin on the top of the body, the rear of the body being cut away on a downward and forward inclination, a suction conduit in the body and extending longitudinally through the center of the body, conduits extending along the op-

posite sides of the body and having fans cooperating therewith, the front end of the body having an opening to receive the front end of said conduit, and a propeller in said body to draw air along said central conduit and to direct the same against the upper side of the body at the rear thereof, said rear upper portion being downwardly inclined.

2. A flying machine comprising a substantially ovoid hollow body, side planes fastened to the exterior of the body and extending longitudinally thereof, the front portions of said planes being inclined upward and forward, a vertically disposed fin on the top of the body, the rear of the body being cut away on a downward and forward inclination, suction conduits in the center and at opposite sides of the body and extending longitudinally thereof, the front end of the body having an opening to receive the front end of said central conduit, fans and a propeller in said body to draw air along said conduits and to direct the same against the upper side of the body at the rear thereof, said upper portion being downwardly inclined, and a swinging tube connected with the forward end of said body and communicating with the conduits.

3. A flying machine comprising a substantially ovoid hollow body, side planes fastened to the exterior of the body and extending longitudinally thereof, the front portions of said planes being inclined upward and forward, a vertically disposed fin on the top of the body, the rear of the body being cut away on a downward and forward inclination, suction conduits in the body and extending longitudinally thereof, the front end of the body having an opening to receive the front ends of the central conduits, a propeller and fans in said body to draw air along said conduits and to direct the same against the upper side of the body at the rear thereof, said rear upper portion being downwardly inclined, and a swinging tube connected with the forward end of said body and communicating with the conduits said body having opposite openings located in proximity to the propeller and for the passage of air therethrough to said propeller.

4. A flying machine comprising a substantially hollow body provided with a rear overhanging portion, air conduit means extending longitudinally through the body and merging at their front extremities and passing through the front end of the body, and means for drawing air through said conduits from their front ends and directing the air against said overhanging portion of the body.

5. A flying machine comprising a substantially hollow body provided with a rear overhanging portion, suction conduit means extending longitudinally through the body at the center and opposite sides, suction and propelling means coöperating with the said conduit means to draw the air along the latter and forcefully drive the same against said overhanging portion, and a swinging tube connected with the front end of the body and communicating with the said suction conduit means.

6. A flying machine comprising a substantially ovoid hollow body, a main suction tube in the body extending longitudinally thereof, propelling means at the delivery end of said suction tube, auxiliary suction tubes connected with the main suction tube near the forward end thereof and for delivering currents of air against said propelling means, and fan casings intersecting said auxiliary suction tubes and companion fans for propelling air through said auxiliary suction tubes.

7. A flying machine comprising a substantially ovoid hollow body, a main suction tube in the body extending longitudinally thereof, propelling means at the delivery end of said suction tube, auxiliary suction tubes connected with the main suction tube near the forward end thereof and for delivering currents of air against said propelling means, fan casings intersecting said auxiliary suction tubes and companion fans for propelling air through said auxiliary suction tubes, and means for throwing said fans out of action.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

GEORGE W. THOMPSON.

Witnesses:
B. B. STEEL,
R. L. LINDSEY.