

1,624,475

FLYING MACHINE

Fig. 1

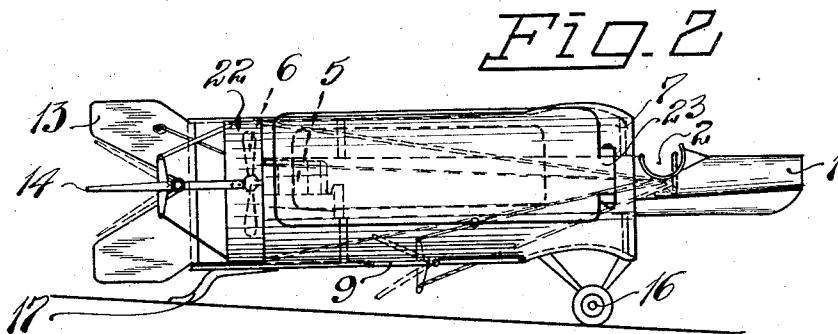


Fig. 2

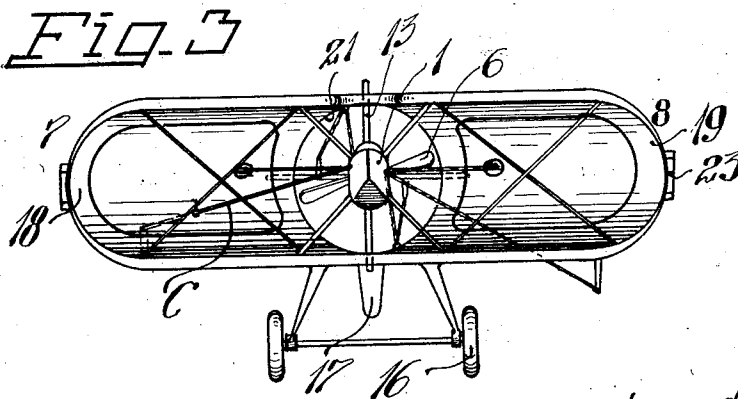


Fig. 3

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FLYING MACHINE.

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My present invention relates to improvements in flying machines of the heavier-than-air type and utilizing tunnels for directing pneumatic jets to the propeller wheel in order that the air may be condensed for action thereon by the propeller blades, thereby increasing the propelling force of the propulsion mechanism of the flying machine.

The tunnels in the form of funnels are embodied in the supporting planes of the machine, and fashioned with upper and lower, approximately flat faces for maintaining the fore-and-aft equilibrium of the machine, and the usual or standard steering apparatus and control devices are employed for steering and stabilizing the machine in flight.

The invention consists in certain novel combinations and arrangements of parts as will hereinafter be more fully set forth and claimed.

In the accompanying drawings I have illustrated one complete example of the physical embodiment of my invention in an aeroplane wherein the parts are combined and arranged according to the best mode I have thus far devised for the practical application of the principles of my invention.

Figure 1 is a top plan view of the flying machine embodying my invention. Figure 2 is a side elevation, and Figure 3 is a front elevation of the flying machine.

In carrying out my invention the flying machine is fashioned with the standard form of fuselage indicated as a whole by the numeral 1 and the cockpit 2, cabin space 3 for passengers, and freight space 4 are aligned from front to rear in the fuselage, with the power plant 5 located aft of the freight space. A single propeller wheel 6 is provided at the rear longitudinal center of the fuselage to receive power from the plant or motor 5, shown in dotted lines, for propulsion of the machine.

Two supporting planes, indicated as a whole by the numerals 7 and 8 are located at the right and left sides of the fuselage and affixed thereto in suitable manner, and the right and left ailerons 9 and 10 projecting laterally from the lower faces of the respective planes 7 and 8 are controlled from the cockpit by suitable control devices indicated by the letter C. These ailerons are hinged at their forward edges to complementary fixed balance wings 11 and 12 at the right and left sides respectively of the ma-

chine and rigid with the lower faces of the two supporting planes 7 and 8.

At the extreme rear of the machine is provided a standard vertical rudder 13 under control of devices manipulated from the cockpit, and the right and left elevators indicated as 14 and 15 respectively are located in horizontal planes at the sides of the vertical rudder, which as shown in Figure 2 is notched to permit the required movement of the elevators.

The usual forward running gear 16 and rear running gear 17 are employed for landing purposes and for supporting the machine while not in flight.

The supporting planes 7 and 8 are fashioned respectively as funnels 18 and 19, which are separated by the interposed fuselage 1, (which is cylindrical or circular in cross section), are open at their larger forward ends. The fuselage forms the inner adjoining walls of the funnels, and the outer, rounded, side walls 20 are obliquely arranged with relation to the longitudinal center of the machine or ship, and converge toward a point at the rear of the propeller 6.

At their converging or smaller ends the two funnels merge into a single, circular opening 21 at the rear of the motor or power plant, and a cylindrical casing 22, which encloses the propeller wheel is formed as a rear extension of the converging funnels or tapering tunnels.

By this construction and arrangement of the tapering tunnels or funnels, spaced equidistant in a horizontal plane at the sides of the longitudinal center of the machine, the air currents are caused to pass into the larger front open ends of the funnels and are passed therethrough toward the smaller single, cylindrical rear outlet for the funnels. The converging walls 20 of the funnels direct the air currents into the propeller casing 22 and the passage of the currents through the space of diminishing cross area results in a greater density of the air that is acted on by the propeller wheel 6, thus increasing the propelling power of the wheel.

After the plane is in the air and the machine is flying as on a level, to reduce the resistance area of the machine and permit greater speed, it is sometimes desirable that the functions of the funnels or tapering tunnels be suspended. For this purpose the outer side walls 20 of the funnels may be hinged on vertical hinges 23, to close over

lateral openings in the side walls of the funnels. The hinges are located at the front or near the front edges of the funnels, and these hinged side walls may be opened in
5 suitable manner and be permitted to swing outwardly as indicated by dotted lines in Figure 1 to a vertical plane parallel with the longitudinal center of the machine. In
10 this position the side walls of the funnels offer but slight resistance to the air currents and the latter pass through the open front of the funnels and out to the rear through
the openings in the oblique side walls of the funnels, thus materially reducing the
15 quantity of air currents directed to the propeller casing and lessening the density of air in the casing.

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

1. The combination in a flying-machine with its central longitudinally extending fuselage of lateral supporting planes forming funnels at the sides of the fuselage and

provided with open front and rear ends, said 25 rear ends merging into a single opening, and a propeller casing formed at the rear of the opening as an extension of the funnels.

2. The combination in a flying-machine with its central longitudinally extending 30 fuselage, of lateral, tapering tunnels at the sides of the fuselage each having an outer oblique wall converging to the rear of the machine, and a circular propeller casing forming an extension of the tapered rear 35 ends of the tunnels.

3. The combination in a flying machine with its central longitudinally extending fuselage, of lateral, tapering tunnels secured 40 at the sides of the fuselage and forming supporting planes for the machine, said tunnels having oppositely disposed oblique outer walls and openings therein, hinged closures for said openings, and a propeller casing 45 forming an extension of the tapered rear ends of the tunnels.

In testimony whereof I affix my signature.
LEONARD F. COE.