Sept. 18, 1934. W. H. WOOD 1,973,835

TAKE-OFF DEVICE FOR AEROPLANES

Filed Nov. 20, 1933

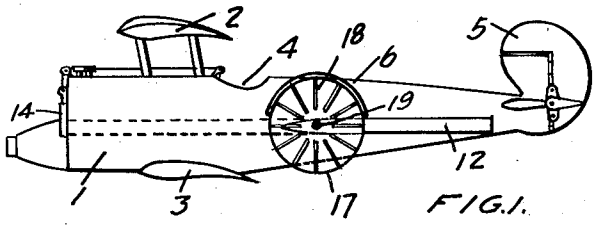


FIG. 1.

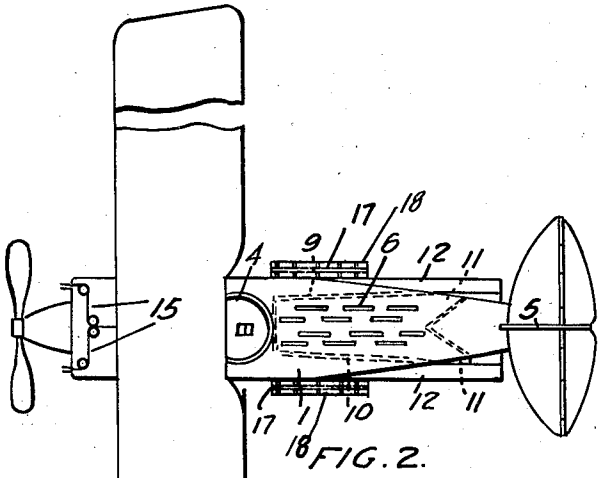


FIG. 2.

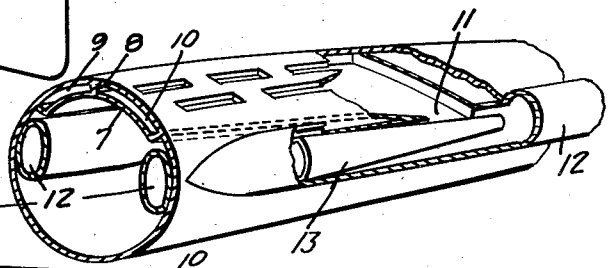


FIG. 3.

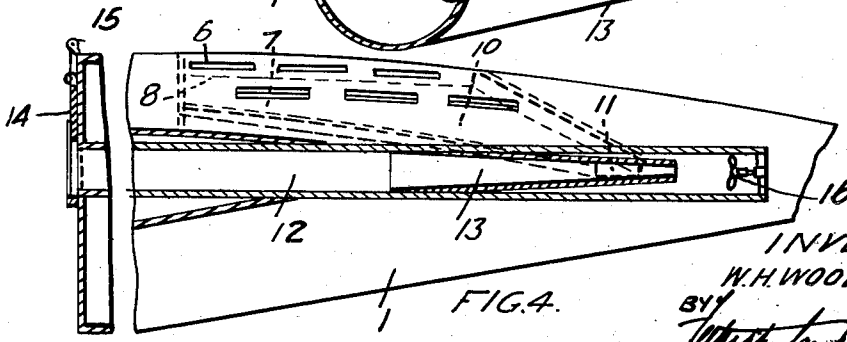


FIG. 4.

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UNITED STATES PATENT OFFICE

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TAKE-OFF DEVICE FOR AEROPLANES

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Application November 20, 1933, Serial No. 698,853
In Canada November 8, 1933

1 Claim. (Cl. 244—12)

My invention relates to improvements in take-off devices for aeroplanes, and the object of the invention is to devise means whereby an aeroplane may take-off with a much shorter run and thereby avoid the necessity of such extensive aerodromes resulting in great economy and which at the same time will help to stabilize the machine, and it consists essentially of the arrangement and construction of parts as hereinafter more particularly explained.

Fig. 1 is a side elevation of an aeroplane constructed in accordance with my invention.

Fig. 2 is a plan view of the aeroplane illustrated in Fig. 1.

Fig. 3 is an enlarged perspective view of a fragmentary portion of the fuselage of the plane.

Fig. 4 is a side elevation, partially in section, of a portion of the fuselage broken away intermediate of its length.

In the drawing like characters of reference indicate corresponding parts in each figure.

1 indicates the fuselage, 2 and 3 the upper and lower planes, 4 the cockpit and 5 the rudder.

Directly behind the cockpit the top wall is provided with slotted openings 6 beneath which is an inner wall 7 forming a suction chamber having a central longitudinal wall 8 dividing the chamber into two compartments 9 and 10, each having a suction outlet 11 leading into a longitudinal tube 12. The forward ends of the tubes 12 lead to the front end of the fuselage and into which air is forced by the forward travel of the plane to pass therethrough longitudinally in a stream which is concentrated by the nozzle 13 so as to be projected therefrom at high speed to discharge through the opposite end of the tube 12 and thereby create a suction from the suction outlets 11 drawing the air through the openings 6 from the upper face of the fuselage body.

It will thus be seen that as the plane travels rapidly forward over the surface of the ground to the take-off the air pressure forming a resistance to the lift of the plane body is removed so that a partial vacuum over the body of the fuselage is formed creating a quicker lift which aids the aeroplane to rise from the ground after a shorter run than is normally required before the take-off. After the aeroplane has risen a sufficient height to clear obstructions, the tubes 12 may be closed at the front end so that the plane will then rise in normal flight without danger of the speed of the aeroplane being reduced below flying speed. The front end of the tubes may be closed by means of shutters 14 which may be operated by pull cords 15 extending to the cockpit.

Stabilizers comprising discs 17 from each face of which extend radial vanes 18, the discs being mounted on studs 19 extending laterally from the fuselage, the upper portions being housed so that the lower portions only are acted upon by the rearward air flow to revolve them.

If desired a suction fan 16 may be provided in each tube to increase the suction on the chambers 9 and 10, such fan being driven by the jet of air passing from the small end of the nozzle 13 whereby suction is created to draw air through the outlet 11.

From this description it will be seen that I have devised a device whereby an aeroplane may take-off more rapidly avoiding the necessity for long runs and, therefore, avoiding the necessity for extensive ground space now required for this purpose resulting in a very great economy.

What I claim as my invention is:—

In a take-off device for aeroplanes, the combination with the fuselage thereof having a perforated top, a suction chamber located below the perforated top and having a lateral outlet at each side of the fuselage, of an open ended duct extending longitudinally at each side of the longitudinal centre of the fuselage with each of which one of the aforesaid lateral outlets communicates adjacent its rear end, a nozzle fitting each duct at its large end and having its longitudinal centre coincident with the longitudinal centre of the duct, and a suction fan at the rear end of each duct driven by the air injected from the nozzle.

WILLIAM HENRY WOOD.