Jan. 24, 1933. T. GHEORGHE 1,895,388

AEROPLANE

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Fig. 1.

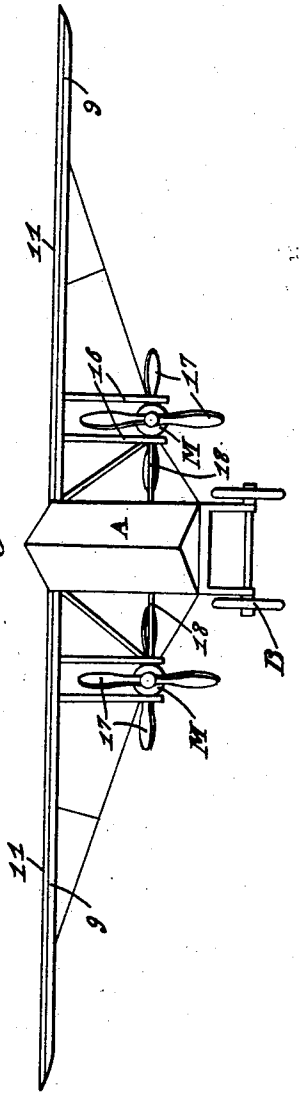
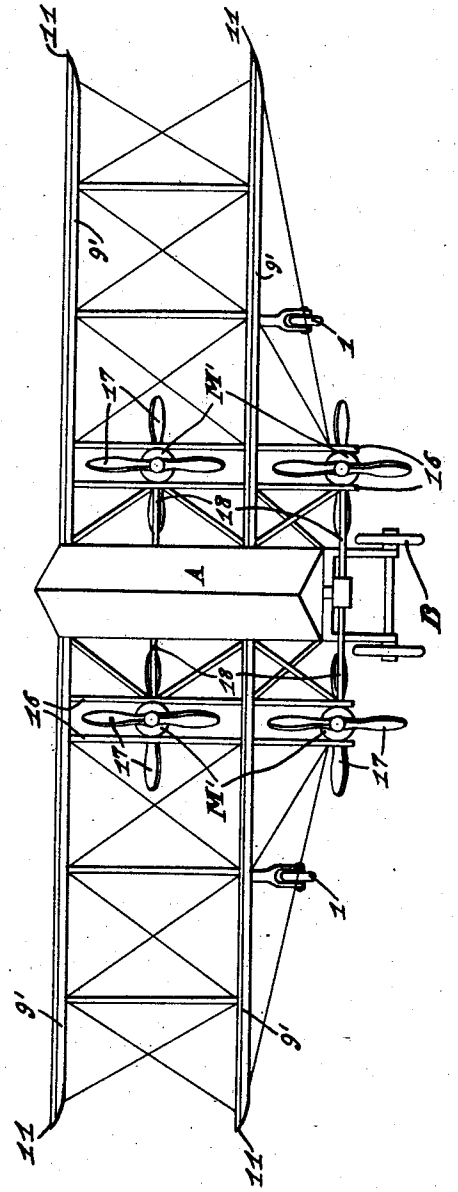


Fig. 3.



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AEROPLANE

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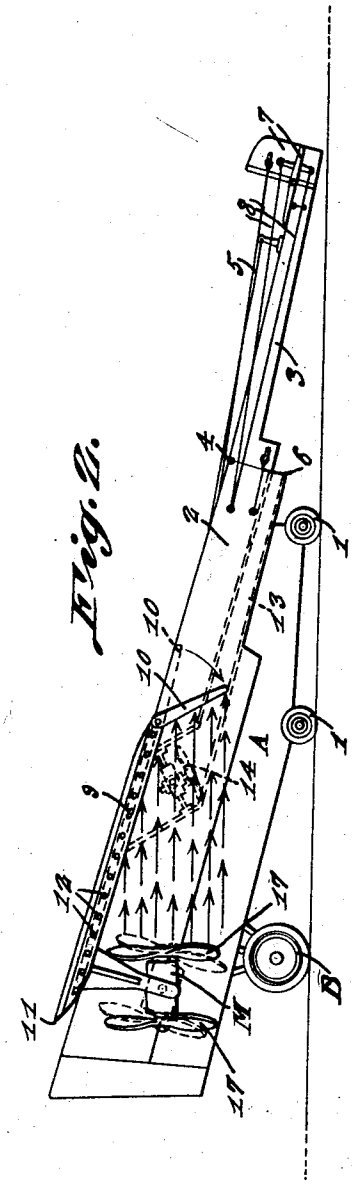


Fig. 2.

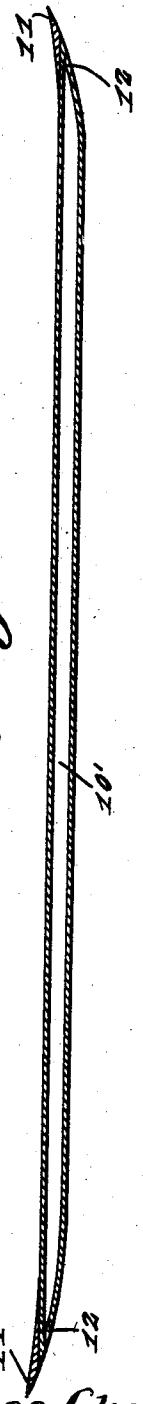


Fig. 7.

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AEROPLANE

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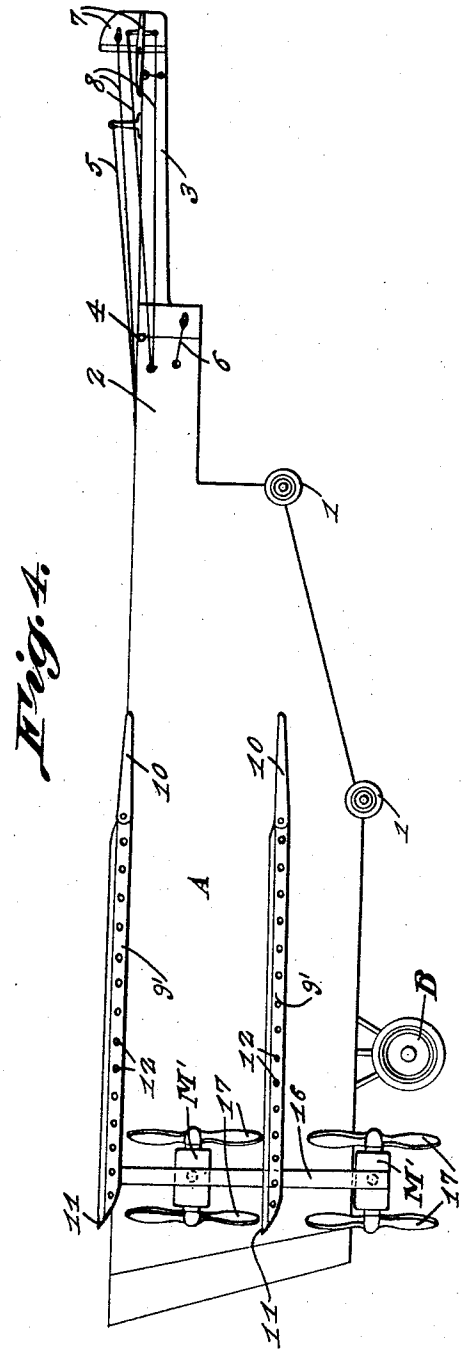


Fig. 4.

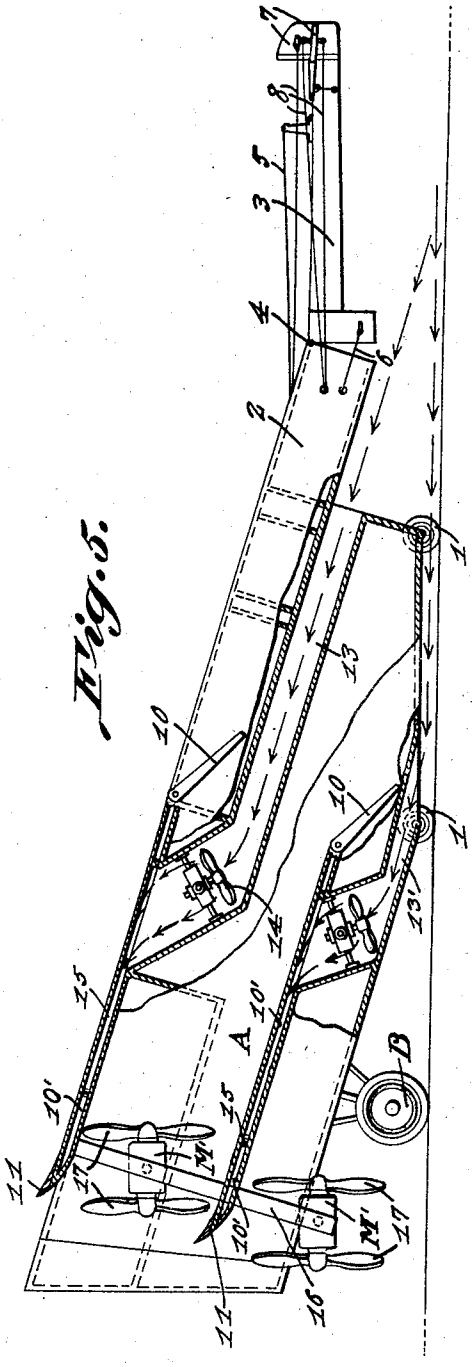


Fig. 5.

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BY Victor J. Evans

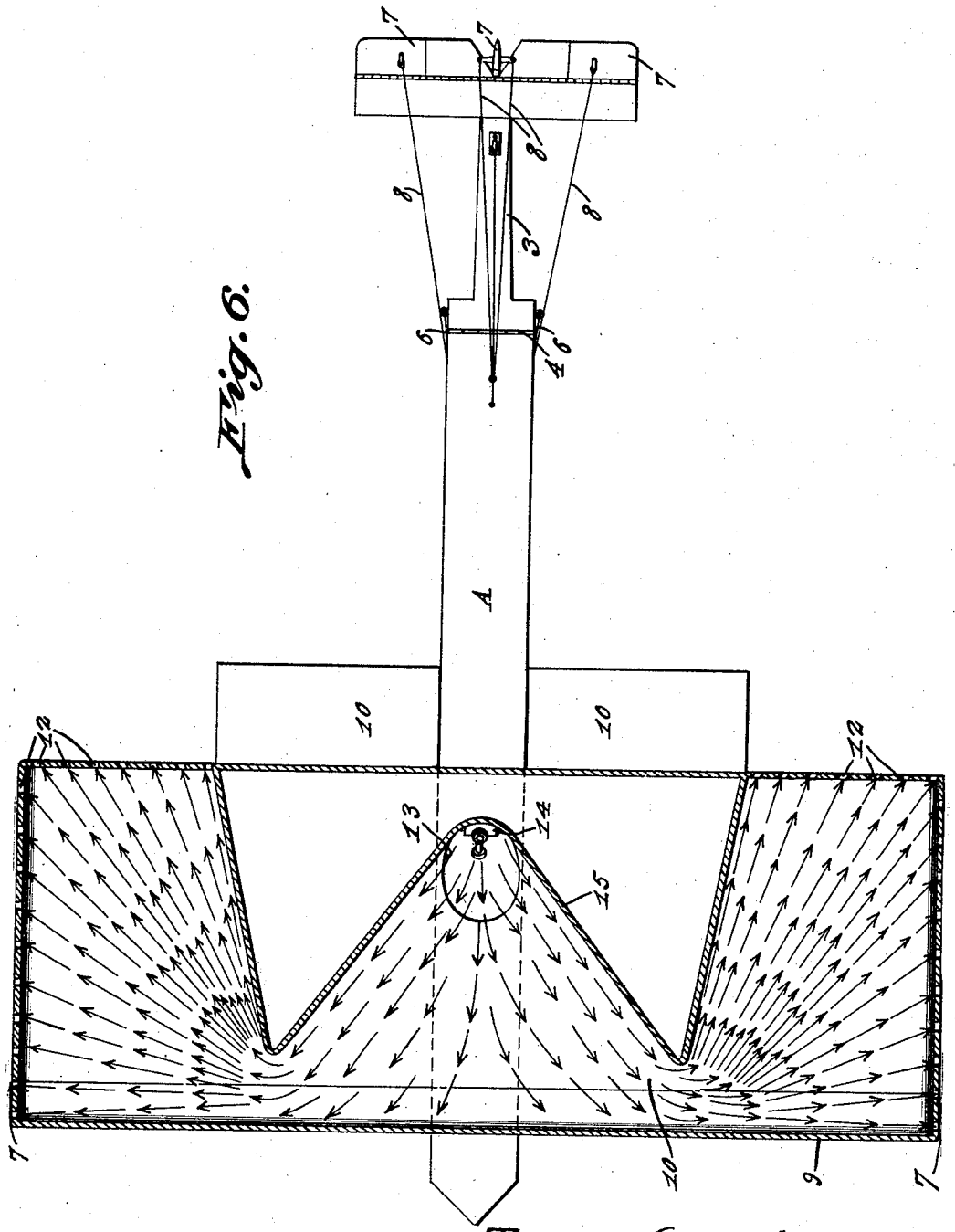
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Fig. 6.



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Patented Jan. 24, 1933 1,895,388

UNITED STATES PATENT OFFICE

TANASE GHEORGHE, OF BALTIMORE, MARYLAND

AEROPLANE

Application filed May 31, 1930. Serial No. 458,092.

This invention relates to aeroplanes and it comprises an aeroplane of the mono- or bi-plane type provided with wings having upwardly curved front and end edges, perforations in the end edges and in portions of the rear edge, means for forcing air into said wings and through said perforations, said aeroplane also being provided with a fuselage having substantially the same width throughout it length, the fuselage being substantially rectangular in cross section with its bottom side inclined upwardly and rearwardly beginning at a point just beyond the region of the wings; landing gear comprising pairs of wheels secured to the fuselage and positioned one pair at its front end, a second pair intermediate the ends of the fuselage and a third pair at the rear end of the fuselage, the landing gear supporting the fuselage upon the ground in a position to bring its inclined bottom portion parallel to the ground and an extended tail portion hingedly secured to the rear of the fuselage so that it can be raised during landing of the plane and remain in this raised position while the plane is on the ground, its purpose being to prevent the tail from striking the ground; all as more fully hereinafter set forth and as claimed.

In describing the invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is a front view of a monoplane constructed in accordance with this invention.

Figure 2 is a side view of Figure 1.

Figure 3 is a front view of a bi-plane constructed in accordance with this invention.

Figure 4 is an elevation of Figure 3.

Figure 5 is an elevation, partly in section, showing the bi-plane resting on the ground.

Figure 6 is a plan view with the upper wing in section.

Figure 7 is a section on line 7—7 of Figure 6.

In these views, the fuselage is shown at A and said fuselage is preferably constructed of the shape shown in the drawings, which shows the fuselage of considerable height and relatively narrow width, with its front end V shape in cross section. The front part of the fuselage is supported on the gear B and the bottom of its rear part slopes upwardly and rearwardly, with the wheels 1 at the ends of this sloping part so that when the plane is resting on a surface, as shown in Figures 2 and 5, the three sets of wheels will contact the surface. A rear extension 2 is formed at the top part of the fuselage and a tail part 3 is hingedly connected to the rear end of the extension, as shown at 4, so that this tail part can be moved to a horizontal position or to a position where there is no danger of it contacting the ground when the plane is at rest. A cable 5 is connected with the tail part for moving the same upwardly on its hinge and a second cable 6 is connected with the tail part for moving the same downwardly. These cables extend to a point adjacent the pilot's seat or any other suitable place in the fuselage and are connected with suitable means for actuating the cables to raise or lower the tail part. This tail part carries the usual rudders 7 which are operated from the interior of the fuselage through means, including the cables 8.

The wing of the monoplane is shown at 9 and the wings for the bi-plane at 9′. Each wing has the ailerons 10 pivoted to the rear edges thereof, these ailerons being operated in any desired manner from the interior of the fuselage. Each wing is of hollow construction, as shown at 10′, with its end and front edges curved upwardly as shown at 11. Perforations 12 are formed in the end edges and in the outer portions of the rear edge, as shown in Figure 6, and a conduit 13 leads from the interior of each wing to the rear end of the fuselage under the extension 2. The conduit is formed in the fuselage and a motor driven fan 14 is arranged in the conduit and acts to draw air through the conduit so that the air will pass into the hollow wing and escape through the perforations 12, as shown in Figures 5 and 6. In the bi-plane type, the conduit 13′ for the lower wing extends through a portion of the sloping bottom of the fuselage, as shown in Figure 5. Par-

titions 15 are arranged in the wing and act to direct the air from the fan 14 forwardly against the inner face of the front edge of the wing and then outwardly and rearwardly through the perforations 12, as shown by the arrows in Figure 6.

The slightly upwardly curved front and side edges of the wings facilitate the taking off and rising of the plane by eliminating the resistance of air pressure on the top of the wings and gives greater speed in flight.

The air passing through the perforation in the end edges and rear portions of the wings lessens the degree of vacuum formed at these points when the plane is in flight and acts similar to a lubricant inasmuch as it lowers the air friction at these points and permits the plane to travel at a greater rate of speed. For this purpose it is not necessary that any great amount of air be forced into the wing.

A motor M is supported at each side of the fuselage in the monoplane type and a number of motors M′ are supported at each side of the body in the bi-plane type. These motors are supported by the members 16 and each motor has a propeller 17 at each end of its shaft. These motors may be connected in a stationary manner to the supporting means or they may be pivotally connected so that they may be adjusted about a horizontal axis by means of the shafts 18 connected with the pivotal points of the motors and operated by suitable means within the fuselage so that by turning the shafts, the motors can be tilted to direct the air currents against the ailerons when the same are turned downwardly and against the wings, as shown in Figure 2. This will facilitate the take off of the plane. When the aeroplane rises, the motors can be moved back to a horizontal position, as shown in Figure 4.

A plane constructed as described is capable of carrying a heavy load and can be navigated safely through violent storms. It can also be started easily with its capacity load. By shaping the body as shown, the wings set on an angle when the plane is at rest so that at the take off, the air, striking the wings, will facilitate the rising of the plane and, of course, this action is further facilitated by the lowering of the ailerons. When in flight, the wings are in a horizontal position and by forming the edges of the wings as shown, the pressure above the wings is eliminated. The peculiar shape of the fuselage places the air pressure at the front, as there is no pressure on the sides. The sides are slightly tapered downwardly, which acts to cause the air to produce an upward lift.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

What I claim is:—

1. An aeroplane of the class described comprising a fuselage, a wing of hollow construction, the end edges and portions of the rear edge having perforations therein, means for forcing a relatively small amount of air into the wing and means for directing the air against the inner face of the front edge of the wing and through the perforations.

2. An aeroplane of the class described comprising a fuselage, a wing of hollow construction, the end edges and portions of the rear edge having perforations therein, means for forcing air into the wing at the center thereof, means for directing the air against the inner face of the front edge of the wing and for directing the air through the perforations, the fuselage having a conduit therein which has its front end connected with the interior of the wing and its rear end passing through the rear part of the fuselage and a motor driven fan in the conduit for drawing air through the same and forcing it into the wing.

3. An aeroplane of the class described comprising a fuselage, a wing, a motor supported at each side of the fuselage, each motor having a propeller at each end of its shaft, ailerons at the rear edge of the wing, means whereby the ailerons can be moved downwardly into the path of the air currents from the propellers, said wing being hollow with perforations at its end edges and portions of its rear edge and the fuselage having a conduit therein having its forward end in communication with the wing and its rear end extending through the rear end of the fuselage, a motor driven fan for drawing air through the conduit and forcing it into the wing and deflector means in the wing for causing the air to strike the inner face of the front edge of the plane and then pass to the perforations.

4. A wing for use with aeroplanes of the class described, said wing having its front and end edges curved slightly upward.

5. In an aeroplane of the class described, a fuselage, hollow wings secured thereto and extending laterally from the sides thereof, said wings being curved slightly upward along their front and end edges, said end edges and portions of the rear edge being perforated and means within the fuselage for forcing air into the wings and through said perforations.

6. An aeroplane of the class described comprising a fuselage, a wing of hollow construction associated therewith, said wing having its front edge turned upward, the rear edge of said wing being provided with perfora-

tions and means for forcing air into the wing and through the perforations.

7. An aeroplane of the class described comprising a fuselage, a wing of hollow construction having its end edges and portions of the rear edge provided with perforations therein, the bounding edges with the exception of the rear edge being upturned to provide an upstanding marginal flange, means for directing air against the inner face of the front edge and likewise through the perforations, the fuselage having a conduit therein which has its front end in communication with the interior of the wing and its rear end passing through the rear part of the fuselage, and a motor driven fan in the conduit for drawing air through the same and forcing it into the wing.

8. An aeroplane of the class described comprising a fuselage, wings connected with the same, propellers operatively mounted on opposite sides of the body of the fuselage, said body being of uniform width throughout with the underside inclining upwardly beyond the region of the wings, and a hingedly mounted tail disposed at the rear end of the body and swingable from a position in alignment with the body upwardly to various angular positions with respect thereto, and a rudder at the rear end of said tail, the wing being provided with ailerons swingably mounted on its rear edge on opposite sides of the body, the body having landing wheels on the underside adjacent the forward end and adjacent the rear end respectively and also at an intermediate point and a wing on opposite sides of the body being provided with wheels on the underside in substantially the same vertical plane as the front landing wheels but with their axes in a much higher horizontal plane than the same.

9. A substantially flat rectangular shaped wing for use with air crafts, said wing having its immediate front edge in a fixed upwardly curved position, the front edge of the wing decreasing in thickness from a point where it begins to curve to the extreme edge of the wing.

In testimony whereof I affix my signature.

TANASE GHEORGHE.