May 27, 1930. W. F. TRIPLETT 1,760,726

AEROPLANE WING

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Fig. 5.

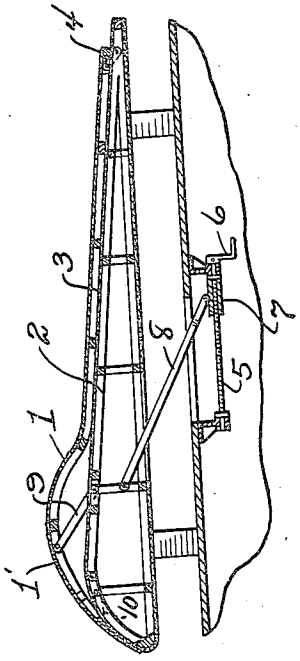


Fig. 1.

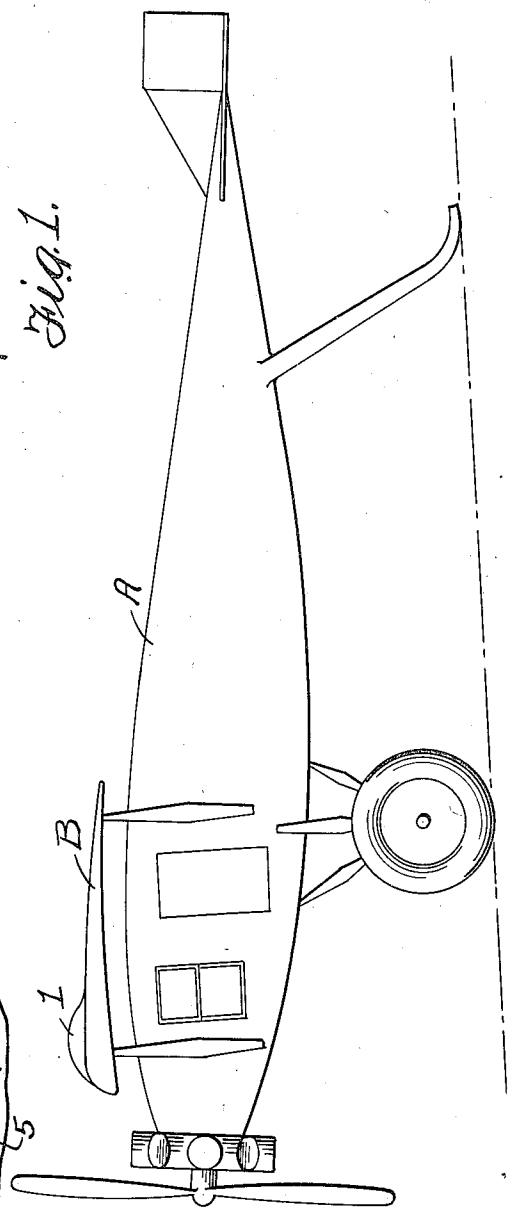
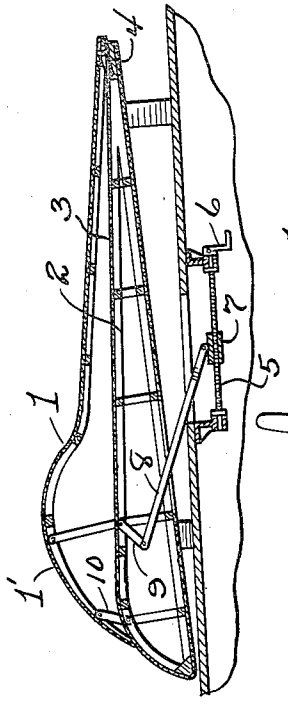


Fig. 4.



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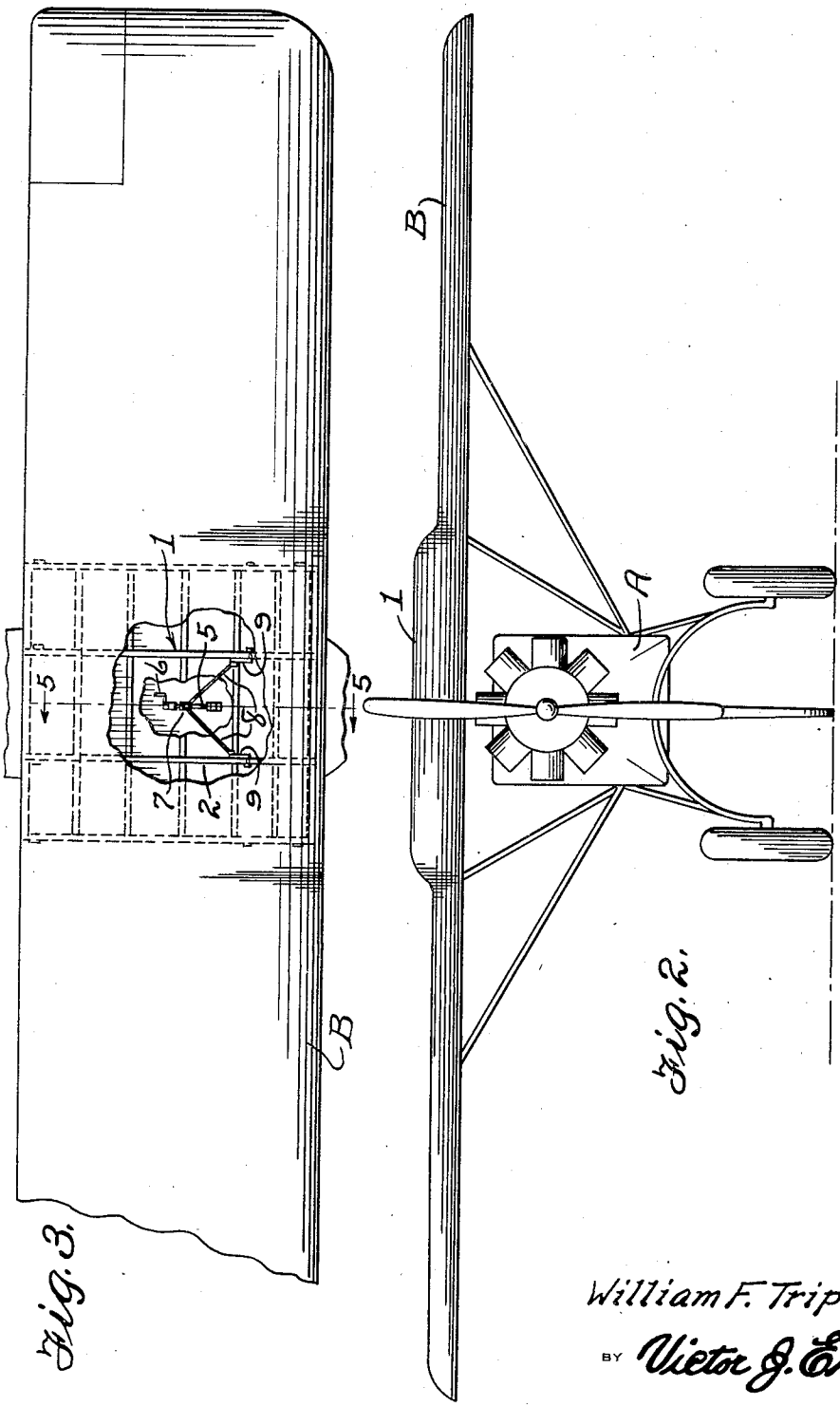


Fig. 2.

Fig. 3.

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UNITED STATES PATENT OFFICE

WILLIAM F. TRIPLETT, OF GRAND JUNCTION, COLORADO

AEROPLANE WING

Application filed March 22, 1929. Serial No. 349,203.

This invention relates to improvements in aeroplane wings, the general object of the invention being to provide means for increasing or decreasing the thickness of certain portions of the wing so as to control the air pressure at the nose or front of the wing and thus control the vacuum produced above the wing which acts to increase the efficiency of the operation of the plane and reduce motor wear and fuel consumption.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

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 an elevation of an aeroplane constructed in accordance with this invention.

Figure 2 is a front view thereof.

Figure 3 is a top plan view, with parts broken away.

Figure 4 is a central sectional view through the wing, showing the device in lowered position.

Figure 5 is a section on line 5—5 of Figure 3, showing the device in raised position.

As shown in these views, the wing B of the aeroplane A is formed with a raised portion 1 having a bowed forward portion 1′, this raised part forming a chamber in the wing to receive the cradle-like device when the same is in raised position, as shown in Figure 5, this cradle being hinged at its rear to the rear portion of the part 1. The main wing will be built rigid throughout its construction, with the cradle device hinged to the same, one-fifth of the distance from the extreme end of the wing span to the center line of construction, also one-fifth of the distance from the front or thrust line to a line at the extreme end of the top wing contour or bow of the frame and will work at about a one-quarter circle up and down movement.

The device comprises a framework 2 and a covering 3 and said device comprises a substantially straight rear part which is hingedly connected at its rear end to the rear portion of the part 1 of the wing, as shown at 4.

The front part of the device is rounded so that its front can pass under the nose or front edge of the wing when the device is raised, as shown in Figure 5. When lowered, the front of the device will rest on the under part of the nose or front portion of the wing, as shown in Figure 4, so that in this position, the device will act to increase the thickness of the wing, thereby increasing the nose thrust or the pressure of the air against the front of the wing, which in turn will create a larger volume of vacuum over the contour or bow at the top of the wing. This will increase the load lift and thus make the aeroplane more efficient and reduce motor wear and fuel consumption. After the desired latitude is obtained, the device is raised, as shown in Figure 5, so as to reduce the air pressure at the front edge of the wing.

The means for operating the member 1 comprises a screw shaft 5 rotatably supported in the cockpit or other part of the fuselage and having thereon a handle 6 whereby the shaft can be turned, a nut 7 being arranged on the shaft, and this nut is connected by the links 8 with the cranks 9, which are connected with the cradle so that by turning the shaft in one direction or the other, the links and cranks will raise and lower the device, as shown in Figures 4 and 5. Other links 10 connect the device with the wing for firmly supporting the device, while enabling it to be raised and lowered.

Thus I have provided means for controlling the nose thrust or air pressure at the front end of the wing which in turn controls the volume of vacuum created above the wing.

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 wing having means thereon for increasing or decreasing the thickness of certain portions thereof whereby the pressure of the wind on the front edge of the wing can be controlled, which in turn controls the volume of the vacuum above the wing, such means comprising a member arranged below certain parts of the wing and having a straight rear part and a curved front part, means for hingedly connecting the rear end of the member to a part of the wing, means for raising and lowering the member whereby its curved part can be raised into the wing or lowered to increase the thickness of the nose of the wing, the operating means comprising a screw shaft, means for turning the same, a nut on the shaft, cranks connected with the curved part of the member, links connecting the cranks with the nut and links connecting parts of the member with the wing.

2. An aeroplane wing having an upwardly bowed forward portion which forms a chamber in the lower part of the wing, a frame tapering from its front to its rear, means for hingedly connecting the rear of the frame with the rear of the wing, said frame having a flat under part, with the front end of the frame curving upwardly and rearwardly from the front edge of the rear part of the frame to provide a nose, covering material covering the frame and means for raising and lowering the frame to increase or decrease the thickness of the wing, the curved part of the frame entering the chamber in the wing when the frame is raised and said curved part increasing the thickness of the nose portion of the wing when the frame is lowered.

In testimony whereof I affix my signature.

WILLIAM F. TRIPLETT.