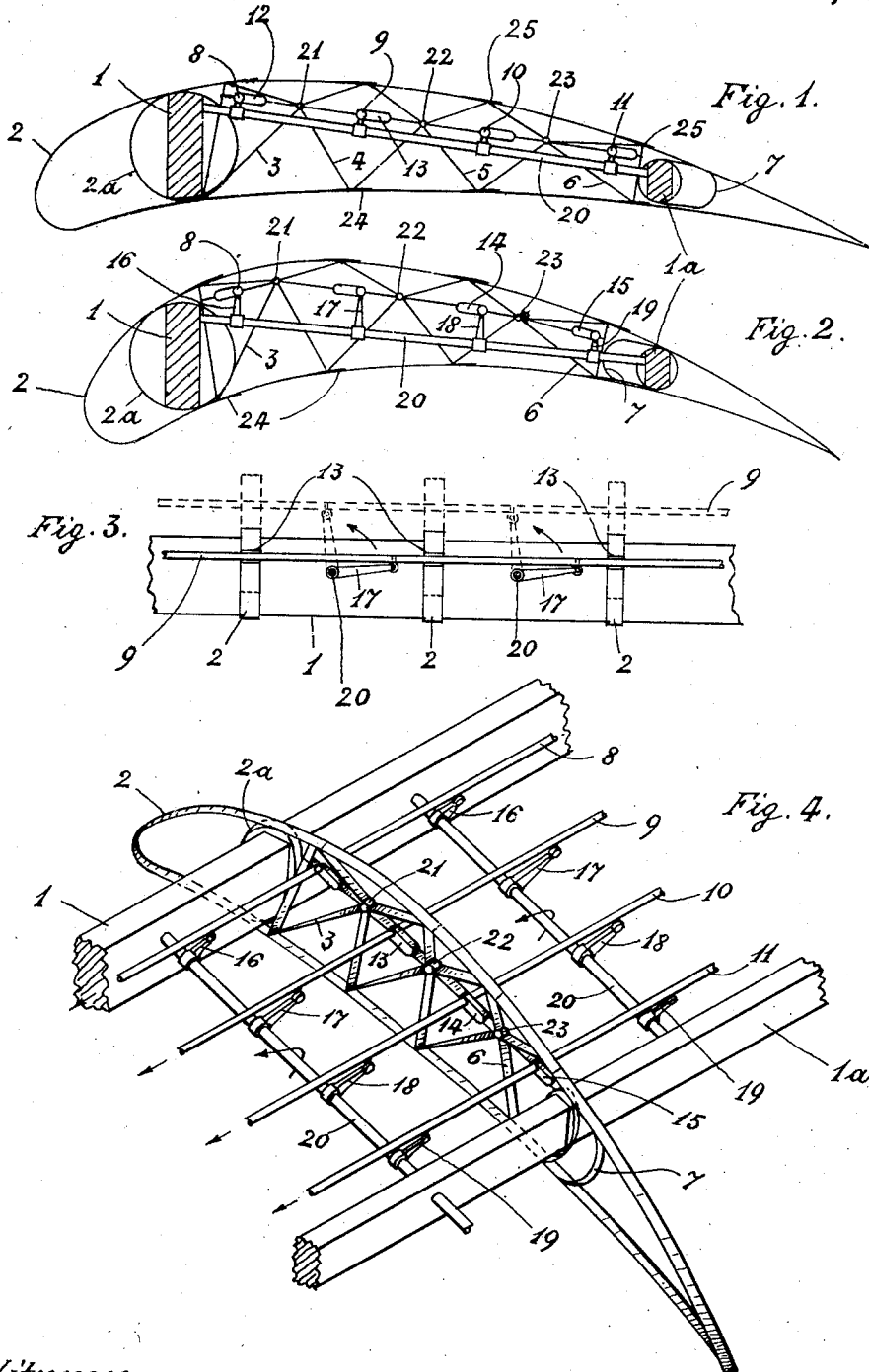


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ADJUSTING DEVICE FOR AEROPLANES.
APPLICATION FILED JULY 2, 1920.

1,365,346.

Patented Jan. 11, 1921.



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UNITED STATES PATENT OFFICE.

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ADJUSTING DEVICE FOR AEROPLANES.

1,365,346.

Specification of Letters Patent.

Patented Jan. 11, 1921.

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To all whom it may concern:

Be it known that I, GOTTFRIED SCHENKEL, a citizen of the Republic of Switzerland, residing at Winterthur, in the Canton of Zurich, Switzerland, have invented an Improved Adjusting Device for Aeroplanes, of which the following is a specification.

This invention has for its object an adjusting device for aeroplanes and concerns more particularly an improved apparatus whereby the supporting planes of the air craft may be adjusted so as to increase or decrease the convexity of the planes for the purpose of increasing or decreasing respectively the power of elevating the aeroplane and consequently also the amount of resistance to the wind.

In order that the invention may be clearly understood, reference is made to the accompanying drawings, in which:—

Figure 1 shows a cross sectional view, in diagrammatical form, of this adjusting device in normal position;

Fig. 2 shows a similar view with the device adjusted to obtain a greater convexity of the supporting planes;

Fig. 3 shows a side view of part of the mechanism, and

Fig. 4 is a perspective view of the adjusting device.

In referring to these drawings, I have shown those parts only which are essential to my invention, namely a portion of the aeroplane frame, one of the series of supporting ribs for the supporting planes of the air craft, and the mechanism for causing this and the other similar ribs and the planes attached thereto to be adjusted for the purpose mentioned.

The means for the supporting of the planes of the air craft comprise the beams 1 and 1^a, and a suitable number of ribs 2 of aluminium or other metal having stays 3, 4, 5, and 6 which are arranged crosswise and hingedly connected with each other and with the upper and lower portion of the ribs. Of these ribs at least one, that shown in Fig. 4, is fitted with the adjusting device hereinafter described.

The end of the rib 2 adjacent to the stay 3 is provided with a ring-shaped attachment 2^a for the reception of the beam 1 which at that part is formed with a flange fitting in said attachment in such a manner that this end of the rib can swing about

the axis of the beam 1. The other end of the rib 2 which is adjacent to the stay 6 is fashioned into an oblong guiding frame 7 for the reception of the beam 1^a, this frame being mounted and disposed in such a way that when the adjustment of the ribs 2 and the air craft planes is effected, see Fig. 2, allowance is made for the corresponding bending movement of this end of the rib. The hinge connections of the stays, which latter during the adjustment of the rib are also adjusted in relation to their positions, are indicated at 21, 22 and 23.

The adjusting mechanism consists of rods 8, 9, 10 and 11 mounted parallel to the beams 1 and 1^a and supported and guided by guiding members 12, 13, 14 and 15 respectively. These guiding members in turn are mounted between the four sets of stays and suitably attached to such parts thereof which remain stationary relative to one another. Pivotaly connected with the rods 8, 9, 10, 11, by means of levers 16, 17, 18 and 19, are rotatable shafts 20, the latter being arranged between and at right angles to the beams and bearing therein.

If therefore the aforesaid rods are moved in the direction of the arrows, Fig. 4, or if the shafts are turned, both of which movements may be effected by any known and convenient appliance (not shown), the levers 16, 17, 18, and 19 are caused to be swung upward into the position indicated in dotted lines in Fig. 3. The consequence is that the rib-end adjacent to the stay 3 is made to swing about the axis of the beam 1 while the other end of the rib, namely that adjacent to the stay 6 is caused to be swung about the axis of the beam 1^a, at the same time adjusting itself in the oblong guiding frame 7. The stays, owing to their hinge connections, are also made to adjust themselves and through these movements produce a greater convexity of the carrying ribs 2 and therefore of the supporting air craft planes secured to the said ribs.

It will be understood that the lower and upper portions of the ribs 2, at or near the points where they are hinged to the stays, must be made to overlap as shown at 24 and 25 respectively, and any covering at the side of the ribs as also the supporting planes themselves must in a similar manner be constructed of overlapping pieces.

Having now fully described my said in-

vention what I claim and desire to secure by Letters Patent is:—

In the herein-described adjusting device for the planes of air-craft, the combination,
5 with two beams forming part of the air-craft frame, of a series of ribs mounted parallel to each other and transversely of the said beams, a number of stays hingedly
10 connected with one another and with the upper and lower portions of the ribs, a ring-shaped attachment at one end of the ribs and an oblong guiding frame secured
near the other end thereof, the said attachment and frame being adapted to receive
15 the first and second beam respectively, a guiding member mounted between each set

of stays of one of the said ribs, rods arranged between and parallel to the beams and guided by the said members, a shaft mounted at either side of each of the ribs
20 and bearing in the beams, and a lever connecting each of the rods with its corresponding shaft, all substantially as and for the purpose set forth.

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

GOTTFRIED SCHENKEL.

Witnesses:

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W. L. LANGER.