244-48 SR
FIP8301 OR 1,351,918

42

F. C. LAWRENCE.

AEROPLANE.

APPLICATION FILED JULY 23, 1919.

1,351,918.

Patented Sept. 7, 1920.

3 SHEETS—SHEET 1.

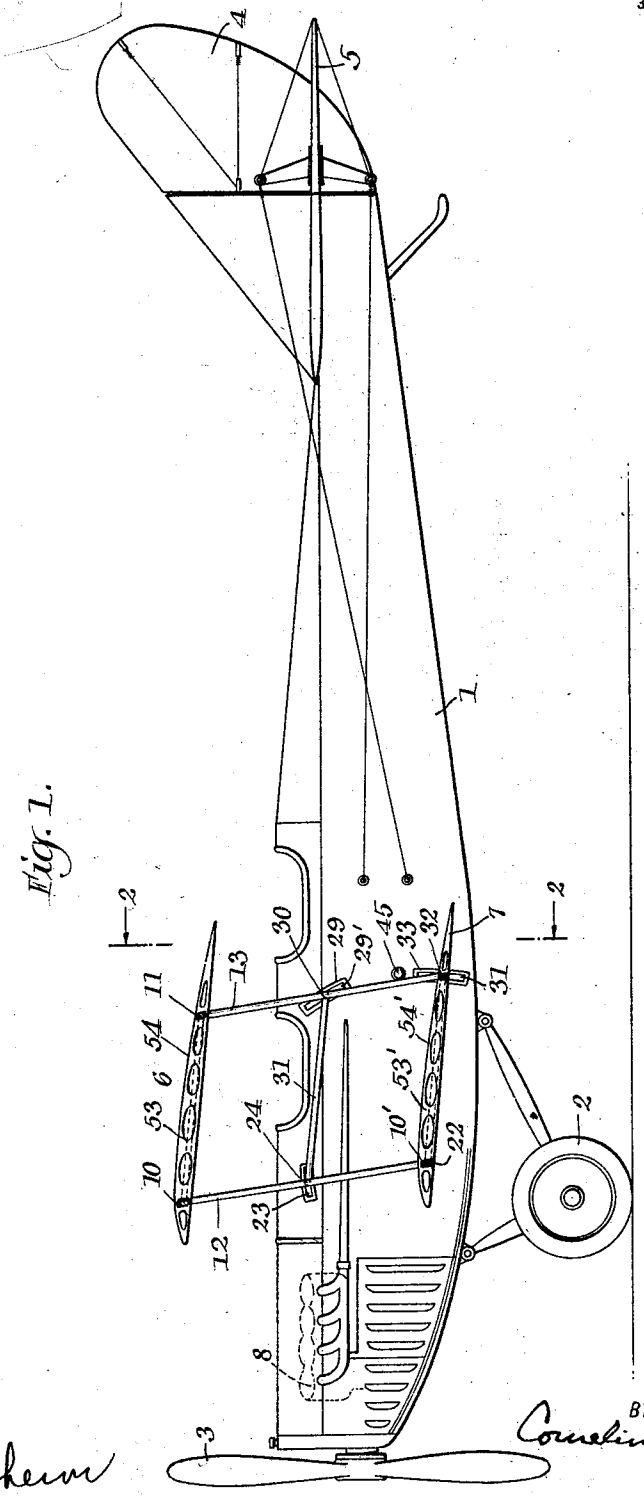


Fig. 1.

INVENTOR
F. C. Lawrence
BY
Cornelius C. Billings
his ATTORNEY

Witness
S. Lorcheim

F. C. LAWRENCE.

AEROPLANE.

APPLICATION FILED JULY 23, 1919.

1,351,918.

Patented Sept. 7, 1920.

3 SHEETS—SHEET 2.

Fig. 2.

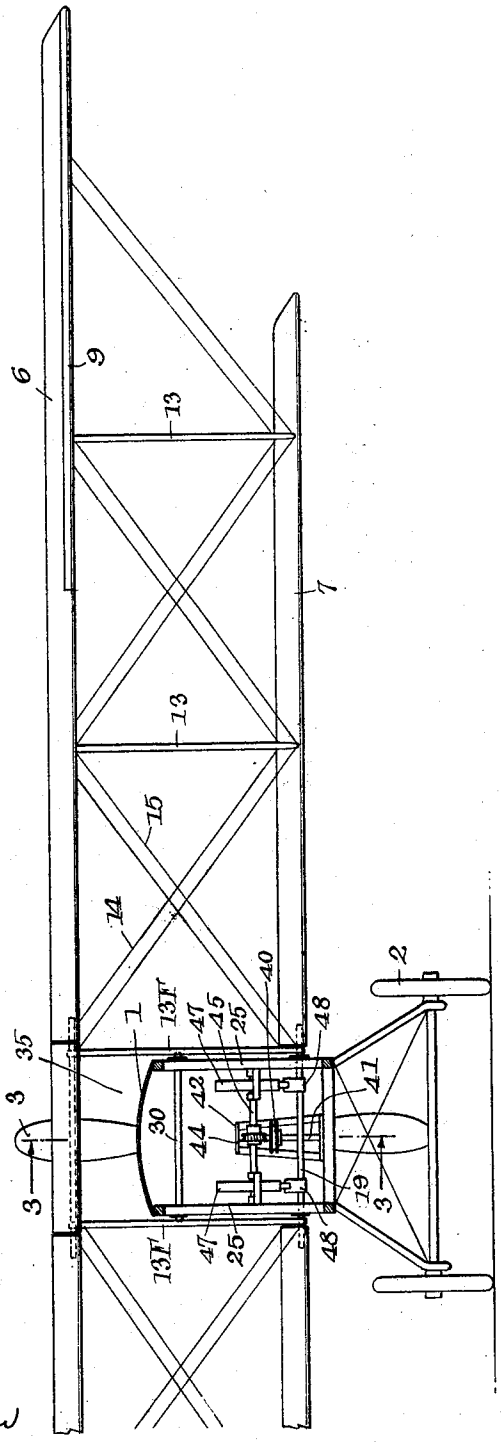


Fig. 6.

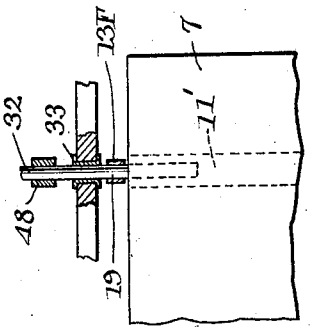
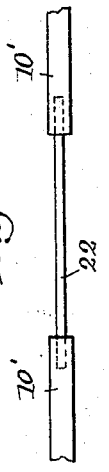


Fig. 5.



INVENTOR

F. C. Lawrence

BY

Cornelius C. Billings

HIS ATTORNEY

F. C. LAWRENCE.

AEROPLANE.

APPLICATION FILED JULY 23, 1919.

1,351,918.

Patented Sept. 7, 1920.

3 SHEETS—SHEET 3.

Fig. 4.

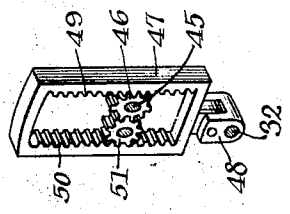
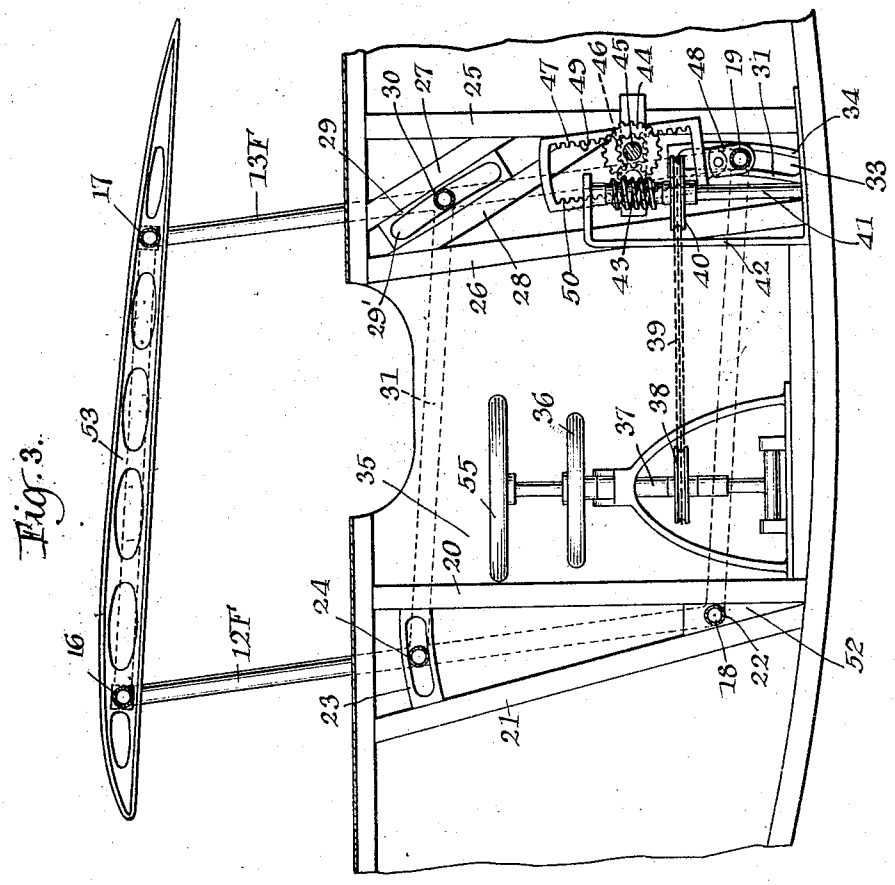


Fig. 3.



INVENTOR

F. C. Lawrence

BY Cornelius C. Billings

his ATTORNEY

Witness

48

UNITED STATES PATENT OFFICE.

FREDRICK C. LAWRENCE, OF NEW YORK, N. Y., ASSIGNOR TO EMMA K. LAWRENCE, OF NEW YORK, N. Y.

AEROPLANE.

1,351,918. Specification of Letters Patent. Patented Sept. 7, 1920.

Application filed July 23, 1919. Serial No. 312,698.

To all whom it may concern:

Be it known that I, FREDRICK C. LAWRENCE, a citizen of the United States, and a resident of the borough of Manhattan, city and State of New York, have invented certain new and useful Improvements in Aeroplanes, of which the following is a specification.

This invention relates to air craft more particularly to aeroplanes.

One of the objects is to provide an aeroplane which shall be readily adjustable to secure efficient flight under varying conditions.

Another object is to provide apparatus of the above type, which shall be strong and reliable in construction, while permitting adjustment in flight to secure efficiency of operation, for various conditions of flight.

Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements and arrangement of parts which will be exemplified in the construction hereinafter set forth, and the scope of the application of which will appear in the following claims.

Referring now to the accompanying drawings, wherein is shown one of various possible embodiments of the several features of my invention,

Figure 1 shows a side elevation of an aeroplane partly in section.

Fig. 2 shows a rear elevation thereof with my invention indicated thereon, parts being broken away.

Fig. 3 shows a sectional view taken along sired construtcion. The usual ailerons for effecting banking of the machine in turning, are indicated at 9.

The upper wing construction is shown more or less conventionally, as including a main or front spar 10, a rear spar 11, and rib members 53 connecting the front and rear spar to furnish a frame work for the fabric covering 54. The lower wings are generally similar to the upper, similar parts being designated by the same reference numerals primed. A plurality of struts 12 are provided for connecting the main spars of the two wings 6 and 7 at spaced intervals, and similar struts 13 are provided for connecting the rear spars of the two wings. A cross-bracing wire 14 connects the upper end of each strut to the lower end of the succeeding strut and a similar wire 15 connects the lower end of each strut to the upper end of the succeeding one.

The parts of the aeroplane thus far described, are common to numerous types of modern aeroplanes and are not my invention when taken by themselves.

My invention contemplates arranging the wings 6 and 7 so that the angle of incidence thereof may be adjusted conveniently as desired, either on the field or during flight. For this purpose, I form a hinged or pivoted connection between the struts 12 and 13 and the wings to which their ends are attached, as clearly shown at 16, 17, 18 and 19 in Fig. 3. The distance between the front and rear spar of the two wings being equal, and the struts 12 and 13 being preferably constructed of equal lengths, it follows that any pair of struts 12 and 13 will constitute a parallel link construction, that is, a con-

244-48 SR
FIP8301 OR 1,368,133
Draftsman
42

C. H. GEORGI.

AIRPLANE.

APPLICATION FILED MAR. 26, 1920.

1,368,133.

Patented Feb. 8, 1921.

3 SHEETS—SHEET 1.

Fig. 1.

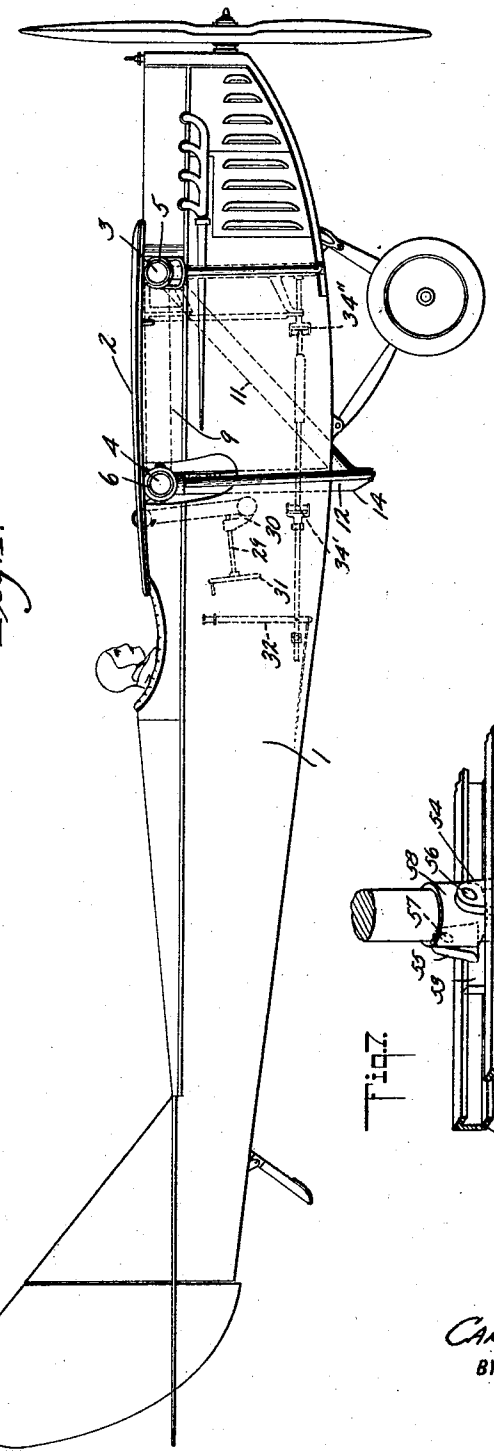
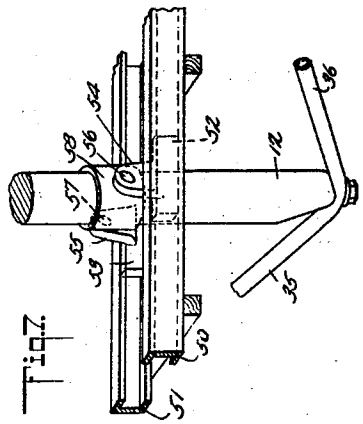


Fig. 7.



WITNESSES:

G. L. Deming

A. L. Kitchin.

INVENTOR

CARL H. GEORGI,

BY Munn & Co

ATTORNEYS