April 14, 1925. 1,533,312

A. H. G. FOKKER

LOCATION OF BENZINE TANKS IN AEROPLANES

Filed July 8, 1921

Fig. 1.

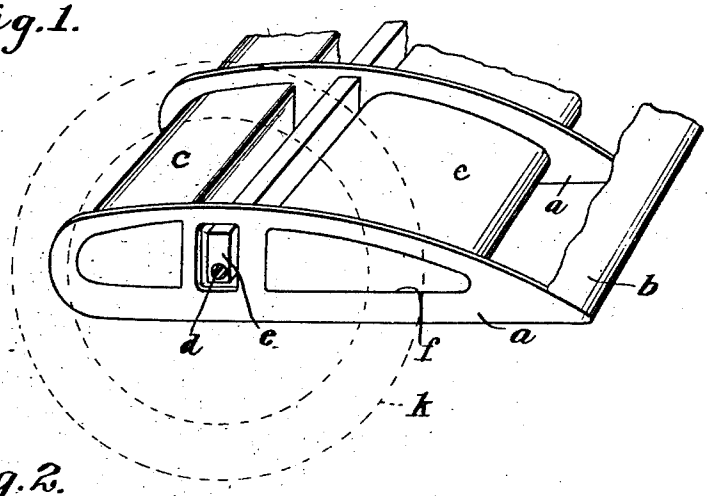
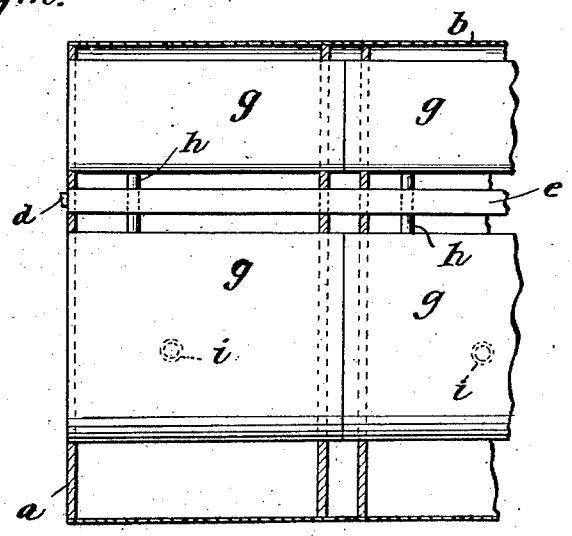


Fig. 2.



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Patented Apr. 14, 1925. 1,533,312

UNITED STATES PATENT OFFICE.

ANTHONY HERMAN GERARD FOKKER, OF AMSTERDAM, NETHERLANDS.

LOCATION OF BENZINE TANKS IN AEROPLANES.

Application filed July 8, 1921. Serial No. 483,316.

(GRANTED UNDER THE PROVISIONS OF THE ACT OF MARCH 3, 1921, 41 STAT. L., 1313.)

To all whom it may concern:

Be it known that ANTHONY HERMAN GERARD FOKKER, residing at Amsterdam, Rokin 84, Netherlands, has invented certain new and useful Improvements in the Location of Benzine Tanks in Aeroplanes (for which I have filed an application in Germany April 6, 1918), of which the following is a specification.

The location of fuel tanks in aeroplanes has always been a source of danger, especially for the reason that in case of an accident the destruction of the plane through ignition of the tank often occurred. Heretofore, the fuel tank has been located as far as possible from the fuselage of the aeroplane, for instance, in the supporting wings or suspended below the fuselage, or, in the case of hydroplanes, inside the floats. All these arrangements however in spite of the proposed advantages had certain disadvantages which latter were generally of greater magnitude than the advantages. The difficulties encountered in balancing especially when locating the tanks in the supporting wings and floats had first of all to be taken into consideration as other arrangements were required to effect a corresponding compensation to balance the variable weights occurring upon the consumption of fuel and these arrangements naturally were more or less complicated and unfavorably influenced the other parts of the aeroplane. The suspension of the tank below the fuselage also had its disadvantages which occurred especially upon starting and landing.

The present invention therefore has for its object the mounting of the fuel tank within the carriage of the aeroplane without however interfering with the effective operation of the carriage in addition to avoiding the disadvantages recited in connection with the previous arrangements.

It is an additional and equally important object of this invention to construct the tank or carriage so that the tank or tanks can be easily removed and replaced while the location of the tank is such that in case of ignition of the carriage, the covering thereof may be destroyed but the fuselage and supporting wings, etc. will not be endangered as the tanks and supporting bars are shaped to give the flames a backward direction during flight.

Other objects as well as the nature, characteristic features and scope of this invention will be more readily apparent from the foregoing description taken in connection with the accompanying drawing and pointed out in the claims forming a part of this specification.

The invention is clearly illustrated in the accompanying drawing, in which:—

Fig. 1 is a perspective view of the improved fuel tank arrangement located within the covering of the carriage, and

Fig. 2 is a horizontal sectional view through a slightly modified form of the invention.

Referring now, more particularly, to the accompanying drawings there is provided a carriage structure including a series of suitably spaced cross-bars or ribs *a* shaped to afford the least resistance to the air and covered by the envelope or covering *b*. The fuel tank is located transversely between the cross-bars *a* and in the present instance is shown constructed in sections *c* preferably arranged in front of and behind the axle *d* which latter is reinforced by a bolster or the like *e* which extends through a series of aligning openings positioned medially of the cross-bars *a* as indicated in the drawings. The cross-bars are also provided with openings forwardly and rearwardly of the axle openings being indicated by the reference letter *f* and the tanks *c* are snugly fitted in these openings. In the arrangement shown in Fig. 1 the section *c* extends throughout the width of the carriage whereas in the arrangement shown in Fig. 2 the tank sections are further divided into horizontal aligning sections, the abutting edges being supported in the openings *f* in the bars or ribs *a*.

If several tanks are arranged between the cross-bars *a*, a connection of the fuel tanks with each other is provided being indicated at *h* Fig. 2, while separate independent supplies to the motor are provided from each tank, the connection therefor being indicated at *i* in Fig. 2.

It is of course appreciated that the axles

are fitted with the usual supporting wheels *k* shown in dotted lines in Fig. 1.

It is believed in view of the foregoing that a further detailed description of the operation is entirely unnecessary. Likewise it is believed that the advantages of the invention will be readily apparent.

Having thus fully described the invention what is claimed and desired to be secured by Letters Patent is:—

1. In an aeroplane carriage, the combination, side bars shaped to afford the least possible resistance to the air, a fuel tank fitted in and supported by said bars, and an envelope covering the bars and the tank, substantially as and for the purposes set forth.

2. The combination with the spaced side bars of the carriage of an aeroplane of a fuel tank constructed in sections and arranged transversely between and fitted in and supported by said bars.

3. In an arrangement as claimed in claim 2 wherein the sections of the tank are shaped to afford the least possible resistance to the air when the aeroplane is in flight.

4. The combination with the side bars of the carriage of an aeroplane having opposed openings therein of a fuel tank arranged transversely between the bars and through the openings so as to be supported thereby.

5. The combination with the spaced side bars of a carriage of an aeroplane having opposed pairs of openings therein and an axle carrying beam spacing said bars, of a fuel tank formed in separate sections and arranged transversely between the bars and snugly fitted through the openings so as to be supported thereby, and the sections being shaped so as to afford the least possible resistance to the air when the aeroplane is in flight.

In testimony whereof I affix my signature in presence of two witnesses.

ANTHONY HERMAN GERARD FOKKER.

Witnesses:
H. G. KUYPERS,
JOHAN P. WESKER.