May 27, 1930. M. WIBAULT 1,760,332

AEROPLANE WING AND THE LIKE

Filed June 14, 1929

Fig 1.

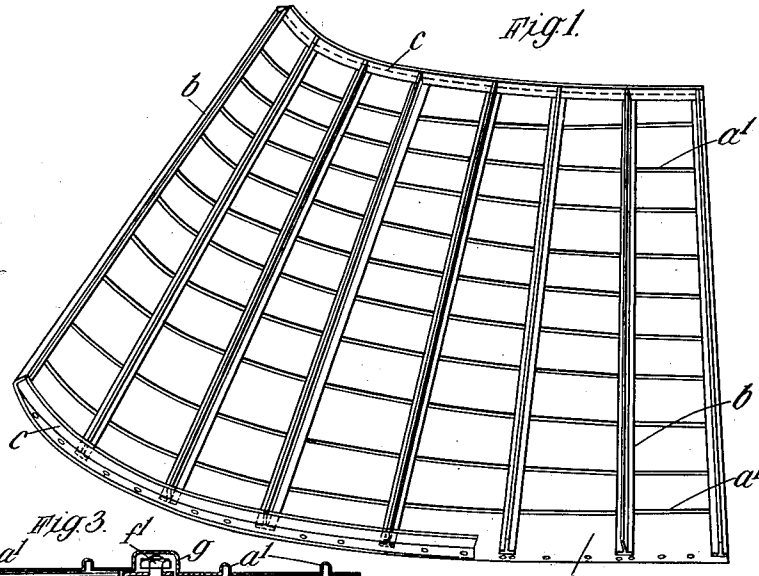


Fig 3.

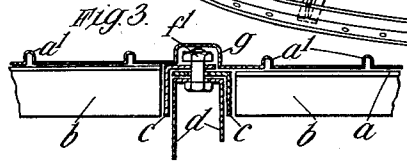


Fig 5.

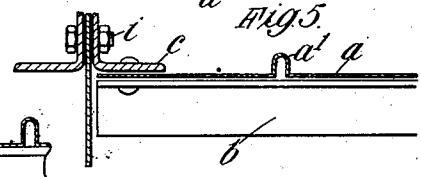


Fig 4.

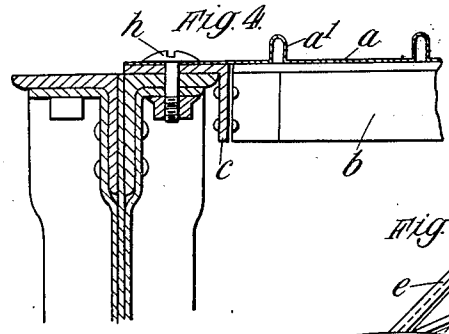


Fig 2.

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UNITED STATES PATENT OFFICE

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AEROPLANE WING AND THE LIKE

Application filed June 14, 1929, Serial No. 370,895, and in France June 26, 1928.

This invention relates to aeroplane wings or the like, and more particularly to aeroplane wings of the type which comprise a covering made up of a plurality of independent panels and has for its chief object the provision of an improved form of wing in which the panels are stiffened or strengthened.

According to the invention the panels are constituted by thin sheet metal plates provided with a plurality of stiffening members extending longitudinally of the wing span. The panels may also be provided with ribs, corrugations, grooves, pinched folds or the like extending transversely of the wing span so that they are stiffened or strengthened in a simple manner, both in a longitudinal direction and in the transverse direction, by a kind of checkering.

In order that the said invention may be clearly understood and readily carried into effect the same will now be described more fully with reference to the accompanying drawings, in which:—

Figure 1 is a view showing the inner surface of a covering panel embodying the invention;

Figure 2 is a perspective view of a partly covered wing, and

Figures 3, 4, and 5 show on an enlarged scale different methods by which the covering may be attached to the main ribs.

In Figure 1 the sheet metal plate *a* of the covering panel is shown provided with a number of stiffening folds a^1 projecting from the outer face of the panel and extending at right angles to the span of the wing. This plate which is suitably curved or bent, is riveted or fixed in any other suitable manner to the stiffening or profiled members *b* arranged in the direction of the wing span. Furthermore, upon the edges of the panel there are fixed angle irons *c* which serve for the assembling of the panel on the main ribs *d* (Figure 2) which are carried on the suitably braced longitudinal girders or stays *e*. This assembling may be effected, as is shown, for instance, in Figure 3, by means of bolts *f* which are carried by the main ribs and pass through suitable openings formed in the horizontal flanges of the angle irons *c* of two adjoining panels, the attachment being completed by the aid of the nuts f^1. If desired, a joint cover cap or shield *g* may be placed over the whole for the purpose of concealing the bolts and their nuts.

In Figure 4 another assembly is shown in which the ends of the stiffening or profiled members *b* are riveted or otherwise secured to the vertical flanges of the angle irons *c* and the horizontal flanges of the latter are secured to the main ribs by screws *h*. In Figure 5 a third form of assembly is shown in which the ends of the stiffening or profiled members *b* and the edges of the metal plates *a* are riveted to the horizontal flanges of the angle irons *c* and the vertical flanges of the latter are secured to the main ribs by bolts *i*.

What I claim and desire to secure by Letters Patent of the United States is:—

1. An aeroplane wing or the like, comprising an internal framework made up of longitudinal girders interconnected by a plurality of transverse ribs, and a covering made up of a plurality of independent sheet metal panels, each of the said panels being stiffened by a plurality of corrugations arranged upon the exterior surface of the wing and extending transversely of the wing span and by a plurality of stiffening members secured to the interior surface of the wing and extending longitudinally of the wing span.

2. An aeroplane wing or the like, comprising an internal framework made up of longitudinal girders interconnected by a plurality of transverse ribs, and a covering made up of a plurality of independent sheet metal panels, each of the said panels being stiffened by a plurality of pinched folds arranged upon the exterior surface of the wing and extending transversely of the wing span and by a plurality of angle irons secured to the interior surface of the wing and extending longitudinally of the wing span.

3. An aeroplane wing or the like, comprising an internal framework made up of longitudinal girders interconnected by a plurality of transverse ribs, and a covering made up of a plurality of independent sheet metal panels, each of the said panels being stiffened by a plurality of corrugations arranged upon

the exterior surface of the wing and extending transversely of the wing span and by a plurality of stiffening members secured to the interior surface of the wing and extending longitudinally of the wing span, said stiffening members being secured at their ends to angle irons disposed along the edges of the panels.

4. An aeroplane wing or the like, comprising an internal framework made up of longitudinal girders interconnected by a plurality of transverse ribs, and a covering made up of a plurality of independent sheet metal panels, each of said panels being stiffened by a plurality of corrugations arranged upon the exterior surface of the wing and extending transversely of the wing span and by a plurality of angle irons secured to the interior surface of the wing and extending longitudinally of the wing span, said angle irons being secured at their ends to further angle irons disposed along the edges of the panels, said angle irons being detachably secured to the transverse ribs.

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