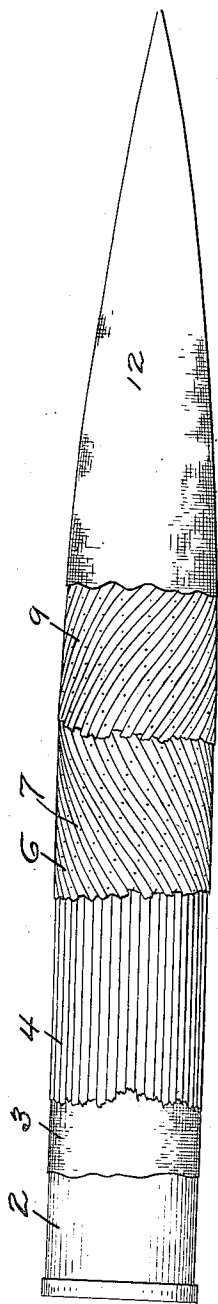


1,307,002.



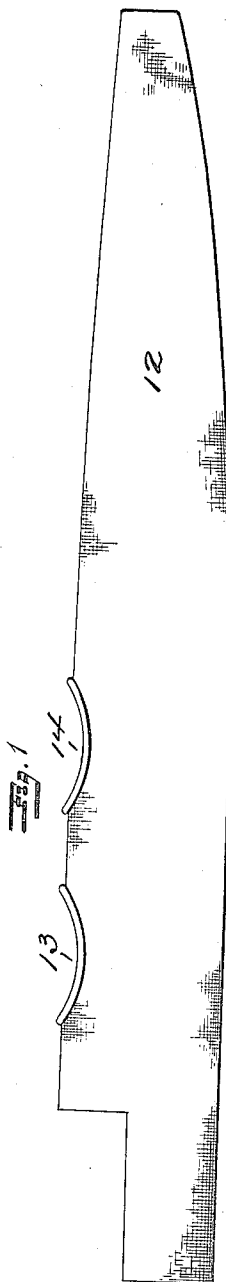
WITNESS

J. B. Gardner

Fig. 2

R. G. FOWLER.
FUSELAGE.
APPLICATION FILED MAY 28, 1917.

Patented June 17, 1919.



INVENTOR.

R. G. FOWLER

BY *White & Post*

HIS ATTORNEYS

UNITED STATES PATENT OFFICE.

ROBERT G. FOWLER, OF SAN FRANCISCO, CALIFORNIA.

FUSELAGE.

1,307,002.

Specification of Letters Patent. Patented June 17, 1919.

Application filed May 28, 1917. Serial No. 171,368.

To all whom it may concern:

Be it known that I, ROBERT G. FOWLER, a citizen of the United States; and a resident of the city and county of San Francisco and State of California, have invented a certain new and useful Fuselage, of which the following is a specification.

The invention relates to a fuselage for aeroplanes, dirigibles and comparable vehicles.

An object of the invention is to provide a fuselage of maximum strength and minimum weight.

Another object of the invention is to provide a fuselage having an all-over stream line contour.

A further object of the invention is to provide a fuselage which requires no internal bracing.

The invention possesses other advantageous features, some of which, with the foregoing, will be set forth at length in the following description where I shall outline in full that form of the invention which I have selected for illustration in the drawings accompanying and forming part of the present specification.

Referring to said drawings:

Figure 1 is a side view of the completed fuselage of my invention.

Fig. 2 is a top view of the fuselage broken away at different parts to show its construction.

An important consideration in fuselage construction is lightness and strength and these two conditions are manifested in the fuselage of my invention. It is also important to reduce wind resistance to a minimum and this I accomplish by properly shaping the fuselage so that it presents the least air resistance and by omitting all external bracing.

The fuselage of my invention is substantially circular in cross section at its main body portion and tapers to a narrow vertical ellipse at the tail portion, thereby presenting a full stream line contour to the wind. On account of its construction no angles or edges are presented to the wind which would cause eddies or otherwise increase the resistance of the fuselage.

The fuselage of my invention is made on a mold 2 of a corresponding shape, which is sheathed with sheet metal. Over the mold I draw a cloth envelop 3 which has been fabricated to fit the mold. Glued to the cloth en-

velop is a layer of wood formed of contiguous wooden strips 4 disposed longitudinally of the fuselage, the strips being properly tapered so that they conform to the curvature of the fuselage. These wooden strips are preferably of spruce and are $\frac{1}{8}$ of an inch thick and three inches wide at their widest portion. The strips are held in place by suitable binders until the glue has set, or may be held in place by short copper tacks driven through the strips and fabric and turned over and clenched by the sheet metal mold, thereby holding the strips to the fabric. The wood shell is then coated with glue and is then covered with a layer of contiguous wood strips 6 of the same size and material as those previously used. These strips 6 are disposed helically on the fuselage and are held in place during the setting of the glue and thereafter, by short copper tacks 7. The tacks are slightly longer than the thickness of the material into which they are driven, so that they strike and are deflected by the sheet metal mold 2 and are thereby clenched.

The second wood layer is then coated with glue and is covered with a layer of contiguous wood strips 9, of the same size and material as those previously used. These wood strips 9 are arranged helically, in the opposite direction to the strips 6, so that the strips of the two layers cross each other. The strips 9 are secured in place by tacks which penetrate the shell and are clenched by the sheet metal mold. The last wood layer is then coated with glue and a cloth envelop 12 is drawn over it. After all of the glue has set, the mold is withdrawn, leaving the laminated shell.

This construction produces a shell of extreme lightness and maximum strength. The three layers of wood strips disposed in different directions produce strength and rigidity in all directions. The use of the copper tacks which clench and hold the wood strips in place during the time that the glue is setting and also assist in holding the strips in place thereafter obviates the necessity of any binders for holding the various laminations in place and also permits one lamination to be laid over the other before the glue sets, thereby permitting the fuselage to be quickly made. The inside and outside of the fuselage are coated with a waterproof paint to further preserve the shell.

When the shell is complete, a portion of the upper forward part is removed to permit placing the engine, and circular apertures 13—14 are cut in the top in back of the engine opening to provide driving and observation compartments.

It is to be understood that the invention is not limited to a fuselage consisting of three laminations, but that two or more laminations may be used depending upon the service to be performed and the strength required.

I claim:

A fuselage comprising a cloth envelop, a layer of contiguous wood strips arranged longitudinally on said envelop, a coating of glue between the envelop and layer, tacks driven through the strips and clenching the

envelop, a second layer of wood strips arranged helically on said first layer, a coating of glue between said layers, tacks extending through said layers and clenched under the first layer, a third layer of wood strips arranged helically in the opposite direction, a coating of glue between said second and third layers, tacks driven through the three layers and clenched under the first layer and a cloth envelop inclosing the outer wooden layer and glued thereto.

In testimony whereof, I have hereunto set my hand at San Francisco, California, this 19th day of May, 1917.

ROBERT G. FOWLER.

In presence of—
H. G. Prost.