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BY A. P. O.

Y. SAKAMOTO
METHOD OF MANUFACTURING HOLLOW PROPELLER
BLADE FOR AIRCRAFT
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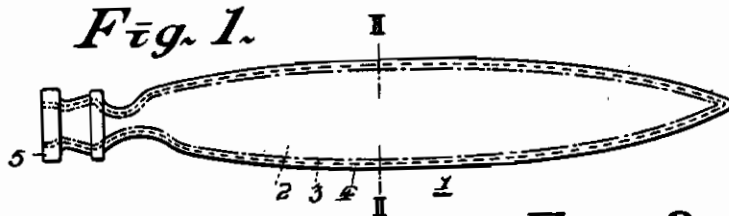


Fig. 2.

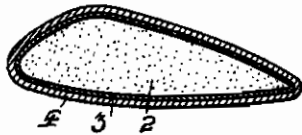


Fig. 3.

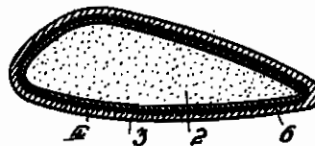


Fig. 4.

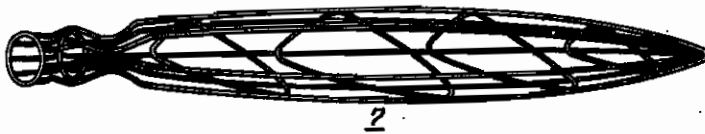


Fig. 5.

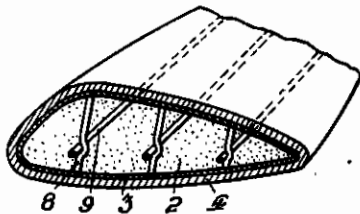


Fig. 6.

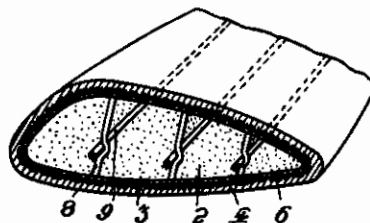
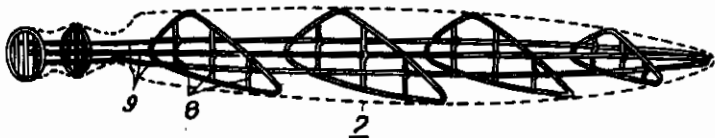


Fig. 7.



INVENTOR.
Y. Sakamoto
BY:
Glascok Downings & Seibold
ATTORNEY.

ALIEN PROPERTY CUSTODIAN

METHOD OF MANUFACTURING HOLLOW PROPELLER BLADE FOR AIRCRAFT

Yutaka Sakamoto, Shizuoka-ken, Japan; vested
in the Alien Property Custodian

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This invention relates to the manufacture of hollow propellers for aircraft and has for its object to provide a new method of simply and easily manufacturing a light and tough hollow propeller blade for aircraft.

The invention essentially consists in preparing a suitably reduced prototype of a propeller blade as desired with a thermally melting solid material, such as paraffin and lead, coating the prototype with a suitable material enabling it to be plated, such as graphite, plating on the surface of the coated prototype with a suitable hard metal, such as nickel or iron, and melting and removing the prototype by heating to melt the material of the prototype, without melting the plated metal.

The invention will be further described with reference to the accompanying drawings in which:

Fig. 1 is a front view of a propeller blade manufactured in accordance with the invention;

Fig. 2 is a cross sectional view in an enlarged scale taken on the line II—II of Fig. 1, but with a prototype used in the manufacture;

Fig. 3 is a view similar to Fig. 2, but with a wire-netting on the prototype;

Fig. 4 is a perspective view of a metal frame adapted to cover the prototype;

Figs. 5 and 6 are fragmentary perspective and sectional views to show struts provided in addition in the embodiments as shown in Figs. 2 and 3 respectively; and

Fig. 7 is a perspective view to show struts provided in addition to the metal frame as shown in Fig. 4.

Referring now to the drawings, 1 represents a propeller blade manufactured in accordance with the invention. In the manufacture, first a prototype of the blade is formed in a suitably

smaller size than the blade by any suitable thermally melting material of a low melting point, such as paraffin or lead, as indicated in the dash and dot line at 2 in Fig. 1. The prototype is shown in cross sectional view in an enlarged scale in Fig. 2.

The prototype 2 is coated with a suitable material enabling it to be plated, such as graphite, as indicated at 3 in Fig. 2, and then it is plated in a plating bath (not shown) with a suitable hard metal, such as nickel or iron, as indicated at 4 in Figs. 1 and 2. After the completion of the plating, the prototype is melted by heating at a sufficient temperature to melt the material of the prototype, but not to melt the plated metal, and is removed through one end 5 of the plated metal, whereby a hollow propeller blade is obtained. The blade may be tempered, if desired.

For the reinforcement of the blade and the facility of the plating, the prototype coated with the material enabling it to be plated may be further covered with a wire-netting of bronze, steel, or other suitable material, as indicated at 6 in Fig. 3. A metal frame 7 shown in Fig. 4 may also be used instead of the wire-netting. In the embodiments shown Figs. 2 and 3, cross and transverse struts 8 and 8 may be embodied in the blade, by previously embedding in the prototype, as shown in Figs. 5 and 6 respectively. Further the cross and transverse struts 8 and 9 may be additionally embodied in the metal frame 7 shown in Fig. 4, as shown in Fig. 7.

Although I have shown and described specific embodiments of the invention, it will be understood that modification and changes may be made without departing from the spirit and scope of the invention.

YUTAKA SAKAMOTO.