Aug. 19, 1930. C. F. RAUEN 1,773,319

PROPELLER SPINNER

Filed Feb. 18, 1928

FIG. 1.

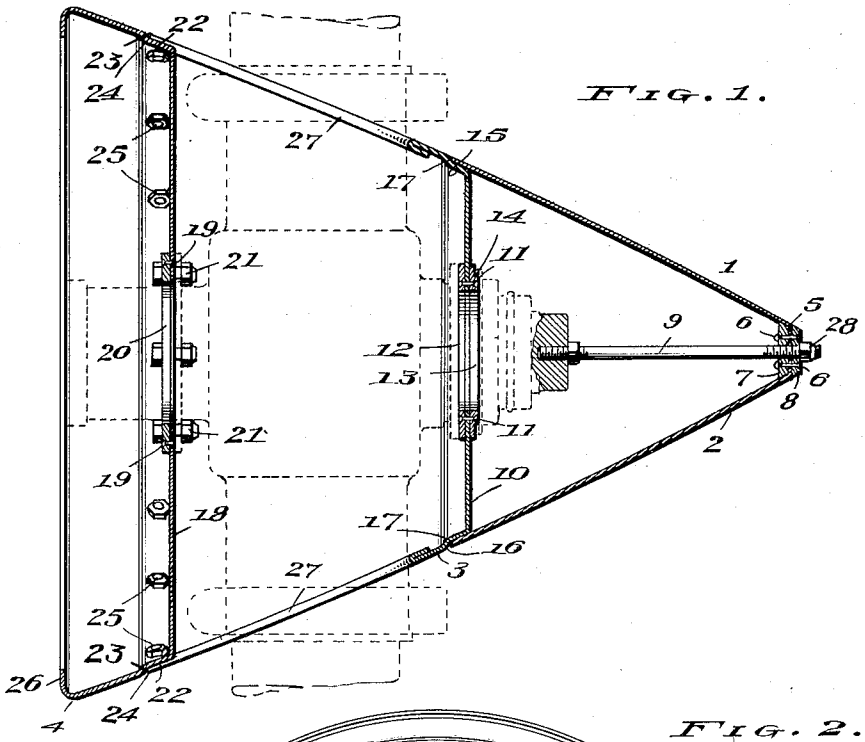
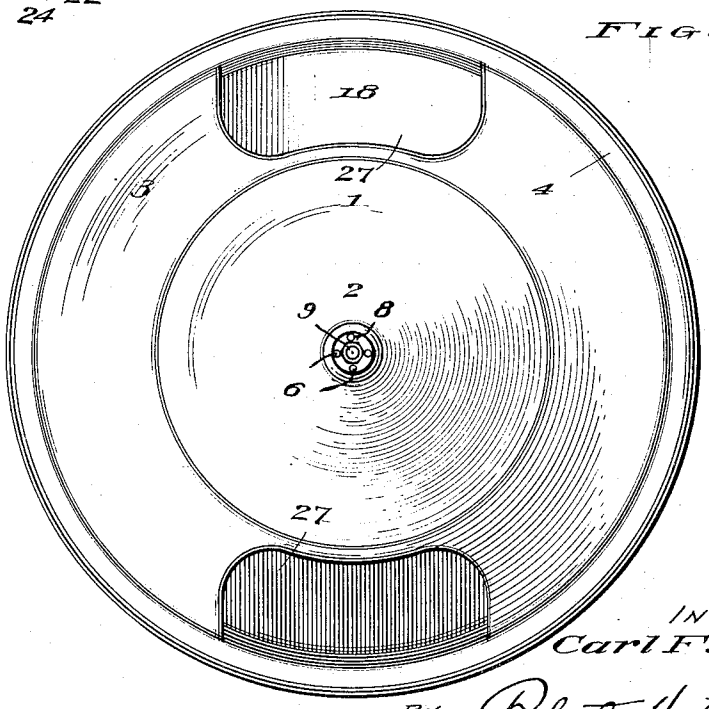


FIG. 2.



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UNITED STATES PATENT OFFICE

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PROPELLER SPINNER

Application filed February 18, 1928. Serial No. 255,343.

This invention relates to aircraft, but more particularly to propeller spinners for same, and the invention has for its object to provide a device of this class which is simple in its construction, cheap and easy to manufacture, strong, durable and efficient.

A further object of the invention is to provide a propeller spinner which is easy to fit to the propeller and which can be quickly assembled, and which is smooth and regular in contour and formation.

With these objects in view, the invention consists of the novel construction and arrangement of the spinner, and in certain combinations of parts, all of which is first fully described and afterwards specifically pointed out in the appended claims.

Referring to the accompanying drawing:

Figure 1 is a vertical longitudinal sectional view of a spinner constructed in accordance with this invention; and

Figure 2 is a front elevation of the same.

Like numerals of reference indicate the same parts throughout the two figures, in which:

1 indicates the spinner, which includes the nose cap 2, cowl 3 and rear-plate section 4.

The nose cap 2 which is cone shaped as shown, is flanged at its forward end at 5, and preferably riveted at 6 between two centrally apertured discs 7 and 8, to receive a bolt 9 passing from the hub of the propeller, which hub, propeller and its immediately associated parts are shown in dotted lines in Figure 1.

The cowl 3 is formed in the form of a truncated cone, the head 10 of which is likewise riveted at 11 between two stiffening plates 12 and 13 arranged to be clamped between the propeller-hub-fastening elements in order to properly center the cowl 3, and I have shown the outer portion of the front stiffening plate 13 reduced in thickness at 14, so that a thin tool or implement may be inserted behind the adjacent lock washer shown in dotted lines, in order to conveniently bend the edges of said lock washer, as is done in the preferred assembly of the propeller-hub parts.

The surface 15 of the cowl 3 immediately adjacent the head 10 is slightly contracted to receive the open end of the nose cap 2 to center the rear end of said nose cap, and to provide a shoulder 16, against which the edge 17 of the nose cap 2 fetches up to limit any undue telescoping of the nose cap 2 over the cowl 3, and further to provide a smooth uninterrupted formation.

The rear plate section 4 is likewise in the form of a truncated cone, the head of which forms the rear plate 18, to which is riveted at 19 a stiffening plate 20 centered on the propeller hub and bolted to a member of the propeller hub assembly by bolts 21.

The surface 22 of the rear-plate section 4 immediately adjacent its plate 18, is likewise slightly contracted to receive the open end of the cowl 3 to center the rear end of the said cowl and to provide a shoulder 23, against which the edge 24 of the cowl 3 fetches up to limit any undue telescoping of the cowl 3 over the rear-plate section 4, and further to provide a smooth uninterrupted formation. The overlapping edge of the cowl may be bolted to the reduced portion 22 of the rear-plate section by bolts 25, while the rear edge of said rear-plate section may be flanged inwardly at 26 to finish and stiffen the same.

Having thus described the invention the parts are assembled as follows:

The rear-plate section is passed over the propeller shaft and the propeller is placed in position. The cowl 3 which is provided with a plurality of U-shaped slots 27 arranged therein to accommodate the blades of the propeller, is then passed over the propeller hub and into position shown in Figure 1. The propeller-hub assembly is then completed which operation clamps and centers the head 10 of the cowl in operative position, and the nose cap 2 is then applied to the cowl 3 and secured by the nut 28 on the bolt 9, to complete the spinner assembly.

Having thus fully described the invention, I do not wish to be understood as limiting myself to the exact construction herein set forth, but consider myself clearly entitled to all such changes and modifications as fall within the limit and scope of the appended claims.

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

1. A device of the character described including a cone-shaped nose cap having its outer end flanged inwardly, centrally apertured reinforcing means receiving the inwardly flanged end, a truncated conical shaped cowl apertured to receive the blades of a propeller and including a head for centering the cowl on the propeller hub assembly, means for stiffening and reinforcing said head, said stiffening and reinforcing means being adapted to be clamped by said propeller hub assembly, the portion of said cowl immediately adjacent said head being reduced to provide a shoulder to receive the open end of said nose cap, a truncated conical shaped back-plate section including a back-plate for centering the same on the propeller hub assembly and adapted to be fastened thereto, the portion of the back-plate section immediately adjacent said back-plate being reduced to provide a shoulder to receive the open end of said cowl, and means for fastening the cowl to said reduced portion, the whole arranged as and for the purposes set forth.

2. A device of the character described including a nose cap, centrally apertured reinforcing means for the outer end thereof, a truncated conical shaped cowl apertured to receive the blades of a propeller, and including a head for centering the cowl on the propeller hub assembly, means for stiffening and reinforcing said head, the portion of said cowl immediately adjacent said head being reduced to provide a shoulder to receive the open end of said nose cap, a truncated conical shaped back-plate section including a back-plate for centering the same on the propeller hub assembly, the portion of the back-plate section immediately adjacent said back-plate being reduced to provide a shoulder to receive the open end of said cowl.

3. A device of the character described including a nose cap, a truncated conical shaped cowl apertured to receive the blades of a propeller and including a head for centering the cowl on the propeller hub assembly, the portion of said cowl immediately adjacent said head being reduced to provide a shoulder to receive the open end of said nose cap, a truncated conical shaped back-plate section including a back-plate for centering the same on the propeller hub assembly, the portion of the back-plate section immediately adjacent said back-plate being reduced to provide a shoulder to receive the open end of said cowl.

4. A device of the character described including a nose cap, a truncated conical shaped cowl apertured to receive the blades of a propeller and including a head for centering the cowl on the propeller hub assembly, and including a stepped reduction to form an annular portion for receiving the open end of said nose cap, a truncated conical shaped back-plate section including a back-plate for centering the same on the propeller hub assembly and including means for receiving the open end of the said cowl.

5. A device of the character described including a nose cap, a truncated conical shaped cowl apertured to receive the blades of a propeller and including a head integral therewith for centering the cowl on the propeller hub assembly, and a truncated conical shaped back-plate section including a back for centering the same on the propeller hub assembly.

6. A device of the character described including a cone-shaped nose cap having its outer end flanged inwardly, centrally apertured reinforcing means receiving the inwardly flanged end, a truncated conical shaped cowl provided with U-shaped slots to receive the blades of a propeller and including a head for centering the cowl on the propeller hub assembly, means for stiffening and reinforcing said head, said stiffening and reinforcing means being adapted to be clamped by said propeller hub assembly, the portion of said cowl immediately adjacent said head being reduced to provide a shoulder to receive the open end of said nose cap, a truncated conical shaped back-plate section including a back-plate for centering the same on the propeller hub assembly and adapted to be fastened thereto, the portion of the back-plate section immediately adjacent said back-plate being reduced to provide a shoulder to receive the open end of said cowl, and means for fastening the cowl to said reduced portion, the whole arranged as and for the purposes set forth.

7. A device of the character described including a nose cap, centrally apertured reinforcing means for the outer end thereof, a truncated conical shaped cowl provided with U-shaped slots to receive the blades of a propeller, and including a head for centering the cowl on the propeller hub assembly, means for stiffening and reinforcing said head, the portion of said cowl immediately adjacent said head being reduced to provide a shoulder to receive the open end of said nose cap, a truncated conical shaped back-plate section including a back-plate for centering the same on the propeller hub assembly, the portion of the back-plate section immediately adjacent said back-plate being reduced to provide a shoulder to receive the open end of said cowl.

8. A device of the character described including a cone-shaped nose cap, a truncated conical shaped cowl provided with U-shaped slots to receive the blades of a propeller and including a head for centering the cowl on the propeller hub assembly, the portion of said cowl immediately adjacent said head

being reduced to provide a shoulder to receive the open end of said nose cap, a truncated conical shaped back plate section including a back plate for centering the same on the propeller hub assembly, the portion of the back plate section immediately adjacent said back plate being reduced to provide a shoulder to receive the open end of said cowl.

9. A device of the character described including a nose cap, a truncated conical shaped cowl provided with U-shaped slots to receive the blades of a propeller and including a head for centering the cowl on the propeller hub assembly, and including a stepped reduction to form an annular portion for receiving the open end of said nose cap, a truncated conical shaped back plate section including a back plate for centering the same on the propeller hub assembly and including means for receiving the open end of the said cowl.

10. A device of the character described including a nose cap, a truncated conical shaped cowl provided with U-shaped slots to receive the blades of a propeller and including a head provided with a stepped portion for centering the cowl on the propeller hub assembly, and a truncated conical shaped back plate section including a back for centering the same on the propeller hub assembly.

11. In a spinner structure for aircraft propellers comprising a nose positioned in advance of said propeller, a back plate rearward of said propeller and a unitary cowl section and head interposed between said nose cap and said back plate, said head having centering means for centering said cowl and nose cap.

12. In a spinner structure for aircraft propellers comprising a nose cap rigidly connected to the propeller, and a cowl section, substantially enclosing the propeller hub, said cowl section having front and back plates secured to said propeller and provided with peripheral recesses to receive the rear edges of said nose cap and cowl respectively thereby presenting a smooth contour.

In testimony whereof I affix my signature.

CARL F. RAUEN.