

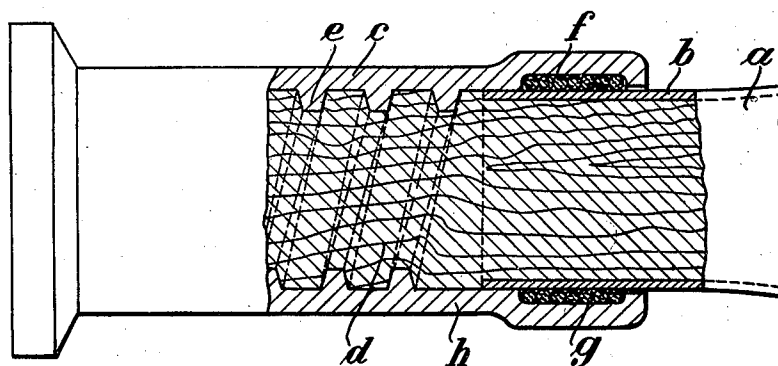
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AIR PROPELLER

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AIR PROPELLER

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3 Claims. (Cl. 170—159)

My invention relates to improvements in air propellers, and more particularly in air propellers of the type in which a blade of wood is fixed in a cylindrical metallic sleeve mounted on the hub. In constructions now in use the root of the blade is formed with screw-threads engaging in corresponding screw-threads made within the said sleeve, a suitable binding medium such as putty or cement being used for rigidly fixing the root to the blade. The object of the improvements is to prevent the access of moisture and dust into the annular space formed between the outer portion of the sleeve and the root of the blade, which moisture and dust tend to spoil the wooden blade, and with this object in view my invention consists in providing packing means at the end of the sleeve and between the same and the root of the blade. Such packing means are particularly important in propellers in which the blade is provided with a moisture proof coating such as is ordinarily made from lacquer or a cellulose derivative. Such coatings cannot be extended into the sleeve and to the part of the root which is fixed thereto, and therefore an unprotected part is produced between the said joint and the coated portion of the blade and root, to which moisture and air have access. In my improved propeller this objection is obviated.

In the preferred construction the sleeve is extended outwardly beyond the joint of the root of the blade, and the packing medium is confined between the said extension and the root. In this case the coating of the blade extends into the said extension so far that the packing medium is applied thereto.

For the purpose of explaining the invention an example embodying the same has been illustrated in the accompanying drawing, showing a fragmentary elevation partly in section of the sleeve and the inner part of the blade of a propeller.

The blade *a* of the propeller is made from wood or composed of laminations of wood with a suitable binding medium interposed between the same, and it has a protective coating *b* which is made for example from a cellulose derivative, and which is proof as against moisture and mechanical attack by water, sand or gravel. The inner end *d* of the root of the blade is formed with screw-threads engaging in corresponding screw-threads *e* of a sleeve *c*, the said sleeve being mounted on the hub of the propeller. The joint is made rigid by means of a suitable binding me-

dium or cement applied between the screw-threads of the sleeve and the root.

In the example shown in the figure the sleeve *c* is extended outwardly beyond the said joint, as is shown at *h*, and the said extension is formed internally with a circumferential cavity *f* adapted to receive a suitable packing medium *g*. The protective coating *b* extends from the body of the blade into the outer portion of the sleeve *c* and to a part near the joint *d*, *e*, so that it is embraced by the packing medium *g* and access of moisture and dust to the inner portions of the root of the blade is prevented. The outer end *i* of the sleeve has a certain play relatively to the root of the blade so that no transverse pressure is exerted on the said outer end of the sleeve by the oscillations and other deformation of the blade caused in service. For the same reason I prefer to make the packing *g* from elastic material, a ring or strips of rubber wound around the root of the blade being preferred.

From the foregoing description of the invention it will be understood that access of moisture and dust to the inner portion of the sleeve and to the unprotected inner part of the root is prevented.

While in describing the invention reference has been made to an example in which the propeller blade is provided at its root with a protective coating, and in which the packing medium is located within an extension of the sleeve, I wish it to be understood that my invention is not limited to these features.

I claim:

1. The herein described propeller, comprising a blade composed of a metallic sleeve, the portion of said root located within said sleeve having a surface permitting the access of humidity into the same, a body made from non-metallic material having its root permanently fixed within said sleeve, and a packing medium in position for preventing access of foreign matter to the inner part of said sleeve and the said root.

2. The herein described propeller comprising a blade composed of a metallic sleeve, a body made from non-metallic material having its root permanently fixed within said sleeve and provided with a protective coating extending from the outer part of said body into the outer portion of said sleeve and leaving the inner part of said root bare, and a packing medium between said sleeve and protective coating preventing access of foreign matter into the sleeve.

3. The herein described propeller comprising a blade composed of a sleeve, a body made from

wood permanently fixed with its root within said sleeve, said sleeve having an extension beyond the joint of said body formed internally with a circumferential cavity and having clearance around the root of the blade, a protective coating on said body extending in said extension to the

portion of the root corresponding to said cavity and leaving the inner portions of said root bare, and an elastic packing medium within said cavity engaging the portion of the protective coating extending into the said extension.

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