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H. SUKOHL

2,201,706

METHOD OF COATING THE BLADES OF AIR PROPELLERS

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Fig. 1

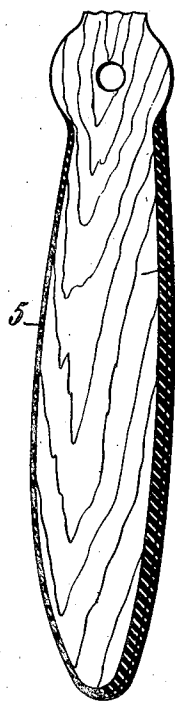


Fig. 2

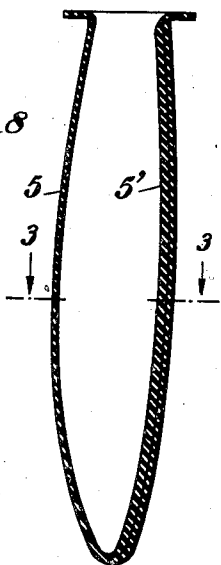


Fig. 4

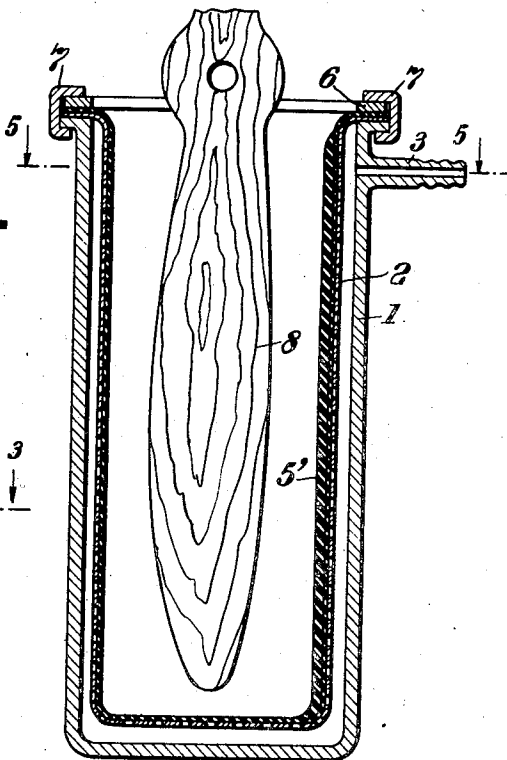


Fig. 3

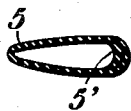
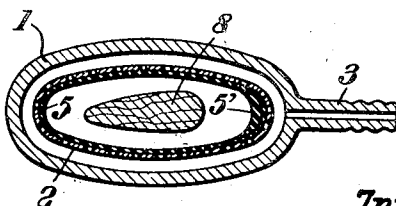


Fig. 5



Inventor:

Heinrich Sukohl

by Frank Reichard.
Attorney.

UNITED STATES PATENT OFFICE

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METHOD OF COATING THE BLADES OF AIR PROPELLERS

Heinrich Sukohl, Berlin, Germany

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2 Claims. (Cl. 154-40)

My invention relates to improvements in the method of and apparatus for coating the blades of air propellers, and the object of the improvements is to provide a method and an apparatus by means of which a coating made from an integral body in the form of a pouch may be readily applied to the blade. With this object in view my invention consists in making a pouch of a shape similar to the outer shape of the blade from elastic material such as rubber, expanding the said coating into a size larger than that of the blade, placing the blade into the said expanded coating, and allowing the coating to contract so that it tightly embraces the blade.

For the purpose of explaining the invention an example embodying the same has been shown in the accompanying drawing in which the same reference characters have been used in all the views to indicate corresponding parts. In said drawing,

Fig. 1 is a sectional elevation showing a blade having a coating applied thereto,

Fig. 2 is a sectional elevation showing the coating before it has been applied to the blade,

Fig. 3 is a sectional plan view taken on the line 3-3 of Fig. 2,

Fig. 4 is a sectional elevation showing the apparatus for expanding the coating with an expanded coating and a blade placed therein, and

Fig. 5 is a sectional plan view taken on the line 5-5 of Fig. 4.

As is shown in Figs. 1 to 3, the coating of the blade 8 consists of an integral body 5 in the form of a pouch of a shape similar to that of the blade but, preferably, somewhat smaller than the said blade. The coating is provided at one side corresponding to the leading edge of the blade with a reinforced portion 5' which when it has been applied reinforces the leading edge of the blade. Preferably the said reinforced portion gradually merges into the part of normal thickness of the wall of the coating, as is shown in Fig. 3. The said reinforced portion may be made integral with the body of the coating, or it may be fixed thereto.

For applying the coating to the blade the apparatus shown in Figs. 4 and 5 may be used. The said apparatus comprises a container 1 which may be circular in cross-section but is preferably oval and so as to adapt itself to the shape of the

blade. Within the container there is a foraminated partition wall 2 which likewise is similar in shape to the blade 8, the said partition being slightly spaced from the wall of the container 1. The container 1 is provided with a nipple 3 adapted to have a suction pipe attached thereto for evacuating the container 1.

For applying the coating 5 to the blade 8 the said coating is first placed into the container 1 and the partition 2, and it is tightly fixed with its margin to the flanged top part of the container 1, for example by means of a ring 6 held in position by cramps 7. Thereafter a vacuum is produced within the container 1 through the nipple 3 whereby the coating 5 is expanded and places itself on the partition 2. Now a suitable adhesive such as glue, lacquer or the like is applied to the blade 8 and the said blade is placed into the expanded coating 5, whereupon air is gradually admitted through the nipple 3 thus gradually removing the vacuum. Thereby the coating is contracted, and it places itself tightly on the blade 8, particularly when the pouch from which it is made is originally smaller in size than the blade 8. When the partition 2 corresponds in shape to that of the blade unnecessary expansion of the coating is avoided, and a smaller vacuum is needed for expanding the blade.

I claim:

1. The herein described method of applying a coating to the blade of an air propeller, which consists in expanding under externally applied vacuum a coating in the form of a pouch having a shape similar to that of the blade to be coated, placing the blade to be coated into the said expanded coating, relieving the vacuum and allowing the coating to contract.

2. The herein described method of causing a coating of elastic material constrictively to engage the blade of an air propeller which consists in expanding under externally applied vacuum a coating in the form of a pouch and normally of smaller size than the blade to be coated to a size larger than the blade to be coated, introducing the blade into the so expanded coating, and relieving such vacuum with contraction of the coating upon the blade.

HEINRICH SUKOHL