

May 26, 1931.

W. WATERS

1,807,359

HEATER FOR PROPELLERS

Filed Oct. 28, 1927

2 Sheets-Sheet 1

Fig. 1.

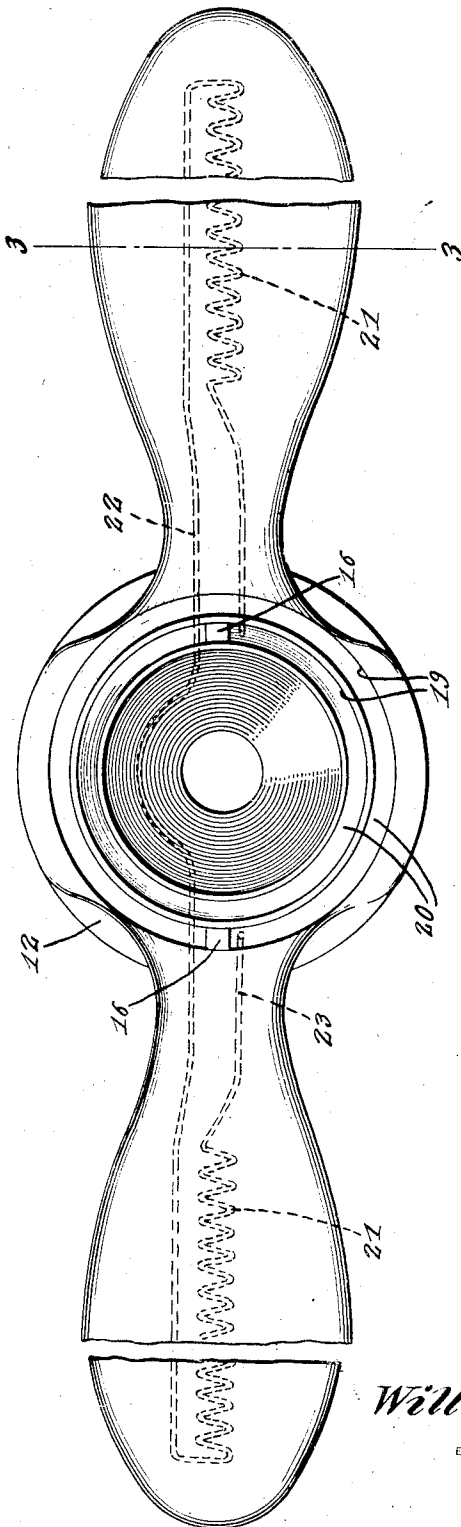
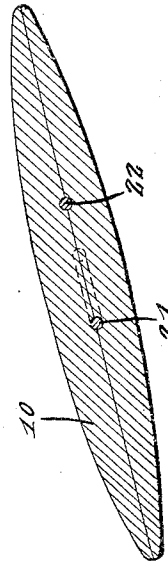


Fig. 3.



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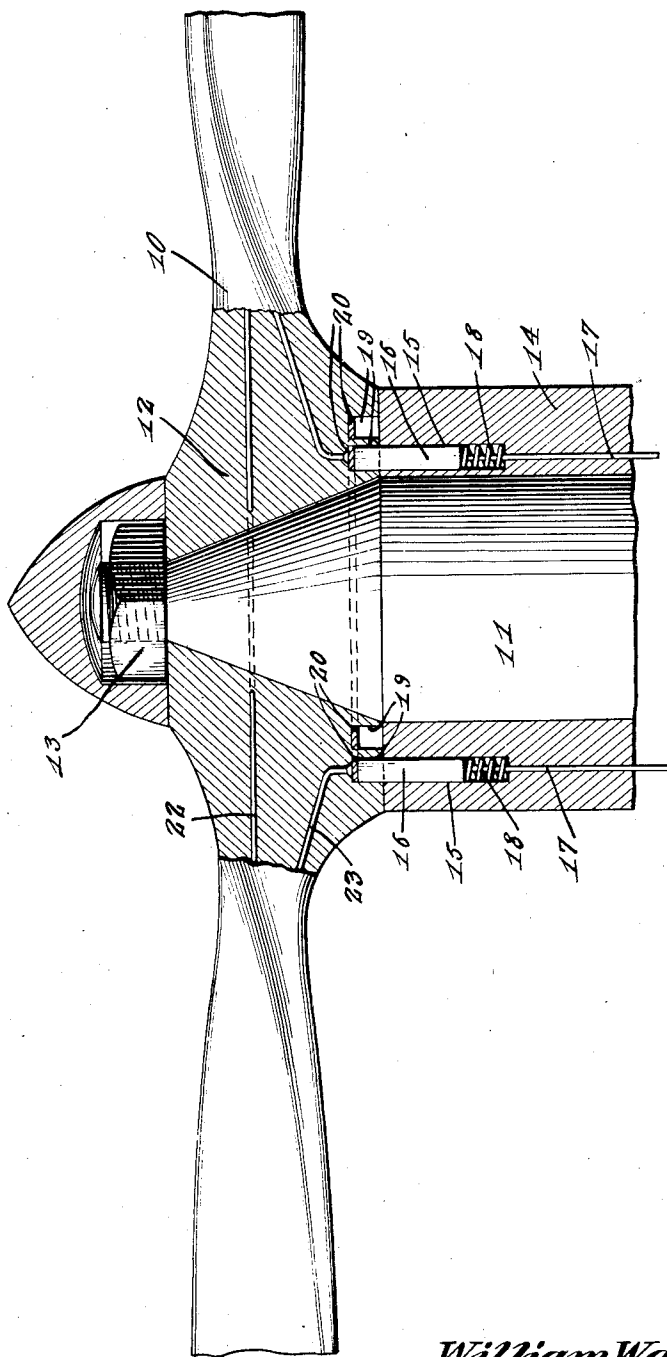
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Fig. 2.



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HEATER FOR PROPELLERS

Application filed October 28, 1927. Serial No. 229,444.

This invention relates to improvements in propellers especially adapted for aircraft, an object being to provide means for preventing snow, sleet and ice from collecting upon the propeller.

Another object of the invention is the provision of means for this purpose which is electrically operated, and to which current may be supplied from a generator or other suitable source, so that the propeller may be kept at a temperature above freezing.

With the above and other objects in view, the invention further includes the following novel features and details of construction, to be hereinafter more fully described, illustrated in the accompanying drawings and pointed out in the appended claim.

In the drawings:—

Figure 1 is an elevation of a propeller constructed in accordance with the invention, parts of the blades being broken away and the brushes shown in section.

Figure 2 is a fragmentary view partly in section.

Figure 3 is a section on the line 3—3 of Figure 1.

Referring to the drawings in detail wherein like characters of reference denote corresponding parts, the reference character 10 indicates a propeller which is mounted upon a shaft 11, the latter being secured within the hub 12 of the propeller as indicated at 13.

Mounted upon the propeller shaft 11 is a non-rotatable sleeve 14 whose end abuts one face of the hub of the propeller as clearly shown in Figure 2 of the drawings. The hub 14 is provided with sockets 15 which open at the outer ends of the hub and which extend parallel with the shaft 11. The sockets 15 are radially offset with respect to one another and house brushes 16. These brushes are adapted to be connected with a suitable source of current, such as a generator, through the medium of conductors 17. Springs 18 arranged within the sockets 15 act to force the brushes outward.

The brushes 16 enter annular grooves 19 provided in the hub 12 of the propeller. These grooves are closed by the end of the sleeve 14 and have located therein collector

rings 20, so that the springs 18 force the ends of the brushes 16 into contact with these rings.

The propeller is of metal construction and arranged within each blade of the propeller is a resistance element 21. These elements are connected by a conductor 22 which is housed within the propeller and which extends around the shaft 11, while conductors 23 connect the resistance elements 21 with the collector rings 20.

It will be seen that current supplied to the brushes 16 from a suitable source will be picked up by the rings 20 and conducted to the resistance elements 21, so that the blades of the propeller will be heated to prevent accumulation of ice and sleet.

The invention is susceptible of various changes in its form, proportions and minor details of construction and the right is herein reserved to make such changes as properly fall within the scope of the appended claim.

Having described the invention what is claimed is:—

In a device of the class described, a shaft, a hub fitted to the shaft and rotatable therewith, blades radiating from the hub, a sleeve in which the shaft is rotatable, one side of the hub being in engagement with the end of the sleeve, the said side of the hub being provided with annular grooves concentric to each other and to the axis of the hub, a collector ring in each of said grooves, an electrical resistance in each of said blades, a conductor bridging corresponding terminals of the resistances, conductors connecting the other terminals of the resistances, each with a respective one of the rings, the sleeve being provided with sockets at opposite sides of its axis and each in communication at its outer end with a respective one of the grooves, contact brushes slidably mounted in the sockets, current conductors connected with the brushes, and means in the sockets yieldably holding the brushes in contact, at their outer ends, with the respective connector rings.

In testimony whereof I affix my signature.
WILLIAM WATERS.