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AIRCRAFT ENGINE HEATER

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1 Claim. (Cl. 125—93)

This invention relates to aircraft engine heaters and has for an object to provide an envelope within which the engine may be received, the envelope having a heated chamber associated therewith and separated therefrom by a plate through which plate heated gases may be conducted into the envelope for warming up the engine, while at the same time the plate being imperforate except for the pipe openings therefrom, will positively prevent retrograde movement of the gas and oil fumes backing into the heated chamber.

A further object is to provide a device of this character which may be made of light flexible material and may be disassembled, folded and placed in a compact package for stowage on the airplane.

With the above and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter fully described and claimed, it being understood that various modifications may be resorted to within the scope of the appended claim without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings forming part of this specification,

Figure 1 is a side elevation of an airplane engine heater constructed in accordance with the invention, in applied position.

Figure 2 is a plan view of the envelope of the heater shown in Figure 1.

Figure 3 is a cross sectional view through the heater envelope and heating chamber.

Figure 4 is a cross sectional view through the heating chamber.

Figure 5 is a fragmentary front elevation showing the heating chamber door and Bunsen burner.

Figure 6 is a fragmentary longitudinal sectional view through the heater shown in Figure 1.

Referring now to the drawings in which like characters of reference designate similar parts in the various views, the aircraft engine heater is shown to comprise a front piece 10 of canvas lined on the outer face with a pliable asbestos piece 11. The front piece is circular and is provided with a central opening 12 to receive the propeller hub 13 and is provided with a radial opening closed by a zipper 14 to permit the front piece being applied to the hub in front of the engine.

A cylindrical sheet 15 of canvas, lined with a pliable asbestos sheet 16, forms an envelope together with the front piece 10 to completely enclose the engine 17 of the airplane 18. The front edge of the cylindrical sheet 15 is connected by a zipper 19 to the edge of the front piece 10.

The side edges of the cylindrical sheet 15 are connected by a zipper 20. The rear corners of the cylindrical sheet are provided with strap sections 21 and a buckle 22.

A plate 23, preferably formed of aluminum is secured to the lower end of the front piece and is provided with a plurality of openings 24. Pipes 25 communicate with the openings and are secured to the front piece by straps 26 or other suitable means. A burner housing 27 is secured to the plate and is provided with a damper 28. The housing is preferably formed of aluminum and is spaced outside with a canvas sheet 29 and is lined inside with an asbestos sheet 30.

A burner 31 of the Bunsen type is secured in the bottom of the housing and is provided with a control valve 32. A flexible tube 33 is connected to the burner below the valve and is connected at the free end to a tank 34 which preferably is filled with natural gas under compression. As natural gas is high in heat value, a small tank of gas will supply the burner for heating the airplane motor a plurality of times.

A door 35 closes a sight opening 36 in the wall of the burner housing, the door being hinged as shown at 37 to the wall of the housing and being equipped with an insulated pane 38 through which the burner may be viewed while regulating the height of the flame as will be understood.

In operation the cylindrical envelope with its circular front wall and rear open end, may be applied to the airplane motor to envelop the same throughout whereupon the zipper 20 may be closed and the strap sections 21 may now be buckled together to hold the device firmly in place. Heated air and products of combustion, being relatively light, will rise through the pipes 26 and heat the enclosure within the envelope so that the lubricating oil and the engine parts will be warmed preparatory to easy starting of the engine. By virtue of the plate 23 being imperforate the gas and oil fumes cannot escape in a retrograde direction backing into the heating chamber.

The device may be compactly stored when removed from applied position by simply removing it from the engine, folding the envelope around the burner housing whereupon the pack-
age may be placed in a canvas bag and stowed in the storage compartment of the fuselage.

From the above description it is thought that the construction and operation of the invention will be fully understood without further explanation.

What is claimed is:

An aircraft engine heater comprising a removable fabric envelope constructed to enclose an aircraft engine, said envelope having an opening in the lower front portion thereof, an apertured plate secured in said opening, distributing pipes extending from the apertures of the plate to various points within and adjacent the front portion of the envelope, said pipes being fastened to the front wall of the envelope, a burner housing suspended from said plate, and a burner within the housing for delivery of heated gases to said pipes.

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