T. P. BROOKE.

FLYING BOAT.

APPLICATION FILED FEB. 20, 1919.

1,313,252.

Patented Aug. 19, 1919.

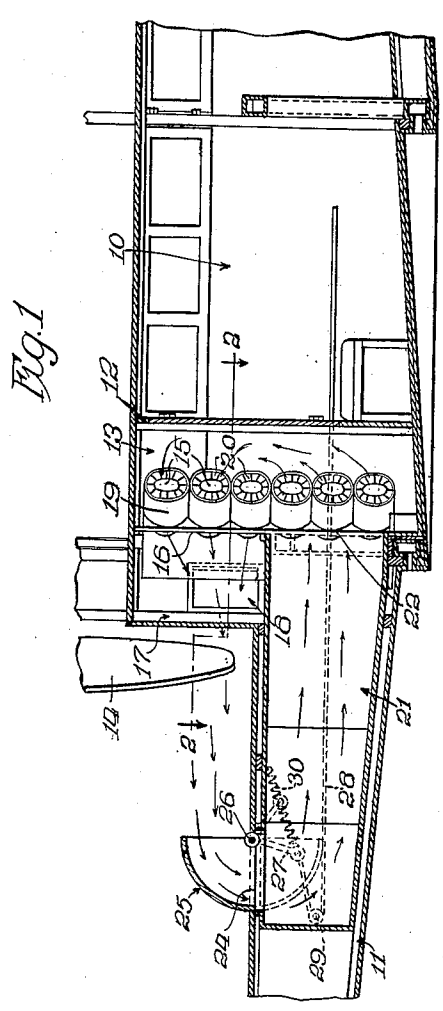


Fig. 1

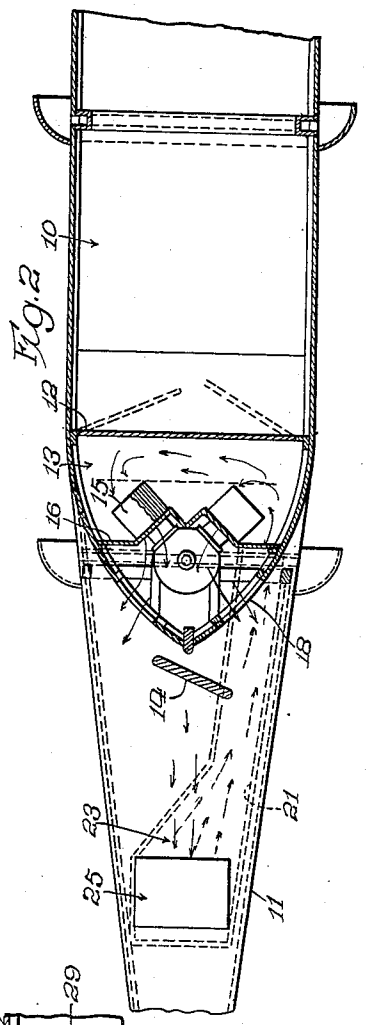


Fig. 2

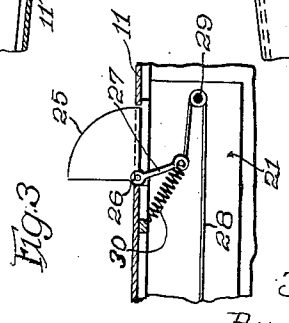


Fig. 3

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UNITED STATES PATENT OFFICE.

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FLYING-BOAT.

1,313,252. Specification of Letters Patent. Patented Aug. 19, 1919.

Application filed February 20, 1919. Serial No. 278,282.

To all whom it may concern:

Be it known that I, THOMAS PRESTON BROOKE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Flying-Boats, of which the following is a specification.

This invention relates in general to improvements in flying boats, but more particularly to improved means whereby the motor will be cooled by the action of the propeller blades at all times when the propeller is in operation.

A further object is to provide improved means for regulating or controlling the amount of air delivered by the propeller to cool the engine.

To the attainment of these ends, and the accomplishment of other new and useful objects as will appear, the invention consists in the features of novelty in substantially the construction, combination and arrangement of the several parts, hereinafter more fully described and claimed and shown in the accompanying drawing illustrating this invention and in which

Figure 1 is a vertical sectional view of the rear portion of a machine of this character constructed in accordance with the principles of this invention.

Fig. 2 is a horizontal sectional view taken on line 2—2, Fig. 1.

Fig. 3 is a detail view partly in elevation and partly in section of the adjustable hood for controlling the amount of air delivered from the propeller blades into the engine chamber.

Referring more particularly to the drawing, in the present form of the invention the body portion of the machine is provided with a cabin 10, projecting from the rear of which is a tubular hollow portion preferably rectangular in cross section and preferably tapers from the cabin portion to the stern.

The cabin is provided with an upright partition 12 which extends entirely thereacross to form a compartment 13, and in this compartment is a motor preferably arranged uprightly, so that the shaft will revolve in a vertical position and which motor is disposed within the body of the boat to be completely housed thereby and is connected with a propeller 14 by means of any suitable driving mechanism. The motor preferably comprises a plurality of cylinders 15, and a partition 16 coöperates with the partition 12 to form the compartment 13. The compartment 17 is provided with openings 18 which form outlets for the air. The cylinders 15 are each provided with a casing 19 spaced from the walls of the cylinders and between which casings 19 and the cylinders 15 are arranged cooling flanges 20 which extend longitudinally of the cylinders and the cylinders, the casings and flanges are so arranged that the passages formed between the flanges constitute the only means of exit for the air which enters the compartment 13, in a manner to be set forth.

Arranged within the tubular extension 11 is a flue 21 which is preferably located to one side of the center and discharges into the compartment 13 as at 22, through the partition 16 and adjacent the bottom of the chamber. This flue 21 may be of any desired length and the opposite end thereof is preferably enlarged laterally as at 23 to substantially fill the portion 11 of the body. An entrance opening 24 is provided through the top of the body 11 and into the flue 21. This opening is arranged in rear of the propeller 14 and is preferably of a size to extend substantially across the body. A hood 25 is provided which is pivotally supported as at 26 to be raised and lowered so as to open and close the opening 24, and the entrance of the hood is arranged adjacent the propeller 14 so that as the propeller rotates the slip-stream therefrom will enter the hood under pressure and will be forced through the hood into the flue 21 to be discharged through the opening 22 into and adjacent the bottom of the chamber 13. The air will flow from the chamber 13 through the openings formed between the cylinders 15 and casings 19 into the chamber 17 where it will be discharged from the chamber through the outlet openings 18. The propeller 14 operates in proximity to the outlets 18 and will also serve as a means for creating a suction in the chamber 17 to draw the air through the openings 18. It will thus be manifest that a constant circulation of air over the engine cylinders will be provided when the hood 25 is opened or in the position shown in full lines in Figs. 1 and 3.

In order to control the amount of air delivered into the flue 21, the hood 25 is ad-

justably mounted and any suitable means may be provided for manipulating the hood such, for instance, as a crank arm 27 preferably connected with the pivot 26 of the hood. Connected with this arm 27 in an operating element such as a flexible cable 28 that passes over a suitable pulley 29. The cable 28 may extend to any suitable point convenient for the operator and may be provided with a suitable fastening means whereby the hood will be maintained in its adjusted position when the cable is manipulated. An elastic member 30 such as a spring may also be provided which tends normally to close the hood 25 so that when the cable 28 is operated to open the hood stress will be exerted upon the elastic member 30 and the hood will be opened against the stress thereof. The elastic member 30 also serves as a means for holding the hood closed and against a rattling or vibratory movement.

While the preferred form of the invention has been herein shown and described, it is to be understood that various changes may be made in the details of construction and in the combination and arrangement of the several parts within the scope of the claims, without departing from the spirit of this invention.

What is claimed as new is:—

1. A machine of the character described embodying a body having a compartment therein, a motor arranged in the compartment and entirely housed thereby, a flue having communication with and extending beyond the compartment, said flue being also arranged within the body and having an air entrance opening through the body at a point spaced from the said compartment, said compartment having an air outlet opening out direct communication with the said flue except through the said compartment, and a propeller operable intermediate the said air entrance and the said air outlet opening, whereby the operation of the propeller will force air into the said entrance to circulate through the flue and chamber, said propeller also operating to create a suction through the said outlet opening.

2. A machine of the character described embodying a body having a compartment therein, a motor arranged in the compartment and entirely housed thereby, a flue having communication with and extending beyond the compartment, said flue being also arranged within the body and having an air entrance opening through the body at a point spaced from the said compartment, said compartment having an air outlet opening out of direct communication with the said flue except through the said compartment, a propeller operable intermediate the said air entrance and the said air outlet opening, and means disposed in the path of the slip stream of the propeller whereby the operation of the propeller will force air into the said entrance to circulate through the flue and chamber, said propeller also operating to create a suction through the said outlet opening.

3. A machine of the character described embodying a body having a compartment therein, a motor arranged in the compartment and entirely housed thereby, a flue communicating with and extending beyond the compartment, said flue being also arranged within the body and having an air entrance opening through the body, said compartment having an air outlet opening out of communication with the said flue except through the said compartment, a propeller operating between the said air entrance of the flue and the air outlet from the compartment, whereby the propeller will create a blast through the said entrance opening and a suction through the said air outlet, and an adjustable hood controlling said entrance opening and itself opening toward the propeller for controlling the amount of air delivered from the propeller into the said flue.

4. A machine of the character described embodying a body having a compartment therein, a motor arranged in the compartment and entirely housed thereby, a flue communicating with and extending beyond the compartment, said flue being also arranged within and housed by the body and having an air entrance opening through the body, said compartment having an air outlet opening, the said air outlet being arranged in a different horizontal plane from the horizontal plane of the point of communication of the flue with the compartment, and a propeller operating intermediate the said air outlet and the said air entrance, whereby the propeller will create a blast through the said entrance opening and a suction through the said air outlet.

In testimony whereof I have signed my name to this specification, on this 5th day of February, A. D. 1919.

THOMAS PRESTON BROOKE.