Oct. 2, 1928. 1,686,071

V. CAVALERI

AEROPLANE

Filed Aug. 20, 1927 3 Sheets-Sheet 1

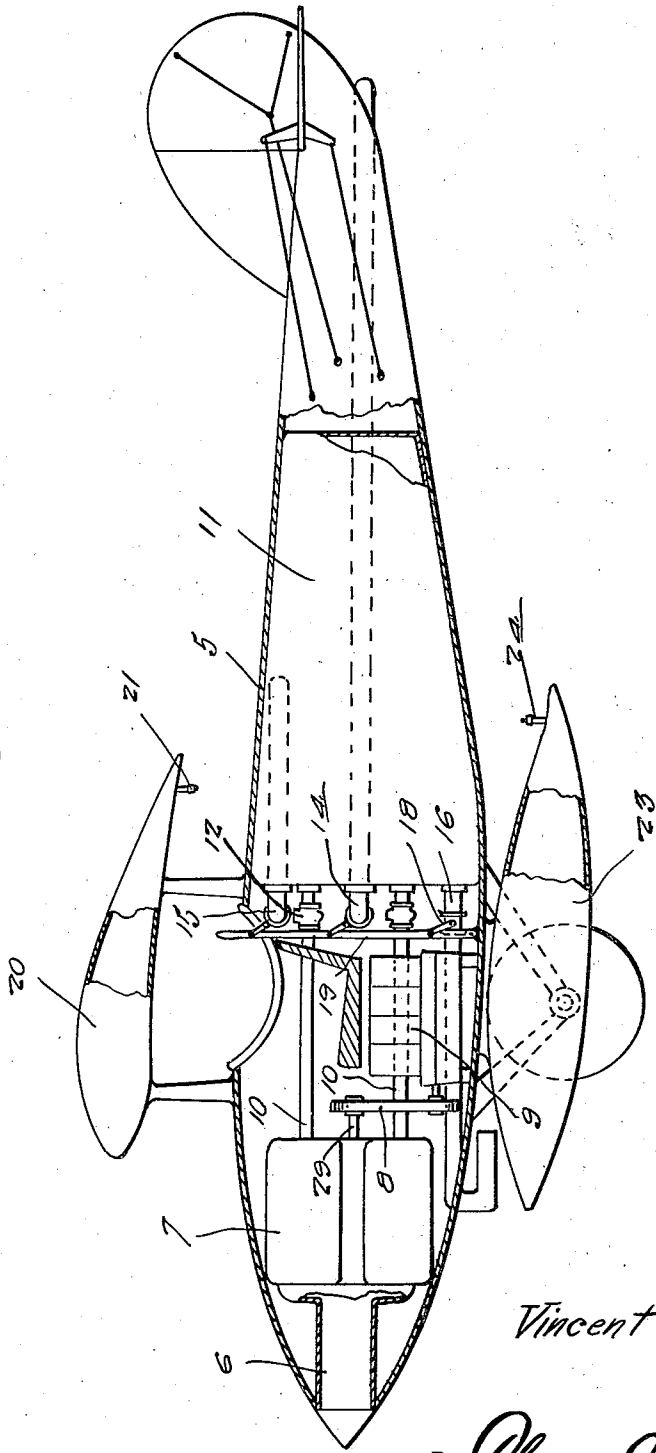


Fig. 1.

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Filed Aug. 20, 1927 3 Sheets-Sheet 2

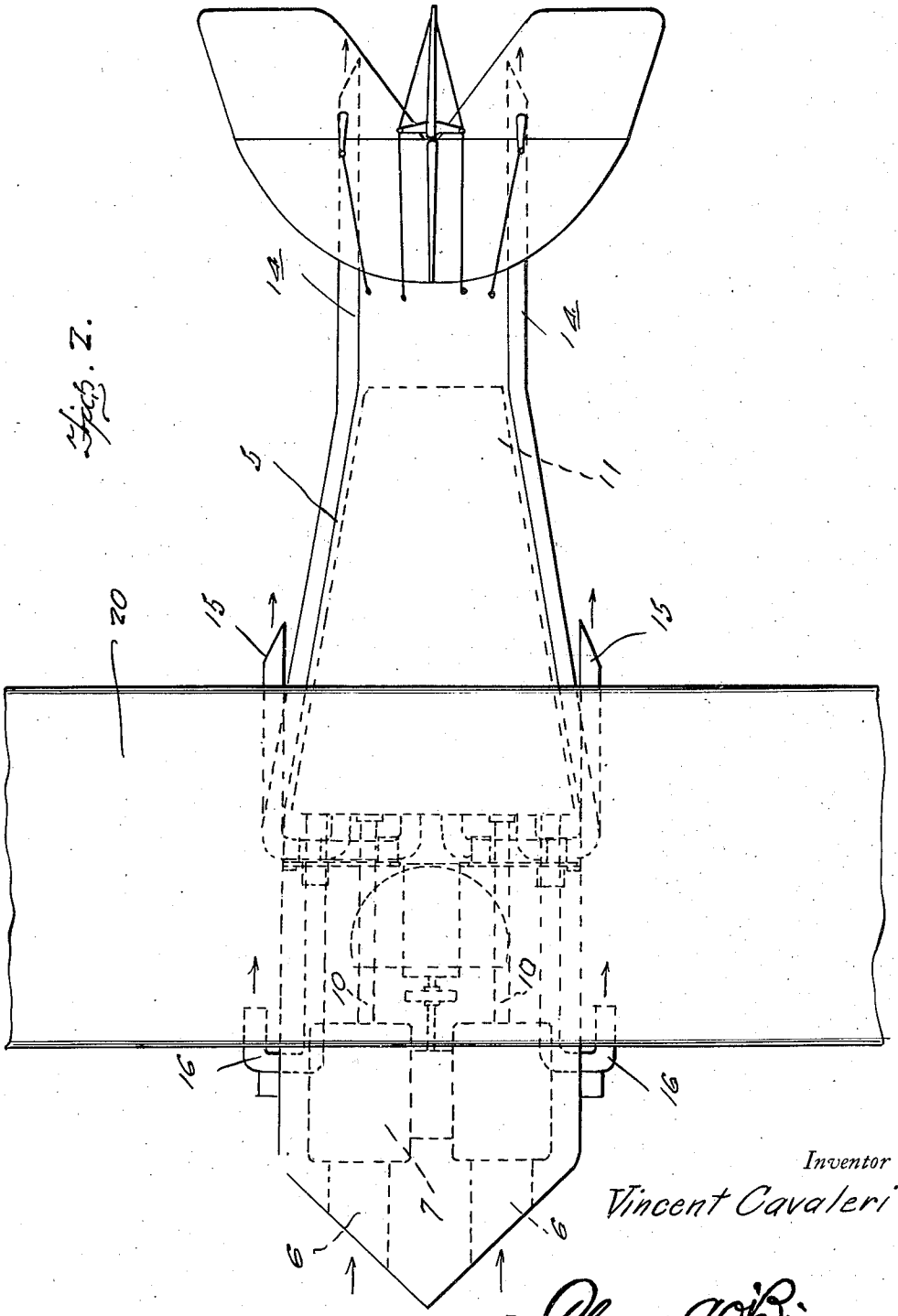


Fig. 2.

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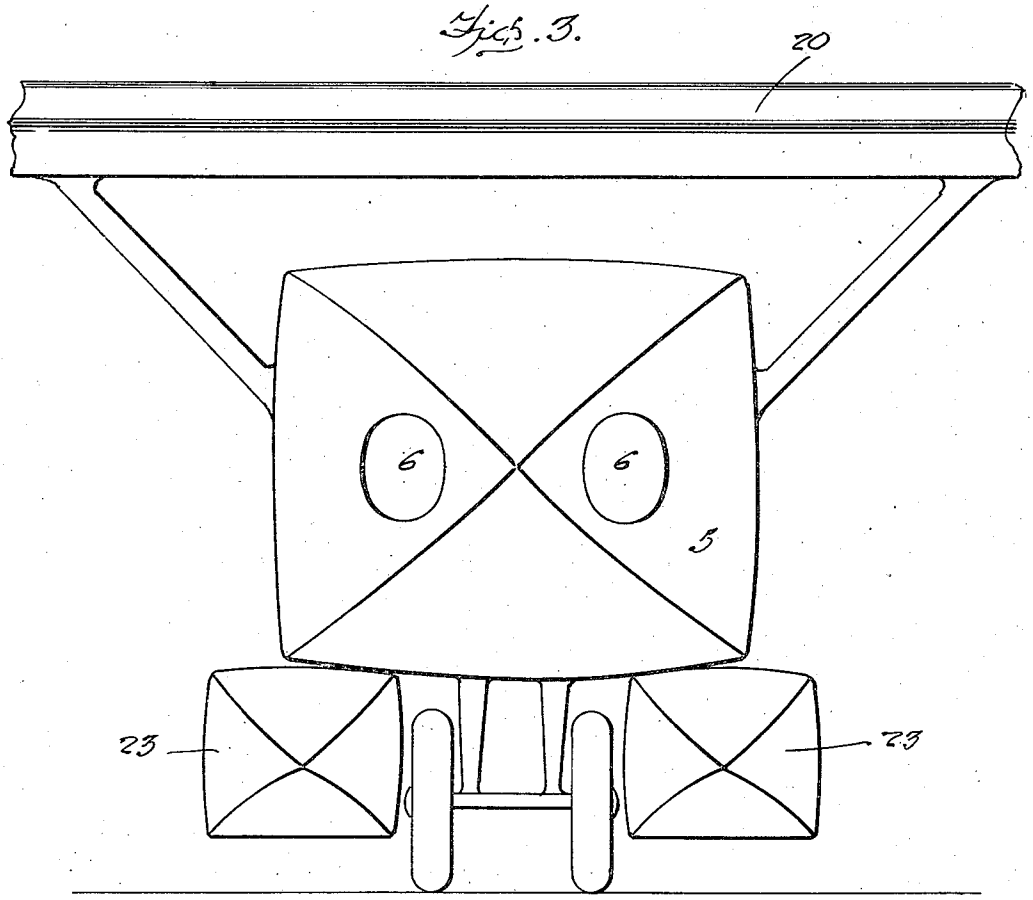
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Filed Aug. 20, 1927 3 Sheets-Sheet 3

Fig. 3.



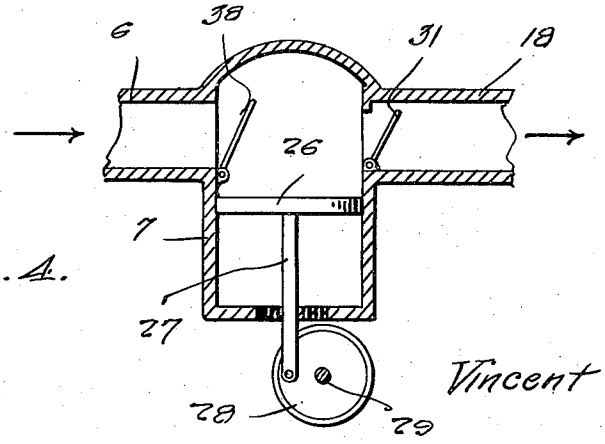


Fig. 4.

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UNITED STATES PATENT OFFICE.

VINCENT CAVALERI, OF BROOKLYN, NEW YORK.

AEROPLANE.

Application filed August 20, 1927. Serial No. 214,304.

The present invention relates to improvements in aeroplanes and more particularly to an improved propulsion unit for aeroplanes and the like.

An important object of the invention resides in the provision of a propulsion unit which sucks in air from the front of the aeroplane, compresses it, stores it, and exhausts it rearwardly of the aeroplane as needed for propulsion purposes.

A still further important object of the invention resides in the provision of a propulsion unit of this nature which is simple in its construction, comparatively inexpensive to manufacture, thoroughly efficient and reliable in use and operation, and otherwise well adapted for the purpose for which it is designed.

With the above and numerous other objects in view as will appear as the description proceeds, the invention resides in certain novel features of construction, and in the combination and arrangement of parts as will be hereinafter more fully described and claimed.

In the drawing:—

Figure 1 is a sectional elevation of an aeroplane embodying the features of my invention,

Figure 2 is a fragmentary top plan view thereof,

Figure 3 is a fragmentary front elevation thereof, and,

Figure 4 is a detail section through one of the compressors.

Referring to the drawing in detail it will be seen that the numeral 5 denotes a fuselage designed as to the usual well known construction having conventional steering means at the rear thereof. The nose of the fuselage is preferably pointed and has intake suction pipes 6 leading rearwardly, one to each side of the point and connected to compressors 7 operatively connected by suitable gearing 8 with a prime mover 9 such as an internal combustion engine. Pipes 10 lead from the compressors 7 to a storage tank 11 and these pipes 10 have check valves 12 therein. Outlet pipes 14 and 15 and 16 lead from the front of the tank 11. The pipe 14 leads laterally and then rearwardly to terminate adjacent the tail of the fuselage. The pipes 15 lead laterally from the tank and terminate intermediate the ends thereof while the pipe 16 extends forwardly to the forward portion of the fuselage, then laterally and then rearwardly for a short distance. All of these pipes 14, 15 and 16 have valves 18 therein controlled in unison by a lever 19 conveniently located in respect to the driver's seat so that the compressed air 11 may be exhausted as needed for propelling the aeroplane.

From the above detailed description, it will be seen that I have devised a very simple and efficient unit for propelling the aeroplane which will cause a rarity of air in front of the aeroplane and a thickness of air in the rear of the aeroplane so as to push the aeroplane forwardly. In this way a great deal of speed may be accomplished and dangers caused by unexpected eddies, air pockets, and the like will be greatly minimized.

It is preferable to construct the machine with wings or planes 20. In the present instance I have shown a single plane. This plane 20 is hollow so as to be filled with a lighter than air gas such as helium, hydrogen, or the like, through a valve 21. It is also preferable to mount pontoons 23 on the bottom of the fuselage for landing in the water and also to obtain maximum buoyancy in the air by making the pontoons hollow and filling them through a valve 24 with lighter than air gas such as mentioned above.

It is thought that the construction, operation, utility, and advantage of the invention will now be clearly understood without a more detailed description thereof. However, I have disclosed in Figure 4 a form of compressor 7 which may be used wherein the cylinder has a piston 26 reciprocable therein by means of a pitman 27 operated by an eccentric 28 on a shaft 29 from the gearing 8. Check valves 30 and 31 are so arranged that the air may pass in one direction only, thus the downward stroke of the piston will suck the air into the cylinder through the one pipe and the upward stroke of the piston will exhaust this air through the other pipe and finally cause a compression in the tank 11 because of the check valves 12.

The present embodiment of the invention, however, has been disclosed in detail merely by way of example since in actual practice it attains the features of advantage enumerated as desirable in the statement of the invention and the above description. It will be apparent that changes in the details of construction, and in the combination and arrangement of parts may be resorted to

without departing from the spirit or scope of the invention as hereinafter claimed or sacrificing any of its advantages.

Having thus described my invention, what I claim as new is:—

1. In combination, an aeroplane fuselage, a pipe leading from the front of the fuselage, a compressor connected with the pipe, a prime mover, means for operatively connecting the prime mover with the compressor, a tank, in the rear of the fuselage, a pipe connecting the compressor with the tank, a plurality of pipes extending forwardly from the tank, then laterally in different directions, and then rearwardly, valves in said last mentioned pipes, and means for simultaneously operating the valves.

2. In an aeroplane having a fuselage, a tank in the rear of the fuselage, said tank adapted to store air under pressure, a plurality of pipes extending forwardly from the tank, then laterally in different directions, and then rearwardly, valves in said pipes, and means for simultaneously operating the valves.

In testimony whereof I affix my signature.

VINCENT CAVALERI.