Dec. 1, 1936. L. J. WHITE ET AL 2,062,384

SEAPLANE PONTOON

Filed April 29, 1935

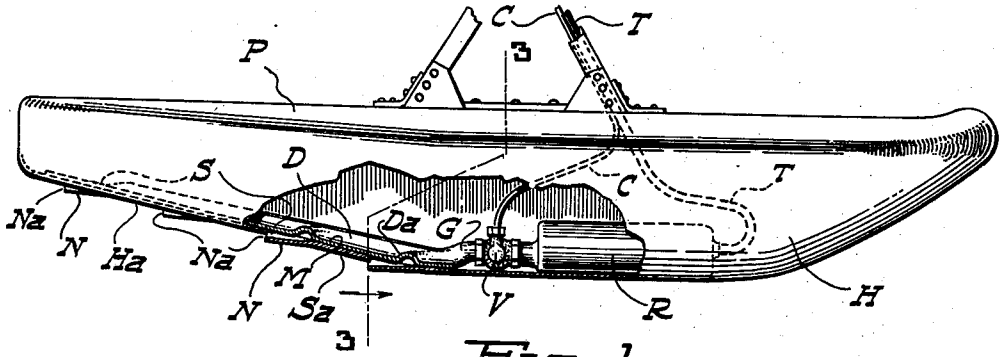


FIG. 1.

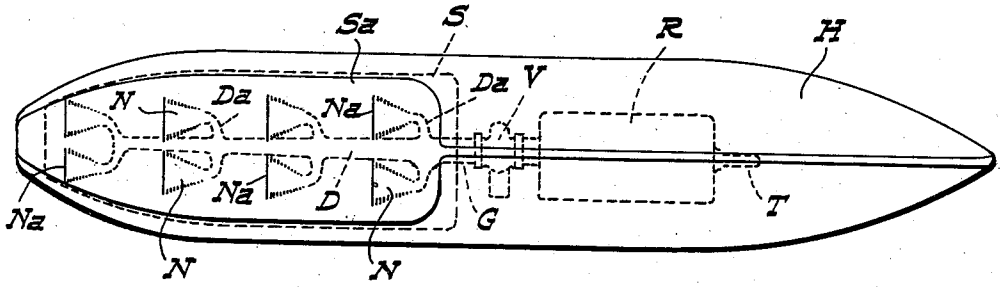


FIG. 2.

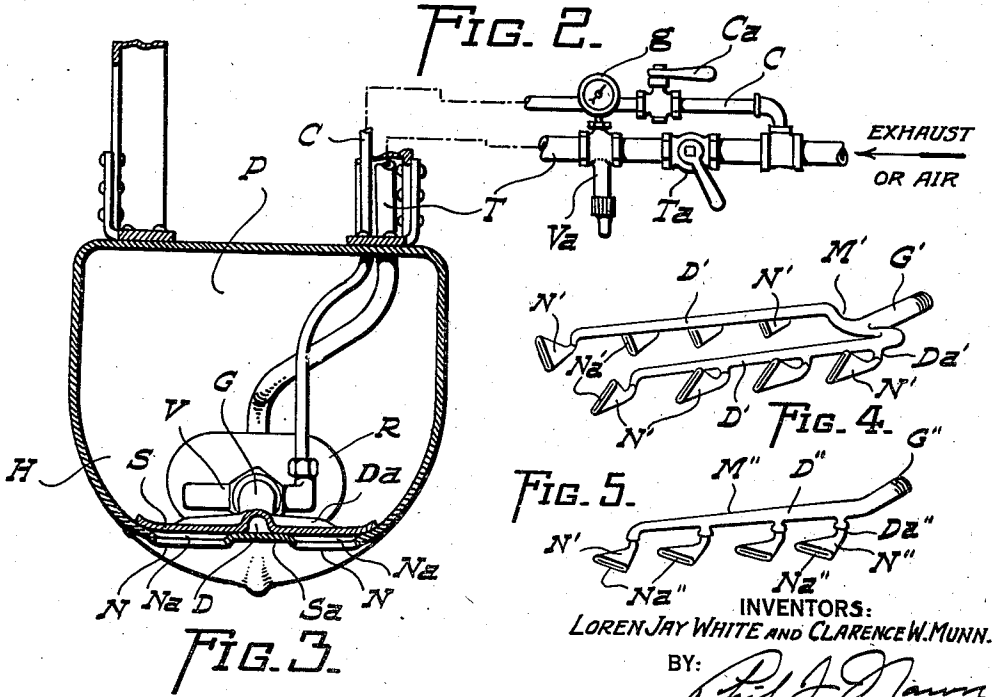


FIG. 3.

FIG. 4.

FIG. 5.

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Patented Dec. 1, 1936

2,062,384

UNITED STATES PATENT OFFICE

*2,062,384

SEAPLANE PONTOON

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Application April 29, 1935, Serial No. 18,808

2 Claims. (Cl. 114—67)

This invention relates to aeronautical construction and particularly to flight launching means facilitating the rapid take-off desirable in amphibian craft.

The objects of the invention are:—

The providing of means whereby the attraction existing between buoyant pontoons, or, a similarly constructed seaplane cabin body, and the supporting water, is disrupted at an instant determined to occur when craft of this classification is negotiating take-offs.

The offering of means responsive to simply arranged controls located relatively remote from the positions of said means whether same be beneath the cabin assembly or beneath outboard pontoon elements removed from the main or cabin portion.

The providing of novel structure integrally incorporated in the construction of aeronautical craft such as seaplanes, or, as independent means attachable to aeronautical craft already existing prior to this innovation, permitting the employment of compressed-air, or exhaust gases, as forces assisting buoyant constructions when rising from their supporting element.

Other advantages will be specifically referred to throughout the particular description and pointed out in the appended claims, both divisions of this application referring to the accompanying drawing illustrating this invention.

The several views shown are indexed as follows:

Fig. 1 is a sectional side elevation of a hull, or, pontoon-like structure.

Fig. 2 is a bottom-plan view of Fig. 1.

Fig. 3 is a section on line 3—3 of Fig. 1.

Fig. 4 is a perspective view of one modification.

Fig. 5 is a perspective view of another modification.

In view of the plurality and buoyant similarity common to a ship-like cabin hull and its associated pontoons, this description will be confined to one such assembly. Those associated accessories necessary in the controlling of sea-going planes will, of course, be understood as requisite equipment located about the pilot's quarters where the instrument panels will include such additional means fitted for actuating the present invention. The structural elements of concerned crafts, wherein this improvement is installed, will be taken advantage of for supporting or masking from view those elements required for conveying the principal forces employed and the tubes through which remote control is effected. The several valves, fittings, and manually controlled apparatus, will be such appurtenances as are best adapted to the duties each perform, the same being in accord with standard practice in the aeroplane industry. In this regard the disclosures seen on the drawing are, in a sense, diagrammatic views that infer accepted materials pertinent and proper to the purposes involved.

Similar characters of reference apply to like parts throughout the several views.

Referring to the drawing, P is a pontoon assembly designed in the customary manner to provide an air-tight and buoyant shell offering the hull formation H, whose after portion is fashioned to leave a wake-relief provision H*a* in the pontoon's keel-line proper. The last to be submerged portion H*a* is designed to provide a hollow manifold construction M whose particular arrangement offers major ducts D from which extend minor ducts D*a* that terminate in flared and slit-like nozzles N. The major ducts unite in a medial passage G which ends in the form of a regular tube that is threaded to receive an air operated valve V the latter functioning as a uniting element joining said regular tube to a storage reservoir R located within the pontoon P. The said reservoir will be a separable unit supplying the said manifold M which latter, in this instance, is an integral part of the pontoon structure's hull which at this point is formed with double plate members welded together to form the necessary duct provisions set forth. The innermost plate S will be impressed to offer the ducts D, D*a*, the inner portions of the nozzles N, and the root of the tube G. The outer plate S*a* will be regularly surfaced to conform to the smooth face of the hull body H, except at the nozzle mouths where there will be a slight expanding of the plate S*a* to attain the desired flare for the slit openings N*a*. It will be obvious that a reservoir, such as R, will not be an essential element where the manifold assembly is installed on the cabin, or, fuselage, hull, because, the original source of the force enlisted, whether same be compressed-air or the motor's exhaust, will be obtained from the craft's central structure. The reservoirs R apply to outboard adjuncts intended for stabilizing water craft of the class here concerned. As there are varied methods of arranging the exhausts of motors, the necessary connections thereto will be equally varied by employing piping means common in the art. For this reason particular conceptions of such considerations are here omitted beyond a mention that such means will be provided to permit the use of desired forces. Where the force is

compressed-air, a suitable pump, geared to the craft's motor, will supply an equally appropriate container tank aboard the main or fuselage section. The take-off instances will, except in emergencies, occur at definite stations, or, ports of call whereat there are all those conveniences necessary to the equipping of landing fields, or, their equivalent for aquaplanes. These conveniences include compressed-air service ready to replenish the reservoirs R should they require this attention. From the said reservoir will lead a pipe or conduit whose terminus in the craft's cock-pit will include a suitable throttle-valve for admitting the exhaust gases, or compressed-air, designated as T, the said throttle-valve being T*a*. In this conduit will occur an air-supply valve V*a* whereto may be attached the replenishing line from a land station air source. At any convenient location in this same line (T) there will be a pressure-gauge *g* between the reservoir R and the valve T*a*. The conduit or line T is connected-up as the label appearing infers. Between the line's valve T*a* and the said source, a tube C leads from the conduit T to the valve V and this element is controlled by a suitable valve C*a* for actuating the valve V which latter is of appropriate design that opens in response to pressure passed through said tube in order to release the contents of the reservoir R which finds its discharge through the nozzles N; the valve functions to close automatically when the said pressure is withdrawn. The pressure conveying means T and C will follow any convenient structure, such as, those strut members that attach the out-board pontoons to the plane proper, in order to avoid wind interference or distortion consequent thereto.

Where the buoyant member's bottom aspect is flat the manifold section will conform thereto, and where there is a definite keel with other than a flat aspect the manifold will be similarly shaped. This will then arrange the several nozzles N accordingly, leaving their discharge orifices N*a* parallel to the adjacent hull surface so that the forces exhausted will form a pressure film breaking up the relationship between hull and water. The said manifold will be a bifurcated arrangement, or, a singular arrangement as conditions demand. The sum of the outlet areas forming the discharge orifices will be equal to the diametrical area of the aforesaid passage G to assure uniform discharge through all of the said orifices. The valve V functions as a check-valve for safeguarding the reservoir against flooding.

The manifold M being a consonant part of the general structure will take the shape of the hull H; however, this invention intends application to craft already existing and in order to meet the conditions prevailing a separate entity, shown as Fig. 4, is devised. The modification M' is in all respects the equivalent of the bifurcated arrangement shown. The nozzles may be separable elements N', which are threaded to the main body within the hull H. Fig. 5 shows another form M'' that offers a singular arrangement with more direct nozzle connection thereto. In the Fig. 4 concept the necks D*a*' would be attached then bent to align the discharge orifices with respect to the hull's contour.

Having described the invention what is claimed and desired to protect by United States Letters Patent, is:—

1. A pontoon structure incorporating a pressure force reservoir; a tapering keel-following conduit leading from said reservoir; relatively reduced branch passages continuing laterally the service offered by said conduit; singular, flared, and, relatively enlarged nozzle formations terminating said conduit and said passages; slit openings providing a restricted discharge orifice for each of the said nozzles; said orifices disposed to be coincident to the transverse curvature of the pontoon's outer hull surface; and a valve element between said reservoir and said conduit responsive to remote control means, selectively directing the replenishing product of said reservoir, for unobstructedly uniting said reservoir and said conduit within the aforesaid pontoon.

2. A pontoon structure having, a double-plate hull portion, the inner plate member of said portion embossed to offer a keel-following conduit extended by laterally branching passages, nozzle formations provided with slit discharge orifices fashioned by expanding the outer member of said portion, said formations terminating said conduit and said passages when said members are integrally joined together, and a completed tubular aspect given said inner plate member for permitting the connecting of same to a valve gated pressure reservoir within said pontoon.

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