Dec. 22, 1959 L. LEGAT 2,918,029

SURFACE OR SUBMARINE CRAFT

Filed Feb. 27, 1957

FIG. 1

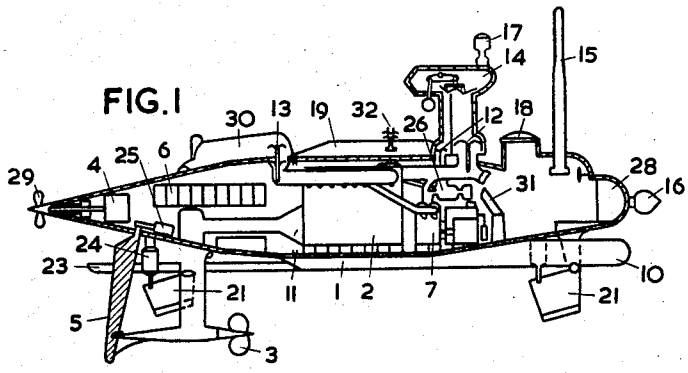


FIG. 2

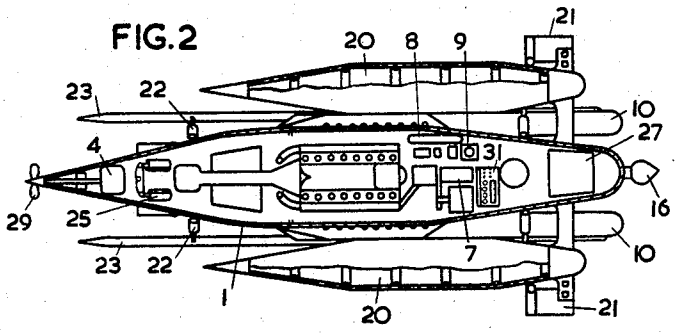


FIG. 3

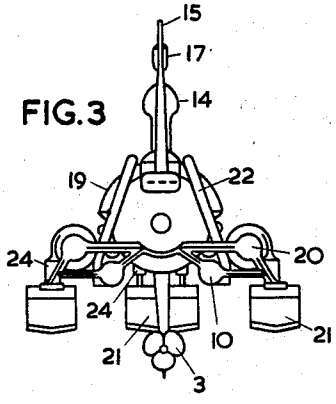
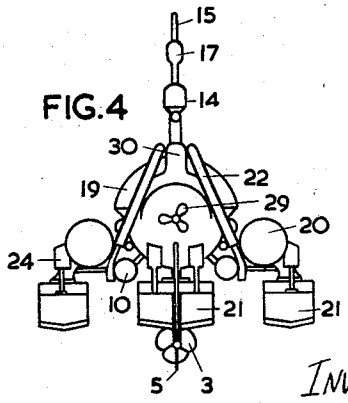


FIG. 4



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SURFACE OR SUBMARINE CRAFT

Lapo Legat, Trieste, Italy

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Claims priority, application Italy February 29, 1956

1 Claim. (Cl. 114—16)

The present invention relates to a special type of boat which, being used as an arm of attack, can provide a maximum offensive coefficient for its particular properties. Said boat is in fact submersible but when it travels on the surface, especially during attack, it is supported out of the water by means of hydrofoils which, reducing the frictional resistance to progress, appreciably increases the speed (above 55 knots).

The means of rapid attack used hitherto in the navy are solely surface vessels or, if submersible, obviously cannot develop high speeds when they are on the surface. For the purpose of being able to obtain a submersible craft capable of acting under-water and on the surface with higher speeds, the present invention has been produced.

In the accompanying drawings, Figure 1 represents the submersible craft to which the present invention relates, seen in lonigtudinal section; Figure 2 represents the same craft seen in plan view; Figure 3 represents the craft seen from the front and Figure 4 the same seen from the rear.

In particular the said submersible craft is constituted by a strong hull 1 in which the equipment is housed, a combustion motor 2 for surface navigation, an electric motor 4 for submerged navigation, a set of electric batteries 6, a dynamo-compressor auxiliary thermal motor group 7, compressed air cylinders 8, an electric pump 9 for controlling hydraulic servo-motors, an electric extractor 26 for vitiated air, hydraulic cylinders 25 for the rudder control 5, equipment cases 27, electronic equipment 28 and a general control panel 31; 11 denotes a flange joint on the hull 1. In direct union with the hull 1 there is situated a sonic emitter, e.g. of the ASDIC or "SONAR" type 16, a periscope 15, an access hatchway or door 18, radar antenna 17, placed above the air-

exchanging device 14 consisting of a valve and a float for automatic closure and the two valves 12, one of which serves for the personnel space and the other for the combustion of the thermal motor 2; also connected directly to the hull 1 we find the valve 32 for the outlet of air from the immersion chamber, a light double hull 19 of the immersion chamber, a silencer 30 for the thermal motors with valve 13 placed on the collector-silencer connection, a screw 29 for submerged navigation controlled by the electric motor 4, the rudder 5, hydrofoils 21 the inclination of which in relation to the speed during surface navigation is regulated by means of servo-motors with hydraulically controlled cylinders 24; 3 denotes a screw for surface navigation; 23 are two pivoted legs which can be moved down for support when the craft is situated on the bottom, these legs being controlled by the servomotors with hydraulic cylinders 22; 10 denotes torpedo tubes with free water circulation. It should be noted that the operation of control of depth during navigation under-water is effected by means of the same hydrofoils 21 controlled by the hydraulic servomotors 24; the fuel supply is housed in special external stores 20 with water compensation.

I claim:

In a surface and submarine craft, a hull, supporting legs pivoted at the lower part of said hull, first hydraulic servomotor means coupled between the hull and the legs for movement of said legs into a raised stowed position adjacent the hull and into a lowered position in which said legs serve as a support for the hull on the seabed, a plurality of hydrofoils pivoted to said hull, and other hydraulic servo-motor means coupled between the hull and each hydrofoil, said hydrofoils being movable by their associated other servo-motor means into selected positions of fixed inclination with respect to the longitudinal axis of the hull and being retainable in said positions to serve as hydrofoils when the craft moves on the surface of the water, and said hydrofoils being movable continuously within limits by said associated other servomotor means to serve as dive and elevator controls when the craft moves under the water.

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