

V. CAVALLINI.
HULL FOR SUBMARINE BOATS.
APPLICATION FILED FEB. 20, 1912.

1,044,489.

Patented Nov. 19, 1912.

Fig. 1.

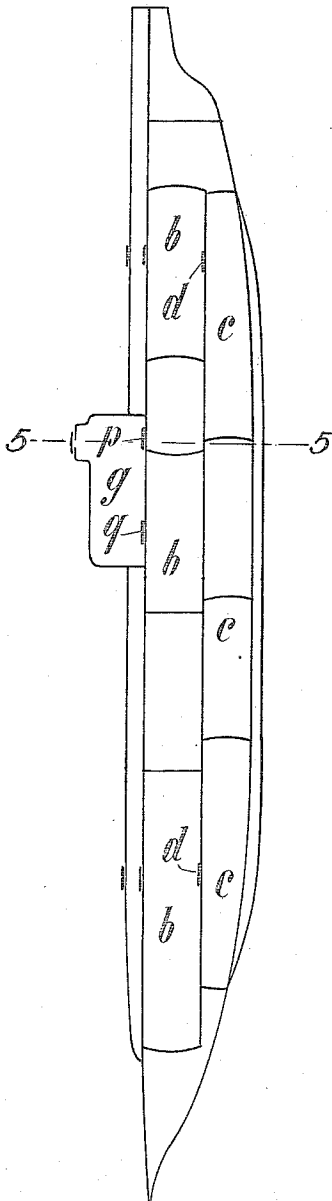


Fig. 2.

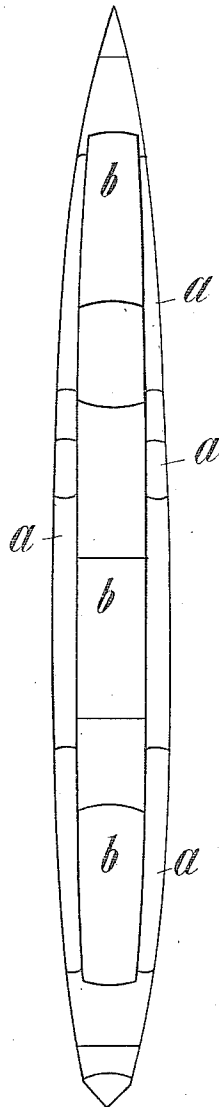


Fig. 6.

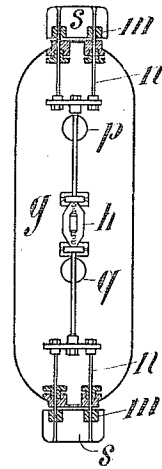


Fig. 3.

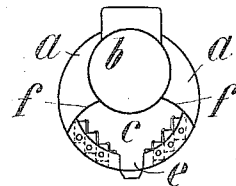


Fig. 4.

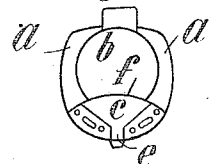
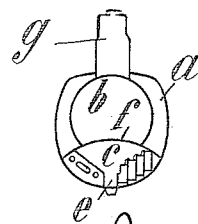


Fig. 5.



Witnesses:
H. Hunsberger
M. M. M. M.

Inventor:
Virginia Cavallini
by B. Singer
Att'y

UNITED STATES PATENT OFFICE.

VIRGINIO CAVALLINI, OF SPEZIA, ITALY.

HULL FOR SUBMARINE BOATS.

1,044,489.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, VIRGINIO CAVALLINI, a subject of the King of Italy, residing at Spezia, in the Kingdom of Italy, have invented certain new and useful Improvements in Hulls for Submarine Boats, of which the following is a specification.

The hull for submarine boats according to the present invention has for its object, on the one hand, to secure complete separation of the storage batteries, and on the other hand to render the life turret accessible by two different passages. In the hull are formed four independent compartments, one of them being exclusively designed for receiving the storage batteries.

In the annexed drawing is represented by way of example an embodiment of the present invention.

Figure 1 is a longitudinal section of a submarine boat; Fig. 2 is a horizontal section, Figs. 3 and 4 are cross sections of two different types of submarine boats, Fig. 5 is a cross section on line 5-5 of Fig. 1, and Fig. 6 shows on enlarged scale the plan view of the life turret.

According to the present invention, the hull is divided into four compartments, two of them are the compartments —a— which receive the water ballast, the inner compartment —b— between the aforesaid two compartments, is for the crew and which contains all the propelling and operating machinery of the submarine boat, the compartment —c—, which forms the special feature of the present invention, is designed exclusively to house the storage batteries. The partition —f— which separates the compartment —c— from the contiguous rooms, is strongly built so as to be able to resist a high water-pressure. In this manner even in the case of the hull being damaged by reason of receiving shocks, or running aground, or in consequence of any other external casualty, the noxious gases, which may discharge from the accumulators, owing to the sea water having flooded the interior of the boat, will remain confined in the compartment —c— which, as already stated, is separated from the dwelling rooms of the hull by partitions capable of resisting very great pressure. If necessary, the compartment —c— may be further subdivided into a certain number of smaller compartments separated by strong watertight bulkheads provided with communicating

doors, so as to keep separate the various storage batteries, and to reduce at the same time, to a minimum, the space susceptible of being flooded in case of damage. As shown by the cross sections, the structure of the hull in the compartment —c— is designed so as to allow of the storage batteries being placed on the right hand side, and on the left hand side, of the hull, leaving free a middle gang way —e— running through practically the whole length of the hull.

At the ends of the compartment —c— there is provided two small hatchways —d— with watertight closures, which put the lower compartment of the hull into communication with the inner upper compartment —b— occupied by the crew. The central portion of the submarine boat and the upper portion is provided with a turret —g— capable of containing the whole crew. This turret, by means of the ports —p— and —q—, may communicate with two of the smaller partitions of the inner upper compartment of the hull and may be detached so that the crew can reach the surface of the sea in case of accident.

The turret —g—, and the lower compartment —c—, with its passage —e—, forms a combination, which in most cases allows a crew, distributed at the bow and at the stern of the inner compartment —b—, to all gather in one of the two compartments communicating with the life turret, to enter the turret itself, and to reach the surface of the sea.

The life turret rests upon the upper portion of the hull and is connected with it by means of two entrance ports —p— and —q— and a double lock —n— which enters into two sockets fixed on the plates —s—, rigidly connected with the hull. The two locks are connected by a double threaded nut —h—. After having disengaged the two ports —p— and —q—, from their bolts connecting them with the hull, the turret may be detached by simply turning the nut —h—.

The working of this device is as follows: Should the boat sink, or any mechanism of it fail to work properly, all of the men assemble in the compartment —c—, availing themselves also of the longitudinal passage —e—, and from there they pass into the turret which is then detached and set afloat.

The device according to the present in-

vention may be applied to any submarine hull, as it is based on a principle which is dependent upon the shape of the boat.

5 Having now fully described and ascertained the nature of the said invention and in what manner the same is to be performed, I declare that what I claim is:

10 A hull for submarine boats provided with a life turret and comprising in combination, a compartment for the crew, two lateral compartments for water ballast and a compartment disposed beneath the three first named compartments and designed to re-

ceive storage batteries, said last named compartment having a longitudinal passage and two ports provided at the ends of said passage and communicating with the compartment of the crew, and two ports provided in the crew's compartment and communicating with the life turret.

In testimony whereof I affix my signature in the presence of two witnesses.

VIRGINIO CAVALLINI.

Witnesses:

AUG. FRANCISCO ROBB,
H. NICOL.