

C. COMA.
SCREW PROPELLER.
APPLICATION FILED DEC. 7, 1908.

966,654.

Patented Aug. 9, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

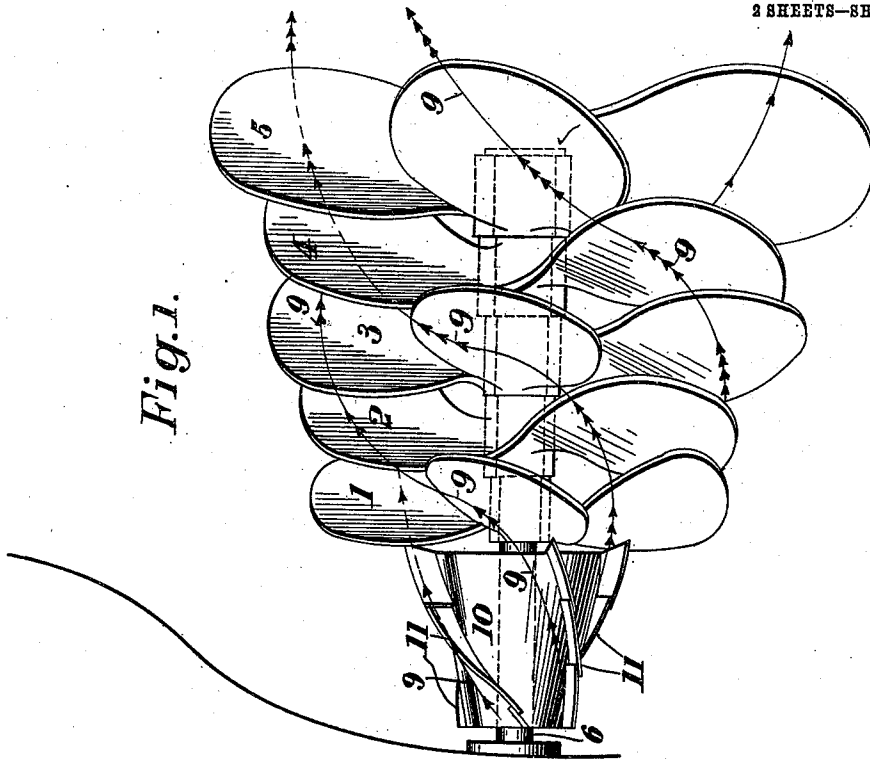
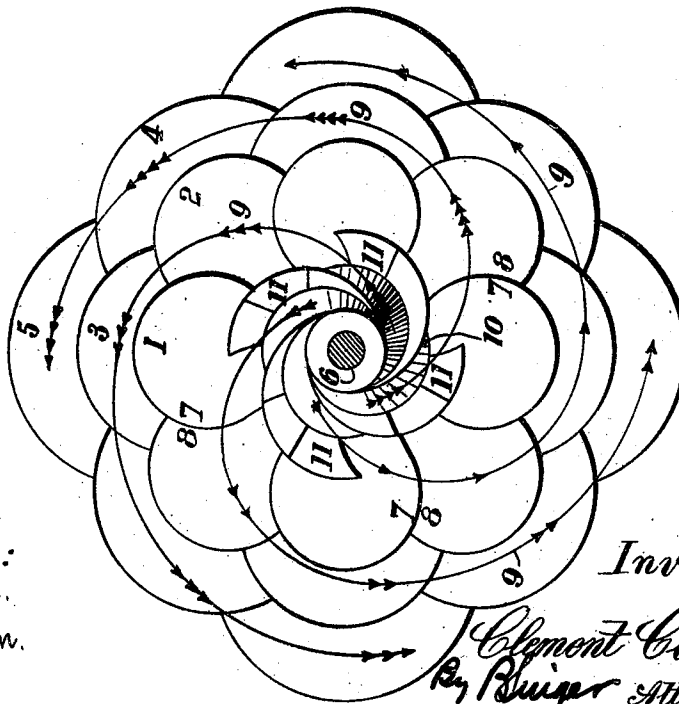


Fig. 2.



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H. D. Smith.
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2 SHEETS—SHEET 2.

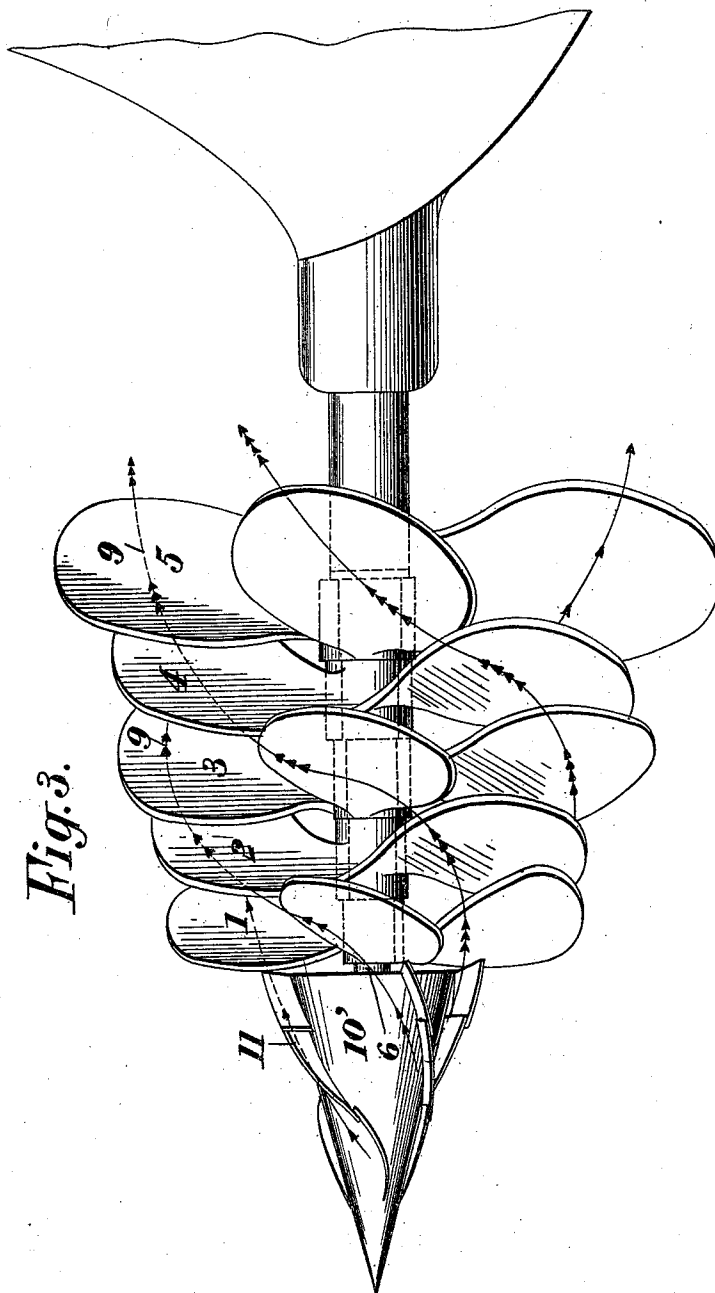


Fig. 3.

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UNITED STATES PATENT OFFICE.

CLEMENT COMA, OF PARIS, FRANCE.

SCREW-PROPELLER.

966,654.

Specification of Letters Patent.

Patented Aug. 9, 1910.

Application filed December 7, 1908. Serial No. 466,368.

To all whom it may concern:

Be it known that I, CLEMENT COMA, a citizen of the French Republic, and resident of Paris, France, have invented certain new and useful Improvements in Screw-Propellers, of which the following is a specification.

This invention relates to a novel arrangement of screw propellers for marine or aerial navigation.

In the accompanying drawing Figure 1 shows a side elevation view of one form of arrangement of the screw propeller, mounted at the stern of a ship. Fig. 2 is a front elevation view of same; Fig. 3 shows a side elevation view of a screw propeller arranged at the stem of a ship.

This device comprises in the form of arrangement shown by Figs. 1 and 2, three or more screws (five in the drawings: 1, 2, 3, 4, 5) juxtaposed one behind the other and secured to the same shaft 6 the diameter of these screws increasing from the first screw 1 which is nearest the point where the shaft leaves the stern of the ship, to the last 5 which is situated at the rear end. For instance, if the first screw (1) has a diameter of 1 m., the second one (2) would have about 1.25 m. or 1.30 m., the third one (3) about 1.50 m. or 1.80 m. and so on. These screws which may have two or more blades are arranged in such a manner that the blades of that wing (the second one for instance) which is juxtaposed to the preceding (first) one are not placed exactly behind those of the latter, but deviated under a certain angle in such a manner that the rear edge 7 of the blades of the first screw, overlaps the front edge 8 of the second one and so on successively for all the screws in such a manner that the blades of the thus juxtaposed screws, form a helicoidal screw thread or channel, shown by the arrows 9 of the drawing.

Thanks to the above described arrangement, each screw exerts its motive action about as if it were alone with this difference however (from the point of view of the expense of motive power) that the centrifugal action of the first screw having broken the resistance of the water (or of the air in case

the propeller is applied to an air ship) the other screws which follow this action and increase them find nearly no further resistance from the water into which they penetrate as if they were rolling therein.

With a view of better breaking the resistance of the water (or the air) and of rendering the action of the first screw more easy, one mounts around the shaft 6 from its point of emergency from the ship to the first screw a cone 10, the large base of which will contact at the rear with the first screw (1) at one third of the radius of the latter and on this cone 10 small blades 11 are arranged which are similar to fragments of small screw propellers. The diameter of these fragments of screws is increased from those at the front to those at the rear these fragments of blades being adapted to initiate the spiral way shown by the arrows 9 as above described.

As shown by Fig. 3, a similar combined screw propeller may be arranged at the stem of the ship or aeroplane with a view of overcoming the considerable resistance opposed by the inertia of the masses of water (or air) at the forward end of the ship. This stem screw propeller is quite similar in construction to that shown and described above for use at the stern of the ship except that the cone 10' is pointed at its front end with a view of being more able to exert its screwing or boring action in the water.

As readily seen with this system of screw propellers, the speed of the ship is greatly increased by the screwing or boring action of the propeller in the water (or in the air) and by reason of the increase of the diameter of the screw propellers and this without any increase of the expense of the motive power.

The advantages of the above described screw propeller are the following:—(1.) The special manner of overcoming the resistance of the mass of water (or air) by the cone shaped form of the screw will have for its effect as above described to considerably increase the speed of a ship without increasing the expense of motive power. (2.) The device may be easily applied to existing boats or ships and with a small expense.

Having now fully described my said invention, what I claim and desire to secure by Letters Patent, is:—

In a screw propeller for ships and such
5 like, the combination with a shaft, of a plurality of propellers mounted on said shaft, said propellers comprising a hub and a plurality of blades, a truncated member secured to said shaft, a plurality of helical propeller

blades fastened to said member, the width 10 of said helical blades increasing toward the larger end of said member.

In testimony whereof I have hereunto set my hand in presence of two witnesses.

CLEMENT COMA.

Witnesses:

ADOLPHE STURM,
H. C. COXE.