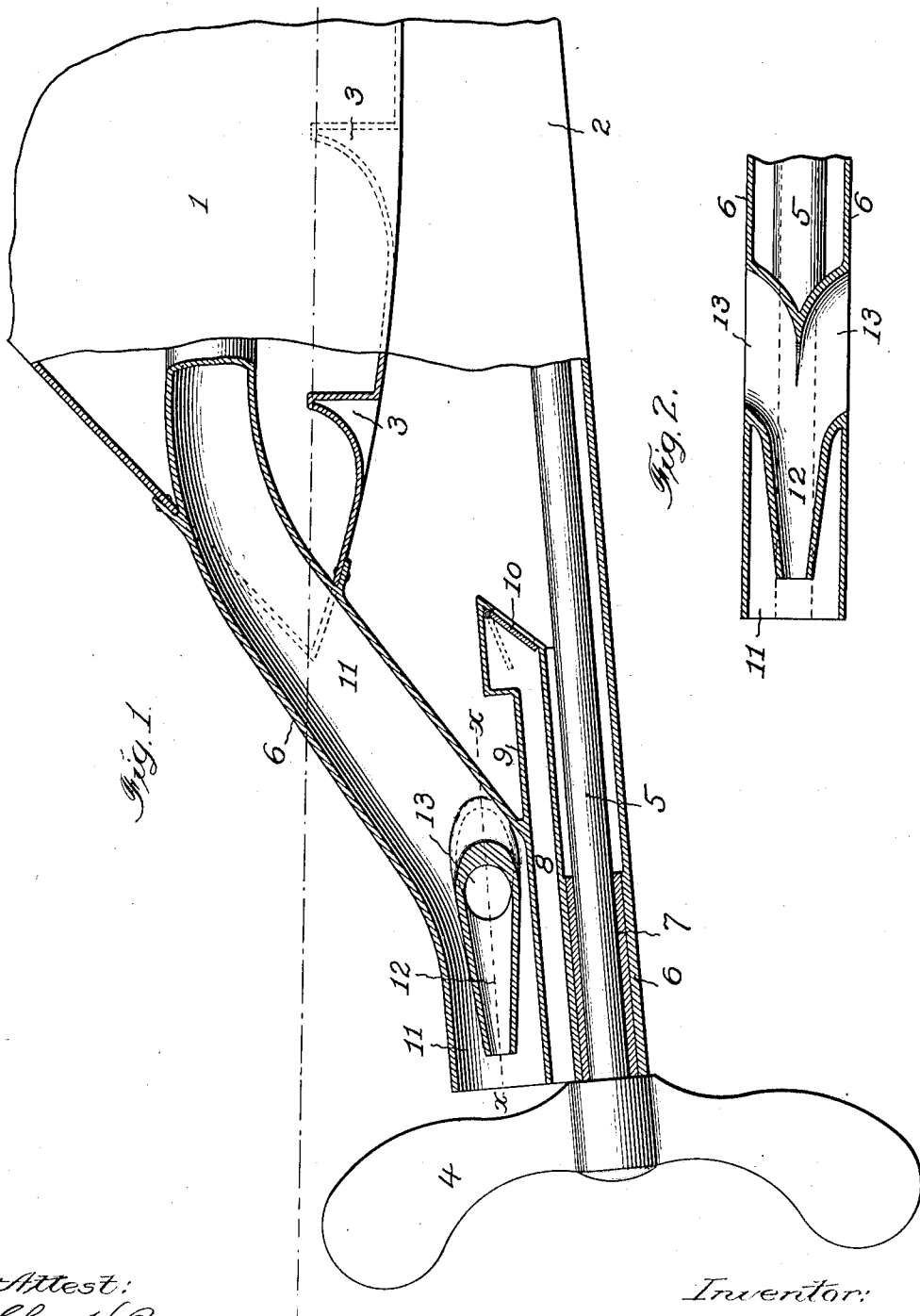


A. MATHIS.
MARINE ENGINE EXHAUST.
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1,054,301.

Patented Feb. 25, 1913.



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UNITED STATES PATENT OFFICE.

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MARINE-ENGINE EXHAUST.

1,054,301.

Specification of Letters Patent.

Patented Feb. 25, 1913.

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To all whom it may concern:

Be it known that I, AUGUST MATHIS, a citizen of the United States of America, and a resident of Chicago, in the county of Cook, State of Illinois, have invented certain new and useful Improvements in Marine-Engine Exhausts, of which the following is a specification.

This invention relates to means for effecting a noiseless and accelerated discharge of the exhaust of marine engines, and more especially engines of the internal combustion type. And the present improvement has for its object to provide a simple and efficient structural formation and combination of parts, whereby the movement of the vessel is utilized to withdraw and dissipate the engine exhaust at the stern of the vessel, all as will hereinafter more fully appear.

In the accompanying drawings:—Figure 1, is a detail longitudinal section partly in elevation, of the rear portion of a gasoline launch or glider to which the present improvement is applied. Fig. 2, is a detail horizontal section on line *x-x*, Fig. 1.

Similar reference numerals indicate like parts in both views.

Referring to the drawings, 1 represents the rear portion of the hull of the boat, formed with the usual hollow keel 2, and with its bottom preferably formed with a series of transverse air cavities 3 into which air is constantly forced with a view to decrease the friction of the hull of the boat in its passage through the water.

4 is the usual propeller having a carrying shaft 5 extending in the usual manner through the hollow keel aforesaid and operatively connected in any usual manner to the main shaft of the engine.

6 is a member or casting, which in the present invention constitutes a rearward extension of the hollow keel 2, and secured thereto and to the rear end of the hull 1 by rivets or in any other ordinary and suitable manner.

7 is a longitudinal orifice formed in the underpart of the member or casting 6, aforesaid, to afford a bearing for the rear portion of the propeller shaft 5 above described.

8 is an intermediate longitudinal orifice formed in the aforesaid member or casting 6, adjacent to the bearing orifice 7 aforesaid, and adapted for connection to an ordinary drain boot 9 arranged in the hollow keel 2,

and provided with the usual check valve 10, as shown.

11 is an enlarged outlet conduit or passage formed in the upper portion of the aforesaid member or casting 6, with its outlet orifice arranged adjacent to the propeller 4, as shown. Said passage 11 extends upwardly and forwardly in an oblique manner and is connected at its forward end to the exhaust pipe or trunk of the engine in any ordinary and suitable manner. With the described arrangement of the outlet orifice of the outlet conduit 11 in close proximity to the propeller 4, the suction produced by said propeller in actual use is adapted to effectively aid in the discharge of the exhaust gases through the outlet conduit 11, and the dissipation of said gases without noise amid the water in the wake of the boat.

12 is a jet or nozzle arranged centrally and longitudinally in the rear portion of the outlet conduit 11 above described, and having lateral supply openings 13 at its forward end and through the respective sides of the member or casting 6, as shown more particularly in Fig. 2. With the described construction, and as the boat moves through the water, the lateral supply openings 13 will take in a constant flow of water and cause the same to be forcibly discharged through the jet nozzle 12, to in turn create a suction in the outlet conduit 11, and aid in the discharge of the exhaust gases therethrough.

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

1. In a boat, the combination of a propeller, a conduit having its rear end disposed in adjacent relation to said propeller and its forward end adapted for connection to the exhaust of the boat engine, and a discharge nozzle disposed longitudinally in said conduit and having lateral inlets at its forward end, substantially as set forth.

2. In a boat having a keel and a propeller the shaft of which passes through said keel, the combination with said keel of a member forming a rearward extension of the keel and formed with an outlet passage the rear end of which is disposed in adjacent relation to the propeller and the forward end of which is adapted for connection to the exhaust of the boat engine, substantially as set forth.

3. In a boat having a keel and a propeller

the shaft of which passes through said keel, the combination with said keel of a member forming a rearward extension of the keel and formed with an outlet passage the rear
 5 end of which is disposed in adjacent relation to the propeller and the forward end of which is adapted for connection to the exhaust of the boat engine, and a discharge nozzle disposed longitudinally in said pas-
 10 sage and having lateral inlets at its forward end, substantially as set forth.

4. In a boat having a keel and a propeller the shaft of which passes through said keel, the combination with said keel of a member
 15 forming a rearward extension of the keel and formed with a longitudinal bearing orifice for the propeller shaft and with an outlet passage the rear end of which is disposed in adjacent relation to the propeller and the
 20 forward end of which is adapted for connection to the exhaust of the boat engine, substantially as set forth.

5. In a boat having a keel and a propeller the shaft of which passes through said keel,
 25 the combination with said keel of a member forming a rearward extension of the keel and formed with a longitudinal bearing

orifice for the propeller shaft and with an outlet passage the rear end of which is disposed in adjacent relation to the propeller
 30 and the forward end of which is adapted for connection to the exhaust of the boat engine, and a discharge nozzle disposed longitudinally in said passage and having lateral inlets at its forward end, substan-
 35 tially as set forth.

6. In a boat having a keel and a propeller the shaft of which passes through said keel, the combination with said keel of a member
 40 forming a rearward extension of the keel and formed with an outlet passage the rear end of which is disposed in adjacent relation to the propeller and the forward end of which is adapted for connection to the exhaust of the boat engine, the said member
 45 having a secondary longitudinal passage adapted for connection to the drain boot of the boat, substantially as set forth.

Signed at Chicago, Illinois, this 26th day of June, 1912.

AUGUST MATHIS.

Witnesses:

ROBERT BURNS,
 HENRY MOE.