

J. W. WALTERS.  
 EXHAUST FOR MOTOR BOATS.  
 APPLICATION FILED JULY 28, 1908.

929,057.

Patented July 27, 1909.

Fig. 1.

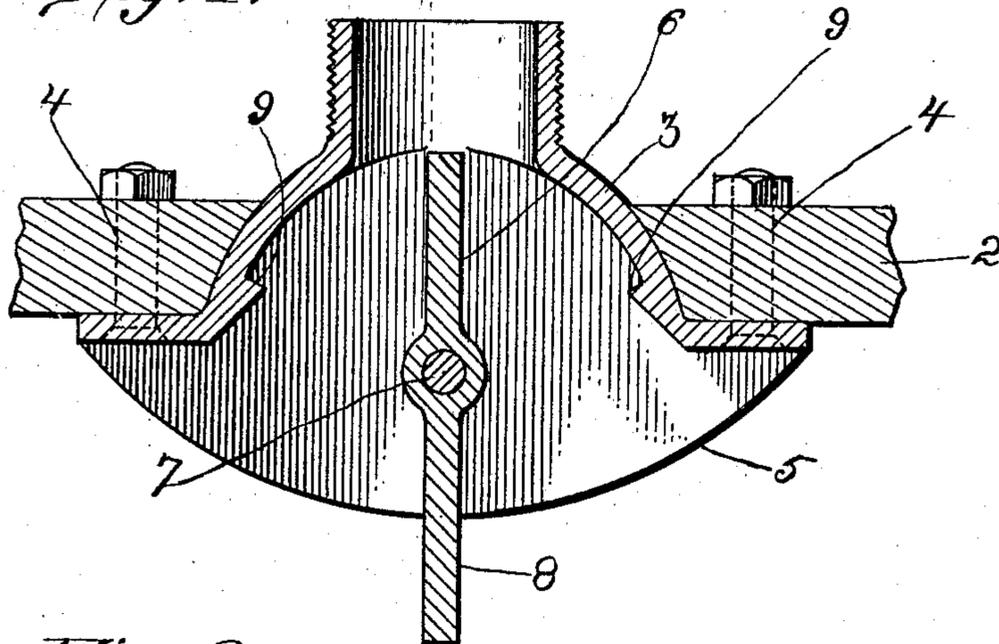


Fig. 2.

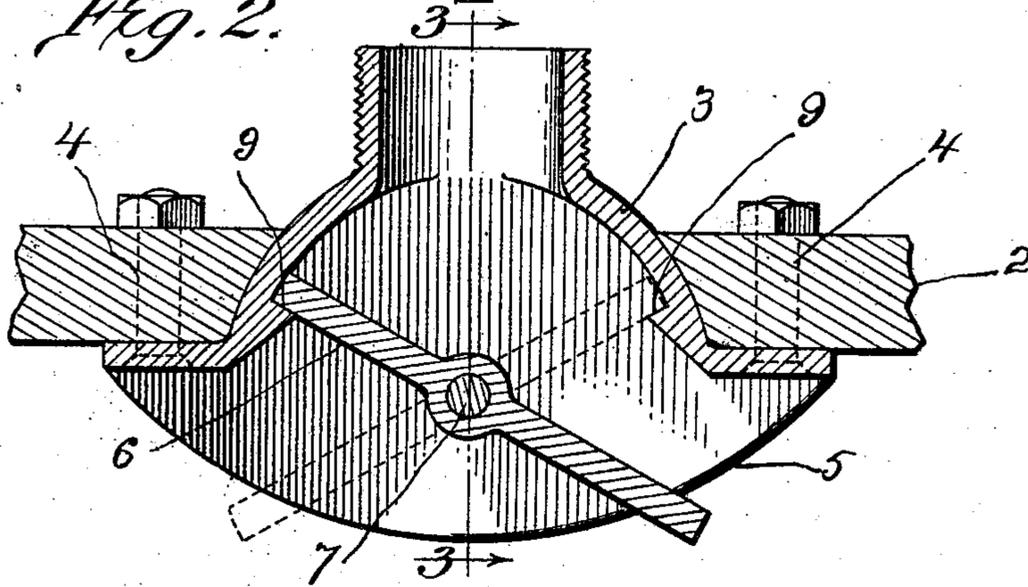
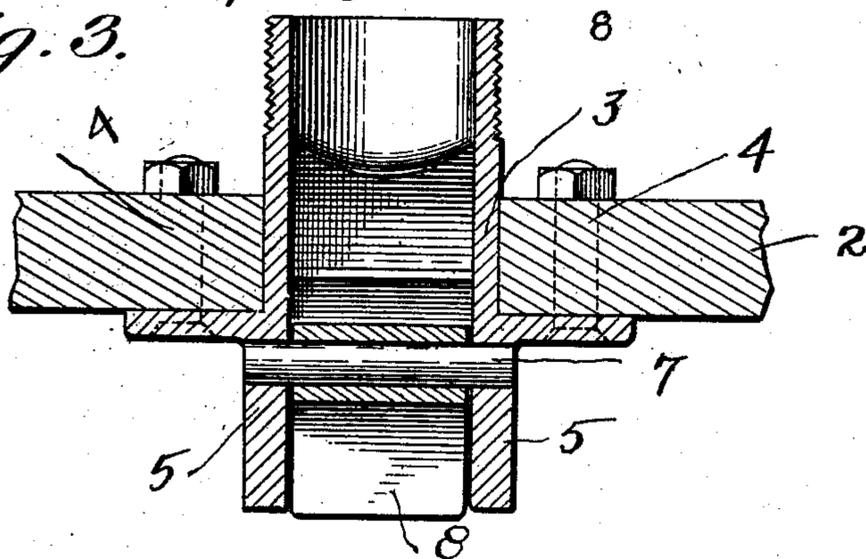


Fig. 3.



WITNESSES

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# UNITED STATES PATENT OFFICE.

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## EXHAUST FOR MOTOR-BOATS.

No. 929,057.

Specification of Letters Patent.

Patented July 27, 1909.

Application filed July 28, 1908. Serial No. 445,793.

*To all whom it may concern:*

Be it known that I, JULIUS WM. WALTERS, a citizen of the United States, residing at Glens Falls, in the county of Warren and State of New York, have invented new and useful Improvements in Exhausts for Motor-Boats, of which the following is a specification.

The present invention relates to exhausts for motor boats, and particularly to that type known as submerged or under-water exhausts, this type being characterized by an exhaust-outlet below the water-line of the craft.

Under-water exhausts, broadly considered, are not new, but so far as I am aware, I am the first to provide a submerged exhaust in which the direction of flow of the exhaust is automatically controlled so as to insure exhaust delivery always in a direction opposite to the direction of movement of the boat, in order that whether the boat is going forward or backing there can be no choking of the exhaust and consequent "killing" of the motor by muffling back the discharge.

Stated generally, the invention contemplates the use of a movable vane, freely pivoted in the exhaust orifice in such a position as to be susceptible to the flow of the water past the vessel, preferably by projecting a wing of the vane beyond the wall of the vessel; this freely-movable vane being adapted to swing to one position or another, where, by means of a suitable stop it is held, and the exhaust is directed by the vane in one direction or the other, as the case may be.

In order that the invention may be understood by those skilled in the art, I have illustrated in the drawings herewith one embodiment thereof, and in said drawings: Figure 1 is a section of the keel or wall of a vessel showing my invention applied thereto with the automatic directing vane in the position it normally occupies when the boat is at rest. Fig. 2 is a similar view showing the vane in full lines in one of its active positions so as to direct the exhaust in one direction, the dotted position of the vane showing the reverse position to direct the exhaust in the opposite direction. Fig. 3 is a transverse sectional view of the exhaust outlet and vane to show the pivotal mounting thereof.

Referring to the drawings by numerals, like numbers indicating like parts in the several views, 2 indicates the wall of the vessel, in a suitable opening in which the outlet

nozzle 3 is mounted, its inner end being threaded or otherwise adapted to be secured to the exhaust pipe of the motor, and preferably the nozzle will be secured to the boat by means of bolts 4, or other suitable fastenings, it being understood that this outlet nozzle 3 is placed below the water-line. The lower end of the nozzle 3 is bell-shaped, as shown, to form a chamber, within which the exhaust controlling vane, presently to be described, is mounted.

Depending from the bell-mouth of the exhaust fitting 3 are parallel wings 5, preferably of the curved outline shown, which form a channel through which the water passes, and pivoted between said depending wings 5 is the automatic controlling vane 6. The said vane 6 is over-balanced, being heavier on one side of its pivot 7 than on the other, preferably by making that wing of the vane longer, so that in its normal position the said vane 6 will stand pendulum-like, as shown in Fig. 1, with the long or heavier wing 8 downward. Immediately upon starting the boat, however, the vane 6 will swing either to the full-line position or the dotted-line position shown in Fig. 2, dependent upon whether or not the boat goes forward or astern. The vane 6 is, of course, forced to this position by the action of the water on the depending wing 8, the angular movement of said vane being limited after it has swung to give a proper exhaust opening, by means of suitable stops 9, in the bell-shaped mouth, one on either side of the exhaust passage. It will be seen that this automatic control of the exhaust orifice insures delivery of the exhaust products of combustion always in a proper direction, away from the direction of movement of the boat and with the flow of the water, so that the exhaust effect will be increased by the pull or suction of the water and all dangers of choking of the exhaust passage by inflowing water will be eliminated.

While I have shown a particular embodiment of my invention, I wish it to be distinctly understood that I do not limit myself to any of the details shown and described, as all such expedients and variations as lie within the range of mechanical skill I deem to be within the purview of my invention.

Having fully disclosed my invention, I claim:

1. A submerged exhaust outlet for motor boats provided with means for automatically

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controlling the direction of flow of the exhaust.

2. A submerged exhaust outlet for motor boats provided with means responsive to movement of the vehicle to automatically control the direction of flow of the exhaust.

3. A submerged exhaust outlet for motor boats provided with means responsive to movement of the vehicle to automatically direct the flow of the exhaust in a direction opposite to the movement of the vehicle.

4. A submerged exhaust outlet for motor boats provided with submerged water-operated means responsive to movement of the boat to automatically direct the flow of the exhaust.

5. A submerged exhaust outlet for motor boats provided with means pivoted in the exhaust passage and responsive to movement of the boat to automatically control the direction of flow of the exhaust.

6. A submerged exhaust outlet for motor boats provided with an exhaust controlling vane pivoted in the exhaust passage and having a wing extending beyond the wall of the boat to automatically control the direction of flow of the exhaust.

7. A submerged exhaust outlet provided with an exhaust-controlling vane pivoted in the exhaust passage and having wings of different weight, one of which extends beyond the wall of the boat.

8. In a submerged exhaust outlet for motor boats, and in combination, an exhaust-controlling vane pivoted in the exhaust passage and automatically operable to control the direction of flow of the exhaust, and means for limiting movement of said vane in either direction.

9. In a submerged exhaust outlet for motor boats and in combination, an exhaust-controlling vane pivoted in the exhaust passage and normally perpendicular to the transverse plane of said passage, and stops on

either side of said passage to limit the movement of said vane in either direction.

10. In a submerged exhaust outlet for motor boats and in combination, an overbalanced exhaust-controlling vane one wing of which extends beyond the wall of the vessel and the other into the exhaust passage, and stops on either side of said passage to limit the movement of said vane in either direction.

11. In combination, an exhaust nozzle having outwardly extended wings to form a channel, and an exhaust-controlling vane pivoted between said wings.

12. In combination, an exhaust nozzle having a bell-shaped mouth, and an exhaust-controlling vane pivoted in said nozzle with one wing extending into said bell-shaped mouth and the other extending beyond the wall of the vessel.

13. In combination, an exhaust nozzle having a bell-shaped mouth, fixed wings extending from said nozzle to form a channel, a pivoted overbalanced vane in said nozzle having one wing extending into said mouth and the other beyond the vessel wall, and stops in said bell-shaped mouth to limit the movement of said vane.

14. A submerged exhaust for motor boats, consisting of a housing having a vane suspended therein and automatically movable by means of the flow of water passing the same, and stops within the housing to hold the vane in position to permit the out-flowing gases to pass the vane in the direction of the flow of the water whether the boat is going ahead or backing.

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

JULIUS WM. WALTERS.

Witnesses:

W. E. LAWRENCE,

R. EUGENE JACKSON.