

(No Model.)

J. O'NEIL.
SELF REGISTERING SHIP'S LOG.

No. 441,578.

Patented Nov. 25, 1890.

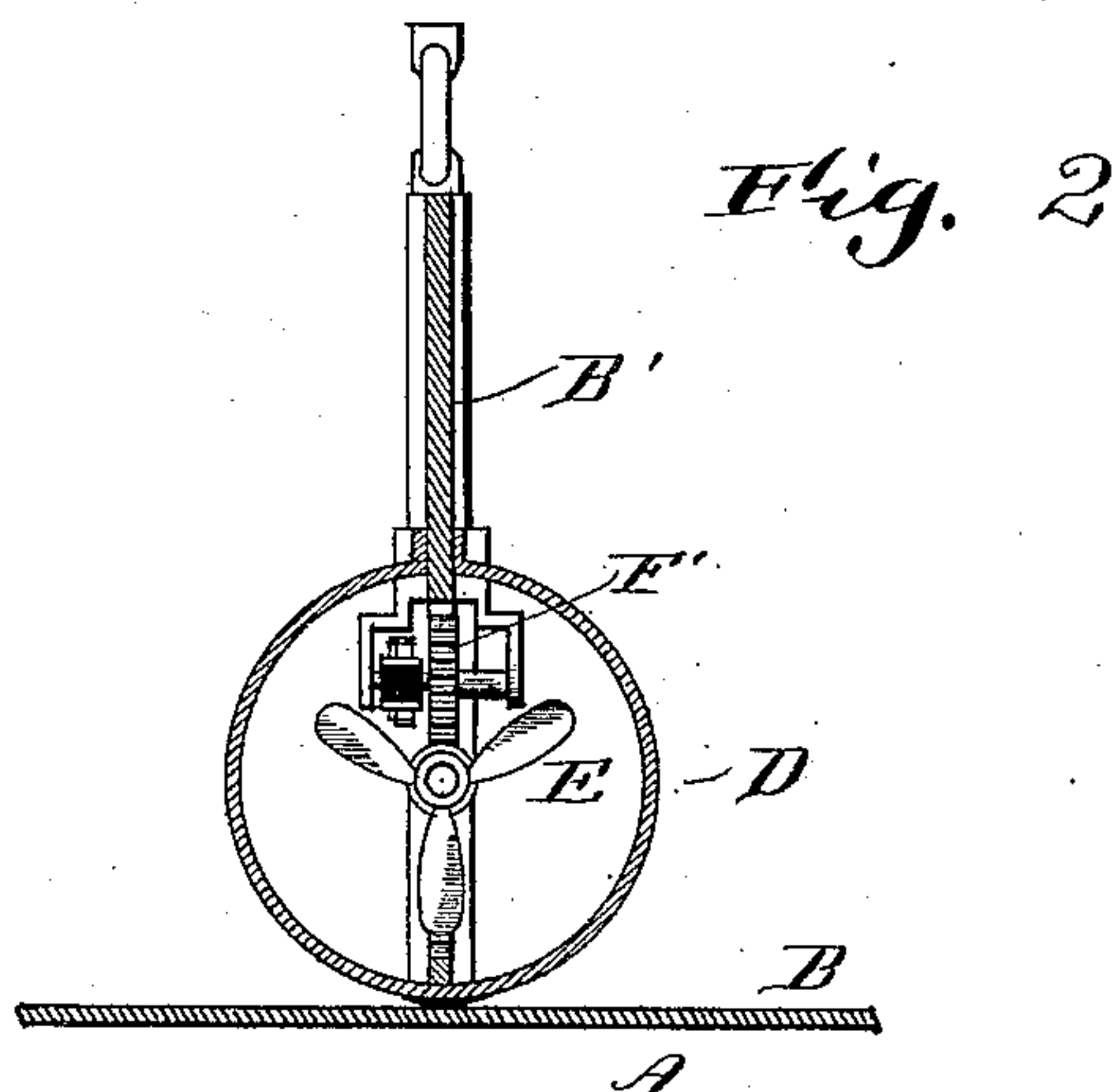
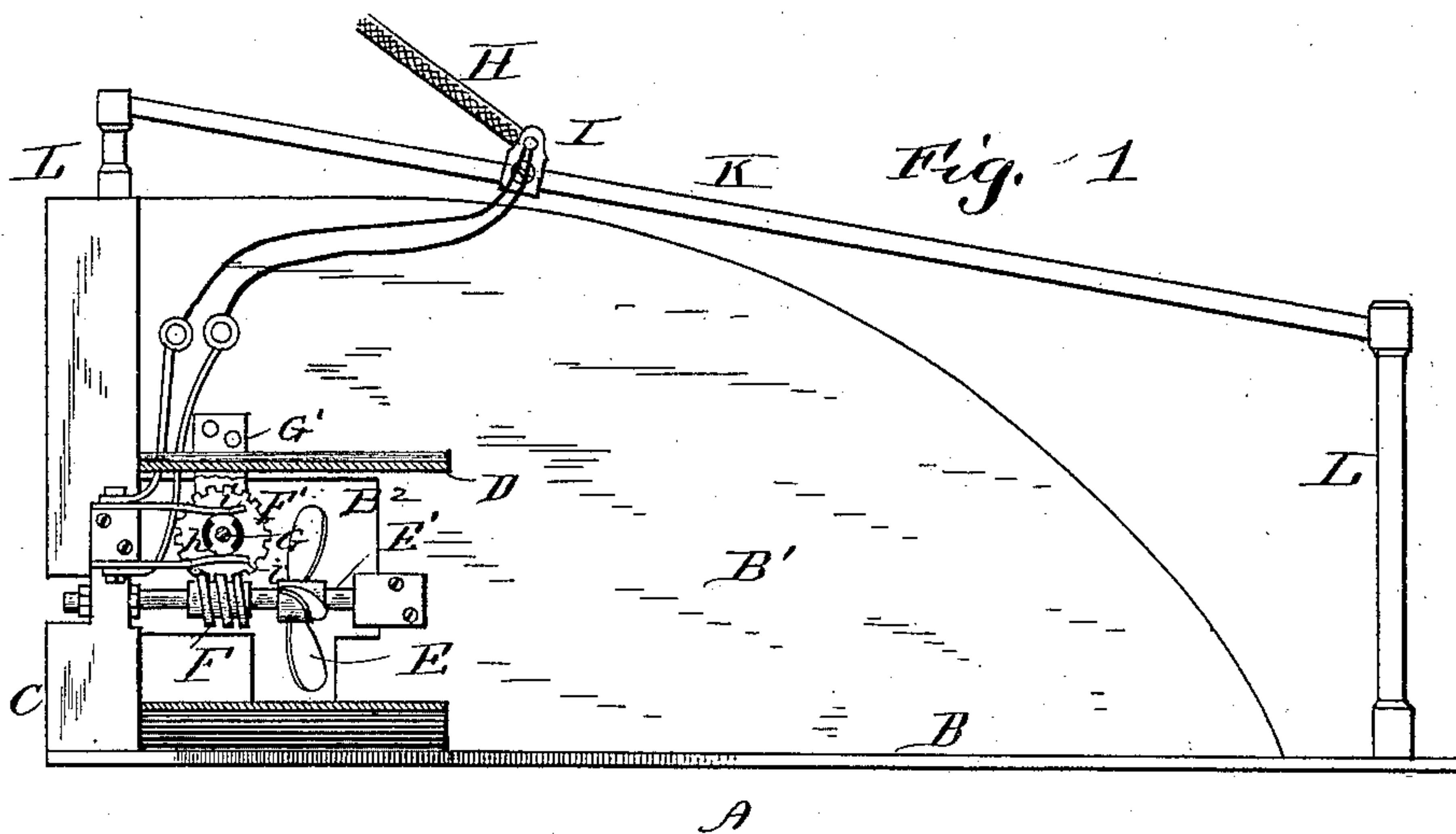
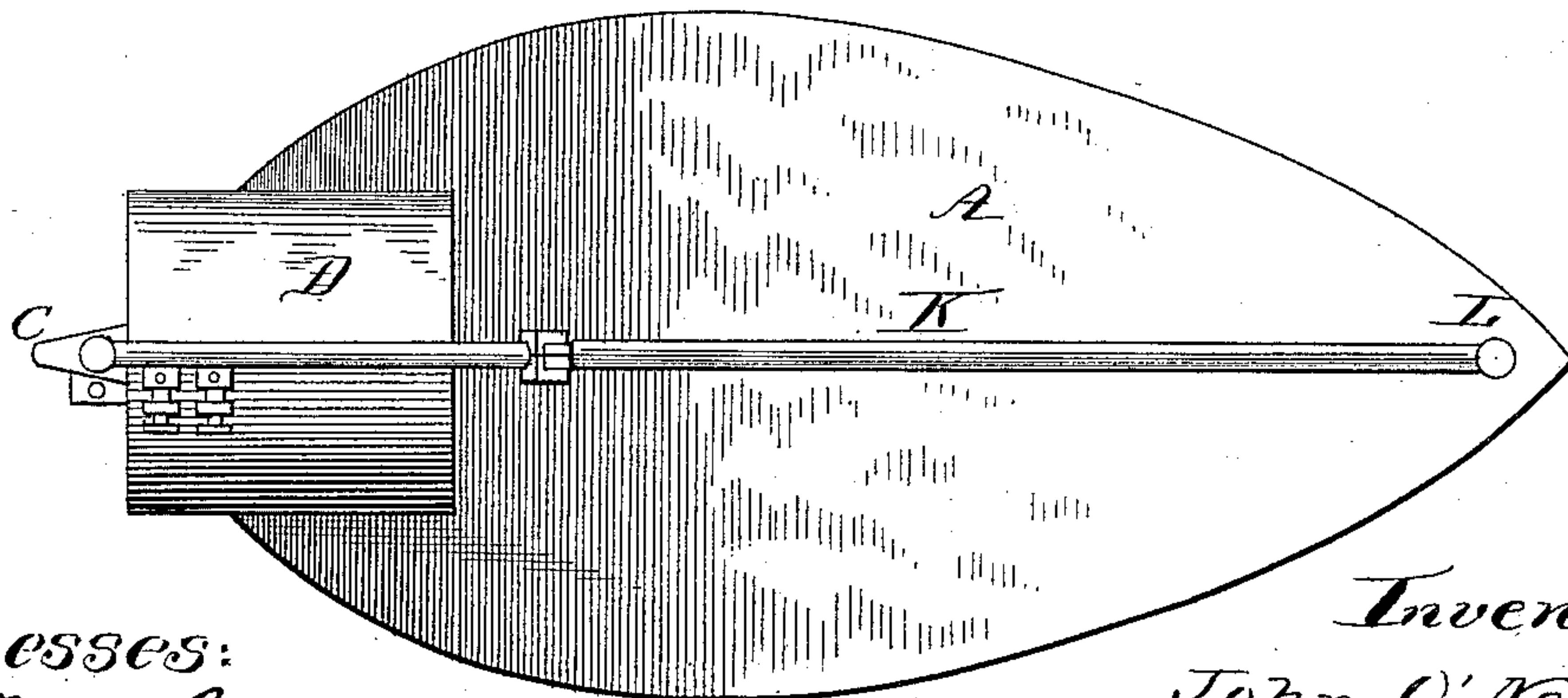


Fig. 3.



Witnesses:

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Inventor:

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UNITED STATES PATENT OFFICE.

JOHN O'NEIL, OF NEW YORK, N. Y.

SELF-REGISTERING SHIP'S LOG.

SPECIFICATION forming part of Letters Patent No. 441,578, dated November 25, 1890.

Application filed July 23, 1890. Serial No. 359,648. (No model.)

To all whom it may concern:

Be it known that I, JOHN O'NEIL, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Self-Registering Ships' Logs; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, which form part of this specification.

This invention has relation to registering-logs for ships, and has for its object the provision of novel mechanism for periodically closing and opening an electric circuit, and thereby producing a step-by-step or intermittent movement of electrically-controlled registering devices located on board the vessel.

The log embodying my invention is primarily designed and adapted for application to the purposes explained in my concurrent application relating to a novel apparatus for indicating latitude and longitude and registering ships' courses, but is not restricted to such special use; hence is made the subject of a separate application for Letters Patent.

The log may be employed for any of the purposes for which registering-logs are intended and adapted, and may be used in connection with any suitable registering devices which will respond to step-by-step movements of electro-magnetic devices.

My invention consists in the novel construction, combination, and arrangement of devices for causing electrical impulses dependent upon the speed of the vessel.

In the accompanying drawings, Figure 1 is a side view of a log embodying my invention. Fig. 2 is a vertical transverse sectional view of the same. Fig. 3 is a plan view.

The log comprises a suitable frame-work A, of metal or other material heavy enough to sink easily in water, and consisting of the flat base-plate or shoe B and a fin or cut-water B', rising from the longitudinal middle portion of the base and running lengthwise of the latter, the edge of the base being curved or converged to a point or prow C, so as to offer but little surface-resistance to the water. A cylindrical open-ended casing or tube D is fitted to the front portion of the partition B' and incloses an obliquely-winged

"screw" or propeller shaped wheel E, mounted on a horizontal shaft E', having bearings on the partition B' and running lengthwise of the latter.

The wheel E is so constructed in accordance with well understood and determined mechanical principles that it will rotate under the impact, pressure, or resistance of the water in a plane at right angles to the line of impact or pressure, and will vary its speed exactly in proportion to the resistance—that is, exactly in proportion to the speed of the vessel and the corresponding rate of travel of the log in the direction of its length. The partition B' has an opening at B² to receive and allow the wheel to rotate. The casing is designed and adapted to protect the winged wheel and to confine the line of pressure or resistance to a definite direction and avoid slippage.

Upon the shaft of the wheel E is mounted a worm F, meshing with a worm-wheel F', mounted on a separate and independent shaft G, having its bearings in pendants G' within the casing. Upon the shaft G is fitted a circuit make and break wheel or commutator h, which is embraced by metallic contact-brushes i i in circuit with a suitable battery or generator and with the electro-magnet of the registering mechanism. The worm and worm-wheel are so proportioned and related that for each definite number of revolutions of the wheel E the worm-wheel will rotate once or any given number of times and correspondingly close the circuit through the contact-brushes. The determination and fixing of these relations is purely arbitrary and will depend upon the standards of measurement and indication adapted in the registering devices. Let it be found, for instance, that the wheel E is adapted to make, say, ten thousand revolutions in every knot, and that the worm-wheel turns once for each one hundred revolutions of the wheel E and closes the electric circuit once. This will give one hundred electrical impulses or marks for every knot traveled by the vessel, which by a suitable train in the register may be multiplied or reduced to meet the standard of registration.

The log is supported when submerged by means of a cable H, attached to an adjustable sleeve I, embracing and movable upon a rod

K, mounted on posts L L at the ends of the log-frame. When the log is dropped into the water, it adapts its position to the surrounding conditions and follows the line of greatest resistance—that is, the course or line of travel of the vessel.

The electrical conductors are carried by the cable and insulated from each other therein; or they may be carried in a separate cable or flexible medium.

What I claim, and desire to secure by Letters Patent, is—

A marine log comprising a self poisoning or adjusting frame, means for supporting the

same, an open-ended casing or tube mounted thereon, a screw or propeller shaped wheel located within said casing, and suitable mechanism for opening and closing an electric circuit at intervals depending upon the speed of the vessel, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 9th day of July, 1890.

JOHN O'NEIL.

Witnesses:

THOS. A. CONNOLLY,
JOS. B. CONNOLLY.