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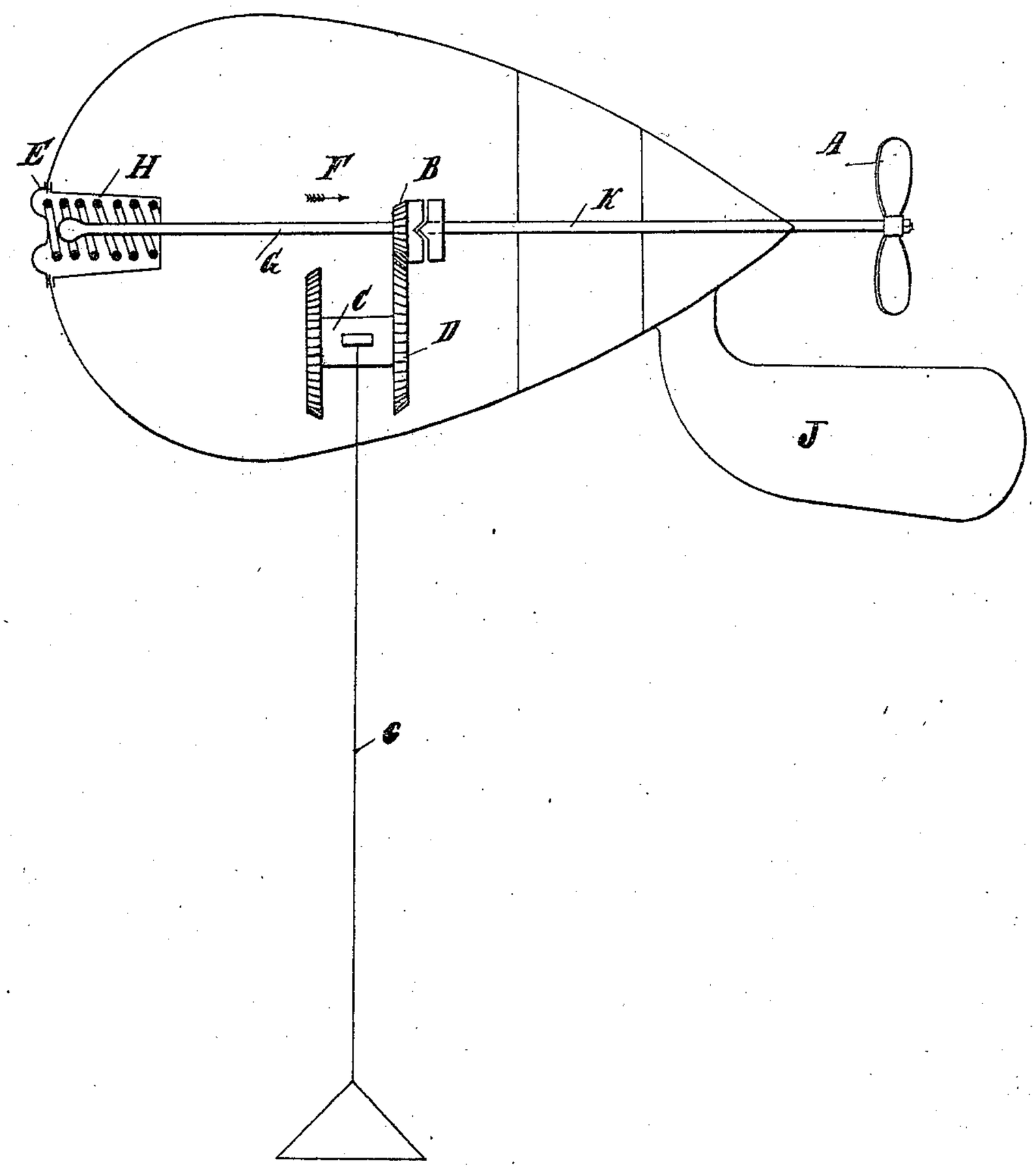
F. BAUDUIN.

TORPEDO FOR SUBMARINE MINES.

APPLICATION FILED MAY 20, 1902.

NO MODEL.



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UNITED STATES PATENT OFFICE.

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TORPEDO FOR SUBMARINE MINES.

SPECIFICATION forming part of Letters Patent No. 720,101, dated February 10, 1903.

Application filed May 20, 1902. Serial No. 108,169. (No model.)

To all whom it may concern:

Be it known that I, FRITZ BAUDUIN, a citizen of the Kingdom of the Netherlands, residing in La Haye, Netherlands, have invented certain new and useful Improvements in Torpedoes for Submarine Mines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing, and to letters of reference marked thereon, which forms a part of this specification.

This invention relates to an arrangement designed for maintaining torpedoes or submarine mines immersed at a predetermined depth in calm waters, as well as where for any reason whatever the currents become disturbed or agitated.

It is known that when strong currents prevail fixed or anchored torpedoes or the like are apt to be displaced thereby in the vertical direction and caused to be lowered or to descend below the level of the sea, and, further, the high and low tides also vary the degree of immersion of the torpedo.

In the accompanying drawing I have represented, by way of example, a device embodying my present invention.

I will describe my invention as applied to a torpedo of the kind described in the specification of Letters Patent No. 686,646, of November 12, 1901.

To avoid variations in the degree of immersion by reason of currents and tides, I provide the torpedo with a shaft K, upon which is mounted a screw-blade A, which is constantly subjected to the action of the currents and is moved thereby. The said screw-blade A is adapted to rotate a bevel-wheel B, mounted on the shaft G, and said wheel B gears with a bevel-wheel D, carried by the drum C, upon which is wound the cable *c* of the torpedo. It is evident that if the torpedo has great power of floating there should be interposed between the two bevel-wheels B and D an appropriate number of gear-wheels sufficient to overbalance the floating power. It is further evident that this arrangement of rotary screw-blade, actuated by the currents, will also cause the torpedo to descend beneath the level of the water. To arrest the torpedo at a predetermined degree of immersion, a hydrostatic plate E, controlled by the pressure of immersion, pushes the bevel-wheel B in the direction of the arrow F until said wheel B becomes disengaged from the bevel-wheel D. For this purpose the shaft G is arranged to slide or to telescope in the shaft K of the screw-blade A, but in such a manner as to be rotated therewith.

The hydrostatic plate E and shaft G are controlled by a helical spring H in such a manner that upon disengagement of the wheel B from the wheel D the drum C unrolls by reason of the floating power of the torpedo. Upon the latter rising, however, toward the surface of the water the pressure upon the plate E is reduced, and the spring H will act to bring the wheel B into gear with the wheel D, and thereby restart the drum C.

A suitable rudder J is provided to maintain the torpedo pointed in direction of the current in order that the screw-blade A shall be in operative position.

By means of the hereinbefore-described device it is possible to maintain torpedoes at any desired depth, even after external circumstances, such as the currents and tides, alter the original degree of immersion.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that I claim—

1. A submarine mine, comprising a floating torpedo and an anchor, a propeller attached to the torpedo and a cable attached to the anchor, and means for varying the length of said cable by the operation of said propeller.

2. A submarine mine, comprising a floating torpedo and an anchor, a propeller on the torpedo and a cable on the anchor, means for varying the length of said cable, and a hydrostatic device for controlling the operation of said means.

3. A submarine mine, comprising a floating torpedo attached to an anchor, and hydrostatically-controlled means located within the torpedo for retaining the torpedo at a constant degree of immersion.

4. A submarine mine, comprising a floating torpedo attached to an anchor, and means located within the torpedo for varying the distance between said torpedo and said anchor

so as to retain the same at a constant degree of immersion.

5. In a submarine mine, the combination with a torpedo, of a propeller attached thereto, of an anchor, of a cable connecting said torpedo and said anchor, of a winding-drum for said cable, of motion-transmitting means between said propeller and said drum, and of means for controlling said motion-transmitting means.

6. In a submarine mine, the combination with a torpedo-propeller and an anchor-cable, of a winding-drum for said cable, of motion-transmitting means from said propeller to said drum, of a hydrostatic device to disengage said drum from said propeller, and of a spring-operated device to reëngage said propeller with said drum.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

FRITZ BAUDUIN.

Witnesses:
GIOVANNI EMANUELE ELIA,
GIUSEPPE MATRICARDI.