

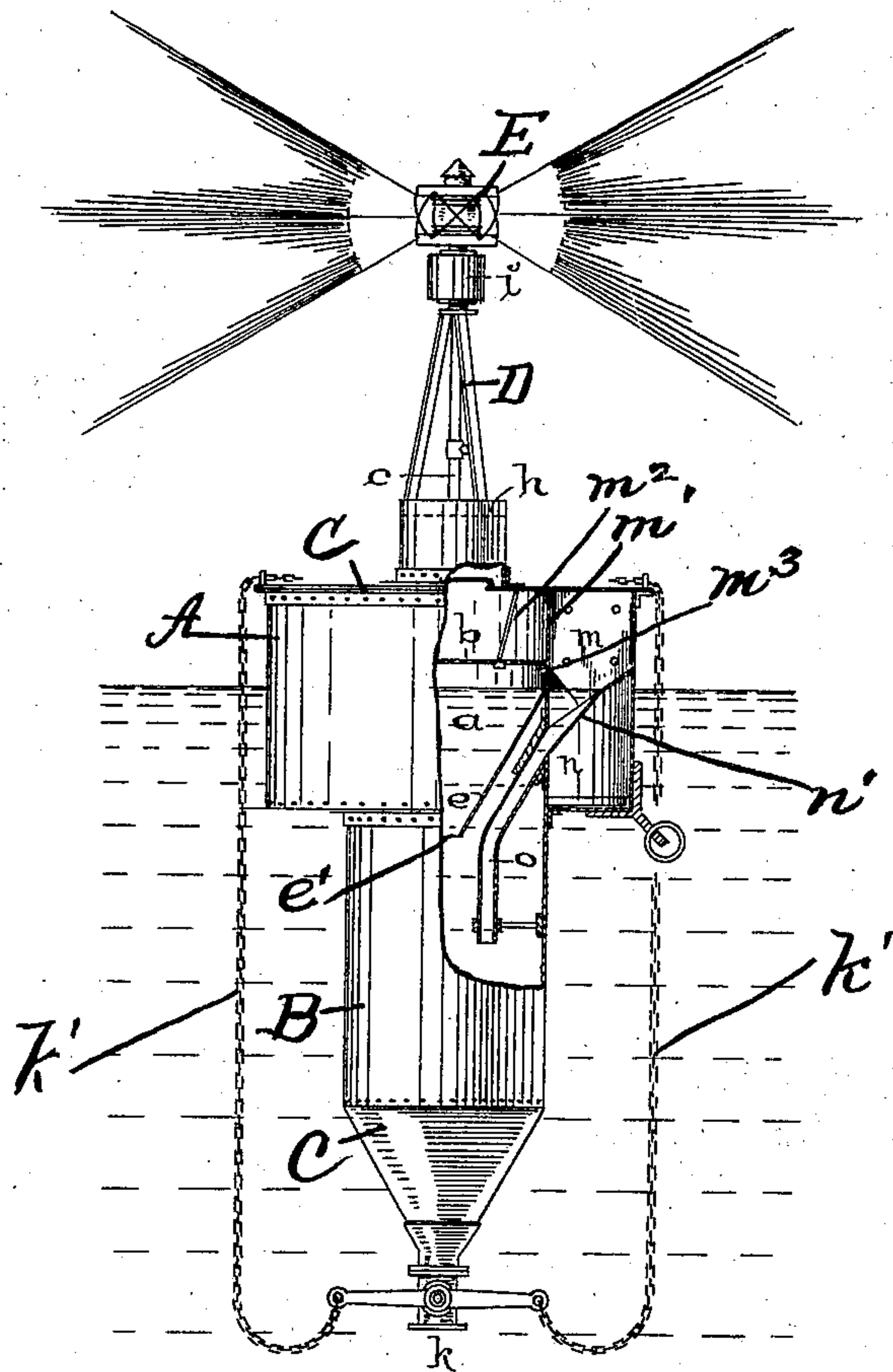
No. 691,855.

Patented Jan. 28, 1902.

K. G. GUSTAFSSON.  
ACETYLENE GAS GENERATOR.

(Application filed Nov. 9, 1900.)

(No Model.)



Attest  
Fuller Donaldson  
Minneapolis

Inventor  
Karl G. Gustafsson  
by Richards  
Attys



# UNITED STATES PATENT OFFICE.

KARL GUSTAF GUSTAFSSON, OF STOCKHOLM, SWEDEN.

## ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 691,855, dated January 28, 1902.

Application filed November 9, 1900. Serial No. 35,965. (No model.)

*To all whom it may concern:*

Be it known that I, KARL GUSTAF GUSTAFSSON, engineer, of Sibyllegatan 4, Stockholm, in the Kingdom of Sweden, have invented Improvements in Acetylene-Gas-Generating Apparatus; and I do hereby declare the nature of my invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement.

My invention relates to lighting-buoys; and it consists of the features and combinations of parts hereinafter described, and particularly pointed out in the claims.

In the accompanying drawing I illustrate the invention in side elevation with parts in section and parts broken away.

The buoy comprises a casing having an enlarged cylindrical upper part A and a reduced cylindrical part B, the latter terminating at its lower end in a funnel-shaped bottom C. In the upper portion A of the casing there is a chamber *a*, containing a grate *b* for supporting the carbid, the said grate being supported at *m*<sup>3</sup> by a partition-wall *m'*, extending concentrically within the cylindrical casing A and forming practically an extension of the lower casing B. The grate *b* is also supported by stays *m*<sup>2</sup> from the cover *c* of the buoy. A purifier *h* surmounts the casing A and communicates with the space above the grate *b*, and above the purifier *h* a framework D is arranged, which supports the lamp E, to which the gas is conveyed from the space above the grate by the pipe *c*. Below the grate *b* a funnel-shaped wall *e* is arranged, having a lower discharge-opening at *e'*.

Outside of the concentric partition-wall *m'* and in the upper part of the chamber A a chamber *m* is formed, which communicates through a pipe *o* with the interior of the reduced casing B of the buoy, and in the lower part of the upper casing A and extending circumferentially thereof an air-chamber is provided, which is separated from the chamber *m* by the wall *n*.

The sediment from the carbid may be discharged from the buoy through a cock *k*, arranged at the outlet in the bottom C. This cock may be operated from the surface of the water in which the buoy is floating through the chains *k'*. The specified gravity of the structure and the water-chamber *n* is so pro-

portioned that the buoy will float at a definite water-level when cock *k* is open to allow the water to enter the buoy freely. The water-level is shown in the drawing both within and without the apparatus, and it will be seen that the grate *b* is located at a point above the normal water-level, so that the carbid supported by the grating will be free from direct contact with the water and will be affected only by the evaporation from the said water. When the gas-pressure increases beyond that required, the water in the chamber *a* will be forced downward and up into the chamber *m*, thus reducing the superficial area of the water in the chamber *a* for evaporation. The generation of the gas is thus decreased until the pressure is reduced to the normal point. The water will then rise in the chamber *a* and fall in the chamber *m*. It will be understood that when the buoy is floated the cock *k* is closed after a sufficient amount of water has been let into the buoy. The said cock, however, may be omitted and the water have free access to the interior of the casing.

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 what I claim is—

1. A lighting-buoy consisting of a hollow casing, means provided on said casing for floating the same at a substantially definite water-level, a grate for holding calcium carbid within said casing, the said grate being supported at a point above the normal water-level in the casing and gas-consuming means provided on said casing for burning the gas produced, substantially as described.

2. A lighting-buoy consisting of a hollow casing, means provided on said casing for floating the same at a substantially definite water-level, comprising an air-chamber, a grate for holding calcium carbid within said casing, the said grate being supported at a point above the normal water-level in the casing and gas-consuming means provided on said casing for burning the gas produced, substantially as described.

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

KARL GUSTAF GUSTAFSSON.

Witnesses:

H. TELANDER,  
BIRGER LINDH.