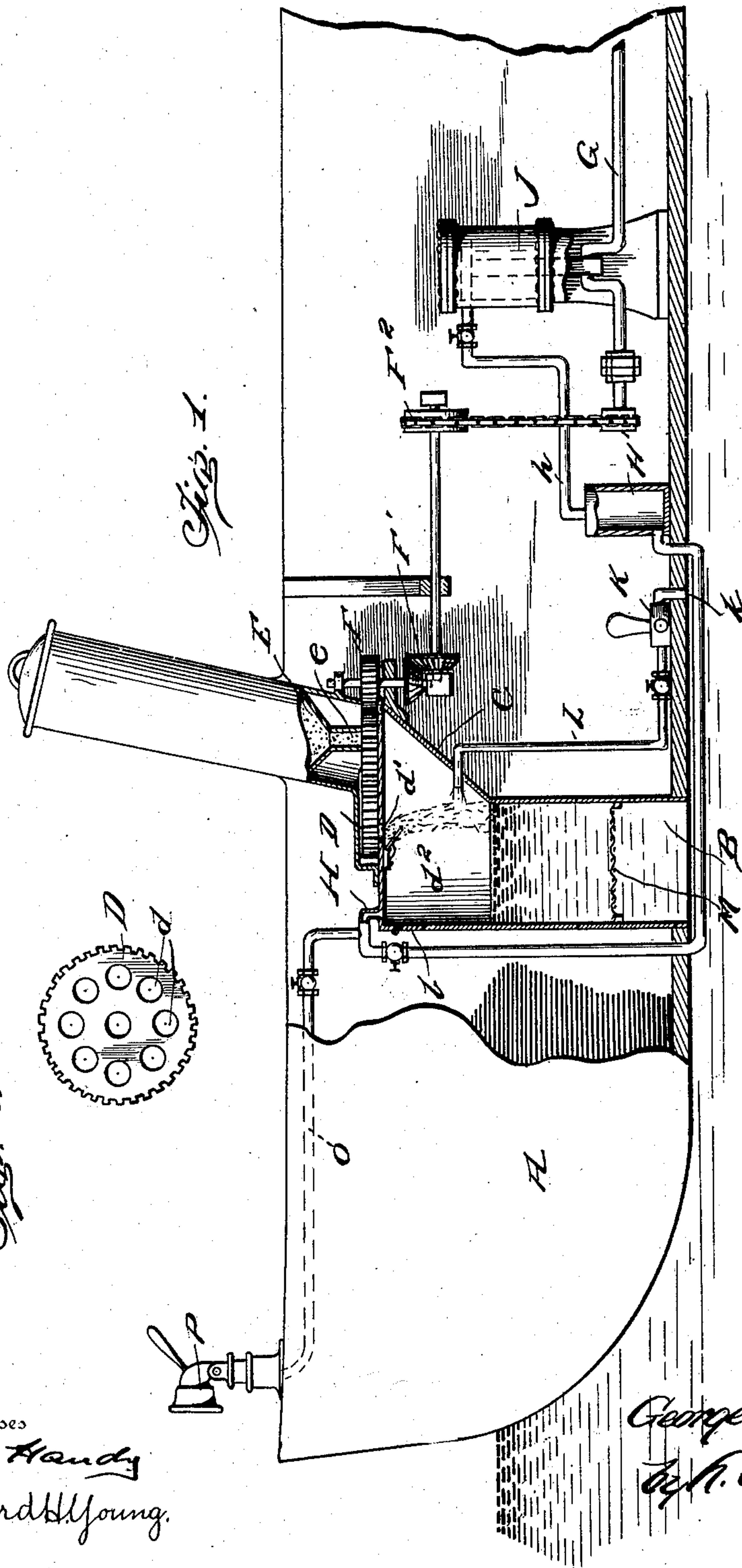


No. 741,771.

PATENTED OCT. 20, 1903.

G. H. DAVIS.
ACETYLENE GAS GENERATOR.
APPLICATION FILED SEPT. 15, 1902.

NO MODEL.



Witnesses
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ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 741,771, dated October 20, 1903.

Application filed September 15, 1902. Serial No. 123,369. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. DAVIS, a citizen of the United States, residing at Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Gas-Generators; 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.

This invention relates to improvements in gas-generators, and more particularly to generators for acetylene gas, and it is embodied in the construction and arrangement of parts presently to be described, and defined in the claims.

The invention is designed more particularly for a generator for acetylene lighting and propelling purposes, and more particularly for use in connection with vessels, and the same comprises a suitable means for generating acetylene gas, maintaining the necessary amount of clear water for generating purposes, cooling the gas, and finally in the improved mechanism or means for equipping a boat with not only power but also with light.

In the accompanying drawings I have shown a portion of a vessel equipped with the apparatus. The details and special arrangement are, however, not essentially material as shown, and the illustration is designed more particularly for the purposes of this specification, as many changes can be made, arrangement widely varied, and in commercial use added features can be employed, all without in the least departing from the nature and principle of the invention.

Figure 1 is a longitudinal section of a portion of a vessel, showing parts in elevation and showing the general arrangement of the apparatus; and Fig. 2 is a plan view of the feed-wheel.

A designates the vessel-hull, having formed therein a well B, opening through the bottom of the vessel. The upper end of the well B is flared somewhat, as at C, and on the top is positioned a suitable feed D, the same comprising conveniently a wheel having a series of pockets d and a circumferential series of teeth. In the top of the well portion, which

I shall term the "generating-chamber," is an opening d' , normally closed by a spring-actuated valve d^2 , the valve opening downward. The opening d' registers with the pockets in the feed-wheel D and also at their upper ends with the feed-tube e , leading from a carbide-tank E. To drive the feed, a pinion F is employed, which is driven by suitable gearing F' and sprocket F², which latter is driven by the driving-shaft G of the boat.

Suitable means may be employed for introducing the initial supply of carbide, and such means may consist conveniently of an opening in the top of the generating-chamber, as shown at b . From the top of the generating-chamber extends a pipe H, the same being carried downward through the bottom of the vessel and along the center thereof, where it will be exposed to the surrounding water. This pipe discharges into a purifier H', from which it is conducted by a pipe h' to the explosive-engine J, of any convenient type. I have shown the engine J in elevation without the necessary detail features thereof, as any convenient form of engine can be employed.

K designates a pump of any convenient type, having its suction-pipe k leading through the bottom of the vessel and its discharge-pipe L leading up into the top of the generating-chamber.

Spanning the generating-chamber adjacent its lower end is a wire or other suitable screen M.

In practice it will be observed that the well B will be at all times filled with water, having the lower open end, the water standing normally at the height of the surrounding water. As the carbide is thrown into the water at the top of the generating-chamber the gas-pressure will necessarily reduce the height of the water in the well B, and the gas will be taken through the pipe H to the engine J, where the same is exploded and serves to drive the piston of the engine, as in the usual explosive-engines. The piston in turn drives the shaft G, which actuates the feed-driving mechanism. The movement of the feed-wheel is governed by the gearing, and as the pocket loaded with carbide approaches the opening d' the weight of the material will

open the valve d^2 and discharge the carbid into the generator. Conveniently I prefer to employ ground carbid, although this is not absolutely essential. When the engine is
 5 working, the pump K is started and a fresh supply of water is pumped at all times into the generator, forcing out through the bottom all contaminated water and sludge, the wire-screen serving the purpose of preventing any
 10 lumps of carbid from escaping before they are completely dissolved.

Obviously gas can be taken from the top of the generator for lighting purposes. I have shown in the drawings a pipe O, leading to a
 15 search-light P.

The principles of the invention, it will be observed, are in maintaining the proper water conditions in the generator, and owing to the fact that the generator is open at the bot-
 20 tom the necessity of trapping is avoided, although it may be that a suitable valve mechanism could be employed, if desired. I regard the utilization of the water-supplying means as highly important in that it con-
 25 ducts a fresh supply of water to the top of the generator.

Of course the principles involved in this invention can be applied in many different ways.

30 Having thus described the invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an acetylene-generator the combination with a vessel, of a generating-chamber
 35 opening through the bottom thereof, and means for feeding carbid to the chamber.

2. In combination with a vessel, of a generating-chamber opening through the bottom thereof below the water-line, means for sup-

plying carbid to the chamber, and means for 40 ejecting water into the upper portion of the generating-chamber.

3. In combination with a vessel, of a generating-chamber having a discharge-opening through the bottom of the vessel below the 45 water-line, means for supplying carbid to the generator, an engine, and means for conducting the gas from the generator to the engine.

4. In combination with a vessel having a generating-chamber therein, the same open- 50 ing through the bottom of the vessel, of means for supplying carbid to the generator, and a gas-conducting pipe passing through the bottom of the vessel, substantially as described.

5. In an acetylene-generator the combina- 55 tion with a vessel, of a generating-chamber opening to the exterior thereof, and means for feeding carbid to the chamber; substantially as and for the purpose described.

6. In an acetylene-generator the combina- 60 tion with a vessel, of a generating-chamber opening through the bottom thereof, means for supplying carbid to the chamber, and a foraminated support in said chamber for the carbid; substantially as described. 65

7. In an acetylene-generator the combina- tion with a vessel, of a generating-chamber opening to the exterior thereof, means for feeding carbid to the chamber, a burner, and a conductor for gas leading from said cham- 70 ber to said burner.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE H. DAVIS.

Witnesses:

STEPHEN W. CARLE,
 FREDERIC W. SHAW.