(No Model.)

J. F. DOUGHERTY.

ACETYLENE GAS GENERATOR.

No. 585,625. Patented June 29, 1897.

Fig. 1.

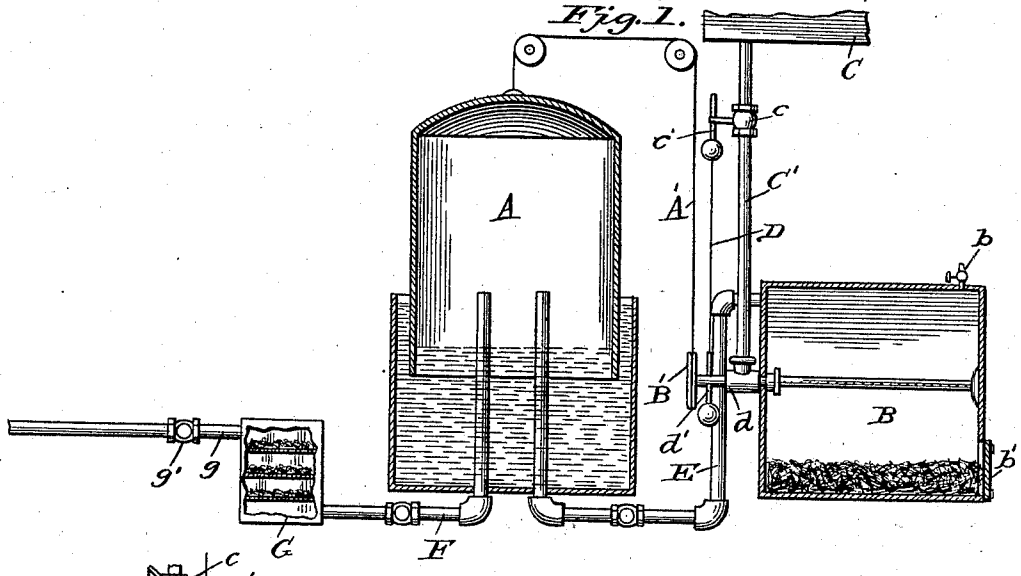


Fig. 2.

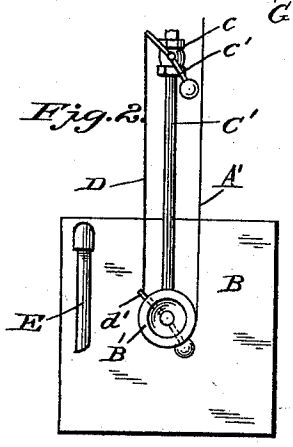
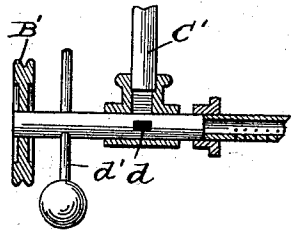


Fig. 3.



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UNITED STATES PATENT OFFICE.

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ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 585,625, dated June 29, 1897.

Application filed January 27, 1896. Serial No. 576,940. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. DOUGHERTY, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, 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 certain new and useful improvements in apparatus for producing acetylene gas; and it has for its object, among others, to provide improved means whereby acetylene gas can be produced by the rotary process automatically and so rapidly that only as much gas is produced as is consumed. It is designed to supply and make the gas at the point of consumption at any desired pressure. I feed water to the carbid or carbid to the water by a rotary motion intermittently, as may be necessary to supply the gas as it is consumed.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a substantially central vertical section through my apparatus. Fig. 2 is a detail in elevation. Fig. 3 is a detail of the sprinkler-pipe and its connections.

Like letters of reference indicate like parts in the several views.

Referring now to the details of the drawings by letter, A designates a gas holder or regulator which controls and governs the action of the generator B by means of a chain or cord A′, attached at one end to the top of the regulator or governor and its other end attached to the wheel B′ of the sprinkler. This sprinkler is mounted for rotary movement within the generator B in any suitable manner. This sprinkler is arranged longitudinally of the generator and receives its supply of water from any suitable source, as the tank C, connected with the sprinkler by the piping C′. The generator is provided with a blow-off valve *b* and has a suitable door or opening *b′* for charging the same. The flow of water from the tank is controlled by a valve *c*, which is carried by the weighted arm *c′* and is adapted to be open when the valve *d* to the sprinkler is closed, and vice versa, the weighted arm *d′* of the valve or cock to the sprinkler being connected by chain or cord D with the weighted arm of the valve to the supply-pipe. The weighted arm *d′* is mounted on and connected with the shaft of the wheel B′ which operates the sprinkler.

E is a pipe leading from the top of the generator B up into the regulator or governor A, and F is a pipe leading from the said governor or regulator through the drier or purifier G, from which leads the supply-pipe *g*, having a suitable valve *g′*, by which the escape of the gas therethrough is controlled.

The drier or purifier may be of any well-known form of construction.

In operation, the generator being charged with the proper amount of calcium carbid and the valve to the sprinkler being closed and the valve on the supply-pipe open, a certain known quantity of water is held between the said valve and the valve to the sprinkler sufficient to raise the gas-regulator to a known height. When the regulator has shown a small quantity of pressure or has become empty to the desired point by the tension of the cord or chain attached to the wheel B′ on the rotary shaft by which the stop-cock on the sprinkler is opened and the stop-cock on the water-supply pipe is closed by a connecting-chain, it allows a known quantity of water to pass through the pipe to the sprinkler, when the gas is generated and the governing-holder A begins to rise to the desired point again. At the same time the cock in the sprinkler is closed and the cock on the water-pipe is opened. By this method I have found that all chances of moisture arising from the generator are cut off when the gas is not desired, as it will necessarily do, as carbid will attack all moisture in close proximity to it. The calcium hydrate (the refuse) can be removed through the opening in the generator by first closing

the cock on the pipe E and opening the blow-off valve in the generator, thereby relieving the pressure on the same.

Having thus described the invention, what is claimed as new is—

1. The combination with a gas holder and generator, a sprinkler mounted for rotary movement within the generator, a wheel on the shaft of said sprinkler, a cord passed around said wheel and connected thereto and its other end passed through pulleys and connected with the holder, a connection between the sprinkler and the source of supply, and automatically-operated valves for controlling said supply, substantially as described.

2. The combination with a gas holder and generator, a sprinkler mounted for rotary movement within the generator, a wheel on the shaft of said sprinkler, a cord passed around said wheel and connected thereto and its other end passed through pulleys and connected with the holder, a connection between the sprinkler and the source of supply, and automatically-operated valves for controlling said supply, weighted arms on the stems of said valves and a connection between said weighted arms, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JAMES F. DOUGHERTY.

Witnesses:

SAMUEL MEYERS,

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