No. 734,394. PATENTED JULY 21, 1903.

T. O. ARNESON.

ACETYLENE GAS GENERATOR.

APPLICATION FILED MAR. 18, 1903.

NO MODEL.

Fig. 1.

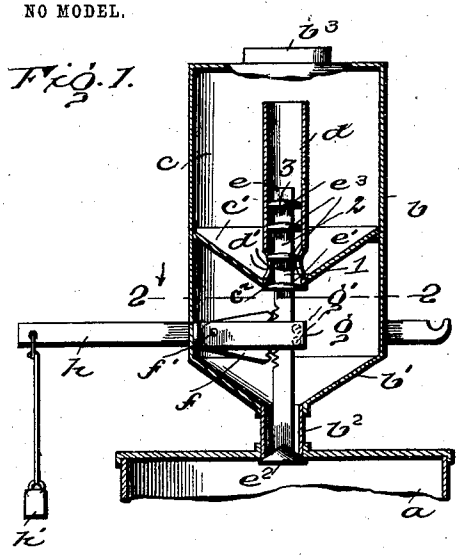


Fig. 3.

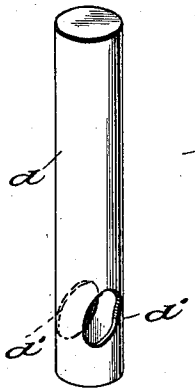


Fig. 4.

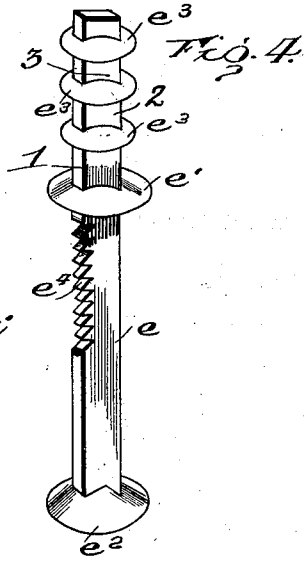


Fig. 2.

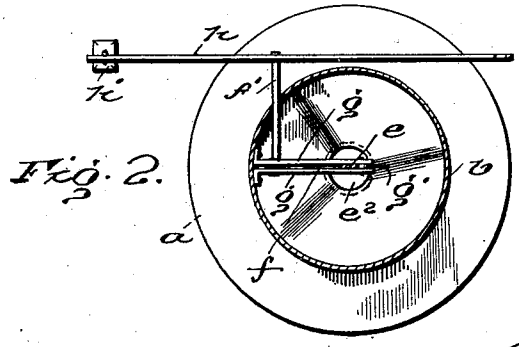


Fig. 5.

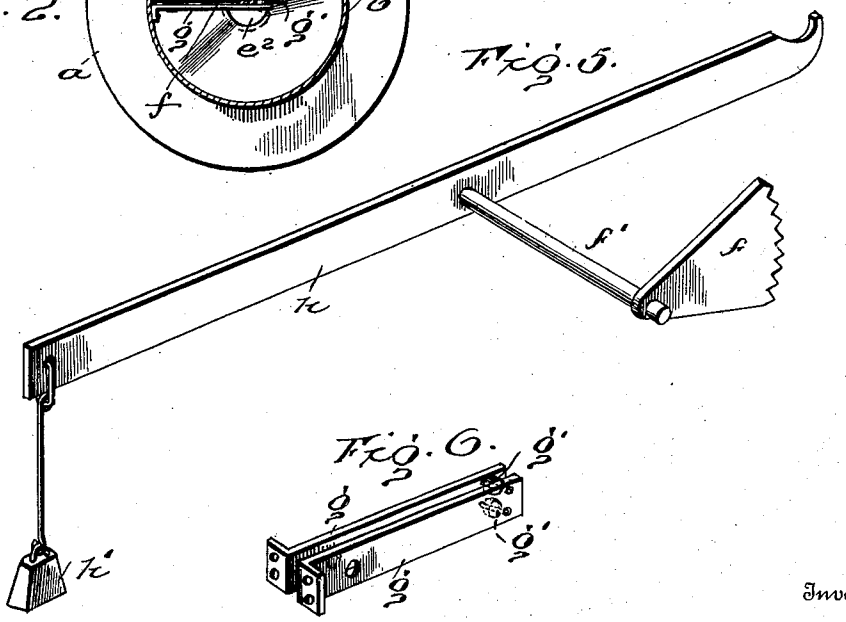


Fig. 6.

Witnesses

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No. 734,394. Patented July 21, 1903.

UNITED STATES PATENT OFFICE.

THOMAS O. ARNESON, OF GARRETSON, SOUTH DAKOTA.

ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 734,394, dated July 21, 1903.

Application filed March 18, 1903. Serial No. 148,362. (No model.)

To all whom it may concern:

Be it known that I, THOMAS O. ARNESON, a citizen of the United States, residing at Garretson, in the county of Minnehaha and State of South Dakota, have invented certain new and useful Improvements in Acetylene-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.

My invention relates to acetylene-gas generators; and it consists, essentially, of the peculiar arrangement and novel combination of the several parts, as will be hereinafter fully described, and stated in the claims.

One of the principal objects of the invention is to provide for automatically feeding the carbid to the generating-chamber and to automatically regulate the supply so as to correspond with the quantity of gas consumed. Other objects of the invention will become apparent upon a detailed description thereof.

In the drawings, Figure 1 is a vertical section of my improved generator, showing the generating-chamber partly broken away; Fig. 2, a horizontal section on line 2 2 of Fig. 1; Fig. 3, a perspective view of the feed-cylinder detached; Fig. 4, a similar view of the carbid-feed regulator, also detached; Fig. 5, a perspective view of the lever and attached gear-segment for operating the feed-regulator, and Fig. 6 a similar view of the bearing and guide brackets.

In the several views the letter a indicates a generating-chamber of the usual construction, and supported above said generating-chamber is a cylinder b, having a funnel-shape bottom b'. The cylinder b is attached to the generating-chamber by means of a neck b^2, which is fitted tightly in an aperture in the top of said generating-chamber, and the top of said cylinder is provided with a carbid-supply opening closed by a cover b^3.

Situated within the cylinder b is the carbid-chamber c, having a funnel-shape bottom c', provided with a central opening c^2, and fitted in said opening is one end of feed-cylinder d, closed at its upper end and provided near its lower end with oppositely-disposed inlets d' d'.

Operating within the feed-cylinder is one end of a vertically-movable feed-regulator e, provided with a valve e', adapted to close the opening c^2, and with a valve e^2, adapted to close the opening in the neck of the cylinder b. The upper end of the feed-regulator, which operates within the feed-cylinder, is provided with a series of partitions e^3, forming measuring-chambers 1, 2, 3, and one edge of said feed-regulator is formed with teeth e^4, adapted to be engaged by the teeth of a segment-gear f, rigidly mounted on a shaft f', journaled in brackets g, secure to the inner wall of the cylinder b, one on each side of the feed-regulator. One end of the shaft f' extends through the wall of the cylinder b and has fulcrumed thereon an operating-lever h. One end of the operating-lever is adapted to be connected with the bell (not shown) of an ordinary gasometer and the other end is provided with a counterbalancing-weight h'. Journaled between the outer or free ends of the brackets are friction wheels or rollers g', which prevent the feed-regulator becoming disengaged from the teeth of the segment-gear.

When the parts are in the position shown in Fig. 1—*i. e.*, when the valves e' and e^2 are closed and the chamber c supplied with carbid—the operation is as follows: The carbid enters through the inlets d' d', filling measuring-chamber 1, and as the gas-supply in the gasometer diminishes the bell of said gasometer, which is to be connected to the end of the operating-lever, will fall and, overcoming the counterbalance-weight, cause the shaft f' to rock the segment-gear downward, and thereby reciprocate the feed-regulator downward, opening the valves e' and e^2. As said valves open the quantity of carbid contained in measuring-chamber 1 passes down through the neck b^2 into the generating-chamber. Should the carbid contained in the first measuring-chamber not be sufficient to generate enough gas to cause the bell of the gasometer to rise sufficiently high to close the valves, the feed-regulator will be forced to continue its downward movement until a sufficient number of measuring-chambers have emptied their contents into the generating-chamber to generate enough gas to cause the gasometer-bell to rise, allowing the counterbalance-weight to return the operating-lever to nor-

mal position, and thereby close the valves to shut off the supply of carbid. The valves will remain closed until the supply of gas in the gasometer is again diminished, when the operation will be repeated.

Various changes in the details of construction may be made in my invention without departing from the principle thereof.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination with a gas-generating chamber and a carbid-chamber, in communication with each other, of a vertically-movable feed-regulator provided with valves adapted to close communication with the carbid and generating chambers and having a plurality of partitions forming measuring-compartments, and means operating the feed-regulator to supply the carbid to the generating-chamber.

2. The combination with a carbid-chamber and a gas-generating chamber, of a vertical feed-cylinder communicating with the carbid-chamber, a vertically-movable feed-regulator provided with valves adapted to close communication with the carbid and generating chambers and having a plurality of partitions forming measure-compartments, and means operating the feed-regulator to supply the carbid to the generating-chamber.

3. The combination with a carbid-chamber and a gas-generating chamber, in communication with each other, of a vertically-movable feed-regulator provided with valves adapted to close communication with the carbid and generating chambers and having a plurality of partitions, forming measure-compartments, a counterbalance-lever, arranged to be connected with a gasometer-bell, carrying a shaft provided with a segment-gear adapted to engage teeth on the feed-regulator, whereby said feed-regulator is operated on the rise and fall of the gasometer-bell.

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

THOMAS O. ARNESON.

Witnesses:
E. E. RODABAUGH,
E. E. CROSS.