

W. A. FENTON.
ACETYLENE GAS LAMP.
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929,296.

Patented July 27, 1909.

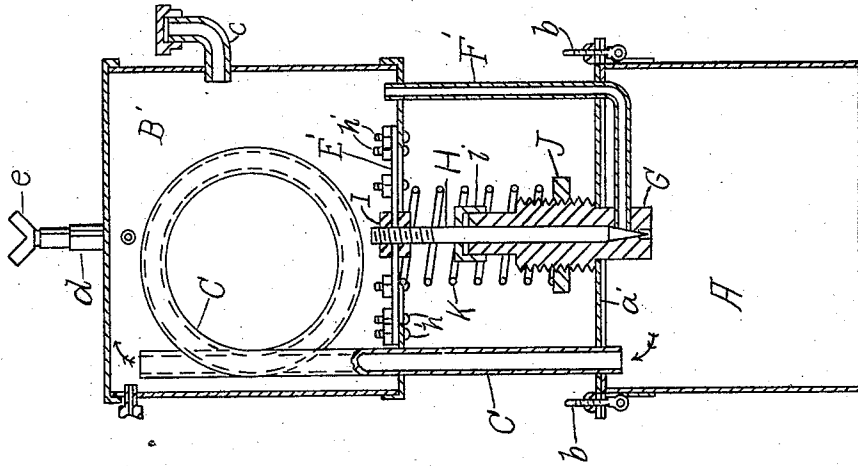


Fig. 2.

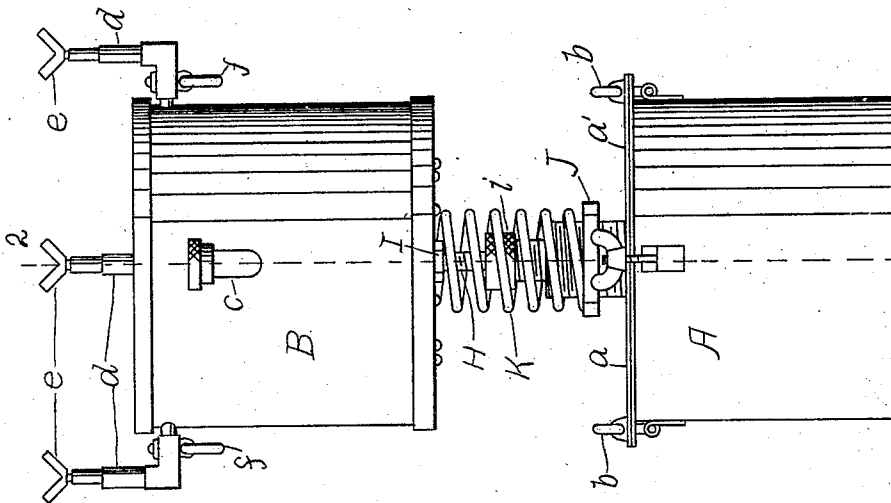


Fig. 1.

WITNESSES:

J. Nelson
J. D. Silmore

INVENTOR

W. A. Fenton

W. A. Fenton
ATTORNEY

UNITED STATES PATENT OFFICE.

WILLIAM A. FENTON, OF SIOUX CITY, IOWA.

ACETYLENE-GAS LAMP.

No. 929,296.

Specification of Letters Patent.

Patented July 27, 1909.

Application filed December 26, 1908. Serial No. 469,264.

To all whom it may concern:

Be it known that I, WILLIAM A. FENTON, a citizen of the United States, residing at Sioux City, in the county of Woodbury and State of Iowa, have invented certain new and useful Improvements in Acetylene-Gas Lamps, of which the following is a specification.

My invention relates to the use of calcium carbid as an illuminant, and the object of the invention is the construction of a lamp adapted to consume what is commonly known as acetylene gas which is the product of calcium carbid in contact with water.

As is well known the water applied to the carbid must be controlled so as to regulate the quantity of gas produced as required for consumption. The control of the water supply and the regulation of the production of gas are the subjects of the invention.

In the accompanying drawing Figure 1 is a view of my invention in side elevation, the pipe for conveying the gas to the reservoir being omitted. Fig. 2 is a cross-section on line 2—2, Fig. 1, the valve stem being shown in full.

The lamp consists of two principal parts, a lower receptacle or generator A to hold the carbid and generate the gas, and an upper cup or reservoir B' for the water and gas, the two being connected by pipes and a valve stem. The generator is adapted to be covered by a lid *a'* secured to the generator by the hinged thumb bolts *b*. The reservoir or gas holder B' is tightly inclosed to hold the gas at the top of the water, having a filler plug *c* at one side for the supply of water and pipes *d* near the top for the outlet of gas. The latter are supplied with the usual tips *e* and the outlet of gas is regulated by cocks *f*.

A pipe C, bent in circular form in the reservoir to cool the gas before passing out of the pipe, extends from the reservoir down through the base and into the generator, conveying the gas from the latter to near the top of the reservoir where the gas rests on the water.

The diaphragm E', made of leather, rubber or other suitable material, is shown in the bottom of the reservoir and is operated by the pressure of gas above the water, being secured to the bottom of the reservoir by bolts *h'*. A feed pipe F' leads from the bot-

tom of the reservoir into the top of the generator and is bent at right angles where it opens into the central part of a casing G secured in the center of the base *a'*. The port of the casing is filled by a valve stem H, threaded at the upper end and fitting an internally threaded nut I secured in the center of the diaphragm. The stem is tapered at the lower end, forming a taper valve, whose seat is the lower part of the port, which tapers downward in similar manner to a point below the entrance of the pipe F' where it is enlarged to receive the point of the stem. The casing is threaded externally to receive an internally threaded hexagonal nut J. A coil spring K encircles the valve stem and rests between the nuts I and J. A gland *i* is adjusted to the upper part of the casing and stuffing may be supplied.

After the carbid is placed in the generator, the lid secured and the reservoir partly filled with water, the generation of gas will begin as the water is allowed to enter the generator and fall on the carbid.

The pressure of the water in the reservoir and the consequent tension of the diaphragm depend upon the tension of the spring as controlled by the adjustment of the nut J. The supply of water through the pipe is governed by the adjustment of the nut which regulates the size of the opening of the pipe into the port.

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

In a lamp, the combination of a generator chamber adapted to contain calcium carbid and to generate a gas by the application of water, a reservoir above said chamber to hold the supply of water and gas, the gas being held above the water, a diaphragm in the bottom of the reservoir operated by the pressure of gas, a pipe leading from the generator chamber to near the top of the reservoir to convey the gas to the reservoir above the water, said pipe being formed spirally in the reservoir to cool the gas from the generator, with a threaded casing between the reservoir and generator opening into the generator, an adjusting nut on the casing, a pipe leading from the bottom of the reservoir into the casing to convey the water to the generator, a stem in said casing forming a valve therein,

one end of the stem being adjustably secured to the diaphragm, and a coil spring between the diaphragm and the adjusting nut to control the stem and regulate the supply of
5 water through said pipe, substantially as described.

In testimony whereof I hereby affix my

signature in the presence of two subscribing witnesses.

WILLIAM A. FENTON.

Witnesses:

H. C. GARDINER,
J. S. NELSON.