No. 646,452. Patented Apr. 3, 1900.

J. McLEAN.

ACETYLENE GAS MACHINE.

(Application filed July 26, 1899.)

(No Model.)

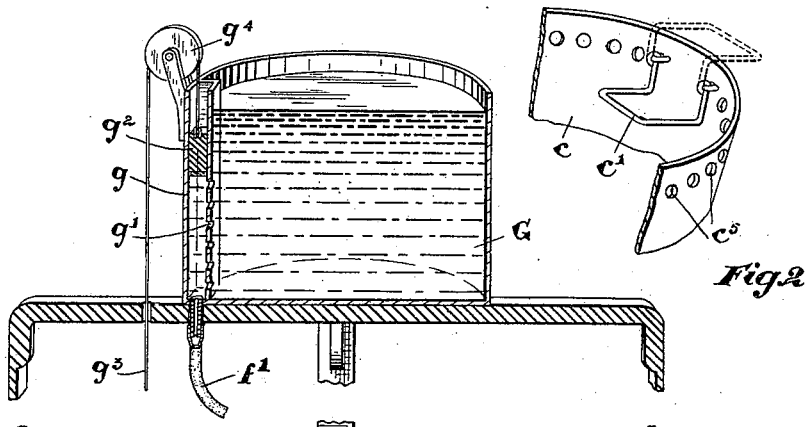

Fig. 2.

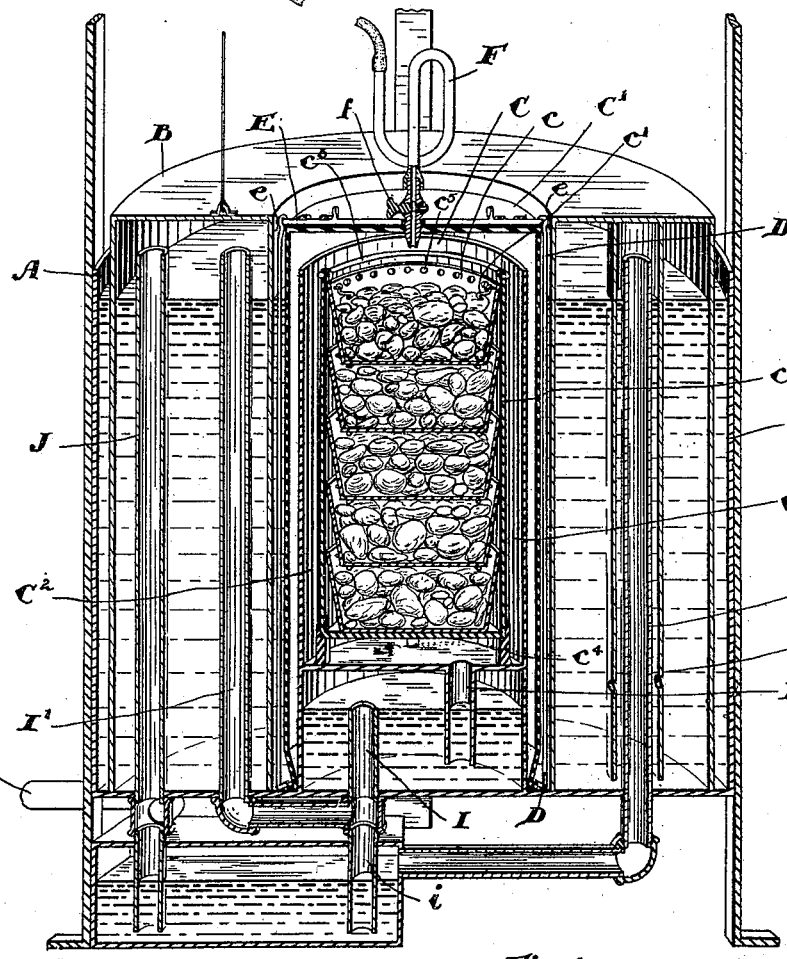

Fig. 1.

Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN McLEAN, OF ORMSTOWN, CANADA.

ACETYLENE-GAS MACHINE.

SPECIFICATION forming part of Letters Patent No. 646,452, dated April 3, 1900.

Application filed July 26, 1899. Serial No. 725,207. (No model.)

To all whom it may concern:

Be it known that I, JOHN MCLEAN, a subject of the Queen of Great Britain, residing at Ormstown, in the county of Chateauguay, in the Province of Quebec, Canada, have invented a new and useful Acetylene-Gas Machine, of which the following is a specification.

My invention relates to improvements in acetylene-gas machines; and the object of the invention is to devise a simple and compact form of machine designed to work automatically in the manufacture (from the carbid of calcium) of pure gas not liable to smoke; and it consists, essentially, of a generator provided with carbid-buckets set one on top of the other surrounded by a gas-holder or gasometer, to which the water is supplied from a cistern placed above the gas-holder through a curvular tube connected with the generator, the various parts of the machine being constructed in detail as hereinafter more particularly described.

Figure 1 is a sectional perspective view of the machine, showing the interior arrangement of the gasometer and generator. Fig. 2 is a detail of the combined carbid-bucket, handle, and support.

A is the gasometer, having a well formed centrally thereof by the casing e'.

B is the dome or gas-holder.

C is the generator.

c are the carbid-buckets, which are placed one on top of the other, being supported by a specially-constructed handle c', which folds inside to hold the bucket above or turns out to be handled with greater ease, as desired. The carbid-buckets are placed in a pail c^2, made to fit loosely inside the generator. This pail has a wire handle c^3, by which it is readily lifted out of the generator when the outside casing of the same is removed. This pail stands on legs c^4, which extend upwardly from a diaphragm forming the upper wall of the water-chamber d, located at the bottom of the open-ended cylindrical casing C, surrounding the pail c^2.

The outside casing of the generator C′ is held in place by straps D, which are securely soldered at the bottom of the generator. These straps at their upper ends have orifices, through which a bolt E passes, the straps being retained in this position by a wire loop e. These bolts extend close to the orifice, where the water-supply stop-cock is screwed into the lid of the generator, thus preventing any chance of the bolts being withdrawn before the stop-cock is removed, averting danger of explosion by allowing a moderate ingress of air and also preventing the machine from being started until the bolts are in position. The straps D, with the bolts E passing through them, retain the outer casing of the generator firmly in position.

The water-supply pipe F, with a stop-cock f at its lower end, is made in the form of a trap, thus preventing the gas from escaping and too great a rush of water into the generator from the cistern G, which is connected to the water-supply pipe by a flexible tube f'. The cistern G has a small stand-pipe g, with perforations g' at the lower end and a weight-valve g^2. This weight-valve is attached to the dome by means of the chain g^3. This chain runs over a pulley-wheel g^4 at the top of the cistern, immediately above the stand-pipe g. When the gas-holder is down, the valve is open, and the water rushing through the flexible tube f' into the pipe F and from thence through to the first bucket filled with carbid immediately forms gas, which passes down the passages C^2, through the opening H and the water at the base of that opening, and from there is driven by the constantly-increasing pressure of the gas into the pipe I, which has a safety extension i leading to the refuse-receptacle. The gas pursuing its course passes up through the extension I′ of the pipe I, raising the gas-holder of the gasometer and dropping the valve g^3, thereby cutting off the supply of water. As the weighted dome or gas-holder B descends the gas is forced through the supply-pipe J to the various uses to which it is to be applied, and as the dome thus descends the valve g^2 is again raised and allows a fresh supply of water into the generator. As the water flows in it gradually fills the uppermost bucket and decomposes the carbid until the bucket c is filled, when the perforations c^5 in the sides of the bucket cause it to overflow into the one immediately below, and so on, until it reaches the lowermost bucket.

The generator is kept cool throughout by

the constant flow of fresh water, thereby producing a gas of low temperature, which passes through such a small quantity of water at the lower end of the opening H that the gas retains a great quantity of acetylene proper, which in many other modes of manufacture is lost in the water. I have provided a customary blow-off pipe K, with a sleeve K′ to regulate the blow-off of the gas, and also the gas-supply pipe J having a safety extension into the refuse-receptacle L. Suitable outlet and filling openings for the various water-chambers are provided, which may be arranged in any desired manner not necessary to illustrate.

What I claim as my invention is—

1. The combination with an annular gasometer having a well, of a generator and carbid-receptacle situated in the well with a trapped water-supply pipe attached thereto at the upper end, and a plurality of carbid-buckets, with inwardly-folding handles, arranged to rest one upon the other as and for the purpose specified.

2. The combination with an annular gasometer having a well, of a generator and carbid-receptacle situated in the well and connected to the water-supply by a trapped pipe and a plurality of carbid-buckets having inwardly-folding handles so arranged that the bucket next above will rest upon the handles as and for the purpose specified.

3. The combination with an annular gasometer having a well, and the bell of a generator and carbid-receptacle situated in the well and connected to the water-supply by a trapped pipe, and a plurality of carbid-buckets having inwardly-folding handles so arranged that the bucket next above will rest upon the handles, the straps securely attached to the lower end of the well in the gasometer and extending to the top of the outer casing and locking-bolts extending through the top of the straps as and for the purpose specified.

4. The combination with an annular gasometer having a well, of a generator and carbid-receptacle situated in the well and connected to the water-supply by a trapped pipe, and a plurality of carbid-buckets having inwardly-folding handles so arranged that the bucket next above will rest upon the handles, means for retaining the carbid-receptacle in position and a water-receptacle immediately below the generator through which the gas passes before rising into the gas-holder as and for the purpose specified.

5. The combination with an annular gasometer having a well, of a generator and carbid-receptacle situated in the well with a trapped water-supply pipe attached thereto at the upper end, and a plurality of carbid-buckets, with inwardly-folding handles, arranged to rest one upon the other, a cistern suitably supported above the gasometer having a stand-pipe with perforations, a drop-valve located in said pipe and connected by a cord passing over a pulley to the top of the gas-holder, such cistern forming the water-supply for the carbid as and for the purpose specified.

Signed at Montreal, Canada, this 24th day of July, 1899.

JOHN McLEAN.

In presence of—
CLARENCE MEDLEY,
RICHARD COLLINS.