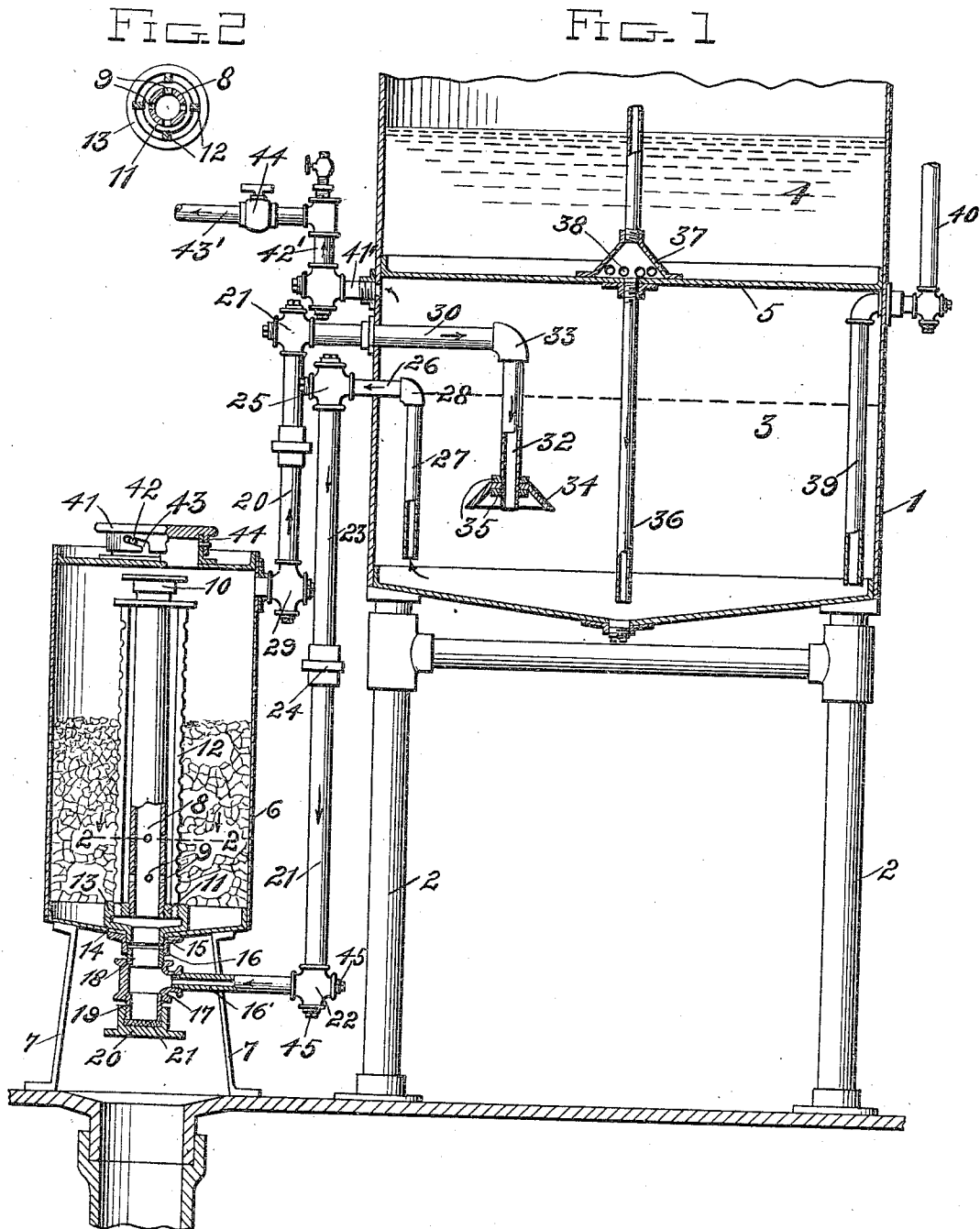


S. A. MILES.
ACETYLENE GAS GENERATOR.
APPLICATION FILED JUNE 7, 1909.

957,698.

Patented May 10, 1910.



Witnesses

W. H. Griesbauer.
C. H. Griesbauer.

Inventor

S. A. MILES.

by *H. B. Wilson & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

SAMUEL A. MILES, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO ISAAC STEAD,
OF PHILADELPHIA, PENNSYLVANIA.

ACETYLENE-GAS GENERATOR.

957,698.

Specification of Letters Patent.

Patented May 10, 1910.

Application filed June 7, 1909. Serial No. 500,647.

To all whom it may concern:

Be it known that I, SAMUEL A. MILES, 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 Acetylene-Gas Generators; and I do 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 an acetylene gas producer of the under-feed type and has for its object to produce a generator of this class which will be simple and economical in construction.

With this and other objects in view, the invention consists of certain novel features of construction, combination and arrangements of parts as will be more fully described and particularly pointed out in the appended claim.

In the drawings, Figure 1 is a vertical sectional view partly in side elevation, of a gas generator embodying my improvements; and Fig. 2 is a horizontal section taken on line 2—2 of Fig. 1.

Referring to the drawings for a more particular description of the invention, 1 indicates the water tank or reservoir which is mounted at an elevation upon the supports 2, and is divided into two vertically spaced compartments 3 and 4 respectively, by the horizontal partition 5. The carbid receptacle 6, which, as shown, is of cylindrical form, is arranged or mounted upon suitable supports 7 at one side of the water tank. A vertical water tube 8, provided at its lower end with suitable transverse openings 9, and at its upper end with a closure cap 10, is arranged centrally within the carbid receptacle. This tube, as shown, is mounted in position by screwing its lower end to a ring 11, which in turn is screwed to the lower ends of a series of vertically disposed spaced guard bars 12, which are arranged around the water tube and have a screwed connection with the cylindrical body 13, of the support 14, having a reduced depending portion 15, which fits in a tubular collar 16, riveted to the bottom of the carbid receptacle. The guard bars 12 are corrugated, as shown, so that a better engaging surface will be presented to the carbid and portions of the latter will therefore not be apt to slip

between the bars against the water tube 8 and choke up any of the perforations 9 thereof.

A horizontal water pipe 16', is screwed to the coupling 17, which in turn has a screwed connection with a nipple 18. A second nipple 19, has a screwed connection with the coupling 17, and a plug 20, carrying the packing 21, is screwed to the lower nipple 19, to secure a water tight joint at this point. The outer end of the pipe 16', is connected with the lower end of the vertical pipe 21, by means of the coupling 22, and the upper end of the pipe 21, with a second vertical pipe 23, by the coupling 24. A two-way coupling 25, is screwed to the upper end of the pipe 23, and a horizontal pipe section 26, is secured to said coupling and passes into the lower compartment of the water tank.

A vertically disposed outlet pipe 27, is connected with the inner end of the pipe section 26, by the elbow 28, and extends downwardly into the lower compartment of the tank. A vertical gas outlet pipe 29, is connected by means of the two-way coupling 29, with the upper end of the carbid receptacle and extends a suitable distance above the upper end of the latter and above the upper end of the pipe 23.

A horizontal pipe 30, extends into the lower compartment of the water tank at a point above the pipe section 26, and is connected with the upper end of the pipe 20, by the two-way coupling 21. A pipe 32, is connected at the inner end of the pipe 30, by the elbow 33, and extends downwardly into the lower compartment of the water tank, the lower end of said pipe 32, carrying the outwardly flared guard 34, which is secured thereon and held in position by nuts 35. A vertical water tube 36, is connected with the bottom of the partition 5, and extends downwardly to a point near the bottom of the lower compartment of the tank. A cone-shaped member 37, provided with an annular series of inlet ports 38, is secured to the upper face of the partition 5, immediately over the upper end of the tube 36. Water may be supplied to the tank by means of the pipe 39, which extends into the lower compartment thereof and is connected to the pipe 40, which may lead to any suitable source of supply.

The upper end of the carbid receptacle is provided with a closure cap 41, which is pro-

vided with pins 42, which are received by bayonet slots 43, formed in the neck 44, of said chamber.

In practice, the carbid is arranged in the 5 carbid receptacle around the water tube 8, the vertical guard bars 12, holding the carbid against coming in direct contact with the outer surface of the tube and thereby clog- 10 ging up the ports or apertures 9 thereof, through which the water passes and mixes with the carbid. The water passes from the upper compartment of the tank through the ports 38, of the tube 36, into the lower com- 15 partment thereof, and upon reaching the level indicated by the dotted lines in Fig. 1, passes into the tube 27, and through the pipes 23, 21 and 16 to the tube 8, and then passing through the ports or apertures 9, of the tube, mixes with the carbid, produc- 20 ing the acetylene gas. This gas rises to the upper end of the carbid chamber and passes through the pipes 20, 30 and 32 into the lower compartment of the water tank. The gas is forced to the upper end of the lower 25 compartment of the tank by the water pressure and passes through the pipes 41', 42' and 43', to any desired point. The pipe 43', is provided with the cut-off plug 44', by means of which, the passage of the gas 30 through said pipe may be controlled. It will be understood that the head of water in the upper compartment of the water tank furnishes a constant pressure which forces the gas through the pipes 41', 42' and 43'. 35 The two-way couplings are provided with removable plugs 45, which may be removed to clean out the several pipes.

From the foregoing description, taken in connection with the accompanying draw-

ings, the construction and operation of the 40 invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be 45 resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described my invention, what I claim is:—

A gas producer of the class described com- 50 prising a water tank divided into upper and lower water compartments, a carbid receptacle arranged beneath and at one side of the water tank, a perforated water tube in the carbid receptacle, an annular series of verti- 55 cal corrugated guard bars inclosing the water tube, a spacing ring on which screws the lower ends of said guard bars to hold them in proper spaced relation, a water conduit for passing the water in the lower com- 60 partment to the bottom of the water tube, a gas conduit for passing the gas from the upper end of the carbid receptacle into the lower compartment of the water tank, means 65 for permitting the water in the upper compartment to flow into the lower compartment, whereby the water in said first mentioned compartment acts as a head of pres- 70 sure to force the gas to the top of the lower compartment, and a gas outlet communicating with the top of said lower compartment.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

SAMUEL A. MILES.

Witnesses:

FRANK KULZER,
FREDERICK ENDERS.