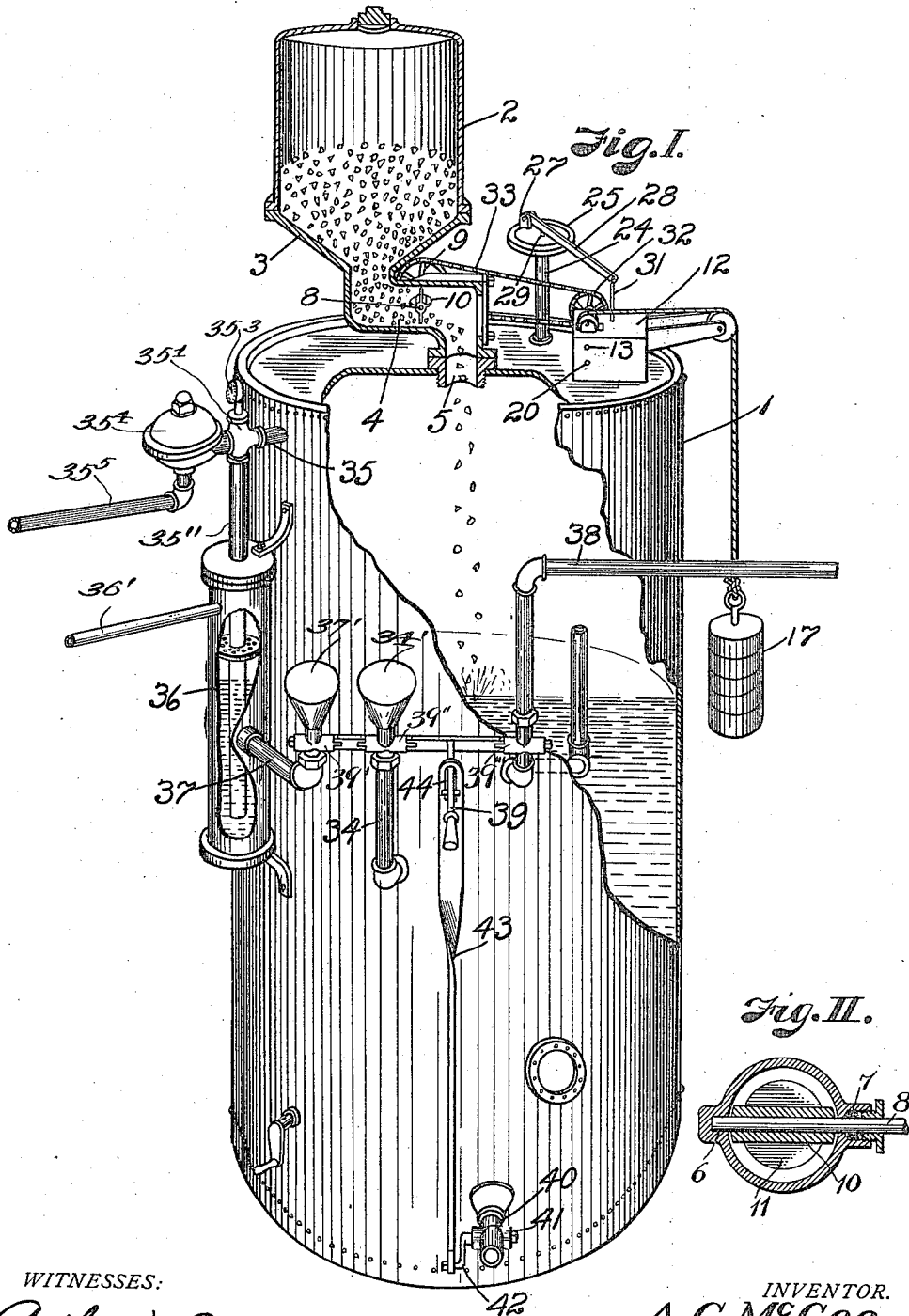


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ACETYLENE GENERATOR.
APPLICATION FILED NOV. 3, 1911.

1,059,946.

Patented Apr. 22, 1913.



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ACETYLENE-GENERATOR.

1,059,946.

Specification of Letters Patent.

Patented Apr. 22, 1913.

Application filed November 3, 1911. Serial No. 658,310.

To all whom it may concern:

Be it known that I, ARTHUR C. MCGEE, a citizen of the United States, residing at Olathe, in the county of Johnson and State of Kansas, have invented certain new and useful Improvements in Acetylene-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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to acetylene gas generators and has for its principal object to provide means for automatically and positively feeding carbide to a generating tank.

In accomplishing this object I have provided the improved details of structure hereinafter described and illustrated in the accompanying drawings, wherein:—

Figure I is a perspective view of an acetylene gas generator constructed according to my invention with portions broken away. Fig. II is an enlarged detail view of the carbide feeding wheel.

Referring more in detail to the parts:—1 designates a generating tank of any suitable construction, and 2 a carbide tank which is supported on the top of tank 1 and has a hopper bottom 3 opening into one end of a horizontal tubular conduit 4, the opposite end of which has a vertical neck 5 opening into the top of the generating tank. In the horizontal conduit 4 is a socket 6 and a stuffing box 7, and journaled within the socket and stuffing box is a shaft 8, the outer end of which carries a sprocket wheel 9. Fixed on the shaft 8, within the conduit 4, is a wheel 10 having blades 11, the outer edges of which are curved to correspond with the curvature of the conduit, but are set in therefrom to provide an annulus when the wheel is in motion, there being preferably four of such blades arranged at right angles on the shaft.

Arranged adjacent the conduit 4 is a motor 12, comprising revoluble shafts 13 and 20, and a weight 17 whereby the shafts are actuated, the particular construction of the motor not being illustrated as this element, *per se*, forms no part of my present invention.

Opening from the tank 1 is a pipe 24 having a diaphragm valve 25 thereon provided

with ears 27, a lever 28 being pivotally mounted on the yoke and provided with a post 29 which extends through the top of the valve in the usual manner, the outer end of the lever 28 having a rod 31 for controlling the motor 12.

On the shaft 20 is a sprocket 32, which is operatively connected with the sprocket 9 on the feeding wheel shaft by a chain belt 33, so that when the motor is in operation the wheel will be revolved to feed carbide from the tank 2 to the generator.

The generator is provided with a filling tube 34, having a funnel 34', through which water is delivered to the interior of the tank. A gas supply pipe 35 leads from the upper portion of the tank and is threaded into a four-way union 35' and a pipe 35'' connects the said union and the gas washer 36, extending into the said washer to a point adjacent the bottom thereof. Mounted in the upper part of the union 35' is a pressure gage 35³ and connected with the other part of the union is a safety regulator 35⁴ and pipe 35⁵. The service pipe 36' is connected with the upper portion of washer 36 and carries the gas to the desired points for consumption. The tube 37 communicates with the lower part of the gas washer and is provided with a funnel 37' for supplying water thereto. An exhaust pipe 38 leads from the tank, being used to draw off the gas when the tank is to be cleaned, the three parts mentioned being valved and the valves of all of said parts being connected to operate simultaneously from a lever 39.

In the bottom of the tank is a clean-out conduit 40 having a valve 41 provided with a crank 42. Connected with the crank 42 is a link 43 having a slot 44 through which the lever 39 is projected, the said lever being connected with and adapted for actuating the valves 39', 39'' and 39'''', so that when the lever is lifted the said valves will be actuated to close or open the gas exhaust tube 37, filling tube 34 and the exhaust pipe 38, and at the same time opening or closing the cleanout 40.

In using the generator, the main tank is partially filled with water through the supply tube 34 the exhaust 38 closed and the carbide tank filled.

When the generator is to be started there is no gas above the water level within the tank and consequently no upward pressure

on the diaphragm valve, so that the weight of lever 28 will force the post 29 downward and extend the diaphragm toward the bottom of its cup, simultaneously depressing the
5 rod 31 to free the motor so that it may drive the sprocket 9 and thereby actuate the carbid feed wheel.

When the sprocket 9 is revolved it revolves the shaft 8 and turns the wheel 10, so that carbid fed into the horizontal conduit 4 from the tank 2, will be positively
10 forwarded into the vertical neck 5 and will drop through said neck into the tank 1.

When the carbid reaches the water, gas is
15 formed, filling the chamber in the upper portion of the tank to be withdrawn through the supply pipe 35.

When the storage chamber in the upper portion of the tank 1 is filled, the gas acts
20 on the diaphragm valve to lift the post 29, lever 28 and rod 31, to stop the motor and interrupt the operation of the feeding wheel.

The supply of carbid to the generator is discontinued when the wheel is idle, so that
25 the formation of gas is stopped until a sufficient quantity has been drawn from the storage chamber to relieve the pressure on the diaphragm valve to a point where it is again
30 lowered by the weight of the lever 28 and its parts, to start another feeding operation.

It is apparent that the mechanism is automatic and governed by the quantity of gas in the storage tank, the operation being continuous when gas is drawn from the storage tank, but stopped when the supply of gas is
35 greater than the demand.

Having thus described my invention, I claim as new therein and desire to secure by Letters-Patent:

An acetylene generator comprising a gas
40 tank, a carbid tank having a hopper bottom, a horizontal tubular conduit communicating with the hopper bottom and having a vertical neck opening into the gas tank, a shaft
45 extending through said tubular conduit, and a wheel mounted thereon adjacent the vertical neck, said wheel being provided with a plurality of blades having curved outer
50 edges, corresponding with the curvature of the horizontal tubular conduit and adapted for stopping the conduit when the wheel is idle and for feeding carbid into the vertical neck when in motion.

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

ARTHUR C. McGEE.

Witnesses:

MYRTLE M. JACKSON,
ARTHUR W. CAPS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."