

UNITED STATES PATENT OFFICE.

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ACETYLENE-GAS GENERATOR.

No. 804,544.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, SAMUEL A. MENCZER, a citizen of the United States, residing at Collinsville, in the county of Grayson and State of Texas, have invented a new and useful Acetylene-Gas Generator, of which the following is a specification.

This invention relates to acetylene-gas generators, and has for its principal object to provide a gas-generator of simple construction in which provision is made for automatically controlling the feed of the carbid to the tank by the movement of the bell of the gasometer, to provide a self-closing valve for the carbid-holder, to provide for the automatic discharge of excess gas in case of overcharge of the gasometer, and to insure the opening of the upper portion of the generating-tank and the discharge of gas therein through the exhaust or escape pipe when the slush-valve is open.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts herein-after fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claim, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a perspective view of an acetylene-gas apparatus constructed in accordance with the invention. Fig. 2 is a sectional elevation of the same.

Similar numerals of reference are employed to indicate corresponding parts throughout both figures of the drawings.

The generating-tank 10 is preferably cylindrical in form and has a conical top 11, at the upper end of which is a carbid-holder 12, having a sloping bottom which communicates with the upper portion of the carbid-chamber through a contracted throat 13, and this throat is provided with a valve-seat 14 for the reception of a self-closing valve 15, that preferably is cylindrical in form and of sufficient weight to move to closed position by gravity. The valve is guided by a cylindrical casing 17, the upper end of which is closed to prevent contact of the carbid with the top of the valve, and said casing is held by wings or ribs 18, extending inward from the main casing.

Arranged in the generating-tank is a pair of cross-bars 19 and 20, forming guides for a valve-operating rod 21, which normally is out of contact with the valve 15. The lower cross-bar is provided with a bracket 22, to which is pivoted a lever 23, having one end connected to the valve-operating rod and the other to a rod 24, that extends through a tube 25 to a point above the top of the chamber, said tube forming a water seal to prevent the escape of gas. At the upper end of the rod 24 is a guide 27, carrying a roller 28 for the support of a lever 29, and one end of the lever is pivotally connected to a bracket 30, extending from the generating-tank, while the opposite end is connected by a chain or cord 32 to the bell of the gasometer, so that as the latter falls the weight imposed on the lever 29 will move the rod 24 downward and effect upward movement of the rod 21 and the opening of the valve, a quantity of carbid falling from the holder into the generating-tank. When the gasometer is filled, the valve is allowed to close by gravity and the feed is cut off.

At a point adjacent to the generating-tank is a gasometer 33, having a movable bell 34, and the lower portion of the gasometer-tank is divided by a partition 35 to form a lower washing-chamber 36, into which the gas passes through a pipe 37. The discharge end of the pipe 37 is below the level of the water of the tank 36, so that the gas is compelled to pass through the water for the removal of impurities, after which it flows through a pipe 38 to a point above the water-level in the gasometer.

Leading from the gasometer is a discharge-pipe 39 in communication with a service-pipe 40, a suitable filter 41 being interposed between the two, and below the filter is a drip-chamber 43, into which excess water may flow.

At the central portion of the gasometer is a vertically-disposed escape-pipe 45, the upper end of which is considerably above the level of water in the gasometer, and surrounding this tube is a tube 46, carried by the bell and having an open lower end that carries a suitable weight 47, this weight, added to that of the bell, determining the pressure of gas in the service-pipe. The pipe 45 acts as a guide for the bell, and its lower end communicates with a discharge-pipe 48, leading to any suitable point and preferably some distance from the generator, and said pipe is connected to the main gas-pipe 37 by a branch pipe 49, having a suitable valve 50, which when open

will permit the direct flow of gas from the generating-tank through pipe 37 to the exhaust or escape pipe 48.

At one side of the tank is arranged a pipe 5 52, that extends up above the level of water in the generating-tank and may be used to supply water to the latter, and at the lower end of this pipe is a gate 54, which may be opened to permit the discharge of the water 10 and slush from the generating-tank. This gate 54 is connected to the valve 50 by means of a rod 55, and both are normally in closed position during the manufacture of gas. When the gate 54 is to be opened for the pur- 15 pose of cleaning the generating-tank, the valve 50 is also opened, so that any gas in the upper portion of the generating-tank may escape to the outer air.

At one side of the generating-tank is a tube 20 57, its lower open end being adjacent to the bottom of the generating-tank, and through this tube extends a slush-bar 58, having a handle portion 59 arranged outside the reservoir for agitating the slush while the reser- 25 voir is being cleaned.

In operation gas formed in the generating-tank will flow through the pipe 37 to washer 36, and thence pass by pipe 38 into the gas-valve. The gas passes out through the pipe 30 39 to the service-pipe 40, being purified during its passage through the filter 41. When the supply of gas in the bell is reduced, the lever 29 is pulled down, and this results in downward movement of the rod 24 and up- 35 ward movement of the valve-operating rod 21, said rod forcing the valve 15 from its seat and removing the passage of a quantity of carbid from the holder of the generating-tank. The new gas will instantly flow to the gasometer, 40 and, the bell being raised, will again allow the valve 15 to move to its seat by gravity. Should the supply in the gasometer be excessive, the lower end of the pipe 46 will move above the water-line, and the gas is then free to flow 45 through the tube 45 and escape-tube 48, passing to the outer air, and the discharging op-

eration continues until the bell descends to an extent sufficient to again seal the bottom of the tube 46.

When it is desired to clean the generating- 50 tank, the gate 54 is opened, and its movement is transmitted through the rod 55 to the valve 50, opening the latter and permitting the escape of gas from the top of the generating-tank through pipe 37 and pipe 49 to the main 55 escape-pipe 48.

Having thus described the invention, what is claimed is—

In an acetylene-gas apparatus, a generating-tank, a carbid-chamber arranged above the 60 tank, a self-closing valve controlling the flow of carbid from the chamber to the tank, a cylindrical valve-guide arranged within the chamber and having a closed top for shielding the valve, supporting means projecting from 65 the valve-guide to the wall of the carbid-chamber, a pair of cross-bars arranged within the tank, a valve-operating rod guided by said cross-bars and having its upper end connected to the valve, a bracket carried by the lower 70 cross-bar, a lever fulcrumed to said bracket and having one of its ends connected to the valve-operating rod, a second rod connected to the opposite end of the lever and extending upward through the top of the tank, a sealing- 75 tube also extending through the top of the tank and surrounding and forming a guide for said rod, the upper end of said tube being funnel-shaped, a guide arranged at the upper por- 80 tion of said second rod, a roller carried by said guide, a bracket rigidly secured to the upper portion of said tank, a lever fulcrumed to the bracket and resting on said roller, and a gas- 85 ometer including a movable bell connected to the opposite end of said lever.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

SAMUEL A. MENCZER.

Witnesses:

F. W. ANGEL,
J. W. BOYER.