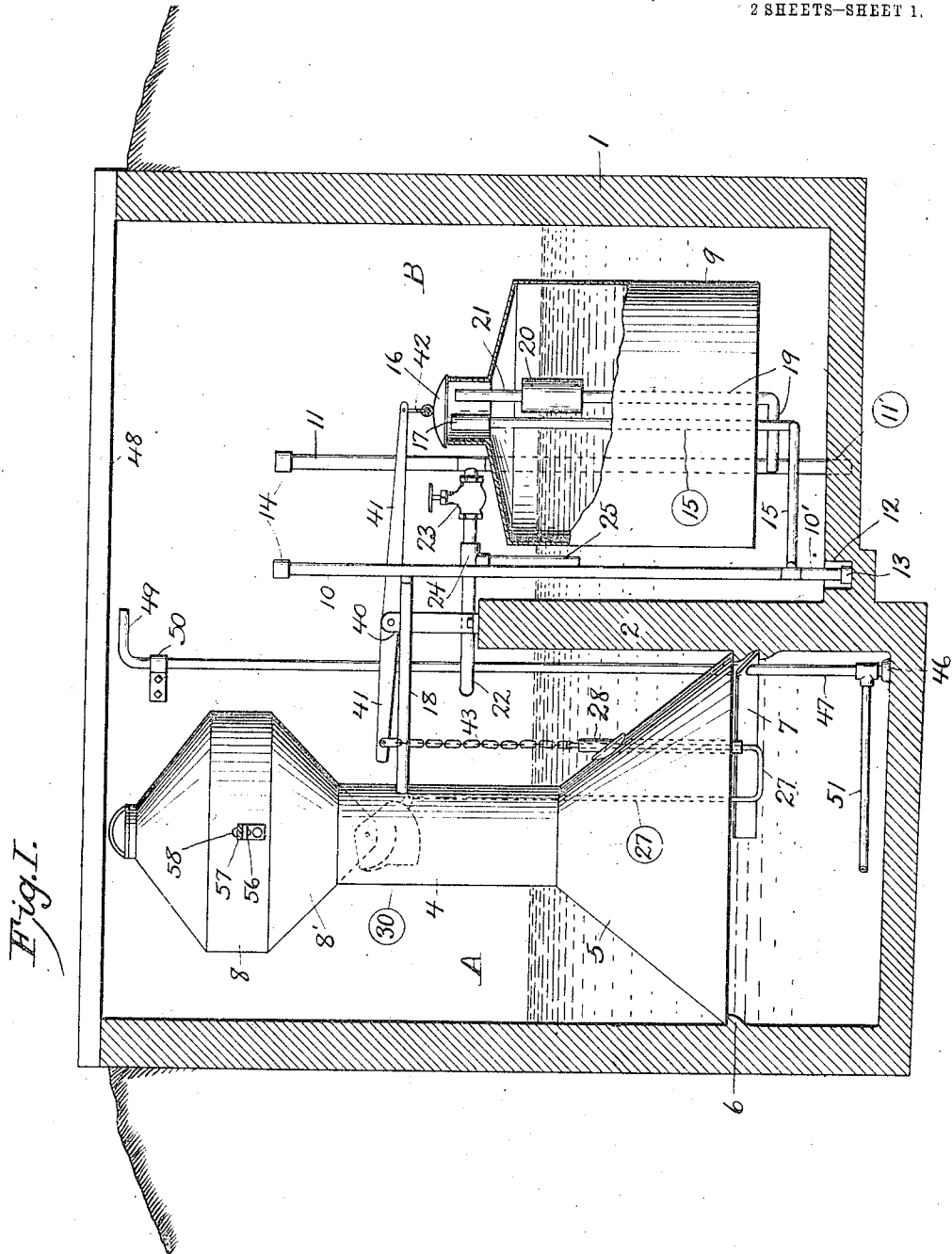


T. W. LACY.  
ACETYLENE GAS GENERATOR.  
APPLICATION FILED DEC. 11, 1909.

1,014,010.

Patented Jan. 9, 1912.

2 SHEETS-SHEET 1.



WITNESSES:

*E. L. Hill*

*K. M. Imboden*

INVENTOR.

*Thomas W. Lacy*

BY

*Wm. C. Brown*

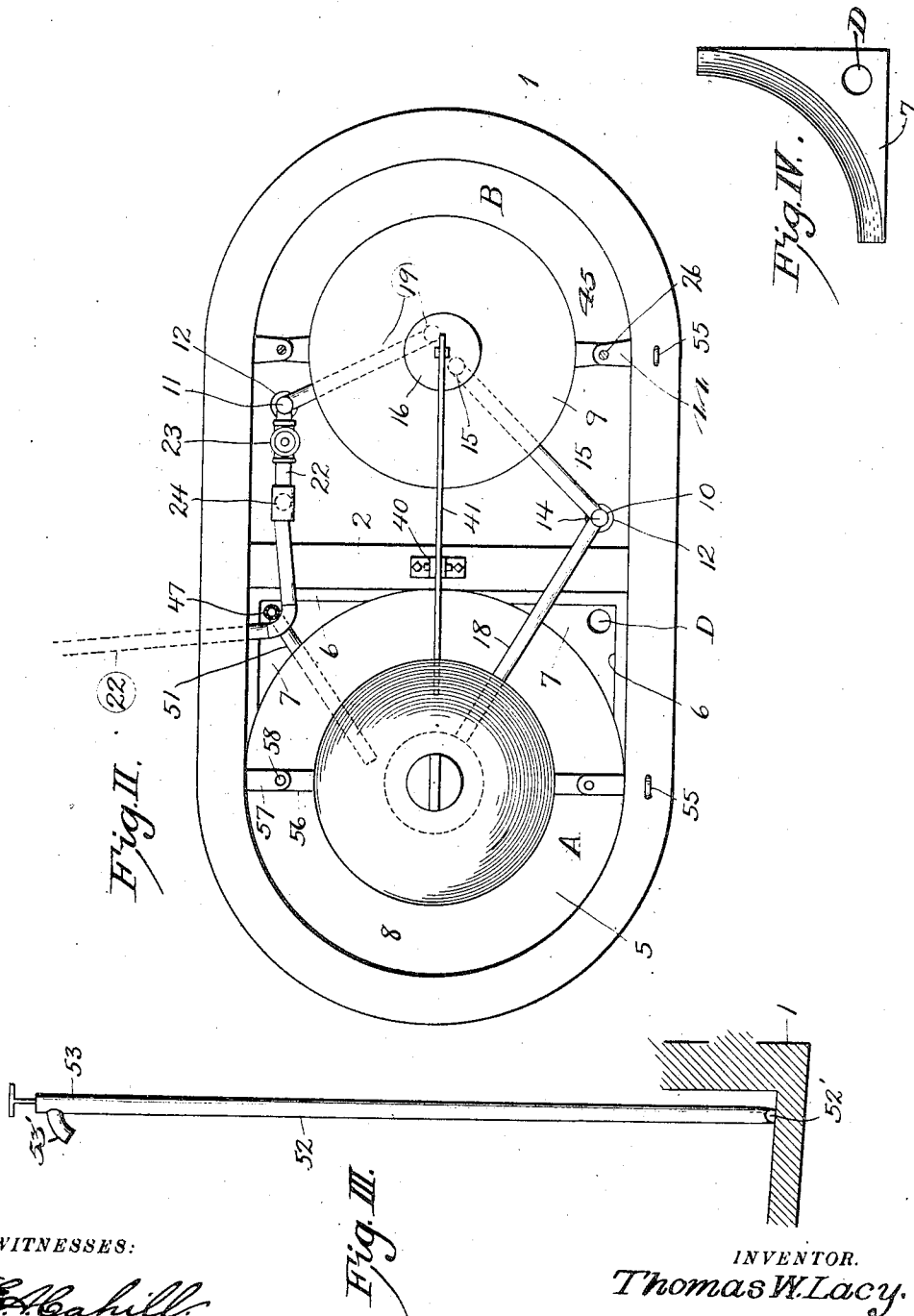
ATTORNEY.

T. W. LACY.  
ACETYLENE GAS GENERATOR.  
APPLICATION FILED DEC. 11, 1909.

1.014,010.

Patented Jan. 9, 1912.

2 SHEETS-SHEET 2.



WITNESSES:

E. Cahill.

K. M. Imboden.

INVENTOR.

Thomas W. Lacy.

BY

Arthur L. Kern.  
ATTORNEY.

# UNITED STATES PATENT OFFICE.

THOMAS W. LACY, OF KANSAS CITY, MISSOURI.

ACETYLENE-GAS GENERATOR.

1,014,010.

Specification of Letters Patent.

Patented Jan. 9, 1912.

Application filed December 11, 1909. Serial No. 532,649.

*To all whom it may concern:*

Be it known that I, THOMAS W. LACY, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, 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, 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 object to provide a generator wherein the supply of carbid shall be automatically governed by the volume of gas contained within the reservoir.

A further object is to provide an improved underground housing for the apparatus to prevent freezing of the water employed in the wells of the apparatus.

Other objects will appear in and from the description of the apparatus and its operation.

The invention relates particularly to a novel and peculiarly constructed device for feeding the carbid; said device comprising a tilting or oscillatory receptacle provided with means for holding back and discharging successive quantities of carbid, according to the rate of consumption of the gas.

Referring now to the accompanying drawings: Figure I is a side elevation, partly in vertical section, of a complete apparatus for generating and storing acetylene gas; and mounted in a concrete cell partly sunken in the ground; all constructed in accordance with my invention. Fig. II is a top plan view of the entire apparatus, the deck being removed. Fig. III is a detail view of a removable pump and the intake thereof. Fig. IV is a plan view of one of the plates 7.

Referring more in detail to the parts:—in Fig. I, 1 designates a cell, shown as formed of concrete, but which may be constructed of brick, lined with concrete, or any suitable material. As shown, the cell extends partly above the grade line and partly into a pit below same. The cell is divided by an upright partition 2, rising from the bottom and stopping short of the top, into two separate water-tight compartments or wells, one of which contains the generator. The bottom of the generator

well A, is set lower than that of the gasometer well, B, and is inclined, substantially as shown toward one corner thereof.

4—5 designate the generating chamber, which comprises the cylindrical part 4 and the downwardly flaring part 5. The base of the latter is supported by a ledge 6, molded on the walls of compartment A and extending entirely around same. As the compartment is D-shaped in plan, the part 5 will not completely fit therein, thus leaving two triangular openings as seen in Fig. II. These openings are covered by correspondingly shaped pieces of sheet metal 7, inserted beneath the ledge 6 and being upwardly and inwardly inclined in order to cause all of the gas rising through the water in the well A to pass into the generating chamber.

Mounted upon chamber 4 and having gas tight connection therewith is the carbid holder 8, which is of an ordinary or any preferred form, having a hopper shaped bottom 8'.

In well B is a body of water which supports the floating gas reservoir 9, which is of the type commonly termed "gasometer bell". Two vertical pipes 10 and 11 are located in the well B and extend from the bottom to within a short distance of the top thereof. Preferably each pipe has its lower end in a socket as 12, and closed with a screw cap 13. The upper ends are also closed with screw caps 14. Connected to pipe 10, below the bell 9, is a pipe 15 that runs horizontally, then upwardly through the bell and into the dome 16 on the top thereof; its upper end being provided with a float-seal or a check-valve, 17, for the prevention of back flow of gas from the generator. Above the top of the partition 2, a pipe 18 connects pipe 10 with the generating chamber section 4. From the other vertical pipe 11 in well B, a pipe 19 runs horizontally then upwardly through the bell 9 and to a filter 20, from which a short pipe 21 rises nearly to the top of the dome 16. Connected to pipe 11 above the partition 2 is the service pipe 22. Connected in this pipe 22 are a hand valve 23 and a T union 24, the latter having connection with a depending drain-pipe 25. The service pipe 22 passes out through the cell wall and passes under ground to the lighting system to be supplied. The downward extensions 10' and 11' of pipes 10 and 11 form traps for the reception of water condensed from the

acetylene gas. Such water may be pumped out at intervals, after removing the upper screw caps 14.

To prevent swaying of the gasometer bell, I prefer to employ guides therefor, the same consisting preferably of vertical rods 26 held by brackets 44 projecting from the cell wall, and lugs 45 secured to the bell near the top thereof and having openings through which said rods pass loosely. Preferably said rods 26 are disposed as shown in Fig. II.

In one corner of the generator well A is a step bearing 46 supporting a substantially vertical shaft 47 which extends nearly to the deck 48, and is provided with a lateral handle 49. 50 is an upper bearing for the shaft. Secured to the lower part of said shaft is an agitator arm 51 which lies close to the bottom of the well. The shaft 47 passes through a closely fitting opening in the gas-collecting plate 7. The bottom of the well is sloped downwardly toward the opposite corner from the agitator shaft, said corner being marked D in Fig. II.

To opposite sides of the holder 8, are secured lugs 56, and projecting over said lugs are brackets 57, secured to the cell walls. Said lugs and brackets are connected by pins 58. These devices prevent the generator 4-5-8 from being lifted by the pressure of gas therein.

Mounted on a stand on the partition 2 is a lever 41, terminating at one end over the center of the bell 9 and connected thereto by a chain, rod, cord or link 42. The opposite end of said lever is adjacent the upper part of the generating chamber, and has suspended therefrom a chain or cord 43, suspended from which is a U-shaped rod 27. The outer leg of said rod passes loosely through a vertical tube 23 that extends through the wall of member 5. Its inner leg passes up within members 5 and 4, and is pivotally connected at 29 to a carbide feeding device, 30, within the hopper 8'.

As gas accumulates in the bell 9, (supposing consumption to be little or none) the bell will be raised by the pressure thereof and the U-shaped rod 27 will be depressed by its weight plus that of the chain 43 and thereby rock the basket 30 so that the supply of carbide to the generating chamber will be arrested. When the bell 9 becomes lowered by withdrawal of gas through the service pipe 22, it gradually turns the basket 30 again toward its discharging position, and more carbide is fed to the generating chamber. By the mechanism described, the feed of carbide will be automatically regulated by the quantity of gas under the bell 9. When a large quantity of spent carbide accumulates in the well A, the deck 48 is removed, and a

pump 53, shown in Fig. III, is lowered into the corner D of the well. Said pump comprises a pipe 52, of suitable length, having a spout 53'. The bottom of pipe 52 is cut away as at 52' and thus the pipe may be rested upon the bottom of the well and yet admit the water. Before starting the pump, the agitator 51 is moved back and forth rapidly by oscillating the handle 49 on the shaft 47. This thoroughly mixes the pulverulent material with the water, and the water so laden is drawn up through the pipe 52 and discharged to the exterior of the well. When the water has been removed a fresh supply of water is introduced, the pump removed, and the deck replaced. The deck may be hinged at one side (not shown) and at the opposite side may be provided with means for receiving a padlock. In Fig. II I show staples 55, fastened in the cell wall and adapted to project up through openings in the deck to receive padlocks.

My object in sinking the apparatus below the surface of the ground is to bring the water level sufficiently low to prevent freezing in cold weather. The object in locating the apparatus out of doors is that in case of an explosion, no damage will be done to adjacent buildings.

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

1. In combination, a concrete well having an inwardly projecting ledge above the bottom of the well, said well being D-shaped in horizontal section; a generator casing having a downwardly flaring, conical base adapted to rest upon said ledge; and plates arranged below said ledge and adapted to prevent waste of gas through the space between the conical base and the straight side of the well.

2. The combination of a well, a generator in said well, a second well; a gasometer in said second well, a pipe connecting the generator and gasometer, regulating means connected with both the generator and gasometer, a vertical pipe adapted for receiving water of condensation, a cap for said vertical pipe, a pipe connecting the interior of said gasometer with said vertical pipe, above the bottom thereof, a service pipe connected with said vertical pipe below the top thereof, and a water sealed drain pipe in said service pipe extended into said gasometer well, for the purpose set forth.

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

THOMAS W. LACY.

Witnesses:

MYRTLE M. JACKSON,  
E. A. CAHILL.