

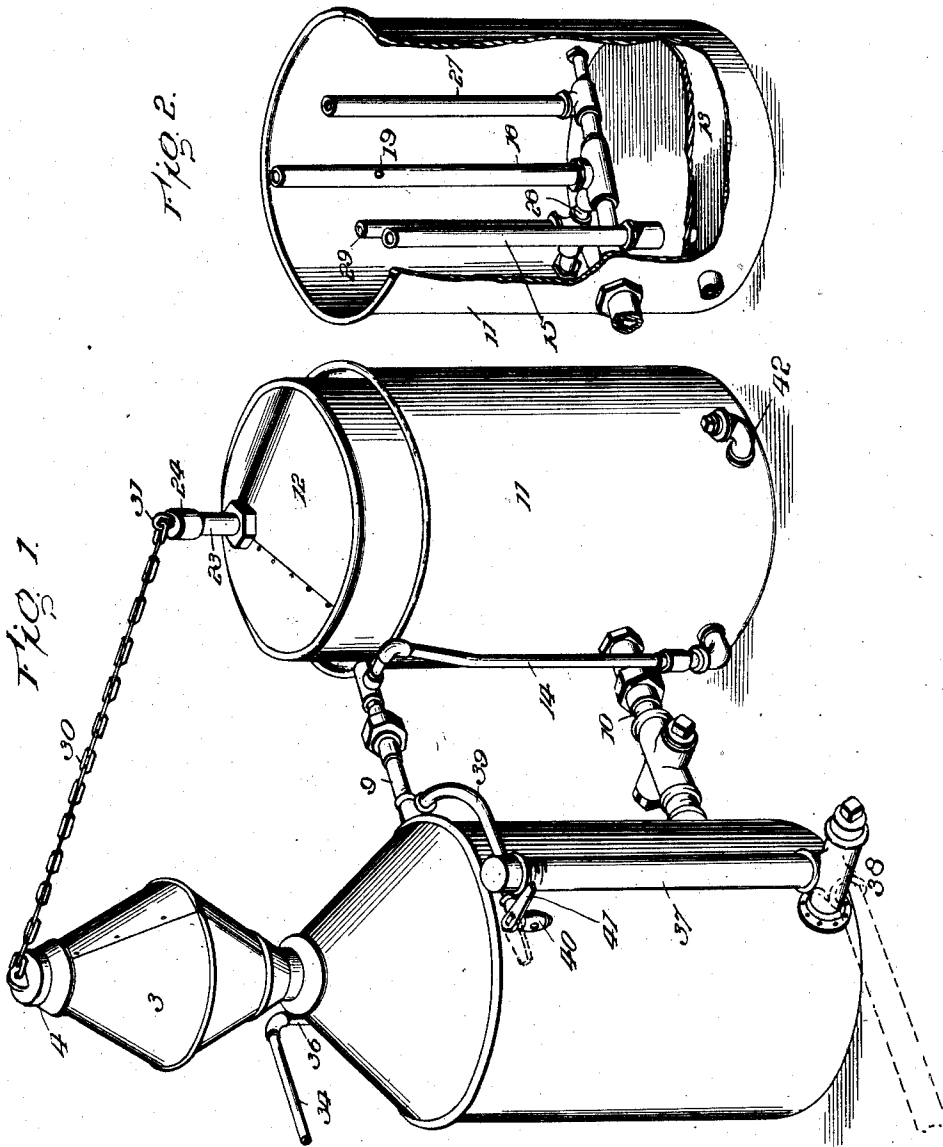
No. 738,319.

PATENTED SEPT. 8, 1903.

W. A. GRIBBLE.
ACETYLENE GAS GENERATOR.
APPLICATION FILED JAN. 31, 1903.

NO MODEL.

3 SHEETS—SHEET 1.



Inventor

William A. Gribble

Witnesses

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Geo. R. ...

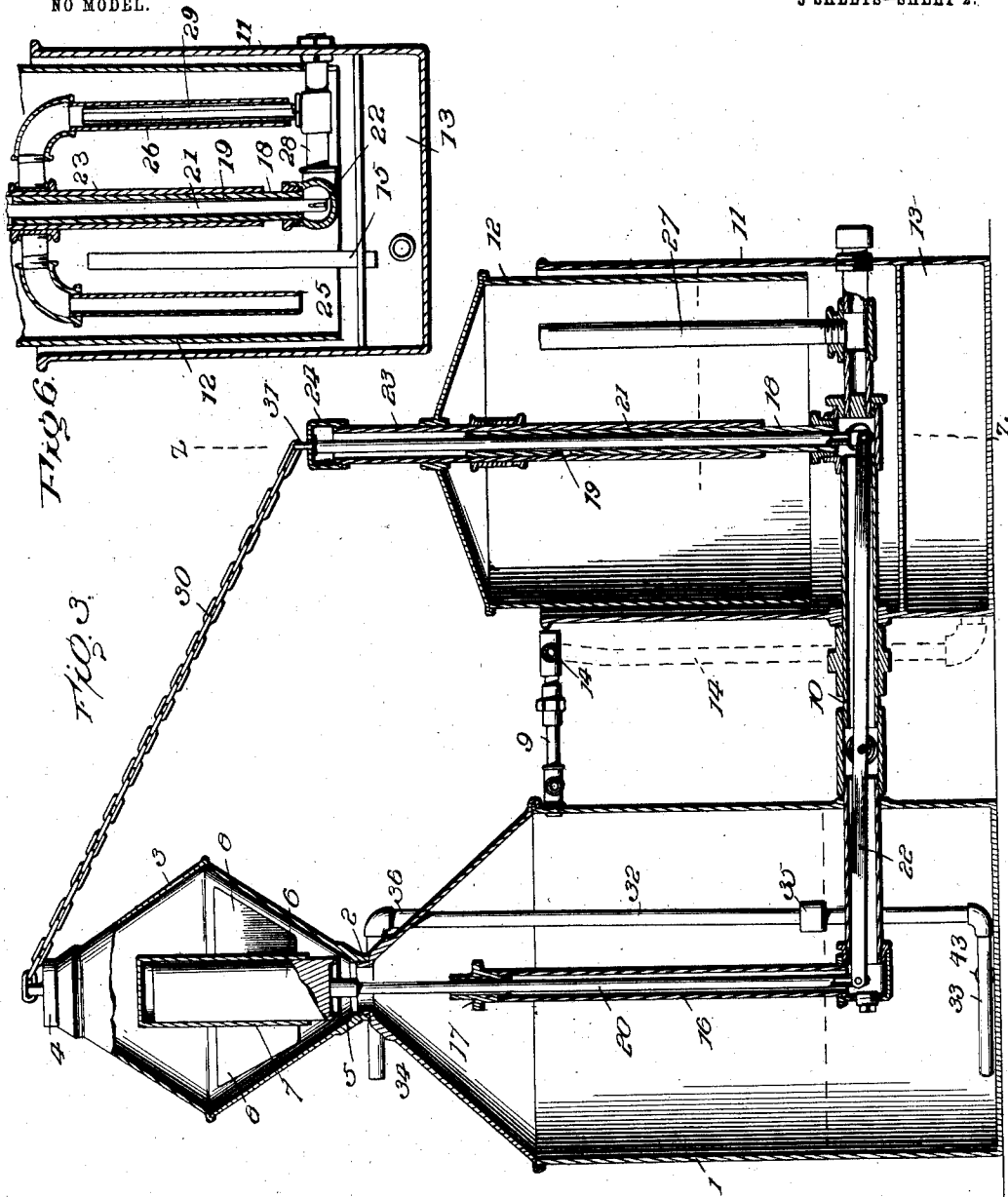
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NO MODEL.

3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

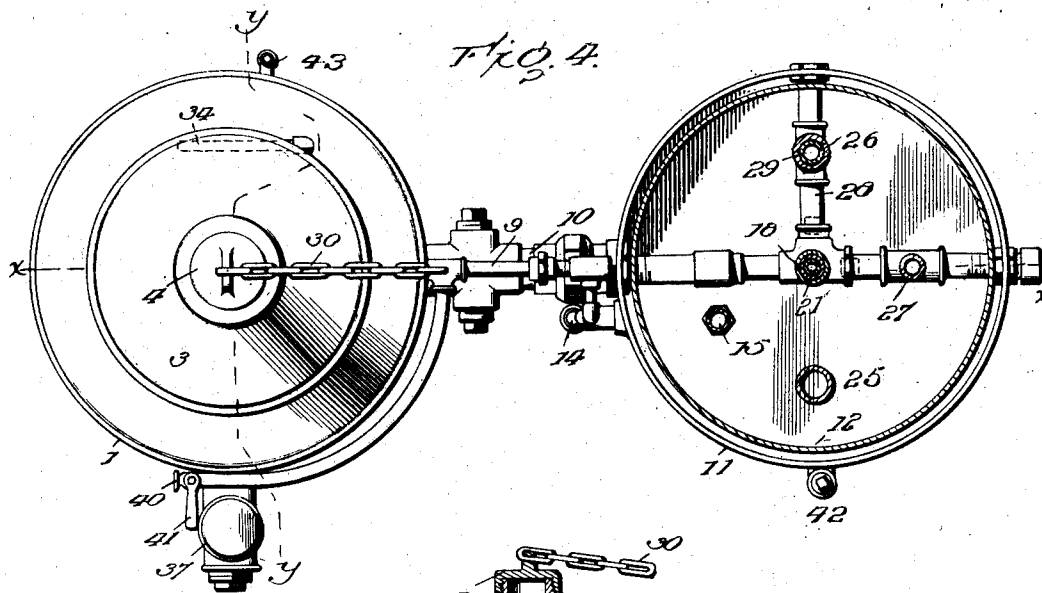
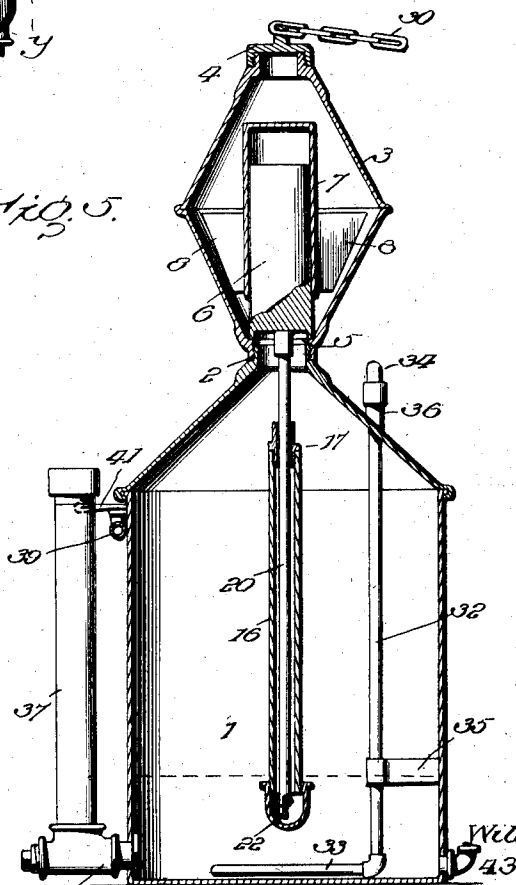


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM A. GRIBBLE, OF AUBREY, TEXAS.

ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 738,319, dated September 8, 1903.

Application filed January 31, 1903. Serial No. 141,361. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. GRIBBLE, a citizen of the United States, residing at Aubrey, in the county of Denton and State of Texas, have invented certain new and useful Improvements in Acetylene-Gas Generators, of which the following is a specification.

This invention aims to provide a machine for generating acetylene gas which will minimize the casualties usually attending upon the use of apparatus of this character, which will obviate the interposition of a check-valve between the generator and gasometer, which will preclude the replenishing of the carbid-holder when the valve between it and the tank is open, which will purify the gas and prevent the siphoning off of the water from the purifier when drawing off the residuum from the generator, and which will be responsive to the action of the bell in its vertical movements due to consumption and generation of the gas.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and drawings hereto attached.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a machine for generating acetylene gas constructed in accordance with and embodying the essential features of the invention. Fig. 2 is a perspective view of the tank of the gasometer, the near side being broken away to show more clearly the series of pipes. Fig. 3 is a vertical central section of the complete machine about on the line X X of Fig. 4. Fig. 4 is a top plan view of the machine, the gasometer being in section. Fig. 5 is a section of the generator about on the line Y Y of Fig. 4. Fig. 6 is a section on the line Z Z of Fig. 3.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The relative size of the elements entering

into the formation of the machine will be governed chiefly by the capacity and volume of gas to be consumed in a given time. In its structural arrangement the apparatus comprises a generator, gasometer, and a carbid-holder, the latter being arranged to supply a determinate quantity of carbid to the generator at intervals, so as to prevent complete exhaustion of the gasometer.

The generator is indicated at 1 and consists of a metallic tank having a conical top terminating in a threaded end 2 for reception of the lower end of the carbid-holder 3, which is detachably fitted to the generator to admit of access to the parts 1 and 3 for any desired purpose. The carbid-holder 3 is likewise constructed of metal and tapers from a central point toward its ends, so as to prevent the formation of dead-spaces for the accumulation of carbid. A cap 4 closes the upper end of the carbid-holder and is threaded thereto. A valve-seat 5 is provided at the lower end of the part 3, and a valve 6 closes downward thereon, so as to shut off communication between the carbid-holder and generator. The valve 6 is of sufficient weight to insure firm seating and operates by a vertical reciprocating movement and is protected from the carbid by means of a casing 7, located centrally within the carbid-holder and attached to the walls of the latter by wings or supports 8. A space is formed between the lower end of the casing 7 and the lower portion of the carbid-holder for the escape of the gas-forming material, and the lower portion of the valve 6 closes this space when the valve is seated.

The gasometer is arranged near to the generator and is connected thereto by upper and lower pipes 9 and 10, which are provided with unions or analogous couplings to admit of separation of the generator and gasometer when required. The gasometer comprises a tank 11 and bell 12, with an interposed liquid or water seal. A water-space 13 is formed in the lower portion of the tank 11 and is normally filled with water, so as to purify the gas in its passage from the generator to the gasometer. The upper connecting-pipe 9 is in communication at one end with the upper portion of the generator, and a pipe 14 connects the opposite end portion of the pipe 9

with the purifier 13, so as to deliver the gas therein as generated. A pipe 15 extends upward from the purifier and delivers the gas therefrom into the gasometer. The bell 12 rises and falls as the gas is generated and consumed.

The pipe 10, connecting the lower portions of the generator and gasometer, extends through the latter and is firmly connected to the tank 11 at diametrically opposite points and projects into the generator at a central point. A pipe 16 rises vertically from the inner end of the pipe 10 and occupies a central position with reference to the generator and is provided at its upper end with a reducer 17, forming a guide for the rod 20 and preventing the carbid entering the pipe 16. A pipe 18, located centrally within the gasometer, is connected at its lower end with the part of the pipe 10 extended through the tank 11 and is provided near its upper end with an opening 19. A rod 20 is located in the pipe 16, and a rod 21 is arranged within the pipe 18, and these rods are connected at their lower ends to the opposite ends of a lever 22, arranged within the pipe 10 and pivoted intermediate of its ends thereto. The rod 20 projects above the pipe 16 and is adapted to come in contact with the valve 6 and unseat the same when the rod 21 is depressed by the weight of the bell 12 resting thereon, as shown most clearly in Fig. 3. When the bell 12 rises, the weight of the valve 6 serves to seat the valve and depress the rod 20 and correspondingly elevate the rod 21, as will be readily understood. A pipe 23 is connected to the top of the bell 12 and is slidably mounted upon the pipe 18 and receives a cap 24 at its upper end, which is adapted to engage with the rod 21 and exert a downward pressure thereon when the bell 12 settles. Pipes 25 and 26 branch from the pipe 23 near the upper end of the bell, and their vertical portions extend parallel with the pipe 23. One of the pipes, as 26, telescopes with the pipe 29, vertically arranged and connected at its lower end by branch 28 with the pipe 10. The pipes 18 and 29 serve to direct the bell 12 in its vertical movements and maintain it in a given position with reference to the tank 11. The other pipe 25 acts as a counterbalance for pipe 26 and obviates side strain on the bell, which would result if the weight of pipe 26 were not neutralized. The pipe 28 extends laterally from the pipe 10 through a side of the tank 11 and, in conjunction with the pipes 29 and 26, constitutes an automatic blow-off for any overproduction of gas. A vertical pipe 27 extends upward from the pipe 10 and receives the gas from the upper portion of the gasometer and conveys it to the service-pipe coupled to the outer end of the pipe 10.

A chain 30 or analogous device connects the caps 4 and 24 and serves to prevent removal of the cap 4 without first disconnecting the cap 24 from the pipe 23, thereby freeing the rod 21 and permitting the valve 6 to

be seated before the carbid-holder can be supplied with the gas-forming substance. The chain 30 or like part is connected by a swivel-joint 31 with the cap 34, thereby permitting the latter to be removed from or applied to the pipe 23. The weight of the bell and adjunctive parts is transmitted to the rod 21 by means of a cap 24. Hence when said cap 24 is removed the rod 21 is free to rise under the downward pressure of the valve 6 and the latter becomes seated, thereby preventing passage of any carbid from the holder into the generator when replenishing. A sludge-pipe 32 is located within the generator and is provided at its lower end with a lateral branch 33 and at its upper end with a branch 34, constituting a handle for operating the pipe to stir or agitate the water and residue within the tank 1. The pipe 32 has a limited vertical play and is supported near its inner lower end by a bracket 35 and at its upper end by means of a gland 36, fitted to the top of the generator.

A stand-pipe 37 is located at one side of the generator and is connected at its lower end, to the bottom portion thereof, by a coupling 38. When it is required to draw off the residuum of the generator, the stand-pipe is turned from a vertical position, so as to permit the contents to readily drain off, as indicated by the dotted lines in Fig. 1. A vent-pipe 39 connects with the pipe 9 and is provided with a relief-valve 40, the handle 41 of which extends across the path of the stand-pipe 37. When draining the generator, it is necessary to first open the vent 40 in order to admit air into the generator and prevent siphoning off of the water from the purifier 13. This will be apparent when it is remembered that pipe 9 14 connects upper end of generator with the purifier. If stand-pipe 37 was turned to bring its upper open end below a plane passing horizontally through coupling 38, vent 46 remaining closed, a vacuum would be created in the generator sufficient to draw off water from the purifier. To guard against the vent 40 not being opened from any cause, the handle 41 is arranged to extend across the path of the stand-pipe 37, and the latter may not be turned to drain off the contents of the generator without operating the handle 41, so as to open the vent 40, as will be readily comprehended.

A coupling 42 is fitted to the lower portion of the tank 11 for connection with a water-main or other source for supplying the purifier with water without necessitating removal of the gas-bell. A like coupling 43 is fitted to the lower portion of the tank 1 for the same purpose.

The pipes 16, 10, and 18 are filled with water, which constitutes a seal and prevents passage of gas therethrough.

Pipe 23 fits pipe 18 sufficiently loose to move freely thereon and allow water to pass between them and through opening 19 into pipe 18, thence into pipes 10 and 16.

Having thus described the invention, what is claimed as new is—

1. In an acetylene-gas generator, and in combination with the generator, gasometer, carbid-holder and valve mechanism controlled by the rise and fall of the gasometer-bell, closures for the carbid-holder and gasometer-bell, the closure applied to said bell serving to transmit pressure thereof to the valve mechanism, and connecting means between the two closures necessitating the removal of the closure of the gasometer-bell before the removal of the closure of the carbid-holder so as to insure seating of the valve, substantially as set forth.

2. In an acetylene-gas generator, the combination of the generator, gasometer, and gas-purifier in the lower portion of the gasometer, a pipe connecting the upper portion of the generator with said purifier, a vent-pipe extended from said pipe and provided with a valve, and a stand-pipe for drawing off the contents from the generator and movable toward and from a given position and having the handle of the aforementioned valve extended across the path thereof for opening the vent-pipe when the stand-pipe is turned from a normal position for draining the generator, substantially as specified.

3. In an acetylene-gas generator, the combination of a generator, a gasometer, a pipe connecting the two and extending into the same, centrally-disposed pipes arranged within the generator and gasometer and connected at their lower ends with the aforementioned connecting-pipe, rods movable in said centrally-disposed pipes, a lever mounted in the aforesaid connecting-pipe and having the lower ends of the rods connected thereto, a carbid-holder centrally arranged upon the gasometer, a valve located therein for controlling communication between the

carbid-holder and generator and adapted to be unseated by upward pressure of the rod located within the said generator, a closure applied to the bell of the gasometer and adapted to transmit the pressure thereof upon the rod to effect unseating of the valve when the bell reaches its lowest point, a closure applied to the carbid-holder, and connecting means between the closures of said carbid-holder and bell, substantially as set forth.

4. In an acetylene-gas generator, the combination of the generator, a carbid-holder fitted to the top thereof, a valve controlling communication between the carbid-holder and generator, a gasometer, upper and lower pipes connecting the generator and gasometer, a valved vent-pipe branching from the upper connecting-pipe, a purifier in the bottom of the gasometer connected with the aforesaid upper connecting-pipe, a lever arranged in the lower connecting-pipe, vertical rods connected to said lever, the one adapted to unseat the valve arranged within the carbid-holder and the other adapted to sustain the weight of the bell when at its lowest position, connected closures applied to the carbid-holder and bell, a series of pipes carried by the bell of the gasometer, pipes rising vertically from the aforementioned lower connecting-pipe and telescoping with certain of the pipes of said bell, and a stand-pipe connected to the lower portion of the generator having the handle of the valve applied to the aforesaid vent-pipe normally extended across the path thereof, substantially as set forth.

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

WILLIAM A. GRIBBLE. [L. S.]

Witnesses:

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J. A. L. MCFARLAND.