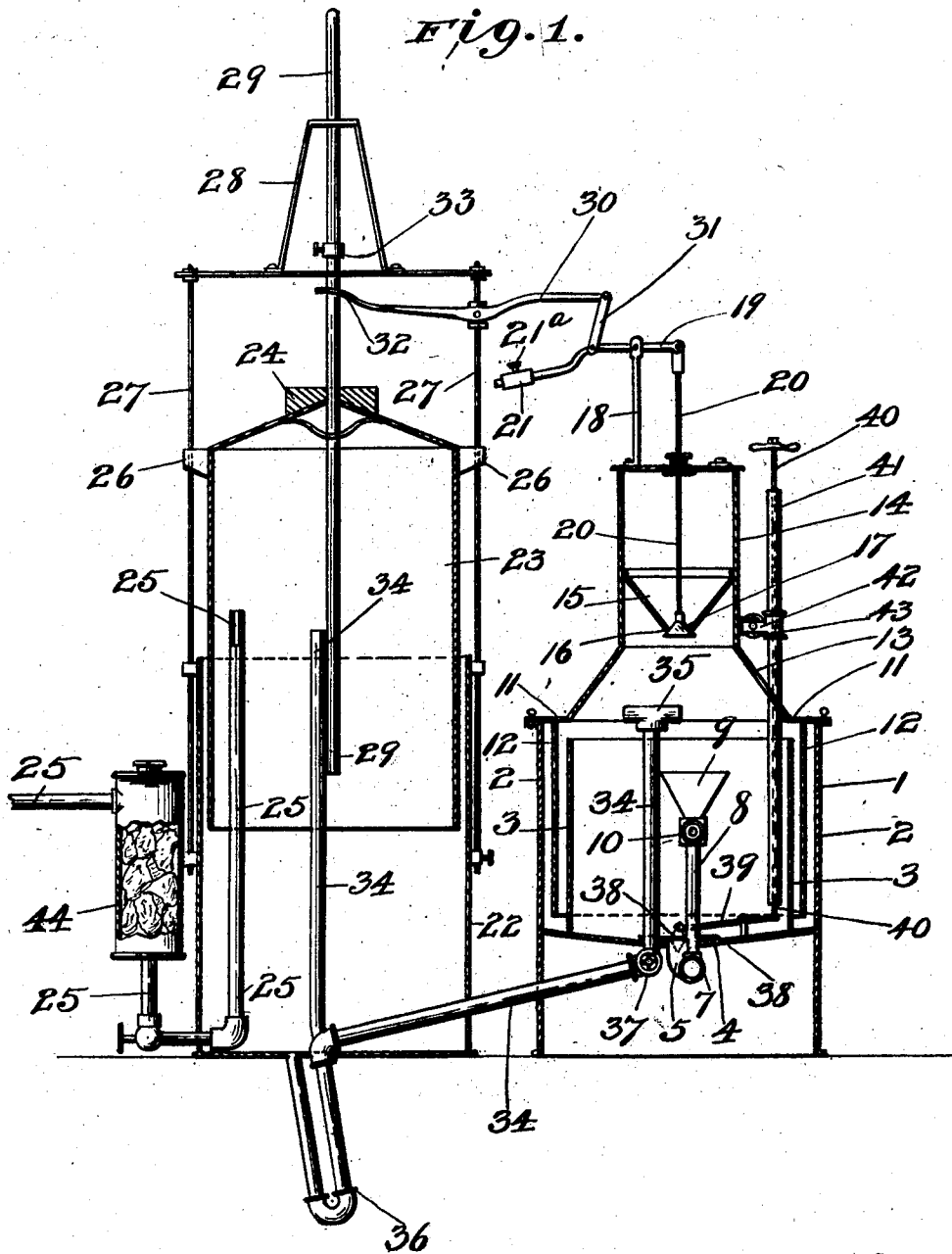


G. W. DAYTON.
ACETYLENE GAS GENERATOR.

APPLICATION FILED APR. 20, 1905.

2 SHEETS—SHEET 1.



Witnesses
James H. Blackwood
W. Randolph, Jr.

Inventor
George W. Dayton
 By *D. A. Gouvier*
 Attorney

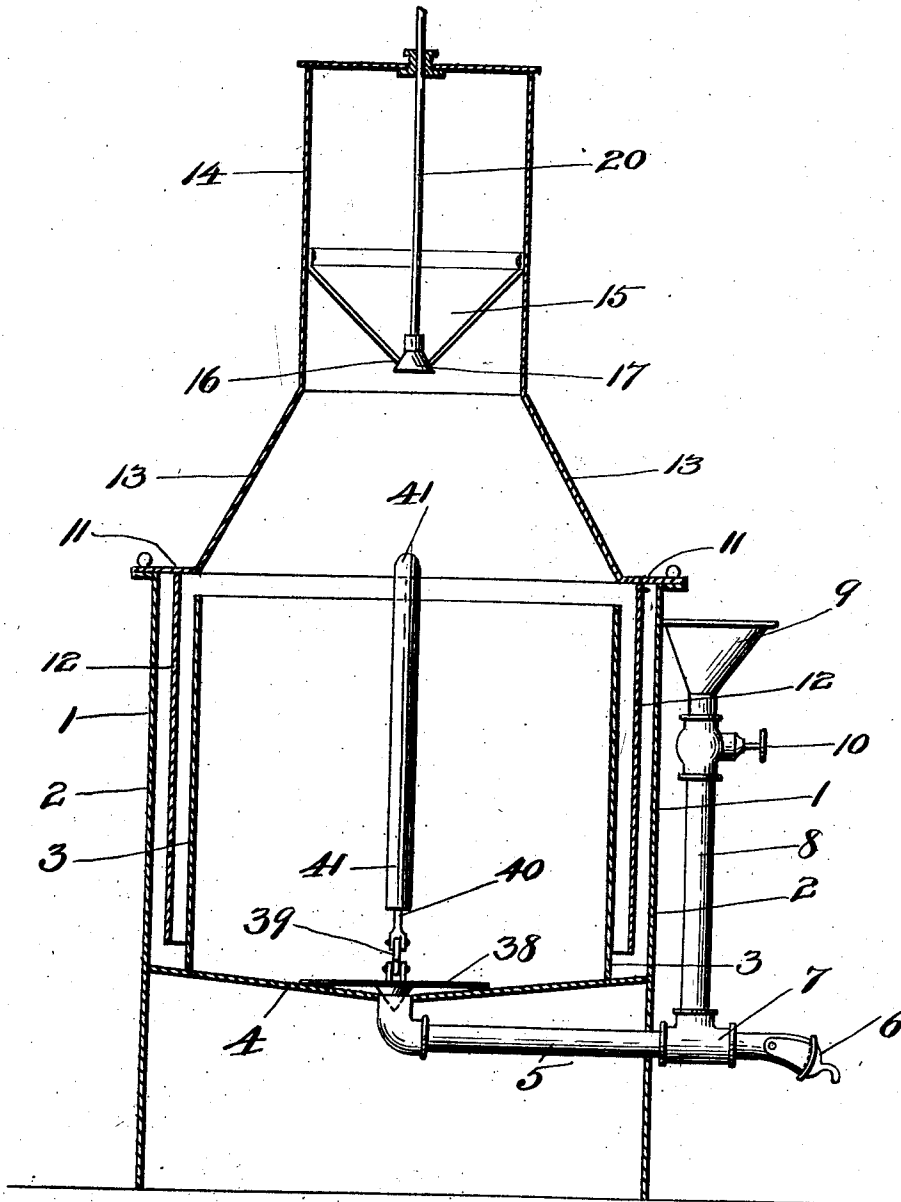
No. 853,400.

PATENTED MAY 14, 1907.

G. W. DAYTON.
ACETYLENE GAS GENERATOR.
APPLICATION FILED APR. 20, 1905.

2 SHEETS—SHEET 2

FIG. 2.



Witnesses
James H. Blackwood by *George W. Dayton*
V. Randolph, Jr. *D. A. Gourick*
Inventor
Attorney

UNITED STATES PATENT OFFICE.

GEORGE W. DAYTON, OF KING CITY, CALIFORNIA.

ACETYLENE-GAS GENERATOR.

No. 853,400.

Specification of Letters Patent.

Patented May 14, 1907.

Application filed April 20, 1905. Serial No. 256,556.

To all whom it may concern:

Be it known that I, GEORGE W. DAYTON, a citizen of the United States, residing at King City, in the county of Monterey and State of California, have invented certain new and useful Improvements in Acetylene-Gas Generators, of which the following is a specification.

My invention relates to acetylene gas generators in which the carbid is contained in a receptacle over the generator tank and has for one of its objects the provision of means by which the feed of the carbid into the generator tank is controlled by mechanism outside of the generator tank so as to prevent rust of the parts.

Another object of my invention is the provision of means for emptying the generator of the water and sediment from the exhausted carbid without destroying the water seal, and for emptying the generator of air before replenishing the storage tank after the flow has been cut off to clean the generator.

Another object of my invention is such a construction of the storage tank and connections with the carbid feed in the generator that the flow of gas to the burners is not stopped during the time the generator is being cleaned and a fresh supply of the carbid placed in the holder.

The construction, operation and advantages of my invention will be fully explained hereinafter and illustrated in the accompanying drawings in which—

Figure 1 is a sectional elevation of my improved acetylene gas generator and storage tank, and Fig. 2, a vertical sectional view of the generator.

In the drawings similar reference characters indicate corresponding parts throughout the several views.

1 represents the lower portion of my improved generator consisting of a cylindrical receptacle having two concentric walls 2 and 3 spaced apart and a centrally depressed bottom 4 and a drain pipe 5 secured in a hole therein the outer end of said drain pipe being provided with a faucet 6 similar to the faucet ordinarily used for syrups and molasses, *i. e.* with a swinging gate. 7 represents a T in said pipe 5 in which is secured a vertical pipe 8 having a funnel 9 at its upper end and a valve 10 just below said funnel, said pipe and funnel being intended to be used in filling the receptacle 1.

11 represents the upper portion of the gen-

erator having a cylindrical wall 12 which fits between the two walls 2 and 3 and when water is poured into the space between the walls as shown in the drawings serves to form a water seal to prevent escape of gas from the generator. Above the wall 12 the part 11 is formed frustum-shaped as shown at 13 and then cylindrical at the top as shown at 14. On the inside of cylindrical portion 14 is secured an inverted cone-shaped hopper 15 forming the bottom of the carbid holder and having a central opening 16 for the escape of the carbid, 17 being a valve for controlling the flow of the carbid from the holder.

18 represents a standard secured to the top of the cylindrical portion 14 and 19 a lever, fulcrumed thereon, to one arm of which is pivotally secured a rod 20, the lower end of which is secured to the valve 17. On the other arm of lever 19 is secured a weight 21 to normally hold the valve 17 closed, said weight being adjustable on said arm by means of a set screw 21^a.

22 represents lower portion of the gas storage tank and 23 the pressure bell having a weight 24 on its top for compressing the gas and driving it out through service pipe 25. The bell 23 has ears 26 on its sides that ride on rods 27 secured to the lower portion 22 and serving as guides for said bell 23.

28 represents a guide frame secured to the upper ends of rods 27 and 29 a rod secured to the top of bell 23 and riding in guide 28.

30 represents a lever fulcrumed on one of the rods 27 and having one arm connected by means of link 31 with the arm of lever 19 having the weight 21 thereon while the other end of said lever 30 is forked as shown at 32 to receive rod 29.

33 represents a collar secured to rod 29 and adapted to engage the tines or forked end 32.

It will be understood from this construction that the weight 21 serves to hold the valve 17 closed when the storage tank is filled with gas but when the gas is withdrawn through feed pipe 25 so that the bell is depressed the collar 33 engages the forked end 32 of lever 30, depressing it and raising the weighted end of lever 19, opening valve 17 to permit the escape of the carbid from the hopper 15 into the generator, which contains water, and gas is generated.

34 represents a pipe for conveying the generated gas from the generator to the storage tank having a T 35 on the end inside of the generator to prevent the dripping from con-

densed moisture on the upper portion of the generator dropping into the pipe.

36 represents a trap at the lowest portion of the pipe 34 to drain the pipe of any moisture that may be therein and prevent it from becoming clogged thereby.

37 represents a valve for controlling the flow of gas through said pipe 34.

38 represents a plate secured to one arm of lever 39 fulcrumed in the bottom of the generator and having a cone-shaped protuberance on its bottom to normally seat in the end of drain pipe 5 while to the other arm of the lever is secured a rod 40 that extends through pipe 41 to the outside of the generator. The purpose of said plate 38 being to agitate the water in the generator when cleaning it so as to insure removing all the residuum incident to the generation of the gas.

42 represents a pipe connecting the top part of the generator with pipe 41 and having a valve 43 to open and close said pipe. The purpose of this pipe is as follows: After the generator has been cleaned, as above described, it is generally found that a quantity of air has been admitted thereto which it is desirable to remove before refilling the storage tank. The valve 37 in the pipe 34 having been closed before cleaning the generator the valve 43 is opened when the generation of gas is recommenced and the air escapes through pipe 42, after which the valve 43 is closed the valve 37 opened and the gas flows into the storage tank.

44 represents a tank secured to service pipe 25 and containing sponge to filter the gas before it goes to the burners.

In operation when the generator is being cleaned and refilled the collar 33 is loosened on rod 29 so as to permit the bell 23 to be depressed more than normally so that the feeding of the gas through the service pipe 25 need not be interrupted. After cleaning the generator and refilling the carbide holder the valve 17 may be held open by hand pressure on the lever 19 until the storage tank has

been refilled and the collar 33 is again secured to the rod 29 at the position desired thereon to properly regulate the flow of carbide from the holder.

Having thus described my invention what I claim is—

1. In an acetylene gas generating and storing machine, a hopper for holding the carbide, a valve to control the flow of carbide from said hopper, a lever fulcrumed on top of the generator, a rod connecting one arm of said lever with the valve, a weight adjustably mounted on the other arm of the lever, another lever suitably fulcrumed having one arm connected with the weighted arm of the first-mentioned lever and the other arm forked, the storage tank having a weighted adjustable bell, a rod secured to said bell and adapted to reciprocate between the tines of the forked end of the lever, and a collar adjustably secured to said rod and adapted to engage said tines, substantially as shown and described.

2. In an acetylene gas generator and storing machine, a generating tank, a hopper for holding the carbide connected with said tank, a valve to control the flow of carbide from said hopper into the generating tank, a lever fulcrumed on the top of the generator, a rod connecting one arm of said lever with the valve, another lever suitably fulcrumed and having one arm connected with the first named lever to actuate it and the other arm forked, the storage tank having a weighted, vertically-adjustable bell, a rod secured to said bell and adapted to reciprocate between the tines of the forked end of the lever, and a collar adjustably secured to said rod and adapted to engage the tines when the adjustable bell lowers, substantially as shown and described.

In testimony whereof I hereto affix my signature in the presence of two witnesses:

GEORGE W. DAYTON.

Witnesses:

JOHN C. TOMPKINS,
JOSIAH W. COAN.