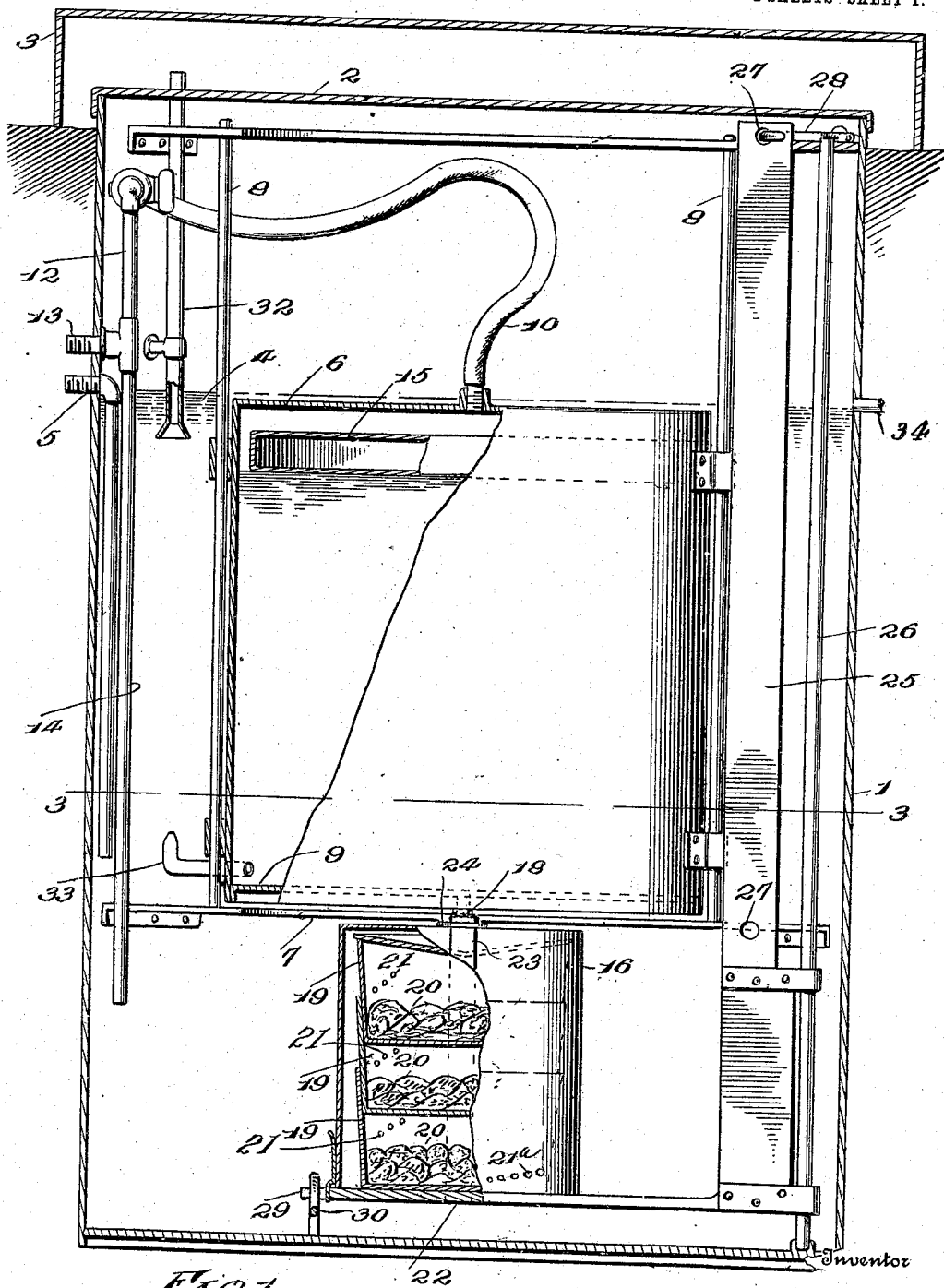


939,614.

F. J. MOSS.
ACETYLENE GAS GENERATOR.
APPLICATION FILED FEB. 18, 1908.

Patented Nov. 9, 1909.
2 SHEETS—SHEET 1.



Witnesses

Fig. 1.

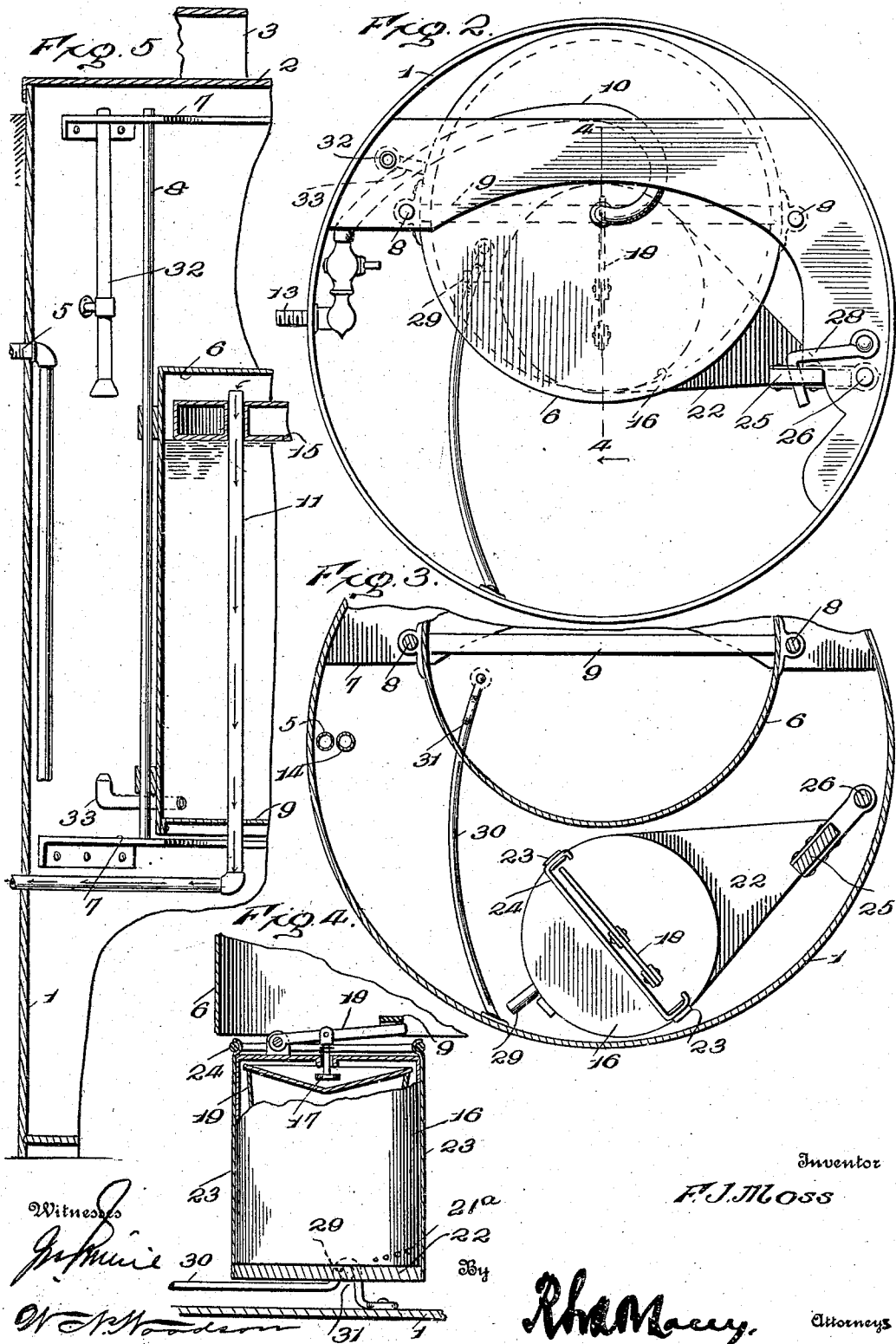
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ACETYLENE-GAS GENERATOR.

939,614.

Specification of Letters Patent.

Patented Nov. 9, 1909.

Application filed February 18, 1908. Serial No. 416,505.

To all whom it may concern:

Be it known that I, FREDERICK J. MOSS, a citizen of the United States, residing at Conneaut Lake, in the county of Crawford and State of Pennsylvania, have invented certain new and useful Improvements in Acetylene-Gas Generators, of which the following is a specification.

The present invention relates to apparatus for generating gas from calcium carbide, the purpose being to provide a machine which may be operated with safety and prevent the house, building or structure being permeated with the disagreeable odors arising from the machine when removing the residue and recharging, as well as to provide a machine which, in cold weather, will be prevented from freezing.

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

While the invention may be adapted to different forms and conditions by changes in the structure and minor details without departing from the spirit or essential features thereof, still the preferred embodiment is shown in the accompanying drawings, in which:

Figure 1 is an elevation of an acetylene gas machine, embodying the invention. Fig. 2 is a top plan view thereof, the cap and cover being removed. Fig. 3 is a horizontal section on the line 3—3 of Fig. 1, parts being broken away. Fig. 4 is a vertical section on the line 4—4 of Fig. 2, looking to the left as indicated by the arrow. Fig. 5 is a vertical section of a portion of one side of the machine, bringing out clearly the relation of the several parts.

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 tank 1 for containing water and the operating parts may be of any capacity and construction and is preferably of wood and is located outside of the house, building or other structure to be supplied with gas and set into the ground. The tank is closed by means of a cover 2 and a cap 3, the latter affording additional security and preventing frost in cold weather from reaching the interior and interfering with the works of

the machine. The tank is supplied with water 4 to within a short distance of the top thereof, said water being furnished from a suitable source by means of a pipe 5. The gas bell 6 is located in the upper portion of the tank and mounted upon a support 7 and is adapted to rise and fall, being directed in its movements by means of guide rods 8 which project upward from the support 7 and pass through keepers at the sides of the bell. The bell 6 is open at its lower end and is located directly above the generator. A rod or bar 9 provided at the lower end of the bell 6 serves to operate the valve by means of which the outflow of the gas from the generator to the bell is controlled. The gas may be let from the bell 6 either by means of a tube 10 Fig. 1 or a pipe 11 Fig. 5. A tube 10 is flexible and one end connects with a nipple or coupling at the upper end of the bell 6 and its opposite end connects with a pipe 12. A pipe 13 connects with the pipe 12 and establishes communication between said pipe 12 and the gas fixtures in the house, building or the like to be supplied with gas from the machine. A drip pipe 14 connects at its upper end with the pipe 12 at about the juncture of the pipe 13 therewith and terminates a short distance from the bottom of the tank 1 so as to discharge therein any water of condensation or other impurities that may be eliminated from the gas in its passage through the pipe 12 to the pipe 13. The pipe 11 extends vertically into the bell 6 and terminates a short distance from the top thereof when the bell is resting upon the support 7. The main or service pipe is adapted to be connected with the lower end of the pipe 11 in any manner. It will be understood that the gas may pass from the bell either through the tube 10, pipe 12 and service pipe 13 to the fixtures or it may enter the upper end of the pipe 11 and pass downward therethrough and to the service pipe connected therewith, thence to the fixtures according to which form of gas outlet is used. A float 15 is arranged within the bell and has an opening to receive the pipe 11. The purpose of the float 15 is to act as a baffle to cause the gas bubbling upward to spread outward before entering either the tube 10 or the pipe 11.

The generator consists of a tank 16 which is provided at its upper end with a valve adapted to open downward and to close upward, said valve being operated by means

of a lever 18, one end of which extends into the path of the rod or bar 9 to be depressed thereby and open the valve when the bell 6 is at the limit of its downward movement.

5 A series of pans 19 are arranged within the tank 16, one above the other, the upper end of one pan being closed by the lower portion of the pan next above. A quantity of calcium carbide is placed in each pan 19, as indicated at 20. Each of the pans is provided in a side with a series of openings 21 arranged at different levels, said openings providing for ingress of water and egress of gas. The openings 21 are comparatively

10 small and by having them arranged at different levels the water is admitted gradually to the pans and as it rises it covers one or more of the openings 21. The tank 16 is provided in a side near its bottom with a series of small openings 21^a. The water is adapted to enter the tank through one or more of the openings 21^a and reaches the carbide in the pans 19 through the openings 21 formed in the sides thereof. When the

15 bell 6 is at its lowest position, the valve 17 is open, thereby permitting water to enter the tank through one or more of the openings 21^a. The gas formed passes out through the opening closed by the valve 17 and enters the bell 6. When the bell rises, any gas continuing to be evolved from the carbide passes outward through the openings 21^a near the bottom of the tank 16 and bubbles upward through the water contained in the tank 1 and enters the bell 6. The internal pressure within the upper portion of the tank 16, when the valve 17 is closed, is sufficient to prevent water entering the tank through the openings 21^a until the valve 17

20 is again opened when the bell 6 reaches its lowermost position. The generator is located directly beneath the bell 6 so that the gas escaping therefrom and bubbling upward through the water 4 will enter the bell 6 and accumulate therein. A support 22 receives the generator and has a two-fold movement, the one a horizontally swinging motion and the other a vertical movement. As the support 22 is swung horizontally, the

25 generator is either brought beneath the bell 6 or moved to a position to clear said bell. The vertical movement of the support 22 brings the generator to the upper portion of the tank 1 to admit of residue being removed from the pans 19 and the same to be supplied with fresh carbide. The support 22 is in the nature of a shelf or bracket and the generator is secured thereto, suitable holding or clamp means being provided.

30 As shown, clamp members 23 are employed and attached at their lower ends to the support and their upper ends are bent to engage over the top of the tank 16, said ends being prevented from outward displacement by means of a tie 24 and consisting of a rod

having opposite ends bent to engage extensions at the upper ends of the clamp members 23. A bar 25 is connected with the support 22 and is of a length to extend to the top of the tank 1 when the support 22

70 is at its lowest position. To insure proper position of the parts, the bar 25 is mounted to move vertically and to swing horizontally upon a guide rod 26 which is supported at its ends both at the top and at the bottom of the tank 1. The bar 25 is provided with openings 27 which are adapted to be engaged by means of a suitable catch 28 so as to hold the support in the required adjusted

75 position. A projection 29 extends outward from the support 22 and is adapted to engage under a rod 30, said rod being provided at one end with a loop 31 into which the projection 29 fits, thereby holding the support in proper position and against

80 movement in any direction. The rod 30 is spaced a short distance from the bottom of the tank 1 and is so arranged that a portion adjacent to the loop 31 extends into the path of the projection 29 so as to extend over the

85 same when the support 22 is moved downward to its lowest position and swung horizontally toward the loop 31. When the projection 29 is in register with the loop 31, it is caused to enter the same by a slight upward movement of the support, thereby fixing the position of the latter, as herein

90 stated.

Any overproduction of gas escapes by means of a vent pipe 32 which projects

100 above the ground and the upper end of the tank. A short pipe 33 fitted to the lower end of the bell 6 is adapted to make connection with the lower end of the vent pipe 32 when the bell 6 is at the limit of its upward

105 movement, thereby establishing communication between the bell and the vent so as to relieve the machine of abnormal internal pressure and prevent an explosion or disastrous results.

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It is to be understood that both pipes 10 and 11 are not used in the same machine, the pipe 10 being employed when the service pipe leading to the house is high, and the pipe 11 being used when the main pipe leading to the house is low.

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In order that the level of the water in the tank may be uniform, said tank is provided with an overflow 34.

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

120

1. In a machine of the character described, the combination of a bell for collecting the gas, a generator located underneath the bell, a valve at the upper end of the generator

125 controlled by the vertical movement of the bell, and a support upon which the generator is mounted, the generator being movable with the support, and the support being adapted to swing horizontally to bring the

130

generator beneath the bell or to a position
to clear the same and to move vertically to
elevate the generator to convenient position
for cleaning and charging or to lower the
5 same into a position to swing beneath the
bell.

2. In combination a bell adapted to re-
ceive a quantity of gas and adapted to rise
and fall, a generator arranged beneath the
10 bell and provided with a valve adapted to be
operated by the vertical movement of said
bell, a support for the generator adapted to
swing horizontally and to move vertically,
the generator being mounted upon said sup-
15 port, and movable therewith, and means for
securing the support in position underneath
the bell.

3. In combination with a tank for con-
taining a quantity of water, a bell mounted
20 in the tank and adapted to rise and fall and
open at its lower end, a generator arranged
beneath the bell within the lower portion
of the tank, a valve in the upper portion of
the generator, and adapted to be controlled

by the vertical movement of the aforesaid 25
bell, and a support for said generator mount-
ed to swing horizontally and move verti-
cally, the generator being mounted upon
said support and movable therewith.

4. In combination, a tank, a bell located 30
in the tank and adapted to rise and fall,
a generator located in the lower portion of
the tank beneath said bell, a support for the
generator mounted to swing horizontally
and to move vertically, the generator being 35
mounted upon said support and movable
therewith, a projection extending from said
support, and means fitted to the lower portion
of the tank to cooperate with said projec-
40 tion and support to secure the latter in
proper position.

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

FREDERICK J. MOSS. [L. S.]

Witnesses:

LOUIE DENNIS,
WALLACE E. HALL.