

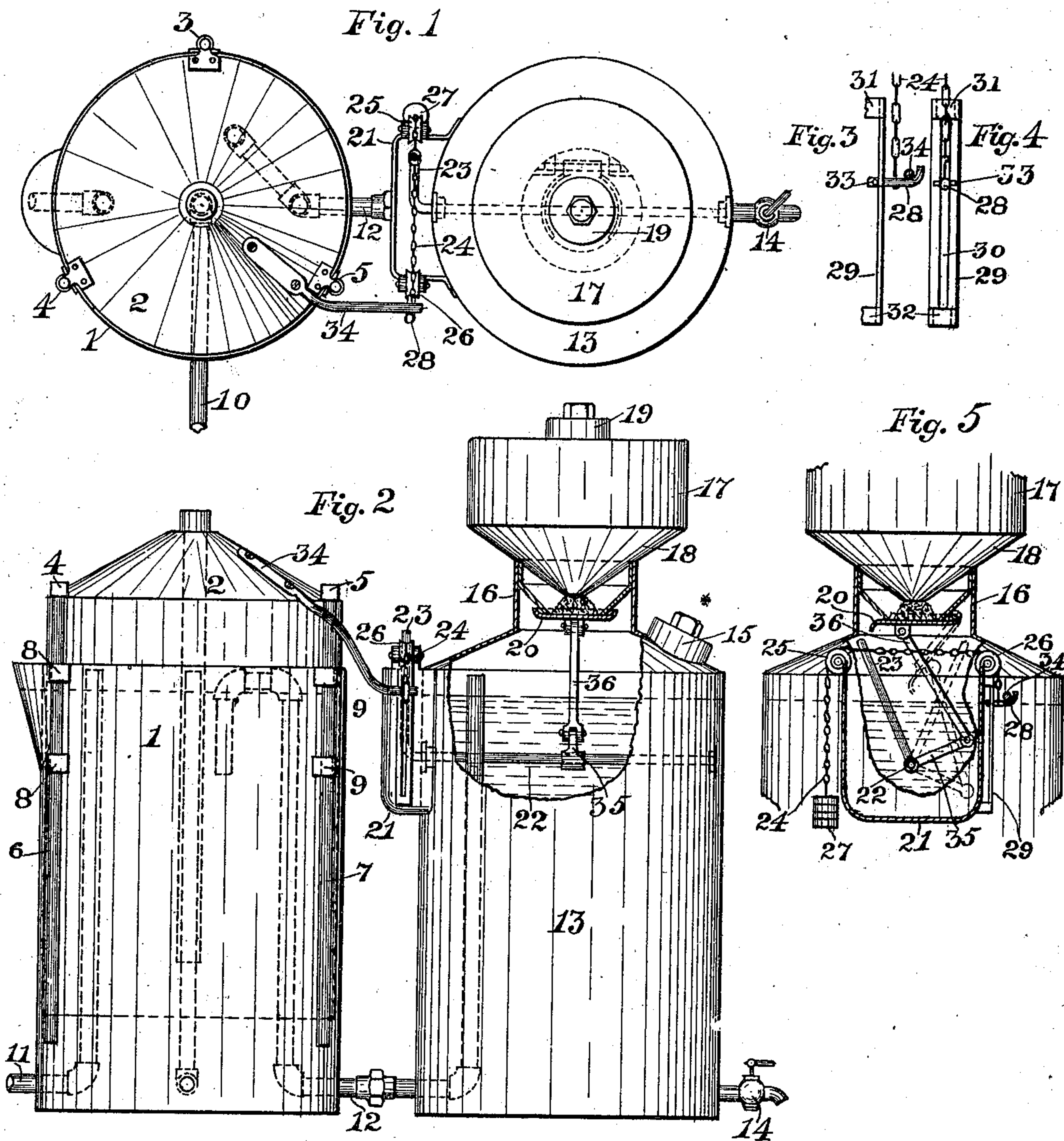
No. 687,108.

Patented Nov. 19, 1901.

L. J. BAMBERG.
ACETYLENE GAS GENERATOR.

(Application filed Feb. 18, 1901.)

(No Model.)



Witnesses

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ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 687,108, dated November 19, 1901.

Application filed February 18, 1901. Serial No. 47,814. (No model.)

To all whom it may concern:

Be it known that I, LOUIS JOHN BAMBERG, a citizen of the United States, residing at South Woodstock, in the county of Windham and State of Connecticut, have invented certain new and useful Improvements in Acetylene-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 figures of reference marked thereon, which form a part of this specification.

My invention relates to acetylene-generators, more particularly to that class of apparatus designed for the production of the gas acetylene by the chemism of water and the carbid of calcium in which the carbid is served by various mechanical contrivances to a body of water instead of the fluid being piped to the solid.

The object of my invention is to produce apparatus of this sort that will comprise the fewest practicable number of working parts and in which a tilting, receiving, and dumping pan may be arranged to deliver more or less carbid to the body of water in correspondence with a variable consumption of the gas.

Each constituent element of my invention is described in detail and its individual office, together with the mode of operation of the whole, fully explained hereinbelow.

Of the accompanying drawings, throughout which like numerals are employed to designate like parts, Figure 1 is a top plan view; Fig. 2, a side view, part of the casing being cut away to show the operating pan in position. Figs. 3 and 4 are side and rear views of the chain-hook and its guide; and Fig. 5 is a side view of the generator only, taken at right angles to the plane of Fig. 2, showing the pocket in section, and a portion of the wall or side of the generator is cut away in this figure to exhibit the internal parts for operating the pan.

Considering the drawings, number 1 marks the bottom or stationary part of the gas-holder, inclosing a bell or movable portion 2. Upon opposite sides of the bell are attached

threaded sockets 3, 4, and 5, and in these sockets are secured guide-rods or pieces of pipe depending vertically, two of which are shown in Fig. 2 (marked 6 and 7) and movable up and down through the short sleeves 8 8 and 9 9, fixed upon the exterior of the bottom 1 of the holder. The office of the guide-rods is to prevent the bell from turning as it rises and falls. The holder is equipped with the usual escape or exhaust pipe 10, the service-pipe 11, and the pipe 12, leading to the body of the generator, which is marked 13.

The body of the generator has a waste-cock 14 near its bottom and a removable cap 15 at the top. Water may thus be drawn off or introduced. Number 16 marks the neck of the generator. This part is shown in section in Figs. 2 and 5. Neck 16 supports a hopper 17, which is provided with a funnel portion 18, having an open mouth. At the top the hopper possesses a cap 19, by way of which carbid may be supplied to the hopper. It is usually so supplied in granulated form, the granules being of suitable size for feeding effectively through the funnel-mouth described.

In the neck of the generator will be noted the receiving and dumping pan 20. (See Figs. 2 and 5.) By means of a hinge-like connection with funnel 18 the pan is supported at one point, and it is upheld against the funnel-mouth by devices lying partly within and partly without body 13. By the expression "body of the generator" I mean the lower portion of it, into which the carbid drops. This body portion possesses at one side a deep lip or pocket externally located, the wall of which is marked 21. The pocket is filled with water from the interior of body 13 to about the same level as the water within the body. (See Fig. 5.) A rocking shaft 22 (see Figs. 1 and 2) has one end suitably supported within body 13 and the other end passing out through the wall of the body and into the pocket beneath the water-line thereof. Thus it will be seen the water in the pocket acts as a seal or packing at the opening through which shaft 22 projects, and gas cannot leave the generator by that opening. Owning to the gaseous pressure within the gen-

erator the water in the pocket may stand at a little higher level. The wall of the pocket extends upwardly a sufficient distance to allow a rise of level. In the pocket the shaft 22 takes an upward turn or is joined to a crank-arm 23, which is slipped through a link of a chain 24 or otherwise detachably connected therewith. Chain 24 runs over grooved pulleys 25 and 26 at opposite sides of the pocket-wall and one end is connected with the weight 27 and the other with hook 28. The chain-hook 28 and its appurtenances are best shown in Figs. 3 and 4. Number 29 refers to a strip having a slot 30 extending lengthwise. The strip is secured, by means of end blocks 31 and 32, to the side of the pocket, (see also Fig. 5,) leaving, as shown, a longitudinal space between it and the wall of the pocket. Through the slot 30 the straight end of hook 28 is inserted, and a pin 33 is secured transversely near the end of the hook and prevents the withdrawal of it. The hook is freely movable up and down the slot. The bent end of hook 28 is intended to normally engage the projecting extremity of an arm 34, secured upon the top of bell 2 of the holder portion of the apparatus. Should the bell fall from lack of internal gaseous support, it would evidently draw the hook and chain down with it, raising the suitably-proportioned amount of weight 27 and turning the shaft-arm 23 to the right, approaching the position indicated by broken lines in Fig. 5. This movement wholly or partially dumps pan 20 by the agency of the arm 35, fixed on shaft 22 at about its middle point and pivotally coupled to the lower surface of the pan by link 36. Arm 35 and link 36 are shown in Figs. 2 and 5 to be within the body 13.

When the carbid is dumped from the pan into the water, gas is evolved correspondingly, and the bell 2 rises, and weight 27 in falling restores the arm 23 and pan to their original positions, the pan receiving a new load of carbid.

If it is desired to cease the generation of gas and to consume all that remains in the holder, the hook 28 is disengaged from the bell-arm 34, and the devices operating the pan are no longer actuated by the descending bell.

If no gas is consumed, the bell remains raised and the pan holds its charge above the water. It is my purpose to so proportion the communicating pipe 12 and the exhaust-pipe 10 as to prevent a sudden overgeneration of gas from displacing any of the parts. The capacity of the pan and the size of the mouth of the funnel of the hopper, together with the amount of the weight 27, are governed by the quantity of gas the apparatus is expected to produce regularly. In different apparatus these parts may be of different dimensions.

When the gas is somewhat slowly consumed

and withdrawn from the holder, the bell falls steadily, but not rapidly, and as the arm 23 turns the rocking shaft and pan downwardly a portion of the carbid drops into the water, and the consequent increase of pressure restores the bell and pan temporarily to the positions shown in Fig. 5. This operation is repeated again as the pressure in the holder falls below a certain amount. If the bell falls rapidly, almost the entire contents of the pan will be thrown into the water, and the generation of gas is correspondingly quickened and increased in volume. By properly proportioning the apparatus to the work expected of it a very steady generation and flow result.

I am aware that numerous generators have been constructed in which the carbid is precipitated into the water in various quantities and by mechanisms adapted to the peculiarities of each device, and I do not claim that feature, broadly, as my invention.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In an acetylene-generator, the combination of the holder having a movable bell, an arm secured to the bell, a generator-body having an exterior pocket and an interiorly-located dumping-pan, pulleys supported at opposite sides of the pocket, a chain passing over the pulleys and having one end engaging the said arm, a weight secured to the remaining end of the chain, the said chain being drawn upon by the fall of the bell, and devices actuated by the chain and arranged within the pocket and generator-body for operating the said pan, substantially as described.

2. In an acetylene-generator, the combination of the holder having a movable bell, a generator-body having an exterior pocket and an interiorly-located pivoted dumping-pan, a shaft having one end journaled within the said generator-body and the opposite end passing out into the pocket below the water-line of the generator, pivotal connections between the said shaft and dumping-pan, an arm 23 having one end fixed to the end of the shaft in the pocket and one free end projecting from the mouth of the pocket, the said arm being limited to a swinging movement within the pocket, weight-operated mechanism located outside the generator and connected with and acting on the free end of said arm 23 whereby the pan is held in its highest position, and devices connected with the said movable bell and arranged to simultaneously raise the weight, move the arm and dump the pan during the fall of the bell, substantially as described.

3. In an acetylene-generator, the combination of the holder having a movable bell, an arm secured to the bell, a generator-body having an exterior pocket and an interiorly-

located dumping-pan, pulleys supported at opposite sides of the pocket, a chain passing over the pulleys, a weight secured to one end of the chain, a hook attached to the remaining end of the said chain and arranged to engage the said arm, means for retaining and guiding the hook, and devices actuated by the chain and set up within the pocket and generator-body for operating the said pan, substantially as described. 10

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

LOUIS JOHN BAMBERG.

Witnesses:

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