No. 651,848. Patented June 19, 1900.

J. H. GREEN.

ACETYLENE GAS GENERATOR.

(Application filed Sept. 27, 1899.)

(No Model.)

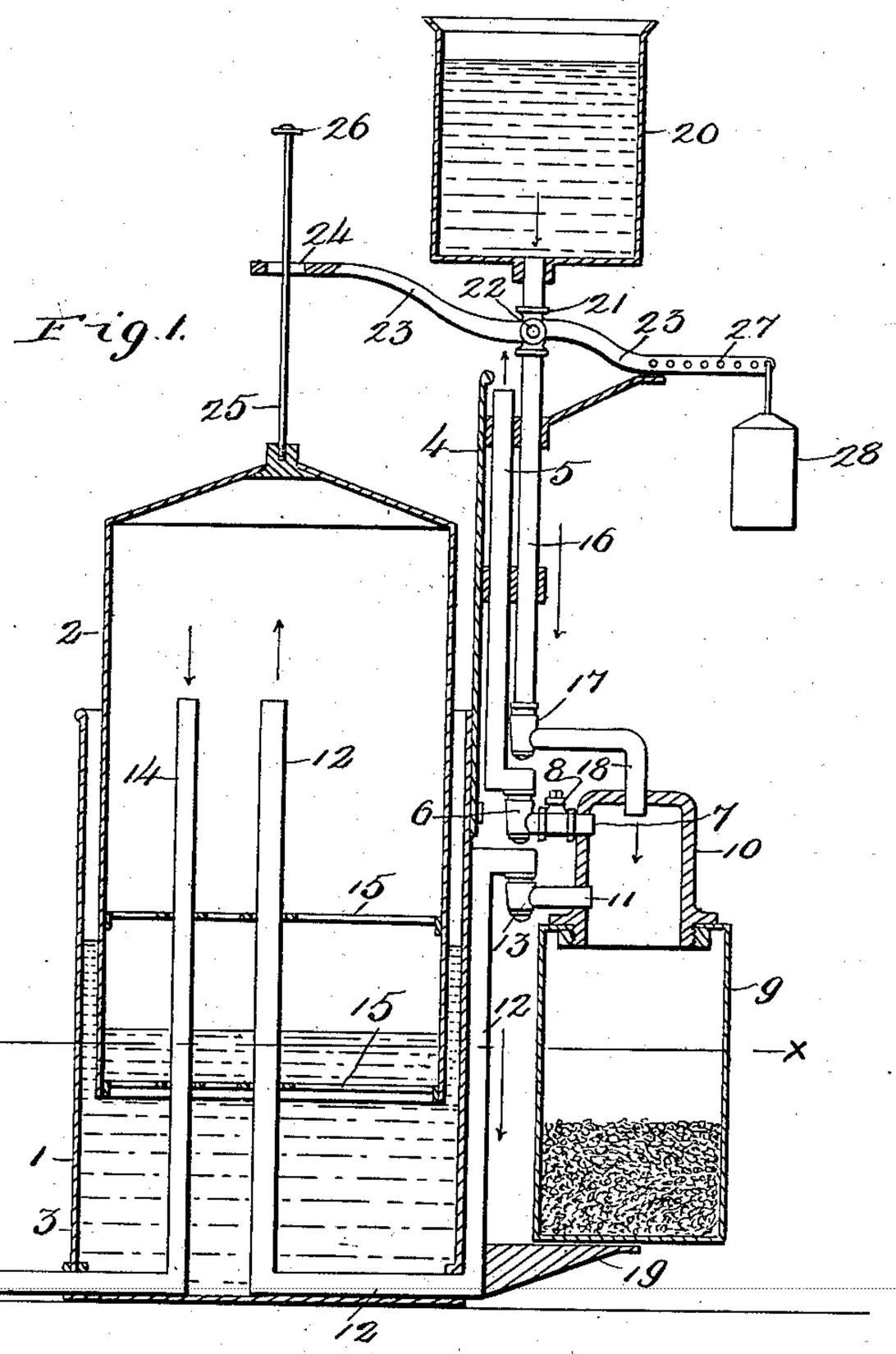


Fig. 1.

Fig. 2.

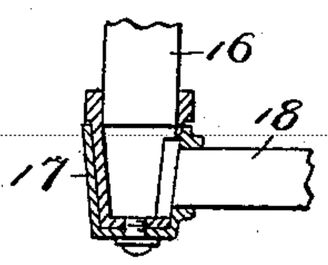
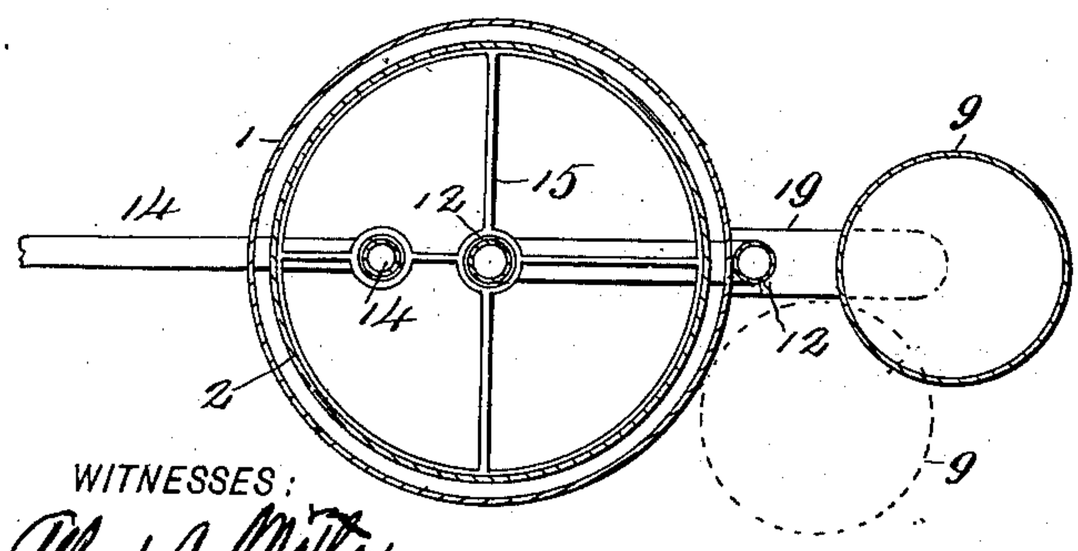


Fig. 3.



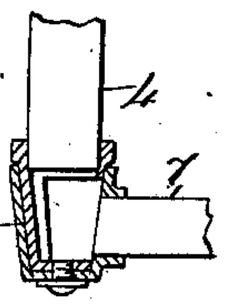


Fig. 4.

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ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 651,848, dated June 19, 1900.

Application filed September 27, 1899. Serial No. 731,800. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. GREEN, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Acetylene-Gas Machines; and I do hereby 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.

My invention relates to improvements in acetylene-gas machines; and it consists in the novel combination and arrangement of parts, as will be hereinafter more particularly described and claimed.

In the drawings, Figure 1 is a vertical longitudinal section of my complete invention. Fig. 2 is a horizontal section taken on the line *x x* of Fig. 1. Fig. 3 is a vertical longitudinal section of one of the valves which I employ in carrying out my invention, and Fig. 4 is a similar view of the hinge located in the escape-pipe which I employ in connection with my invention.

The object of my invention is to construct an acetylene-gas machine in such a manner that the original cans, which contain the calcium carbid, can be readily attached to the machine, thus dispensing with the additional receptacle usually employed and forming a part of the machine for receiving the calcium carbid from the cans contained in the same; and it further consists in constructing the parts in such a manner that when the can containing the calcium carbid is attached and turned in its proper position the parts are operatively connected for the perfect working of the machine, but when said parts are turned to remove the can the supply of water and gas into the gasometer are automatically cut off, but the escape for the excess of gas that might be created is at all times open, notwithstanding the position of the can contained in the calcium carbid, whereby a perfect-operating machine is obtained, and, further, one that can be manipulated by an inexperienced person.

Referring to the drawings, 1 represents a gasometer or reservoir which may be of any well-known construction, and consists of a fixed tank 1, which is adapted to rest upon the floor or other surface, and located within and telescoping with the tank 1 is a gas-receiver 2, which is open at its bottom and is movable within said tank, a suitable quantity of water 3 being located in the latter in order to prevent the escape of gas, as is usually employed in all gasometers.

Secured to one side of the tank 1 is an upright support 4, to which an escape-pipe 5 is attached, the upper end of which is open and the lower end provided with a hinged connection 6, which forms a movable connection with the short pipe 7, in which is located a safety-valve 8, which may be regulated in the usual manner, whereby should the gas become excessive in the calcium-carbid tank or can the same will escape, the said hinged connection 6 being so constructed as to be open at all times, notwithstanding the position of the calcium-carbid can 9, the construction of which valve is best shown in Fig. 4. The calcium-carbid can 9 is of the usual construction and provided with a screw-threaded opening which is located in the top of the same and is covered by screw-threaded cap 10, which forms a receptacle for the gas as it is generated and before it enters the gasometer, this construction being preferable for the reason that the can 9 may be filled with calcium carbid before it is attached to the machine, the short pipe 7, forming a part of the escape-pipe 5, being secured to said cap and opening into the same. Also connected to the cap 10 is a short pipe 11, the connecting end opening into the said cap and having its opposite end movably attached to the gas-pipe 12 by a valve 13, the said gas-pipe passing into the tank 1 at the bottom of the same and projecting upwardly therein, whereby the gas when generated will be passed into the gasometer, the said gas passing out of the gasometer through a pipe 14, also passing through the bottom of the tank and leading to any suitable place for supplying the gas to a suitable burner for lighting or heating. In order to properly guide the gas-receiver 2 within the tank 1, skeleton frames 15 are attached to and carried by the said receiver and provided with suitable openings through which the pipes 12 and 14 pass. Also secured to the upright support 4, adjacent to the pipe 5, is a water-supply pipe 16, the lower end of which is pro-

vided with a valve 17, to which is connected a pipe 18, attached to the top of the cap 10 and also opening into the latter, whereby water is admitted as it becomes necessary to produce the proper quantity of gas, the valves 17 and 13 being similarly constructed and shown in detail in Fig. 3 of the drawings, all of said valves being arranged on a line with one another, whereby a hinged connection is obtained for the lateral movement of the tank 9 for attaching and detaching the same when it becomes necessary, a bracket 19 being located below the said can when the latter is in its normal position or to indicate its proper operative position and also to prevent the said can from being removed from its connections while the valves 17 and 13 are open and the machine in operation, but when it becomes necessary to remove the can, the same is turned laterally or against the sides of the tank 1, whereby it may be easily removed and the valves 13 and 17 simultaneously closed, preventing further generation of gas, but still placing the valve 6 in an open position, which is the same under all circumstances.

Attached to the upper end of the pipe 16 and supported by the same is a tank 20, which contains water for supplying water to the calcium carbid located within the can 9 for generating gas, and located within the said pipe is a cut-off valve 21, to the stem 22 of which is attached a lever 23, one end of which is slotted, as shown at 24, through which slot a rod 25 passes, the latter being secured to and carried by the top of the gas-receiver 2 of the gasometer, the top of said rod being provided with a head 26, which is adapted to come in contact with the slotted end of the lever 23 for depressing the same and opening the valve 21, whereby water is automatically fed into the can 9 containing the calcium carbid when the gas becomes sufficiently low within the gasometer, and formed in the opposite end of the lever 23 are a series of openings 27 for hanging a weight 28, whereby the lever is properly adjusted and weighted for the proper operation of the valve.

Should the calcium carbid become exhausted in the can 9, the same is first turned in a horizontal plane or to one side of the tank 1, as shown in dotted lines, Fig. 2, whereby the said can will move from over the bracket 19, and thus be in a position to be removed from the screw-threaded cap 10, and while the cap is in said position a new can or one filled with the proper amount of calcium carbid is screwed on the cap and the latter, together with the can, turned over the bracket 19, the latter preventing the removal of the can from the cap while the said can is in such position. In the operation of turning the can 9 to one side or against the tank 1 the valves 17 and 13 are simultaneously closed, thus cutting off the supply of water and gas to the gas-receiver, respectively, the hinged connection 6 being so constructed as to be open at all times in order to allow the gas to escape should the same become excessive in either position of the can 9.

When the calcium-carbid can is in its normal position or over the bracket 19 and the gas-receiver 2 in its lowest position, the head 26 of the rod 25 will come in contact with the lever 23 and open the valve 22, allowing a certain amount of water to pass down the pipe 16 from the tank 20 through the valve 17 and into the can 9 upon the calcium carbid contained therein, producing gas immediately, the latter passing through the pipe 11, valve 13, and pipe 12 into the gas-receiver, causing the latter to rise, in which operation the lever 23 will assume its normal position by the weight 28 closing the valve 22 and cutting off the supply of water to the calcium-carbid can, the gas contained in the gas-receiver passing through the pipe 14, the latter supplying the gas to any given place.

Having fully described my invention, what I claim is—

1. An acetylene-gas machine, comprising a suitable gasometer, a gas-supply pipe leading into the same, a water-supply pipe, hinged valves located in each of said pipes, a calcium-carbid can, pipes connecting the latter to the said valves, whereby when the said can is moved out of its normal position, the said valves are simultaneously closed, a suitable escape-pipe, connected with the calcium-carbid tank, and a check-valve located in said escape-pipe, as and for the purpose described.

2. In an acetylene-gas machine, a gasometer, suitable pipe connections, a suitable device connecting the ends of said pipes, valves located in the pipes, whereby the end of the latter may be turned, a can removably attached to said device, and an arm or bracket located below the said can when the latter is in its normal position, and the machine in operation for producing gas, as and for the purpose described.

3. An acetylene-gas machine, comprising a suitable gasometer, a pipe for supplying gas into the same, an escape-pipe, and a water-supply pipe, short pipes connected with each of the said pipes, valves for connecting the short pipes with the first-named pipes, whereby a hinged connection is obtained, a safety-valve located within the escape-pipe, a cap connecting the short pipes and forming a chamber into which the same open, a calcium-carbid can removably attached to said cap, and an arm or bracket located below said can when the latter is in its normal position, as and for the purpose described.

4. In an acetylene-gas machine, comprising a suitable gasometer, pipe connections leading to the same, and provided with hinged valves, means for connecting the ends of said pipes forming a common chamber, a calcium-carbid can removably attached to the ends of said pipe, and in communication with said chamber, and means for indicating the operative

position of the can, and for preventing the same from being removed when in said position, as and for the purpose described.

5. In an acetylene-gas machine, a suitable gasometer, a gas-supply pipe, a hinged valve located within the same, a water-supply pipe, a hinged valve located within the latter, an escape-pipe, a hinged connection located within the latter, all of said valves being located on a line with one another, a safety-valve located within the escape-pipe, and a calcium-carbid can adapted to be removably secured to the ends of said pipes, whereby when the said can is turned in a position for removing it from the machine, the valves in the water-supply and gas-supply pipes are automatically closed, as and for the purpose described.

6. An acetylene-gas machine, comprising a suitable gasometer, suitable pipe connections leading to the same, through which the gas passes, a hinged valve forming a part of said pipe connections, a calcium-carbid can adapted to be removably attached to the latter, whereby when the can is turned out of its normal position, the said valve is closed, and suitable means for supplying water to the calcium-carbid can, as and for the purpose described.

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

JOHN H. GREEN.

Witnesses:
ALFRED A. MATHEY.
C. F. KELLER.