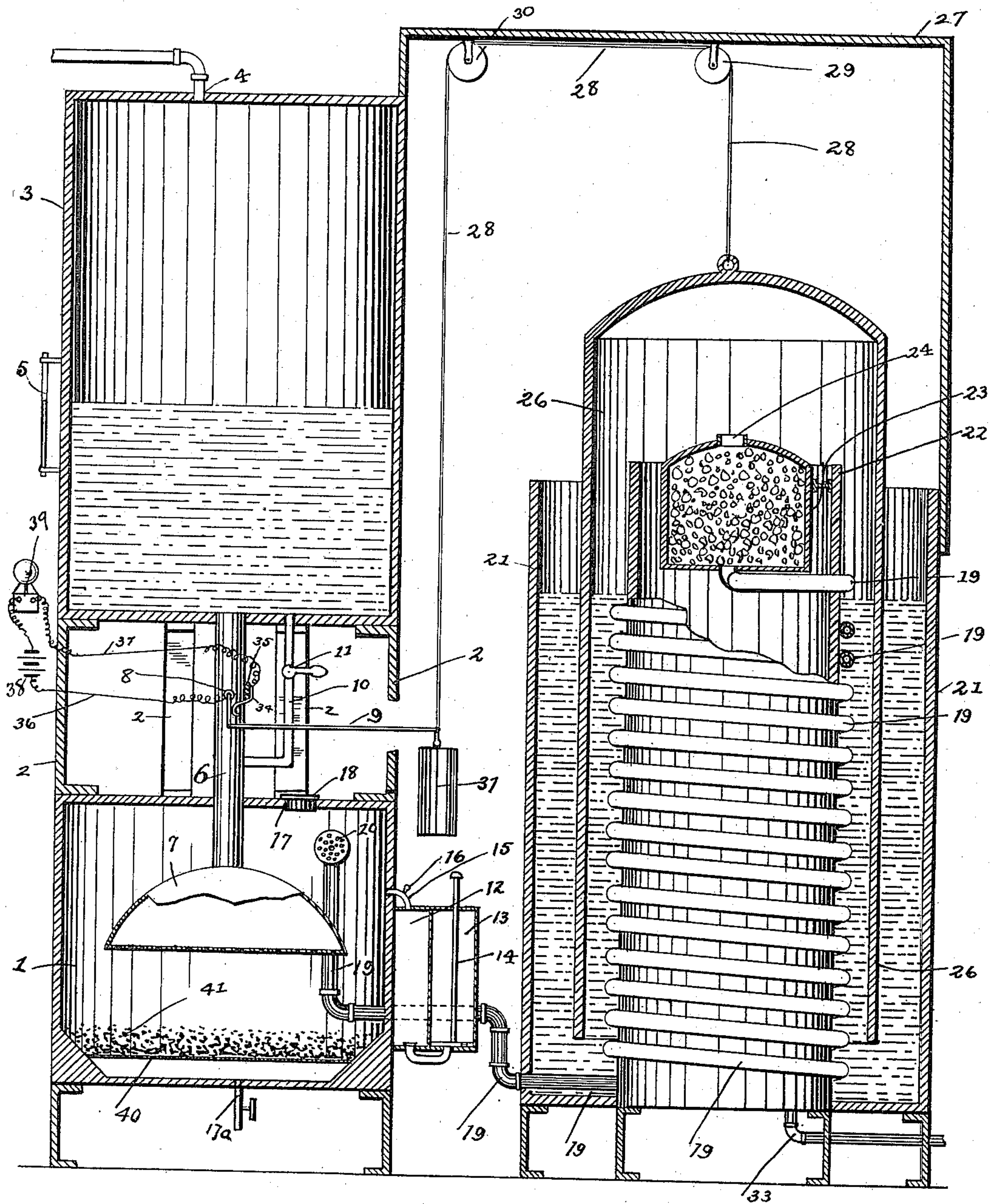


(No Model.)

H. M. HANDSHY.
ACETYLENE GAS GENERATOR.

No. 600,868.

Patented Mar. 22, 1898.



WITNESSES:

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HENRY M. HANDSHY, OF CHICAGO, ILLINOIS.

ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 600,868, dated March 22, 1898.

Application filed December 15, 1896. Serial No. 615,739. (No model.)

To all whom it may concern:

Be it known that I, HENRY M. HANDSHY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Gas-Generators, of which the following is a specification.

My invention relates to the improvement of gas-generators, and has particular relation to that class of gas-generators which are adapted for use in generating gas from carbid.

The objects of my invention are to provide an improved generator of this class of superior construction and arrangement of parts; to provide improved means for producing a pure and superior quality of illuminating-gas; to provide improved means for automatically sounding an alarm when the gas in the tank or reservoir is reduced to a comparatively light pressure, and to produce other improvements the details of construction of which will be more fully pointed out hereinafter. These objects I accomplish in the manner illustrated in the accompanying drawing, in which the figure is a central vertical section of my improved generator and receiver.

Similar numerals refer to similar parts throughout the view.

In the construction of my improved generator I employ a generating case or cylinder 1. Rising from this generating-cylinder 1 are suitable standards 2, which serve to support an upper water tank or cylinder 3, this tank 3 being provided with a suitable water-inlet 4 and water-gage 5. Leading downward from the lower end of the water-tank 3 and through the upper end of the generator-case 1 is a vertical water-pipe 6, this water-pipe supporting on its inner end a suitable water-spraying nozzle 7. At a point in the water-pipe 6, between the water-tank and generating-cylinder, I provide a suitable cut-off valve, which is indicated at 8, said cut-off valve being adapted to be opened and closed by means of an angular valve-handle 9, one arm of which extends outward beyond the standards 2. 10 represents a smaller water-conducting pipe, which leads from the bottom of the tank 3 into the pipe 6 at a point below the valve 8. This pipe 10 is provided with a cut-off valve 11.

On the outer side of the generator-case 1 I provide a combined air-tank 12 and pump-

cylinder 13, said pump-cylinder being provided with an air-pump piston 14, adapted to work therein and to force air into said air-cylinder 12. This air pump and cylinder may be of any of the ordinary and well-known designs. Leading from the air-cylinder into the generator-case is a pipe 15, which is provided with a valve 16.

17 represents a feed-opening in the upper side of the generator-case, said feed-opening being adapted to be closed by a suitable plug or cover 18.

17^a represents an outlet which is arranged in the lower end of the casing.

19 represents a gas-pipe which is preferably provided with an enlarged perforated head 20, said head being arranged in the upper portion of the casing 1. The pipe 19 passes outward through the wall of the casing 1, thence into the lower portion of a vertical water-tank 21. Within the central portion of the tank 21 is supported a vertical and cylindrical tank 22, which has its upper side open, as shown. Supported in the upper end portion of the internal cylinder 22 is a purifying-box 23, which is filled with any suitable gas-purifying ingredients. The pipe 19 after entering the lower portion of the tank 21 passes about the lower end portion of the internal cylinder 22, from which point it rises in a coil about said inner cylinder and has its upper end connected with the lower end portion of the purifying-case 23. This purifying-case is, as indicated at 24, provided with a gas-outlet in its upper end.

26 represents a vertical gas-cup which, as shown in the drawing, is in the form of a cylinder having an open lower end and closed upper end portion. This gas-cup, which loosely surrounds the inner cylinder 22 and forms a covering for the upper end portion of said inner cylinder, is suspended from a suitable upper frame-arm 27 by means of a cord or chain 28, which passes upward over a pulley 29, which is journaled from the frame-arm 27. From the pulley 29 the cord 28 extends horizontally to a second pulley 30, which is also journaled from the frame 27, and from the pulley 30 said cord passes downward on the outer side of the water-tank 3 and is provided at a point below the latter with a weight 31, the latter being designed

to counterbalance the gas-cup 26. This gas-cup is adapted to have the greater portion of its body suspended in the manner described in water contained in the tank 21 and which is indicated by the dotted lines therein. The lower end portion of the cord 28 is connected with the outer end of the valve-operating arm 9.

The lower end of the inner gas-tank 22 has leading therefrom a gas-outlet pipe 33.

34 represents an electric contact-spring, which has one of its ends secured to a suitable insulating-block 35 on the pipe 6 and which has its remaining end in such position as to come into contact with the shorter arm of the valve-operating lever 9 when the latter is in a vertical position. This contact of said spring-strip and valve-arm serves to close an electric circuit through the medium of wires 36 and 37 and a battery 38 through a suitable alarm-bell 39.

In order to utilize my device, I provide in the lower end portion of the tank 1 a slightly-elevated and preferably-perforated floor 40, upon which is adapted to be deposited through the medium of the opening 17 a suitable carbid or other gas-generating compound 41. The valve 8 being open water is discharged through the medium of the pipe 6 and nozzle 7 onto the chemical mixture 41. This mixture of water and chemicals results in the formation of gas, which, passing through the perforated head 20 of the pipe 19, passes out through said pipe through the coil of the latter, thence into and through the purifier 23, and out into the gas-cup 26. The pressure of gas thus formed within the cup results in elevating the latter and in the weight 31 descending until the valve-arm 9 is so turned as to close the valve 8 and thereby cut off the flow of water to the generating-tank. In order to supply the generating-case with a proper amount of air, the air-pipe valve 16 may be opened and air from the tank 12 allowed to escape into the case 1. In case it is desired to admit of a flow of water into the tank 7 when the valve 8 is closed the valve 11 may be opened and water allowed to pass from the water-tank through the medium of the pipe 10.

From the construction and operation herein shown and described it will be seen that owing to the pipe 19 being coiled about the inner cylinder 22 and the greater portion of said cylinder and pipe being surrounded by water the gas contained in the pipe 19 will be cooled in its passage from the generating-case to the purifier. It will also be seen that the inner cylinder 22 will serve as a dry compartment

for the reception of gas. When the gas in the holder 26 has become sufficiently reduced to cause said holder or cup to descend within the tank 21 to the position indicated in the drawing, it is obvious that the valve-lever arm 9 will be turned to such position as to come into contact with the spring-strip 34, resulting through the closing of the circuit hereinbefore mentioned in the ringing of the bell 39, thus providing an automatic alarm when the gas-pressure is reduced.

From the construction and operation herein shown and described it will be seen that simple and comparatively inexpensive means are provided for generating gas from carbid or other similar gas-producing substance and that improved means are combined therewith for cooling and purifying the gas so generated.

Having now fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a gas-generator the combination with the generating-tank 1, a water-tank, a water-pipe leading from said water-tank to said generating-tank, inlet and outlet openings in said generating-tank, a valve in said water-pipe and means for supporting a gas-producing substance in said generating-tank, of a tank 21 to contain water, a central gas-cylinder within said tank 21, a purifier supported from said gas-cylinder, a gas-holding cup suspended in said tank 21, a gas-pipe leading from said generating-tank into said tank 21 and discharging through the purifier 23 and a connection between said gas-cup and water-pipe valve whereby said valve is closed when said tank is elevated and opened when said tank is lowered, substantially as and for the purpose specified.

2. In a gas-generating device the combination with a generating-tank having inlet and outlet openings and means for supporting a gas-generating substance therein, a water-tank 3, a water-pipe 6 connecting said water-tank and generating-tank, a valve in said water-pipe, an electric contact-strip with which the handle of the valve 8 is adapted to come into contact when said valve is open, and an electrical connection with said valve and contact-strip through a battery and bell, of a suspended gas-receiving cup and a cord connection between said gas-cup and the lever arm or handle of the valve 8, substantially as and for the purpose specified.

HENRY M. HANDSHY.

In presence of—

C. C. SHEPHERD,
E. W. BRINKER.