

No. 707,796.

Patented Aug. 26, 1902.

S. L. NEWLIN & J. MATHISEN.  
ACETYLENE GAS GENERATOR.

(Application filed Mar. 27, 1902.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

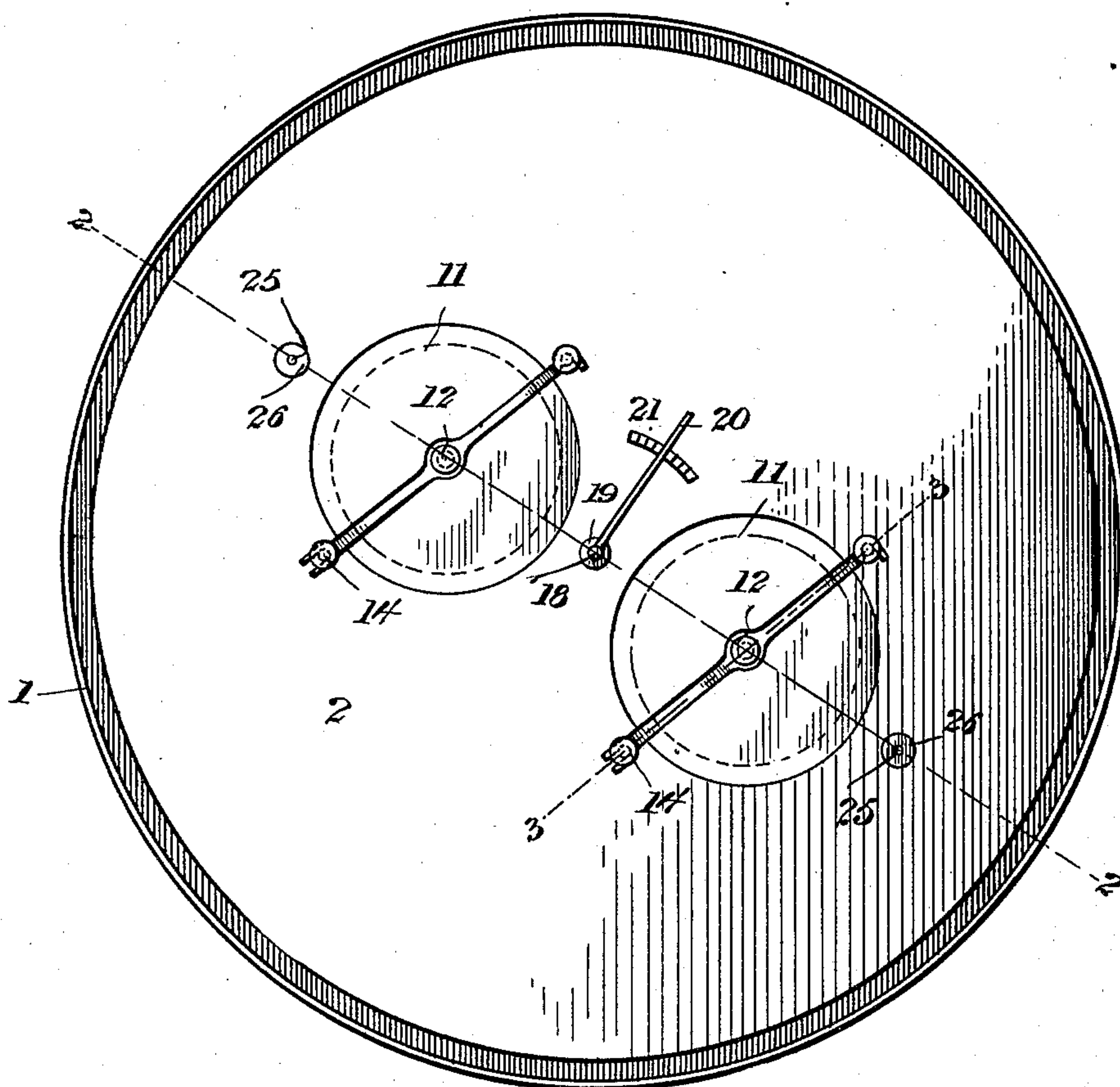
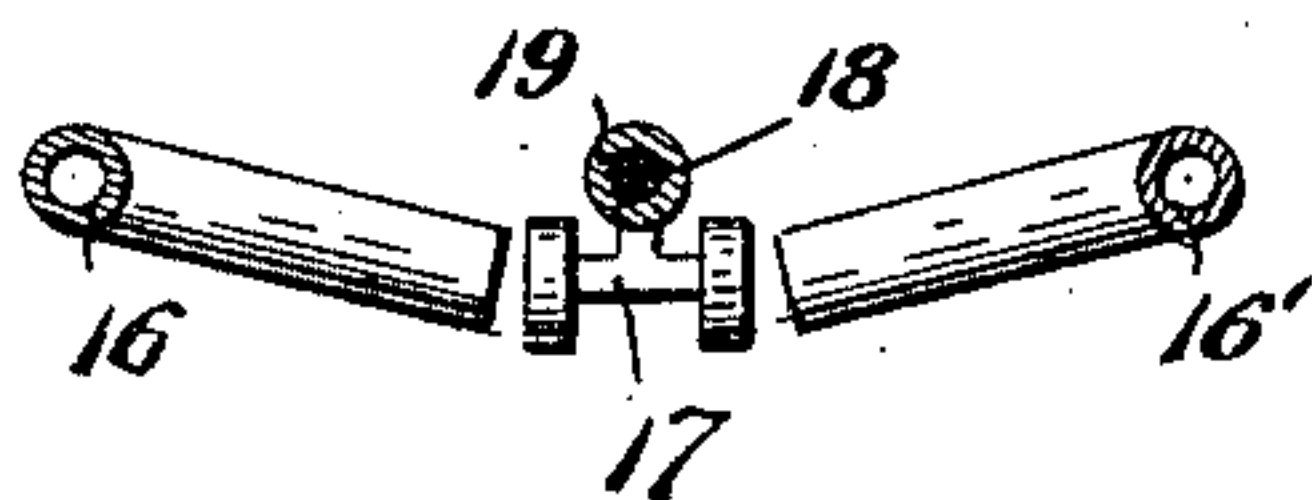


Fig. 4.



Witnesses

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2 Sheets—Sheet 2.

Fig. 2.

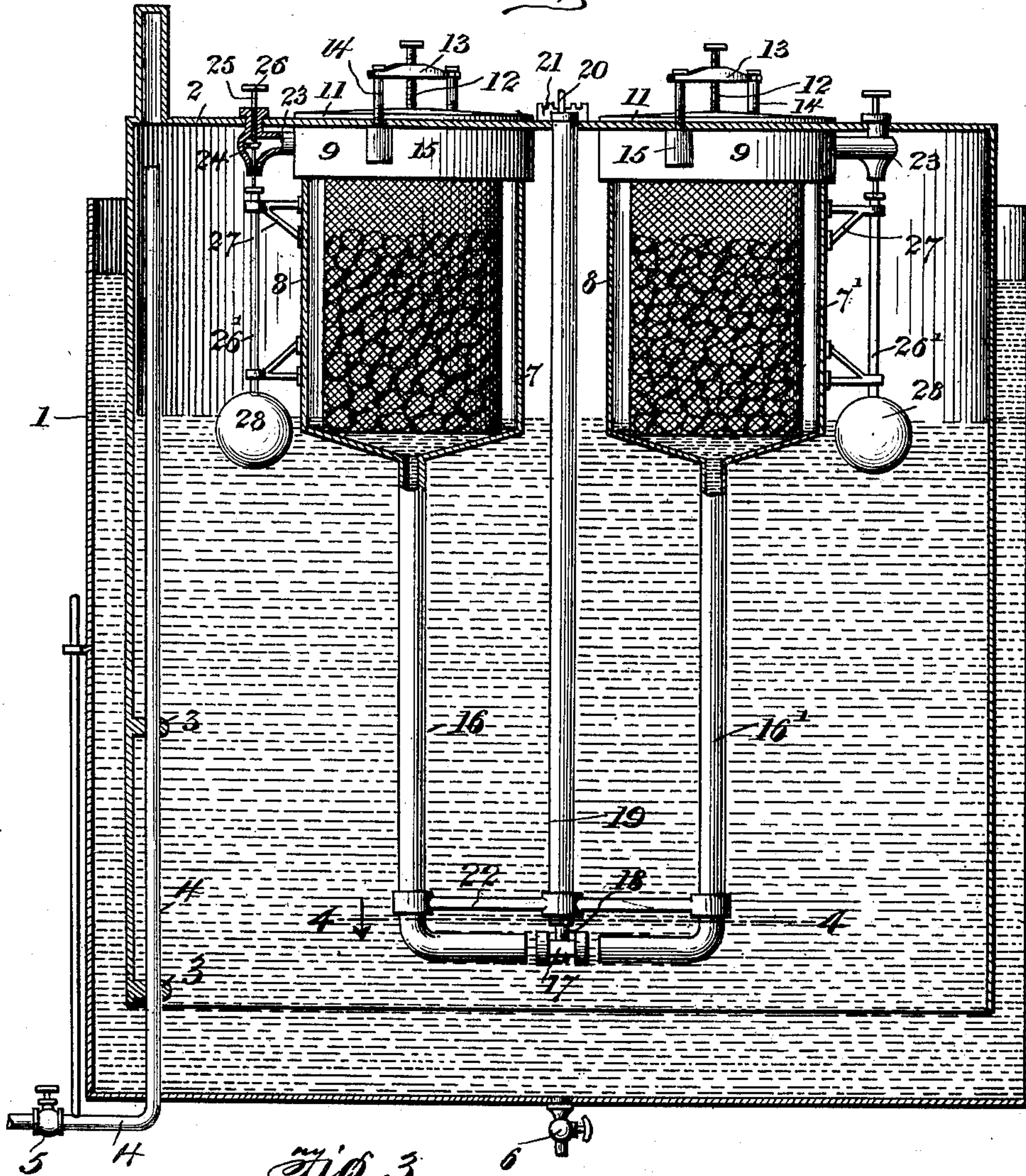
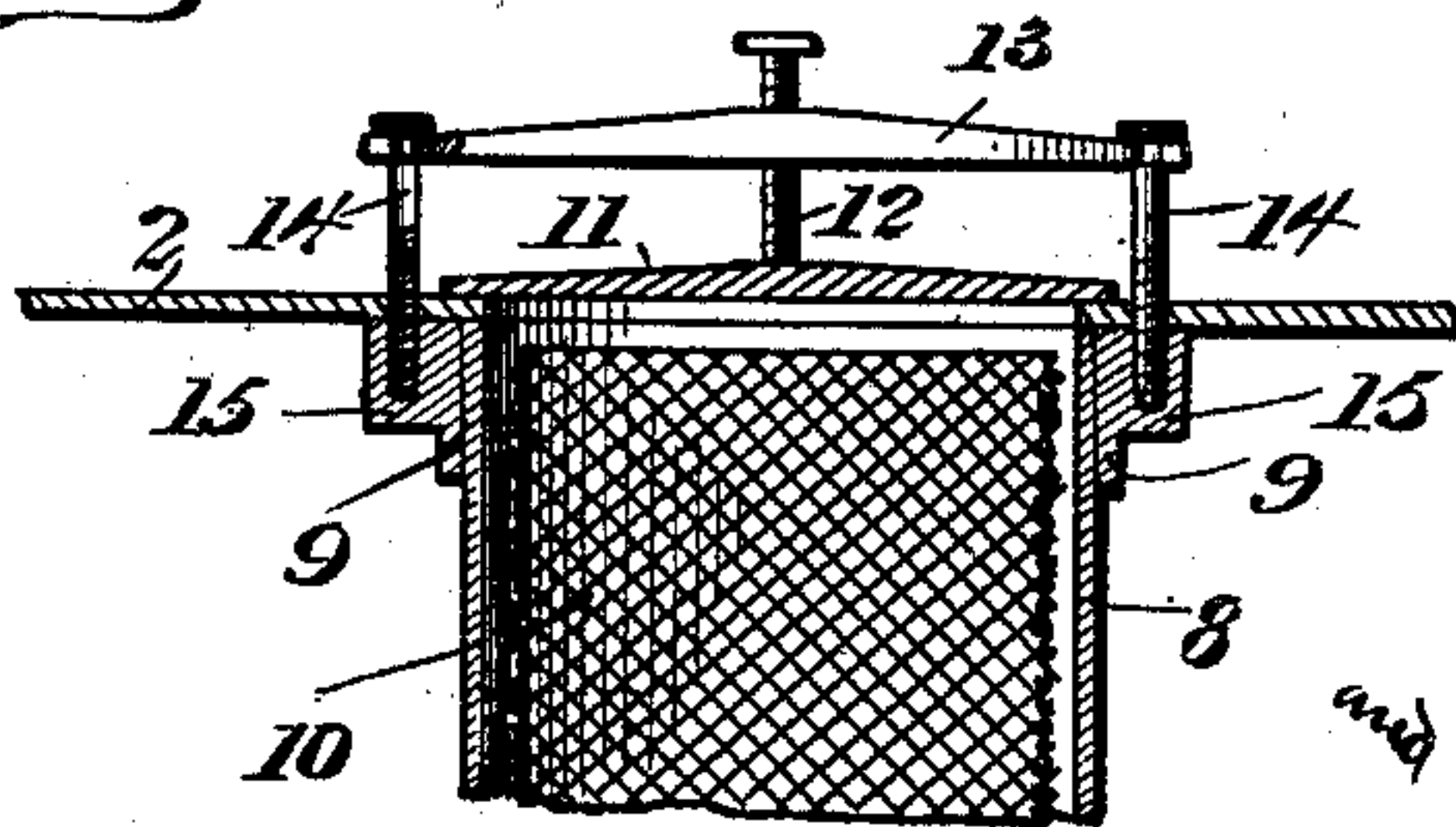


Fig. 3.



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# UNITED STATES PATENT OFFICE.

STRANDA L. NEWLIN AND JENS MATHISEN, OF KINGRIVER, CALIFORNIA;  
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## ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 707,796, dated August 26, 1902.

Application filed March 27, 1902. Serial No. 100,289. (No model.)

*To all whom it may concern:*

Be it known that we, STRANDA L. NEWLIN and JENS MATHISEN, citizens of the United States, residing at Kingriver, in the county of Fresno and State of California, have invented certain new and useful Improvements in Acetylene-Gas Generators; and we 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.

This invention relates to improvements in acetylene-gas generators.

The object of the invention is to provide a generator which shall be simple of construction, comparatively inexpensive of production, safe and efficient in use, and adapted to be easily and conveniently managed.

With this and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, which will be hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a top plan view of an acetylene-gas generator embodying our invention. Fig. 2 is a central vertical section of the same on line 2 2 of Fig. 1, and Fig. 3 is an enlarged detail section through the top of the bell and one of the generators on line 3 3 of Fig. 1. Fig. 4 is a detail section on line 4 4 of Fig. 2.

Referring to the drawings, the numeral 1 represents the water-tank of the apparatus, and 2 the gas-holder or bell arranged therein in the usual way, said gas-holder being guided in a vertical path by guide members 3 thereon, which slide along a service-pipe 4, extending vertically up into the bell above the level of the water therein. This pipe is suitably supported and extends exteriorly for connection with a house service-pipe and is provided with a valve 5. The tank 1 has a valve 6 for discharge of the water and residuum.

Arranged within the bell or gas-holder are two generators 7 7', each of which comprises an imperforate casing 8, provided at its upper end with a strengthening-band 9 and suitably secured to the top of the bell. The top of the casing is open for the insertion and removal of an open-work carbid-basket 10

and is located below a corresponding opening in the top of the bell. The said openings are adapted to be closed by a cover 11, which is held closed by a clamping-screw 12, carried by a yoke 13, one end of which is bifurcated and the other hooked to engage screw-bolts 14, connected to lugs 15 on the band or collar 9. When the screw 12 is slackened, the hooked end of the yoke is free to be swung out of engagement with the coacting bolt 14 to permit of the removal of the cover 11.

Water is supplied to the two generator-casings for the generation of acetylene gas through vertically-depending pipes 16 16', which extend down to within a short distance of the bottom of the tank 1 and have their lower ends, which are open for inlet of water, facing each other and arranged in close relation. Interposed between the inlet ends of the pipes is a valve 17, which when swung in one direction closes the end of the pipe 16 and when swung in the opposite direction closes the end of the pipe 16'. This valve is carried by a rod or stem 18, mounted to oscillate in a tube or pipe 19, depending from the top of the bell 2, and provided at its upper end with an operating-handle 20, adapted to engage a notched bar or rack 21, fixed to the top of the bell, by means of which the rod and valve may be turned and secured in adjusted position. The pipes 16, 16', and 19 are connected and held in proper relation by a brace 22. Water passing upwardly through either pipe 16 16' enters the generator-casing connected therewith and comes in contact with the carbid in the basket 10, thus generating gas. The gas discharges from each generator through a valve-casing 23, in which is arranged an upwardly-opening puppet-valve 24, adapted to close by gravity against its seat. This valve may be held closed by a screw 25, mounted in the upper portion of the casing and provided on the exterior with a hand-wheel 26. When this screw is retracted, the valve is free to be opened by a plunger-rod 26', sliding in guide-brackets 27 on the generator-casing and carrying a float 28, which rests upon the surface of the body of water in the tank and bell.

In priming the apparatus for operation the hand-wheels 26 are manipulated to force the



screws 25 down and hold the valves 24 closed against their seats to prevent the upward movement of said valves by the rods 26', actuated by the floats 28. The covers 11 are then removed and the carbid-baskets 10 filled and inserted in position, when said covers 11 are replaced and closed. The valve 5 is next opened and the tank 1 filled with water up to within a short distance of its top. When this has been done, the screw 25 of either generator—say generator 7—is retracted to permit the coacting valve 24 to open under the upward pressure of the rod 26', whereupon the air contained within the generator 7 discharges, allowing water to flow upward through the pipe 16 and to come in contact with the carbid in the basket 10, thereby generating gas. This gas discharges through the valve-casing 23 into the bell 2 and thence through the service-pipe 4. When the pressure of the gas within the bell reaches a certain height and the bell moves upward to a position in which the stem of the valve 24 is removed from engagement with the rod 26', the said valve 24 is seated by the combined action of gravity and the pressure of the confined gas and prevents the further discharge of gas, and as soon as the pressure within the generator-casing 8 of the generator 7 reaches a certain point it forces the water contained therein down through the pipe 16 out of contact with the carbid, thus preventing further generation. When the pressure in the bell decreases to a certain extent, the stem of the valve 24 again comes in contact with the float-rod 26' and the valve is lifted, allowing the small amount of gas contained within the generator-casing 8 to discharge and the water to again enter said casing and start the generation of gas in like manner until the pressure again reaches the maximum and generation is again arrested, as above set forth.

When the charge of carbid within the basket 10 of the generator 7 is exhausted, the generator 7' is started by retracting the screw 25 to allow the coöperating valve 24 to open and admit water through the pipe 16' to come in contact with the carbid in the basket 10 of said generator. While the generator 7' is working the parts of the generator 7 are allowed to remain in operative position until it is desired to recharge it. Then to recharge generator 7 the hand-wheel 26 is operated to force the clamping-screw 25, coacting with said generator, down to close the valve 24, and the handle 20 of the rod 18 is turned to oscillate said rod, so as to bring the valve 17 into position to close the pipe 16. The cover 11 of said generator is next detached and the basket 10 removed, filled with carbid, and replaced and the cover 11 again closed down. When this has been done, the valve 17 is swung out of contact with the pipe 16. Gas will then be generated in the generator 7 until sufficient pressure is raised to keep the water forced down into the pipe below the carbid in the basket 10, so that said generator

7 will be kept out of operation until the co-operating valve 24 is opened to relieve the pressure and start the generator working. When the generator 7' is exhausted, the generator 7 is again placed in action and the generator 7' recharged in the manner before described with reference to generator 7, except that in this case the valve 17 is preliminarily turned to close the pipe 16'. In this manner the two generators are alternately used, thus insuring a continuous supply of gas, and the pressure is automatically regulated by the rise and fall of the bell 2, the generation of gas being arrested when the bell moves upward to a position in which the floats 28 are moved out of contact with the water contained within the bell and tank and generation again resumed when the pressure decreases and the bell drops to a position in which the floats 28 again come in contact with the water and force open the valve 24, allowing the air or gas to discharge from the associated generator and water to flow up through the pipe 16 or 16', as the case may be, and effect the generation of gas.

From the foregoing description, taken in connection with the accompanying drawings, it is thought that the construction, mode of operation, and advantages of our improved generator will be readily apparent without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In an acetylene-gas generator, the combination of a water-tank, a gas-holder movably mounted therein, a gas-generator carried by the gas-holder and comprising a casing having an inlet for water and a discharge for the generated gas, means for closing the inlet to prevent access of water to the generator, a valve controlling the outlet, means for automatically opening said valve, and means for holding said valve closed against the pressure of the opening device, substantially as described.

2. In an acetylene-gas generator, the combination of a water-tank, a bell or gas-holder movable therein, a generator carried by the bell and comprising a casing having an inlet for water and an outlet for the generated gas, a carbid-basket arranged within the casing, a valve for opening and closing the inlet to regulate the supply of water to the casing, means for holding the outlet-valve closed, and a float carrying a tappet device adapted to open said valve in a predetermined position of the valve when the said valve-closing device is retracted, substantially as specified.

3. In an acetylene-gas generator, the combination of a water-tank, a bell or gas-holder arranged therein, a generator carried by the



gas-holder and comprising a casing having a carbide-basket arranged therein and provided with a depending pipe for the inlet of water thereto, a valve-controlled discharge regulating the outflow of gas from the generator, a rod for opening the valve of said discharge, a float for operating said rod, and means for holding the valve seated against the pressure of the rod, substantially as set forth.

10 4. In an acetylene-gas generator, the combination of a water-tank, a bell or gas-holder arranged therein, generators carried by the gas-holder and each comprising a casing having a carbide-basket arranged therein and provided with a depending water-supply pipe, the water-supply pipes of the two generators having their lower ends arranged in close relation, a valve-controlled discharge regulating the outflow of gas from each generator, 20 means for holding the valves thereof closed against their seats, means for opening the valves in a predetermined position of the gas-holder when said valve-holding means are retracted, and means common to both pipes for opening or closing either of the water-inlet pipes at will, substantially as specified.

5. In an acetylene-gas generator, the com-

bination of a water-tank, a gas-holder arranged therein, generators carried by the gas-holder, each generator comprising an impermeate casing containing a perforate carbide-holder and having a depending water-inlet pipe, the two pipes having their lower ends arranged in close relation, a valve-controlled discharge regulating the outflow of gas from each generator-casing, means for holding the valves thereof closed against their seats, rods for opening the valves when the valve-closing means are retracted, floats for bringing said rods into action when the gas-holder descends to a predetermined position, a valve adapted to close the lower end of either of the aforesaid water-inlet pipes, a rod connected to said valve, and means for operating the rod, substantially as set forth.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

STRANDA L. NEWLIN.  
JENS MATHISEN.

Witnesses:

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