

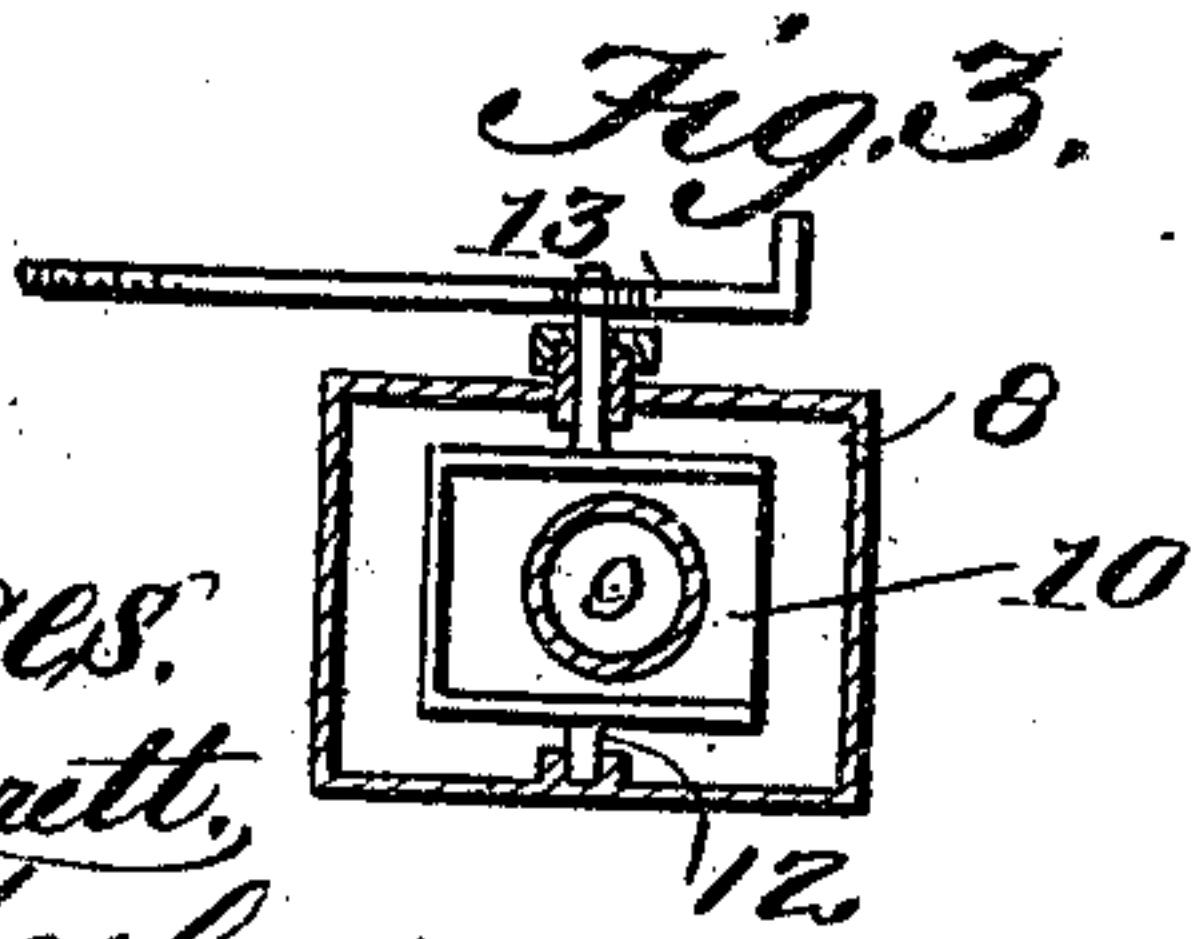
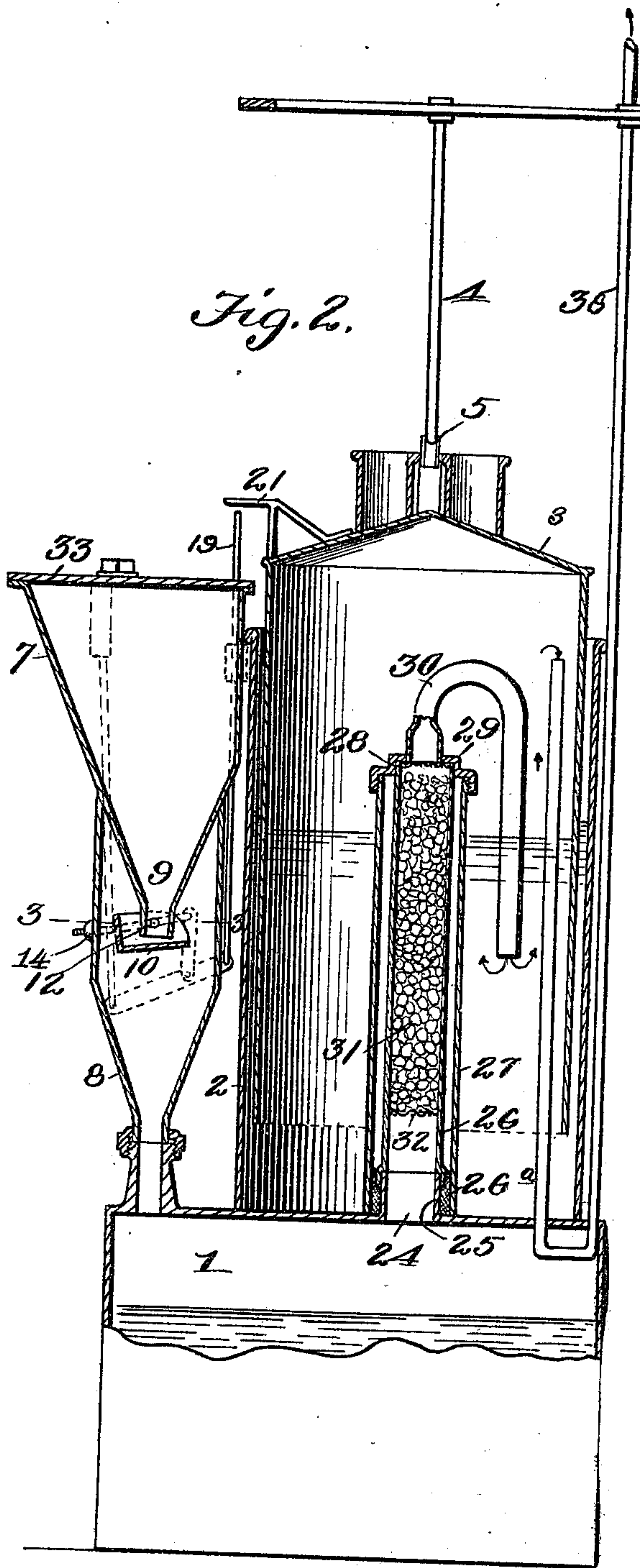
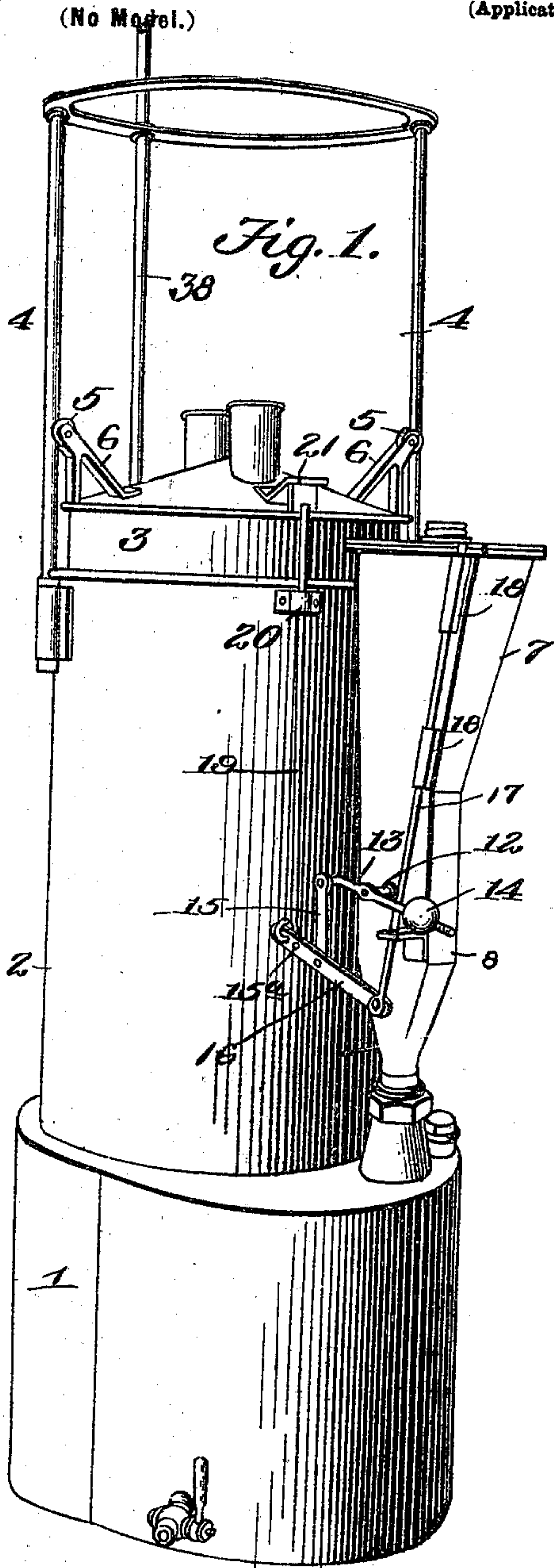
**No. 669,463.**

**Patented Mar. 5, 1901.**

**J. E. LE SUEUR & J. W. TILFORD.**  
**ACETYLENE GAS GENERATOR.**

(Application filed June 23, 1900.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

JOHN E. LE SUEUR AND JAMES W. TILFORD, OF NASHVILLE, TENNESSEE.

## ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 669,463, dated March 5, 1901.

Application filed June 23, 1900. Serial No. 21,329. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN E. LE SUEUR and JAMES W. TILFORD, citizens of the United States, residing at Nashville, in the county of Davidson and State of Tennessee, have invented new and useful Improvements in Carbide-Feeding Mechanism for Acetylene-Gas Generators, of which the following is a specification.

Our invention relates to acetylene-gas generators, our object being to provide simple automatic means for supplying the generating-chamber with carbide which shall be under the control of the gasometer.

It is our purpose also to provide an apparatus which will feed carbide in lumps of any size from a diameter of a quarter of an inch upward and by which the supply of carbide to the water in the generating-chamber shall be regulated by the requirements of the latter and an oversupply thereof prevented.

Our invention consists of the features and details of construction and combinations of parts which will be hereinafter more fully described and claimed.

For the purposes of the following description reference is had to the accompanying drawings, in which—

Figure 1 is a side elevation of a generator of acetylene gas having our invention applied thereto. Fig. 2 is a sectional elevation of the same, the hopper-feed chute and part of the gasometer being shown in vertical section to illustrate the operation of our automatic feeding apparatus. Fig. 3 is a section taken on the line 3 3 of Fig. 2.

The reference-numeral 1 in said drawings indicates the water-chamber or generator of an acetylene-gas-producing apparatus. Above this chamber are the gasometer 2 and gas-bell 3, the latter being arranged between vertical guides 4, with which rolls 5 engage, said rolls being journaled in the ends of rigid arms 6 on the top of the gas-bell.

Upon the side of the gasometer 2 is the feed-hopper 7, communicating at its lower end with a feed-chute 8, which enters the top of the water-chamber or generator 1. The contracted lower end 9 of the hopper enters the top of the feed-chute, which is of such diameter that the exit end of the hopper descends into it for some distance. Upon said

exit end 9 is mounted a scoop-shaped feed-gate 10, having a pivotal support 12 on the end 9 of the hopper between the closed and the open ends of said gate. The pivot 12, which is rigid with the feed-gate, has one end prolonged and extended through the wall of the feed-chute 8. Upon said pivot is rigidly mounted an arm or lever 13, which extends on both sides of said pivot. On one end of said arm or lever is mounted a weight 14, which normally keeps the feed-gate 10 closed. The weight is adjustable on the arm or lever 13 by screwing it upon a threaded portion of the same or in any suitable manner. To the other end of the lever-arm 13 is connected a link 15, which drops a few inches below said lever. To its lower end is pivoted a lever 16, which extends on both sides of said link. To one of its ends a rod 17 is connected, said rod extending upward through one or more guides 18 and being held down by the cap 33 on the hopper, the end of the rod 17 being a fulcrum for the lever 16. To the other end of said lever 16 is pivotally connected one end of an operating-rod 19, which extends upward, passing through a guiding-bracket 20, projecting from the top of the gasometer. The upper end of the operating-rod is considerably above the top of the gasometer and directly under a tripping-arm 21 on the top of the gas-bell. By connecting the link 15 to one or another of a plurality of openings 15<sup>a</sup> in the lever 16 the range of movement of the gate 10 can be varied.

In the top wall of the gas-generator 1 is an opening 24, over which is a fixed flange 25. Upon this flange is seated the end of a pipe 26 of the same diameter, both being surrounded by a concentric outer pipe 27, the annular space between the latter and the flange 25 being filled with a packing 26<sup>a</sup> of asbestos or other suitable material. The pipe 26 rises somewhat above the end of the outer pipe 27, and over its end is spread a cheese-cloth strainer 28, held in place by a screw-cap 29, which also closes the top of the outer pipe 27. From the screw-cap 29 a pipe 30 rises to a point where it is reduced in diameter and is then curved over and extended downward beneath the water in the gasometer, into which the gas coming from the scrubber is discharged.



Beneath the cheese-cloth strainer 28 is a filling of coke or other suitable scrubbing material 31, which extends down in the pipe 26 to a screen or wire diaphragm 32, on which  
5 said material rests.

The gas coming from the generator 1 passes through the opening 24 and enters the pipe 26. Passing through the diaphragm 32 it flows through the scrubbing material 31 and  
10 then through the cheese-cloth strainer 28 into the gooseneck or curved pipe 30, by which it is discharged beneath the surface of the water. Rising from the surface of the water it enters the gas-bell 3, from which it is with-  
15 drawn by a pipe 38. By means of this apparatus we are able to produce commercially-pure acetylene gas, which is cleansed of all its impurities by passing through the scrubbing material 31 and cheese-cloth strainer 28.

20 The operation of our invention is as follows: The hopper 7 being supplied with calcium carbide, the generation of gas in the chamber 1 causes the gas-bell 3 to rise in the gasometer, thereby removing the tripping-arm 21  
25 from the end of the rod 19, which permits the weight 14 to close the feed-gate 10. As the gas in the bell 3 is consumed the latter falls until the arm 21 on said gas-bell comes in contact with the end of the operating-rod 19,  
30 pushing the latter downward in the guide-bracket 20. The movement depresses the end of the lever 16 to which the operating-rod is pivoted. As the other end of the lever 16 is pivoted to the rod 17, which is rigid, the  
35 lever or arm 13 is compelled to yield, overcoming the weight 14, and thereby opening the feed-gate 10 and allowing a supply of carbide to pass into the feed-chute and thence to the generator 1. The renewed supply of gas  
40 to the bell 3 causes it to rise again, thereby cutting off the feed of the carbide in the manner already explained. This automatic action continues as long as any carbide is in the hopper 7.

45 The apparatus is extremely simple and can be manufactured and placed upon the market at a low price. The organization is such that there is practically no danger of the

mechanism getting out of order, and all that is necessary is to see that the hopper is sup- 50 plied with carbide. The top of said hopper is provided with a suitably-tight cover 33 to prevent escape of gas.

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

In an acetylene-gas generator, the combination with the water-chamber and the gasometer mounted upon the same, the movable portion or bell thereof having an overhang- 60 ing tripping-arm upon its upper end projecting outwardly beyond the side of the stationary portion, of a feed-hopper located on one side of said gasometer, secured thereto and communicating at its lower end with said wa- 65 ter-chamber, a pivotally-mounted feed-gate controlling the discharge of material from said hopper, the pivot of which is secured to said gate and extends through, and projects at one end from, said hopper, a lever secured 70 at a point intermediate its ends to the projecting end of said pivot, a weight upon one end of said lever for normally maintaining said gate in its closing position across the mouth of said hopper, a link pivoted to the 75 opposite end of said lever and depending therefrom, a lever pivoted at a point intermediate its ends to said link, a rod 17 connected to the outer end of said lever and extending upwardly and engaging the cap of 80 said hopper, and an operating-rod pivoted to the inner end of the last-mentioned lever, extending up through a guide-bracket on the side of the stationary part of said gasometer, projecting above the upper end thereof and 85 adapted to be engaged by the overhanging tripping-arm on said bell when the latter is depressed, as and for the purpose set forth.

In testimony whereof we have hereunto set our hands in presence of two subscribing wit- 90 nesses.

JOHN E. LE SUEUR.  
JAMES W. TILFORD.

Witnesses:

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DAVID JONES.