

No. 646,427.

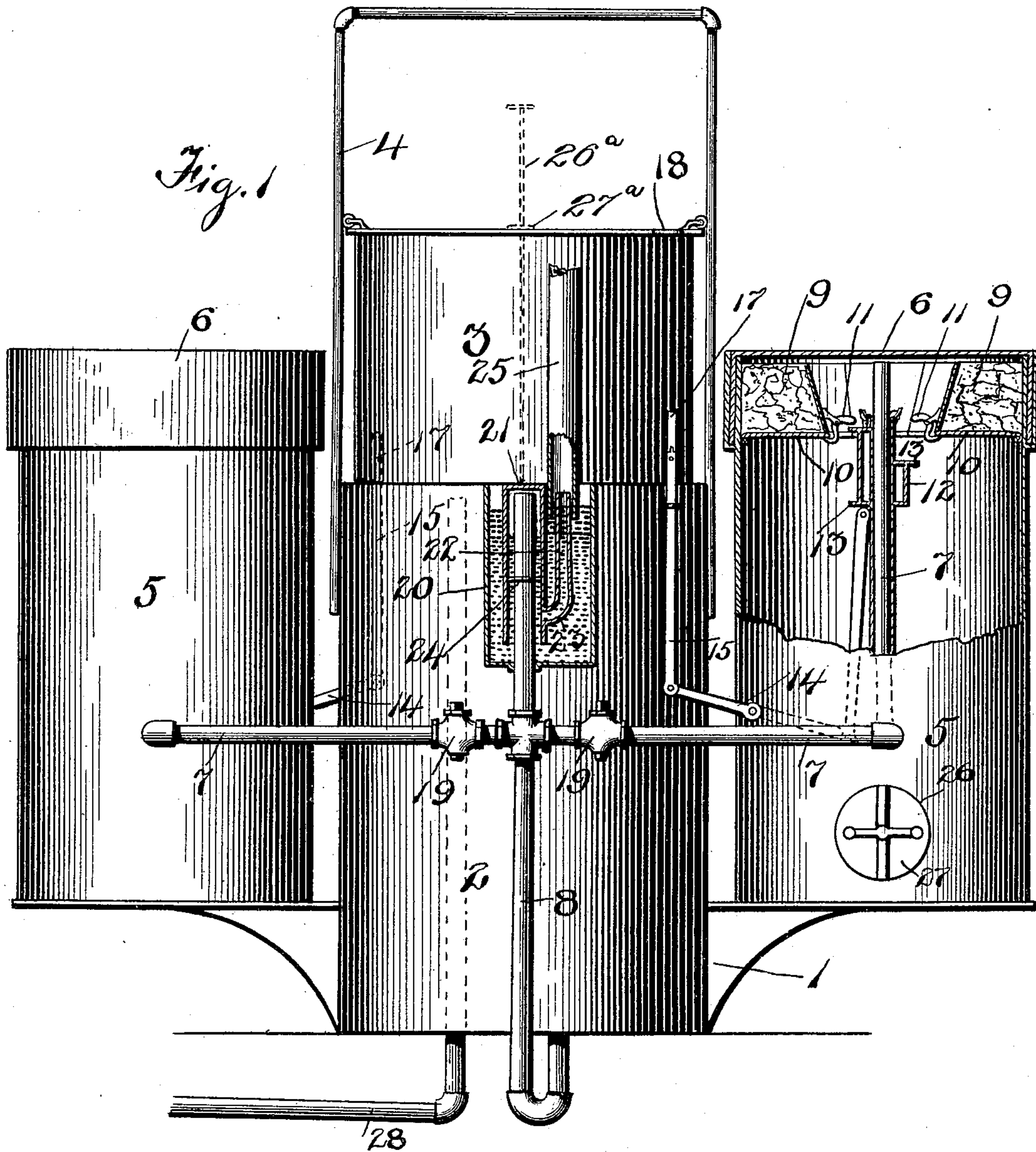
Patented Apr. 3, 1900.

J. F. GUAY.  
ACETYLENE GAS GENERATOR.

(Application filed Feb. 24, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:

*Wm. H. North*  
*Horace T. Deitz*

Jean François Guay, Inventor,  
By *Marion & Marion*  
His Attorneys.

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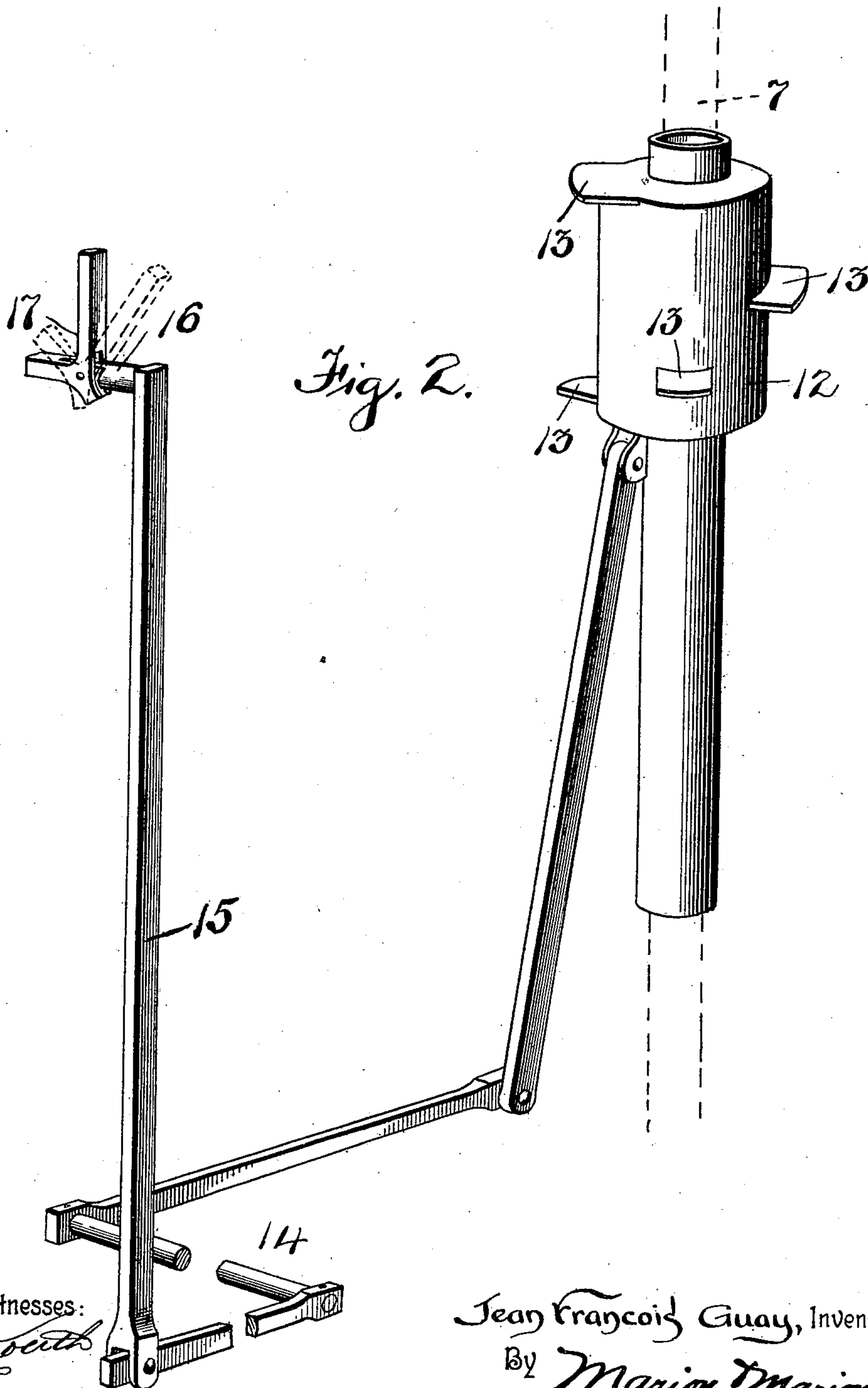
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2 Sheets—Sheet 2.



Witnesses:  
*Edw. Smith*  
*Horace T. Deitz*

Jean Francois Guay, Inventor,  
By *Marion Marion*  
His Attorneys.



# UNITED STATES PATENT OFFICE.

JEAN FRANCOIS GUAY, OF PLESSISVILLE, CANADA, ASSIGNOR OF ONE-HALF  
TO F. T. SAVOIE, OF SAME PLACE.

## ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 646,427, dated April 3, 1900.

Application filed February 24, 1899. Serial No. 706,576. (No model.)

*To all whom it may concern:*

Be it known that I, JEAN FRANCOIS GUAY, a subject of Her Majesty the Queen of Great Britain, residing at Plessisville, county of Megantic, Province of Quebec, Canada, have invented certain new and useful Improvements in Acetylene-Gas Generators; and I do hereby declare that the following is 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 generators.

One object of my invention is to provide an improved construction by means of which a series of carbid-receptacles are automatically and successively opened to drop a predetermined charge into the generating-chamber.

A further object is to provide a construction which is neat and attractive in appearance, durable in construction, simple and efficient in operation, and which can be made at a low cost.

To these and other ends my invention consists in the improved construction and combination of parts hereinafter fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, forming a part of this specification, and in which similar numerals of reference indicate similar parts in both views, Figure 1 is a front elevation, partly in section, of my improved generating apparatus. Fig. 2 is a detail of the mechanism for successively opening the carbid receptacles or chambers.

1 designates the gasometer, formed of the section 2 and telescoping section 3, said section 3 being mounted to have a vertical movement within the frame 4, as shown in Fig. 1.

5 designates the generator, having a removable cover 6, sealed to prevent the escape of gas therefrom. The generator is connected to the gasometer by means of a suitable pipe 7, mounted centrally within said generator and extending outwardly through the side thereof and into a pipe 8, which leads into the gasometer, the pipes 7 and 8 forming the gas-conduit from the generator to the gasometer.

Secured within the periphery of the generator near its top are a series of pockets or chambers 9, each of which is adapted to contain a predetermined quantity of carbid. Each compartment is closed at its bottom by means of a hinged door 10, held closed by means of a suitable catch 11, pivotally mounted within ears formed on the outer face of the pocket, as shown in Fig. 1. It will be readily seen that as long as the catches 11 are in position to hold the doors 10 closed no carbid can drop from said compartment; but when the catch 11 is tripped the door will fall, thus allowing the carbid to drop into the water contained in the generator, thus generating gas, which passes upward and out through the pipe 7 and pipe 8 into the gasometer.

As the pockets or chambers 9 are arranged in series and as it is necessary only that but one chamber or pocket be emptied at a time, it is necessary that the mechanism be so constructed as to cause but one catch to be operated at a time, and this is accomplished by means of a suitable collar 12, slidably mounted on the pipe 7. The face of the collar is provided with a series of laterally-extending portions 13, arranged at different heights, as best shown in Fig. 2. The collar 12 is moved vertically by means of a suitable rocking lever 14, formed substantially as shown in Fig. 2, said rocking lever having a pitman connection with the collar, as shown in said figure. As shown in the drawings, the rocking lever extends to a point within the generator, having one of its arms extending inwardly to approximately the center of the generator and having its arm on the outside of the generator extending rearwardly and having at its end a bar or upright 15, pivotally connected thereto, said bar having at its upper end a lateral extension 16, at the end of which is pivotally mounted an L-shaped rocking arm 17, the parts being substantially as shown in Fig. 2.

While I have described but one generator and its mechanism, it is to be understood that I may use a plurality of generators and mechanism for operating, and in the drawings I have so shown the apparatus, each generator being a duplicate of the other.

In operating my improved apparatus the



receptacles for the carbid (designated as 9) are filled, the doors 10 being in their locked position. One of the arms 17 is placed in the position shown in full lines in Fig. 2, the other arm, located on the opposite side of the gasometer, being placed in the position shown in dotted lines in this figure. As the section 3 of the gasometer passes downward, a plate 18, extending laterally from the top of said section, contacts with the upper end of the arm 17, whereupon by the continued downward movement of the section 3 the rocking lever 14 will be oscillated, raising the collar 12 upwardly on the pipe 7 until the uppermost portion 13 formed on said collar contacts with and opens its catch 11, thus releasing the door from the compartment to which the catch is attached. The dropping of the carbid necessarily forms the gas, causing the section 3 to be raised, and as this section rises the weight of the collar 12 causes it to descend to its normal position. This action is repeated each time the section 3 is lowered, each lowering of the section causing the collar 12 to be moved to a greater height as the successive portions 13 are successively brought into contact with the catch 11 which is operated by said portion. During this movement of the section 3 the opposite plate 18 passes downward in a manner similar to the one which is operating the active generator; but inasmuch as the arm 17 is out of the path of movement of said plate there will be no action of the rocking arm of the inactive generator until the carbid in the active generator has been removed, with the exception of one compartment. During the downward movement of the section 3 to cause this last compartment to be opened the opposite plate reaches a position where it contacts with the lower arm of the arm 17, causing the entire arm 17 to be rocked and to be brought into position as shown, the upright portion of the arm 17 remaining outside of the path of movement of the plate 18 until such plate has moved above the top of said arm, when the weight of the lower arm will cause the arm 17 to assume this position. (Shown in full lines in Fig. 2.) Upon the next downward movement of the section 3 the second generator will come into active operation, while the generator before used will be free from any making of gas, owing to the absence of the carbid, the collar 12 in the inactive generator having a movement corresponding to the movement of the collar within the active generator; but such movement does no harm, inasmuch as all of the compartments have been emptied of their contents.

As shown in Fig. 1, each of the pipes 7 is provided with a suitable cock 19, which serves to allow of the closing of the pipe 7 from operative connection with the interior of the gasometer. It will also be seen that each of said pipes is connected to the pipe 8, which leads directly within the generator, forming the conduit for the gas from each generator.

It will also be seen that the pipe 8 is continued upwardly from the connection with the pipe 7, the upper end being provided with a suitable annular receptacle 20, adapted to receive water to form a water seal, with a suitable cap 21, formed substantially as shown in said figure. The cap 21 is formed with an interior opening, to which is operatively connected an opening 22, formed within the curved pipe 23, secured to the cap 21. The cap 21 is adapted to be placed over the upper end of the pipe 8, a suitable ring 24 serving to retain it in its position on said pipe, while the extension-pipe 23 is adapted to pass within a suitable outlet-pipe 25, forming the safety-pipe for the carrying of the excess of gas. By this construction it will be seen that as the gas is formed it passes into the gasometer until the section 3 has reached a proper position. When this position has been reached, should the pressure within the section 3 become greater, and as the safety attachment just described is regulated to withstand but a predetermined amount of pressure, or when the pressure within the section 3 becomes more than is normally required, the cap 21 will be forced upwardly, carrying with it the extension 22, which passes within the pipe 25, until the opening 22 passes above the water-level of the annular receptacle 20, whereupon the gas will escape through the opening 22 into the pipe 25, and thus to the outer atmosphere. When the pressure is reduced, the cap 21 will pass downward to its normal position, such passing downward causing the opening to be automatically closed, and thus prevent the escape of gas.

Each generator is provided with a suitable opening 26, closed by means of a plug 27, by means of which the residue collecting at the bottom of the generator can be readily removed. The gasometer is connected to the service-pipe by means of a suitable pipe 28, leading into the interior of the gasometer, as shown in dotted lines in Fig. 1.

The advantages of this construction are many, including the ease and simplicity with which the apparatus can be operated, the automatic dropping of the carbid, and the efficient safety apparatus, by means of which all excessive gas may be readily removed.

If desired, the cap 21 may be provided with an upwardly-extending rod 26<sup>a</sup>, (shown in dotted lines in Fig. 1,) said rod having its upper end provided with a cross-piece, as shown. To cooperate with this rod, I place a suitable loop 27<sup>a</sup> on the bell of the gasometer, said loop encircling the rod. By such construction it will be seen that when the bell of the gasometer reaches the position where it is desired to prevent a further upward movement the loop 27<sup>a</sup> abuts against the cross-rod and by the upward movement of the bell causes the cap to be raised, thus opening communication between the gasometer, generators, and escape-pipe.

While I have herein shown a preferred



form of carrying my invention into effect, yet I do not desire to limit myself to such preferred details of construction, but claim the right to use any and all modifications thereof which will serve to carry into effect the objects to be attained by this invention in so far as such modifications and changes may fall within the spirit and scope of my said invention.

10 Having thus described my invention, what I claim as new is—

1. The combination with a gasometer; of a generator; a series of carbid-receptacles secured within said generator, each receptacle 15 having a hinged door; means for holding said doors in their closed position; and a collar, mounted to have a vertical movement within said generator, said collar having a series of lateral projections, located at different 20 heights, said projections being adapted to contact with said door-closing means, successively, whereby the receptacles will be emptied independently and successively.

2. The combination with a gasometer; of a 25 generator; a series of carbid-receptacles secured within said generator, each receptacle having a hinged door; means for holding said doors in their closed position; a collar mounted to have vertical movement within said 30 generator, said collar having means for successively tripping said door-closing means; and a rocking lever operatively connected to said collar, and operated by the movement of said gasometer, for successively bringing 35 said tripping means into operation with said door-closing means, whereby the receptacles will be emptied independently and successively.

3. An acetylene-gas-generating apparatus, 40 comprising a gasometer; a generator; a series of carbid-receptacles secured within said

generator, said receptacles being arranged about the inner periphery of said generator; a door hingedly connected to said receptacles, each receptacle having an independent door, 45 said doors being adapted to normally close said receptacles, each door extending radially toward the center of said generator; a catch for each door, adapted to normally hold the door closed, said catch extending in- 50 wardly toward the center of said generator; and means, operated by the movement of the gasometer, and movable vertically within said generator, for successively tripping said catches, whereby said doors will be released 55 and said receptacles emptied independently and successively.

4. The combination with a telescoping gasometer; of a plurality of generators operatively connected thereto, each of said genera- 60 tors having a series of carbid-receptacles; doors hingedly connected to said receptacles, each receptacle having an independent door, said doors being normally in a closed position; a tripping mechanism mounted within 65 each generator; a rocking lever adapted to be operatively connected to said tripping mechanism, the movement of said lever being adapted to impart a vertical movement to said tripping mechanism, whereby said 70 doors will be released; and means, automatically operated by the movement of the bell of the gasometer, for imparting movement to said rocking levers, said means being automatically brought into operative position by 75 the movement of said bell.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

JEAN FRANCOIS GUAY.

Witnesses:

J. A. MARION,  
HORACE G. DEITZ.