

No. 691,959.

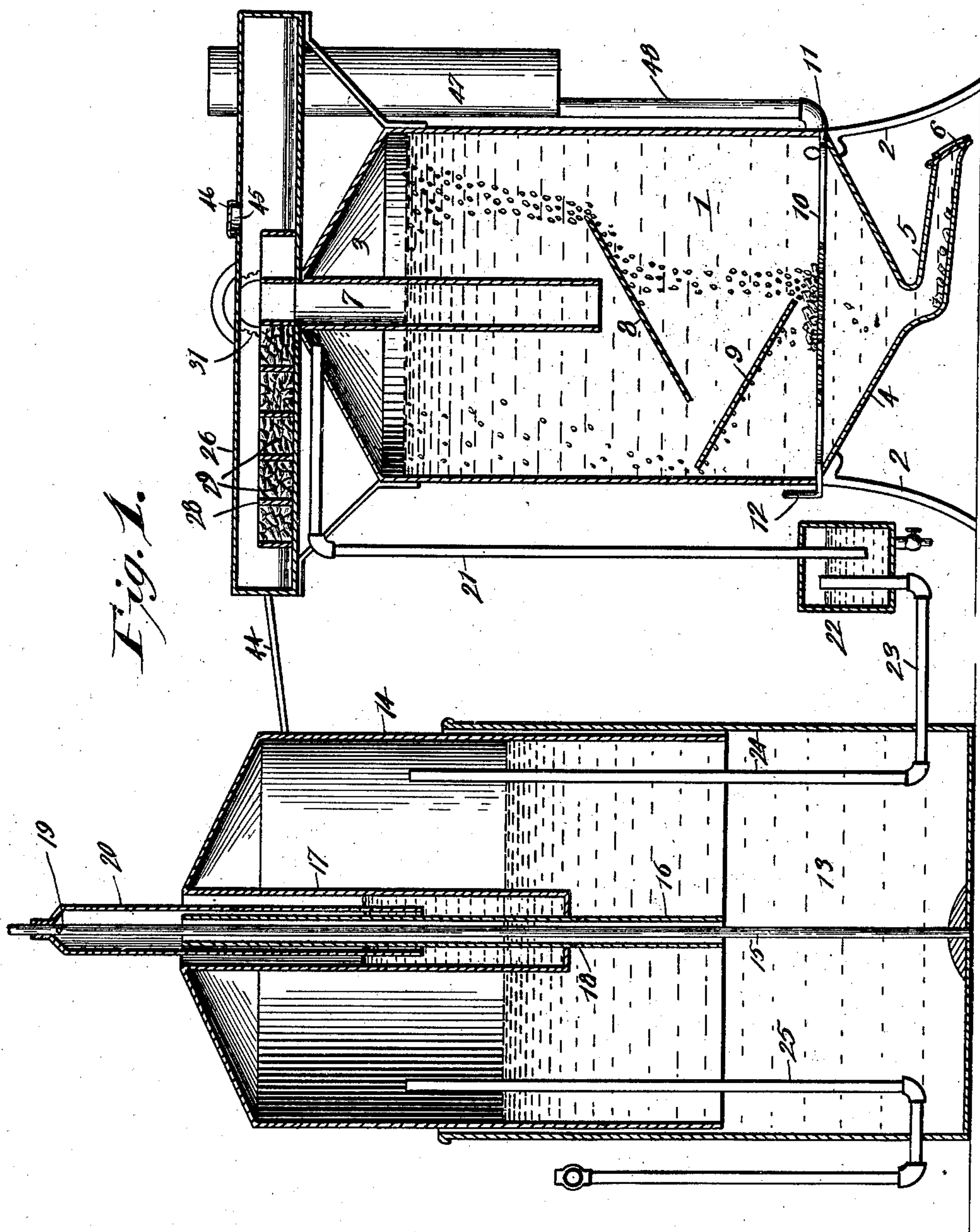
Patented Jan. 28, 1902.

A. MYERS.
ACETYLENE GAS GENERATOR.

(Application filed Apr. 26, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses.

W. Walker
J. Gardner

By *his* Attorneys,

Alfred Myers Inventor

C. A. Snow & Co.

No. 691,959.

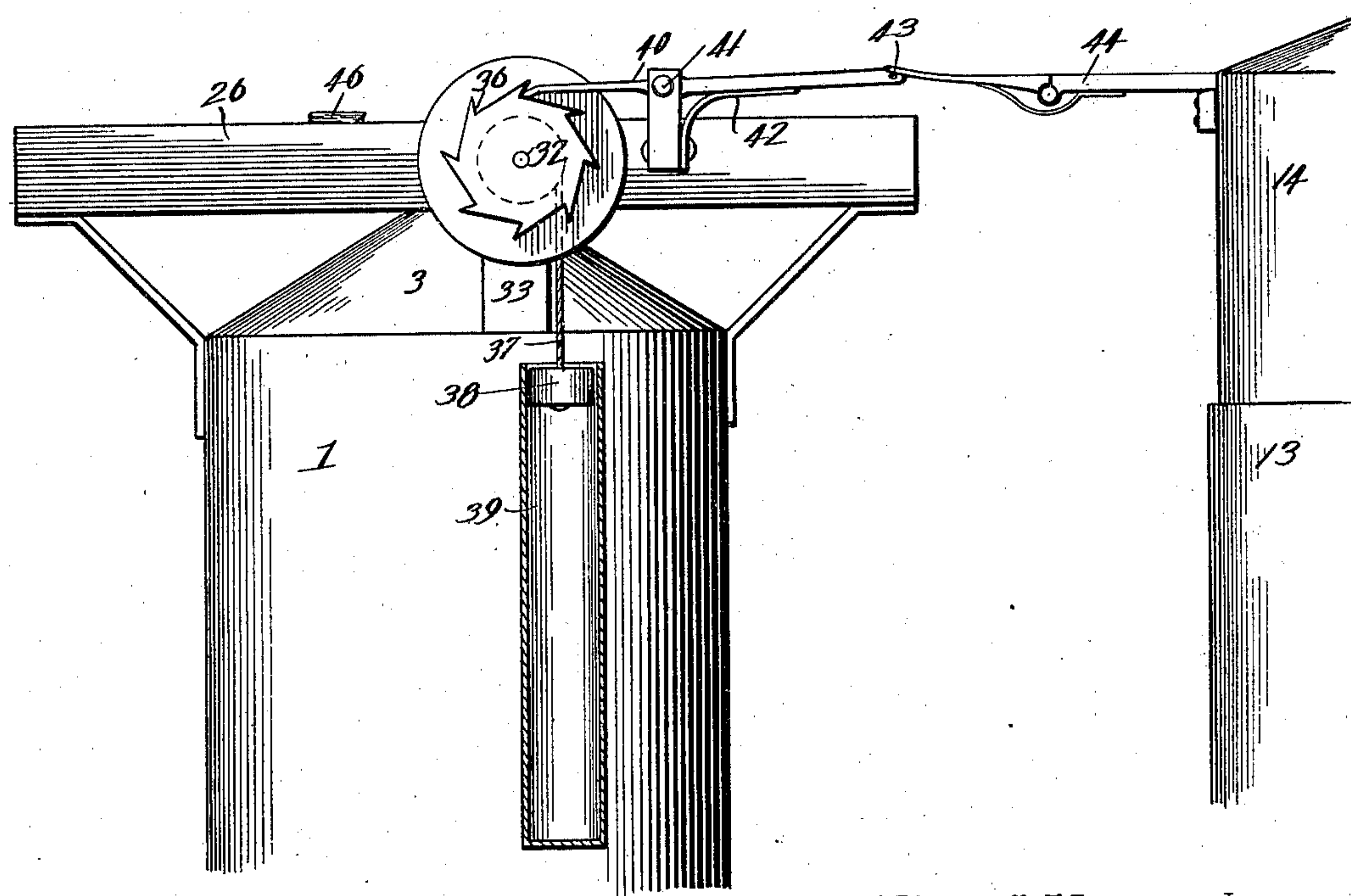
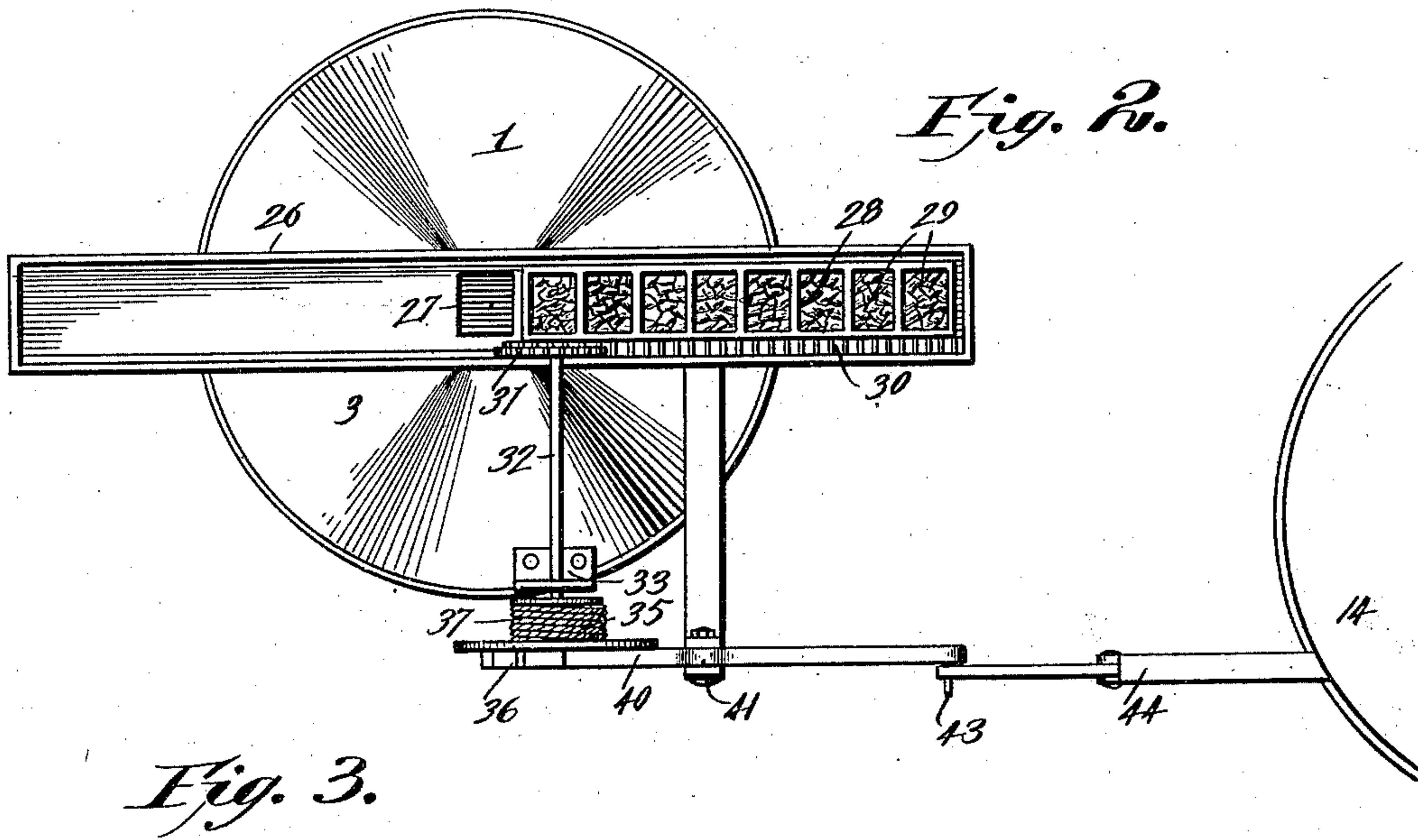
Patented Jan. 28, 1902.

A. MYERS.
ACETYLENE GAS GENERATOR.

(Application filed Apr. 26, 1900.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses

C. N. Walker.
J. W. Garner

By *his* Attorneys,

Alfred Myers Inventor

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

ALFRED MYERS, OF DRYDEN, NEW YORK.

ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 691,959, dated January 28, 1902.

Application filed April 26, 1900. Serial No. 14,449. (No model.)

To all whom it may concern:

Be it known that I, ALFRED MYERS, a citizen of the United States, residing at Dryden, in the county of Tompkins and State of New York, have invented a new and useful Acetylene-Gas Generator, of which the following is a specification.

My invention is an improvement in acetylene-gas generators, the object of my invention being to provide an automatically-operated apparatus for feeding carbide to the generator as the gas is consumed, and thereby maintain a constant supply of the gas.

My invention consists in the peculiar construction and combination of devices hereinafter fully set forth, and particularly pointed out in the claim.

In the accompanying drawings, Figure 1 is a vertical sectional view of an acetylene-gas-generating apparatus embodying my improvements. Fig. 2 is a top plan view of the generator and a portion of the expansible gas-holder, showing the automatically-operating feed mechanism, the top of the inclosing case of the carbide-magazine being removed to disclose the interior construction thereof. Fig. 3 is a side elevation of the same.

The gas-generator 1 comprises a tank or can of suitable size provided with supports, as at 2. The upper and lower sides of the generator are conical in form, as at 3 4, the bottom of the generator being provided with a discharge-pipe 5 for the residuum of the carbide and for the purpose of draining the contents of the generator therefrom when it is desired to cleanse the same. Said discharge-pipe 5 is provided with a suitable valve or gate, as at 6.

The top of the generator is provided with a central opening, with which coincides the upper end of a vertical feed-pipe 7, which depends from the top of the generator and the lower portion of which is submerged in the water in the generator, as shown. An inclined chute and baffle-plate 8 is arranged transversely in the generator and under the lower end of the feed-tube 7 and at a suitable distance therefrom, as shown. An oppositely-inclined chute and baffle-plate 9 is arranged in one side of the generator near the bottom thereof and below the baffle-plate 8, as shown. A perforated vibratory shaker 10 is disposed in the generator below the baf-

fle-plate 9 and has bearings in the sides of the generator, as at 11, and is further provided with a shaking-arm 12, by means of which it may be oscillated. The carbide drops through the feed-tube 7 into the body of water in the generator, falls upon the plate 8, passes downward on said plate, drops therefrom onto the plate 9, passes downward on the latter, and is deposited on the central portion of the shaker 10. The gas generated by the coaction of the water and the carbide in ascending through the body of water in the generating-tank is prevented by the plates 8 9 from entering the lower end of the feed-tube, and hence there is no escape of gas through the feed-tube, the lower end of the latter being effectually sealed by the water in the generator. By operating the shaker 10 from time to time, as may be found desirable, the carbide thereon may be mechanically disturbed, so as to discharge the disintegrated portions of the carbide through the shaker and expose fresh surfaces of the carbide to the action of the water, as will be readily understood, thus effecting an economy of the carbide and preventing any of it from being wasted.

In the water-tank 13 is a bell 14, the lower portion of which is submerged normally in the water in the usual manner. A gas-pipe 21, which communicates with the interior of the gas-generator at the upper end thereof, has a depending leg, the lower end of which is sealed by the water in a trap 22. A gas-pipe 23 has an ascending leg, which communicates with the interior of the trap above the water-line therein, as shown, and said pipe 24 extends through the column of water in the water-tank and communicates at its upper end with the interior of the bell. A pipe 25 communicates also with the interior of the bell and extends to the point of consumption. It will be understood that the water in the trap 22, through which the gas passes on its way from the generator to the gas-holder, serves to wash the gas and relieve the same of impurities.

My improved automatically-operated carbide-feed mechanism may be described as follows: On the upper side of the generator-tank is an inclosing case 26, which is preferably of rectangular oblong form and is provided at its center on its lower side with a discharge-

opening 27, which coincides with the upper end of the feed-tube 7. In this inclosing case is a carbid-magazine 28, which is adapted to reciprocate in said inclosing case and to move from one end thereof to the other and is suitably guided in said inclosing case. The magazine is somewhat less than one-half the length of the inclosing case and is divided into a series of bottomless compartments 29, each of which is of predetermined capacity, adapted to contain a charge of carbid, as shown in Fig. 2. Said compartments correspond in size and shape with the discharge-opening 27. The carbid-magazine is provided on one side with a rack-bar or series of rack-pins 30, movable therewith, and said rack-bar or rack-pins is or are engaged by a spur-wheel 31 of suitable diameter, which is fast to a shaft 32. Suitable bearings, as at 33, are provided for the said shaft, and on the same is a drum 35 and an escapement-wheel 36. An operating-cord 37 is attached to and adapted to wind upon and unwind from said drum, and to the said cord is attached an operating-weight 38, which, as shown in Fig. 3, may be confined in a tubular inclosing case 26 on one side of the gas-generating tank. A spring-pressed pivoted anchor or detent 40 engages the escapement-wheel, 41 being the pivot of said anchor or detent and 42 being the spring which keeps the said anchor or detent normally in engagement with said escapement-wheel. The outer extending arm 43 of the anchor or detent is disposed in the path of a spring-tappet 44, which projects from one side of the bell of the gas-holder and is adapted to trip the anchor or detent from the escapement-wheel as the bell descends, thereby permitting said escapement-wheel to rotate through a space equal to the distance between two of its teeth, and hence partially rotate the wheel 31, which engages the carbid-magazine, said wheel causing said carbid-magazine to move a distance corresponding to the width of one of its compartments, and thereby discharging the contents of one of said compartments through the opening 27 and feed-pipe 7 into the generating chamber or tank, as will be readily understood. On the ensuing rise of the gas-holder consequent upon the increase of the gas-pressure therein the spring-tappet passes the arm 43 of the anchor or detent without affecting the same, as will be readily understood. It follows from the foregoing that my improved feed mechanism automatically supplies carbid to the generator as the gas is consumed, thereby maintaining gas at a practically constant pressure in the gas-holder un-

til all the carbid in the carbid-magazine has been consumed. The carbid-magazine is then returned to its initial position (shown in Fig. 2) by manually reversing the rotation of the shaft 32, thereby winding up the cord on the drum and raising the operating-weight. The compartments of the carbid-magazine are successively recharged as they pass in the retrograde movement of the carbid-magazine under an opening 45 in the top of the inclosing case 26, which opening is provided with a screw or other tightly-fitted closure 46.

An expansion-tank 27, which communicates with the lower portion of the generating-tank 1 through the pipe 48, as shown in Fig. 1, permits the feeding of water to said generating-tank as the same is required, said expansion-tank having a suitable opening, (not shown,) through which water may be poured into said expansion-tank. A water seal is formed by the column of water in said expansion-tank 27 and pipe 48, which effectually prevents the escape of gas through the expansion-tank.

Having thus described my invention, I claim—

In combination with an acetylene-gas generator, an inclosing case, a carbid-magazine movable longitudinally in said inclosing case and having compartments adapted to successively register with a discharge-opening in the bottom of said case, said magazine having a rack, an operating-shaft having a pinion engaging said rack and provided further with an escapement-wheel and a drum, a weighted cord attached to and wound upon said drum, an anchor or detent engaging said escapement-wheel and having an outwardly-extending arm, a vertically-movable gas-holder having an arm projecting therefrom, and a spring-supported tappet, hinged to and extending outward from the end of said arm, said tappet engaging the outward-extended arm of the said anchor or detent to trip said anchor or detent on the descent of the gas-holder, thereby allowing carbid to be fed to the generator, and adapted to yield and clear said arm of said anchor or detent on the ascent of the gas-holder, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ALFRED MYERS.

Witnesses:

B. S. WEYANT,
H. C. LOOMIS.