

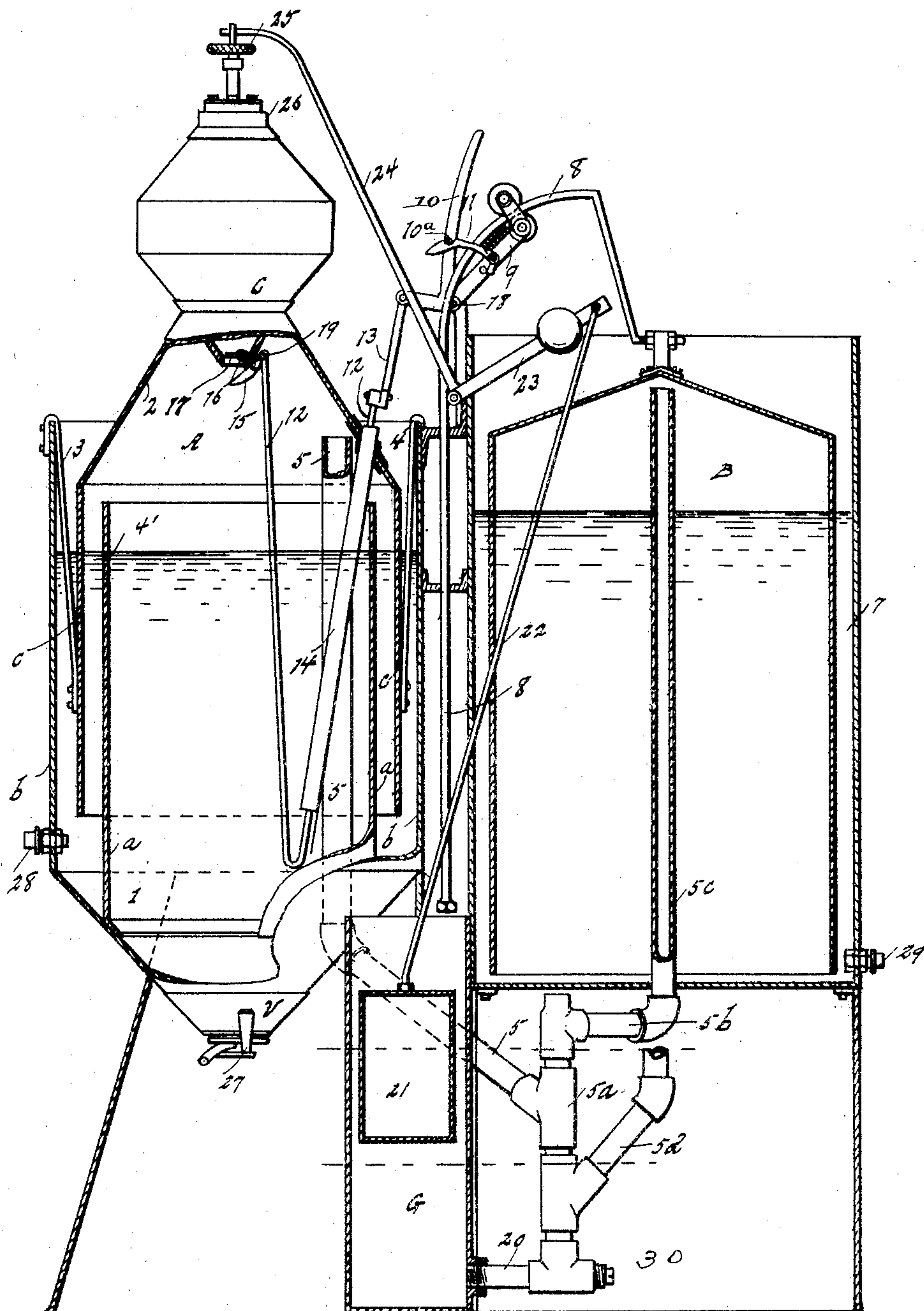
No. 779,726.

PATENTED JAN. 10, 1905.

E. E. MILLER.
ACETYLENE GAS GENERATOR.

APPLICATION FILED SEPT. 8, 1902.

2 SHEETS—SHEET 1.



WITNESSES

J. J. Mearns
May E. Holt

Fig. 1.

By

INVENTOR

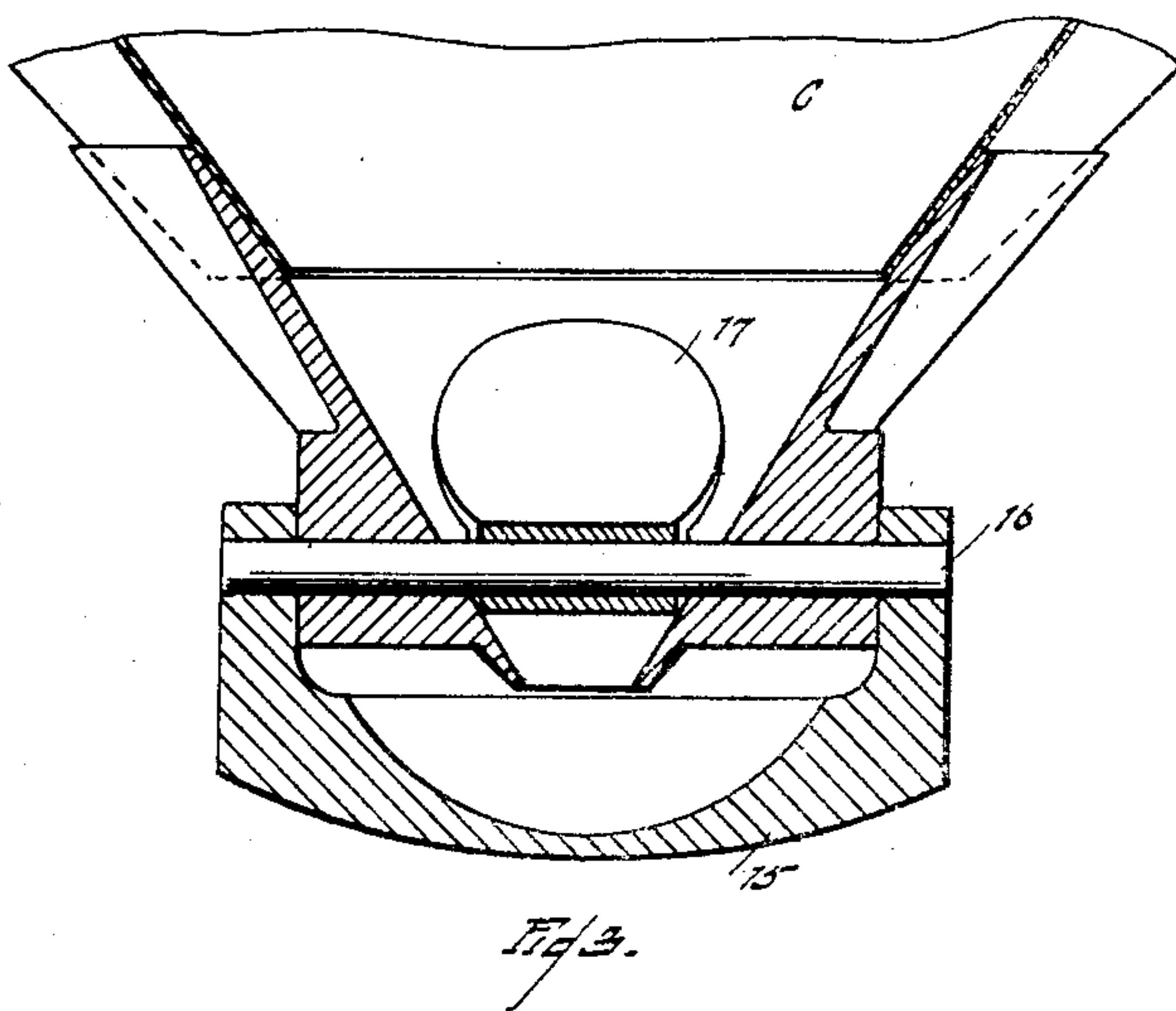
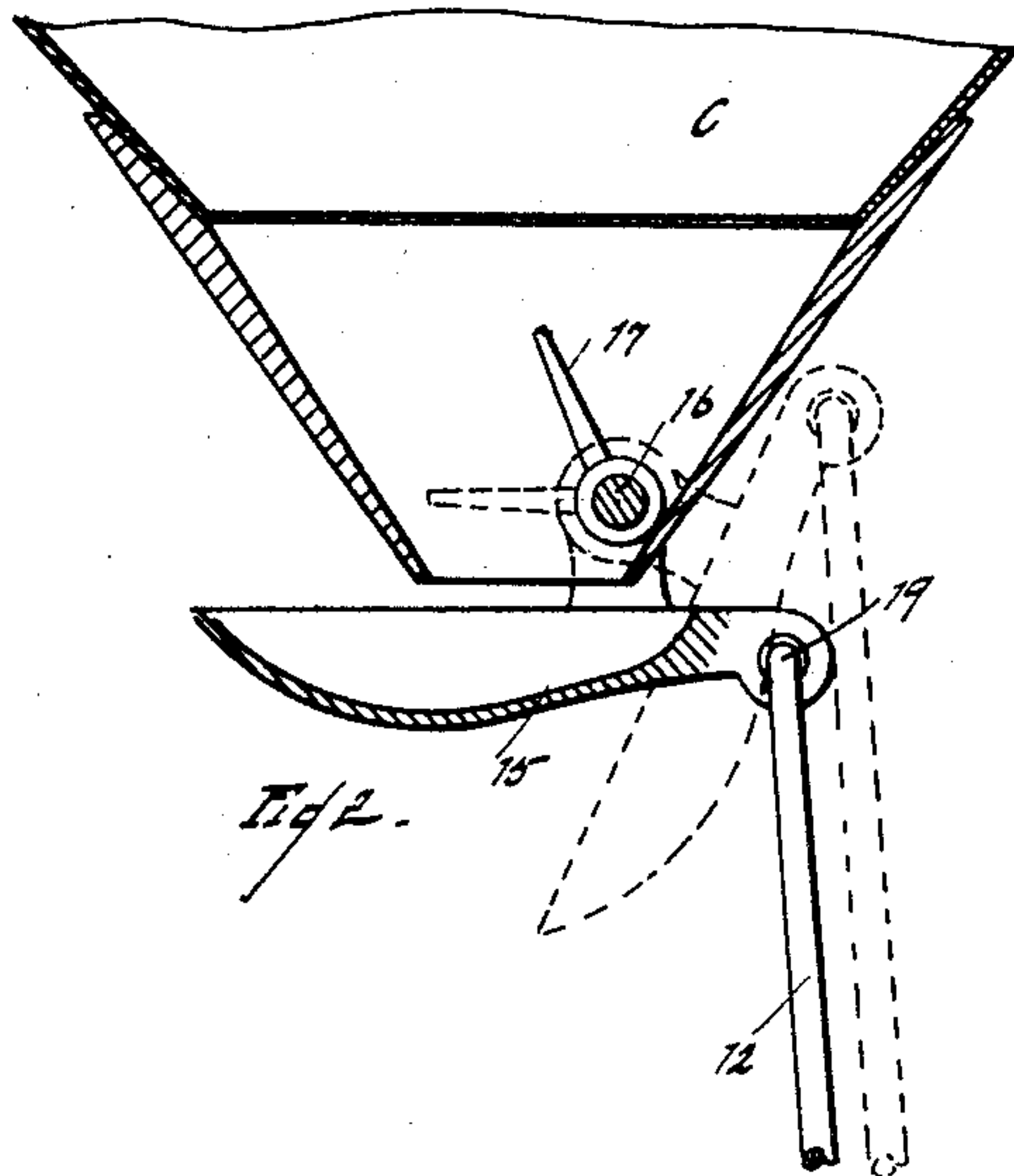
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2 SHEETS—SHEET 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

EDWIN E. MILLER, OF ROCHESTER, MICHIGAN.

ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 779,726, dated January 10, 1905.

Application filed September 8, 1902. Serial No. 122,514.

To all whom it may concern:

Be it known that I, EDWIN E. MILLER, a citizen of the United States, residing at Rochester, county of Oakland, State of Michigan, have
 5 invented a certain new and useful Improvement in Acetylene-Gas Generators; and I 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 pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to acetylene-generators, and has for its object an improved generating apparatus, the special features of the invention being directed to the feeding device by which the carbide is fed into the water of the generating-tank and to a construction of the generating-tank, by means of which the
 15 foam incident to the generation of the gas is prevented from accumulating and rising in the tank to act upon the carbide in the carbide-storage receptacle of the tank.

In the drawings, Figure 1 is a view, mainly
 25 sectional, of the generating apparatus. Fig. 2 is a detail sectional of the feeding-spoon. Fig. 3 is a rear view or view as seen by one standing at the right of the device as shown in Fig. 2.

30 The device consists of a generating-tank A, a gas-holder or storage-tank B, a seal-water tank, and various gas-pipes connecting the two or connected with one of the two, and levers actuated by one movable part and arranged to produce certain results, which will be described.

The generating-tank A consists, essentially, of a fixed part or base part 1, supported on any suitable framework having a conical bottom and double walls *a b*. At the bottom is a clear-out gate V. Between the double walls the hanging walls of the cover or cap part 2 hang in a sealing-compartment between the walls *a b*, supported by hangers 3 4. The
 40 cell between the walls *a b* is filled with water, and the tank 1 inside the wall *a* is also filled with water, which enters the inner tank through an opening 4' in the wall *a*. The

opening 4 is below the extreme upper edge of the inner wall *a*, and there is left between the
 50 wall *a* and the hanging wall *c* of the cap 2 an annular chamber that is empty of water, being above the surface of it, and this chamber serves to space the wall *a* from the wall *c* and to prevent the bubbles that form in the tank
 55 from passing to the wall *c* and gathering in a mass which would, were it not for the space, gradually accumulate until the top of the bubble mass or foam mass reaches the lower part of the carbide-receptacle C. The bubbles
 60 reaching the top of the wall *a* break without bridging across to the wall *c*, and this prevents undesirable accumulation of foam. A pipe 5 leads from the space above the water in the generator through the bottom wall of
 65 the generating-tank and thence around an inverted siphon or siphon-like coupling 5^a to the service-pipe 5^b and to a branch 5^c from the service-pipe that leads into the storage-tank B and delivers gas into the storage-tank
 70 B above the water. The storage-tank B is an inverted bell or gas-holder movable vertically in a water-containing tank 7, and the water furnishes a seal to prevent the escape of gas from the tank. A safety blow-off pipe
 75 5^d is connected with the pipe 5 below the bend of the coupling and is always sealed by water that enters and fills that part of the piping which serves as a coupling between 5 and 5^d. The seal, however, is not so heavy but that
 80 under an excess of pressure in the holder B the gas can blow it out.

To the top of the movable gas-holder B is connected a bent rod 8, on which travels a carriage-like structure 9, joined by pivot con-
 85 nections with a bent lever 10. The carriage contains a hook 11, capable of engagement with a pin 10^a on the bent lever 10, in which case the carriage-body is practically rigid with the end of the bent lever 10 and the
 90 bent lever is actuated by the relative movement of the rod 8 and the carriage 9. The rod 8 is bent in a way that causes it to actuate the carriage by causing it to move radially outward from the central vertical line of the
 95 tank B contemporaneously with the rising

movement of the carriage and the rod 8 at the time when the tank B rises as it fills with gas, and there is a corresponding inward movement of the carriage with the lowering of the tank B. To the end of the lever 10 is connected a rod 12 by means of a connecting-link 13. The rod 12 passes through the walls of the generating-chamber and reaches through a sheathing-tube 14 below the top of the contained water. The rod 12 extends below the sheathing-tube 14 and is there bent at an acute angle, and a branch of it extends upward to and is pivoted to a spoon 15, that is pivotally supported under the bottom of the carbid-holder C. The spoon 15 swings on the pivot 16, and on the same pivot is an arm 17, that serves the double purpose of an agitator to agitate carbid in the contracted mouth of the carbid-tank C and it serves also to close or nearly close the mouth of the carbid-tank when the spoon is tipped to the position shown in dotted lines in Fig. 2. It serves also to force downward through the mouth of the carbid-tank that part of the carbid which is in the extreme lower end. The lever 10 is pivoted to the framework by the pivot 18, and during the period that the tank B is lifted by the pressure of the gas within it the carriage part of the lever stands nearly vertical, and the lever 10 is in position to hold the spoon 15 in the position shown in Fig. 1 and in full lines in Fig. 2, and when in this lifted position the hook 11 catches over the pin 10^a on the lever 10 and the carriage and lever are held in engagement. When the tank B falls because of the escape of gas and assumes the position shown in Fig. 1, the hook being engaged with the end of the lever 10, the entire lever is turned on its pivot, and the rod 12 is lifted, throwing up the end 19 of the spoon and dumping the contents of the spoon. As this is practically a measured quantity, (depending on the size of the mouth-opening of the receptacle and the distance the spoon hangs below it and the relative size of the spoon and the agitator 17,) there is always thrown down into the generating-tank a definite quantity, and this definite quantity is thrown down when the storage-tank is practically empty and there is no liability of overcharging the tank, and thus losing the gas.

G indicates a water-seal tank which has communication through pipe 20 with the lower part of the inverted siphoning between the generating-tank and the gasometer. In the tank G is a weight or a vessel 21, that is normally held above the surface of the water in the tank by link 22, that is connected to a rock-lever 23 24, one branch of which is pivoted to the link and the other branch of which is brought into engagement with a hand-wheel 25, that must be turned to release the cap 26 of the carbid-

receptacle C. The branch 24 of the lever is manually put into engagement with some part connected with the hand-wheel 25 after the carbid-tank has been closed and must be manually released therefrom before the carbid-tank can be opened. When the arm 24 of the lever is manually released, the weighted end 23 and the weight 21 drop into the water into the sealing-tank G. Normally the water in the sealing-tank G rises to a height to seal the escape-pipe 5^d, but does not seal either the service-pipe 5^b or the pipe 5^c, that leads into the gasometer; but when the weight 23 falls and the weight 21 drops into the water the level of the water in the tank G rises to seal the bottom of the siphon or the connection between the generating-tank and the gasometer and service-pipe, so that before the cap 26 can be removed the possibility of the return-flow from the gasometer into the generating-tank is removed and all danger tending to drive what gas still remains into the generating-tank is taken away.

Provision is made for cleaning out the generator-tank through the clean-out valve 27, and provision is made for drawing off the seal-water from the outer chamber between *a* and *b* through discharge-valve 28. Provision is made for drawing off seal-water from the gasometer from discharge-valve 29.

A screw-plug 30 is arranged low down in the system of piping for the purpose of emptying the seal-tank G and the inverted siphon-pipes.

The hook 11 may be manually released from the pin 10^a and the lever 10 worked by hand when desired.

What I claim is—

1. In an acetylene-gas generator, in combination with a storage-receptacle, a measuring-receptacle pivoted beneath the opening of the storage-receptacle, a plate pivoted within the mouth of said receptacle and adapted to turn inward to open the passage through the mouth and to turn outward to close said passage, and means for connecting said measuring-receptacle to said plate so that the turning of the receptacle shall turn the plate, for the purpose described.

2. In an acetylene-gas generator, in combination with a gasometer, a carriage actuated thereby, a lever pivoted to said carriage and to the framework, means for engaging an arm of the lever and the body of the carriage, whereby after engagement, the lever and carriage-body are rigidly connected, a carbid-receptacle arranged to receive a small portion of carbid from the main carbid-receptacle, a link connection between the lever and the carbid-receptacle, substantially as described.

3. In an acetylene-gas generator, in combination with a storage-receptacle, a shaft piv-

oted thereon and passing through the discharge-passage, a measuring-receptacle secured to said shaft so as to come at the lower end of the discharge-passage and a plate secured to said shaft adapted to turn inward to open said passage and to turn outward to close the same.

In testimony whereof I sign this specification in the presence of two witnesses.

EDWIN E. MILLER.

Witnesses:

THOMAS LOVELL,
J. G. TOLES.