

No. 621,757.

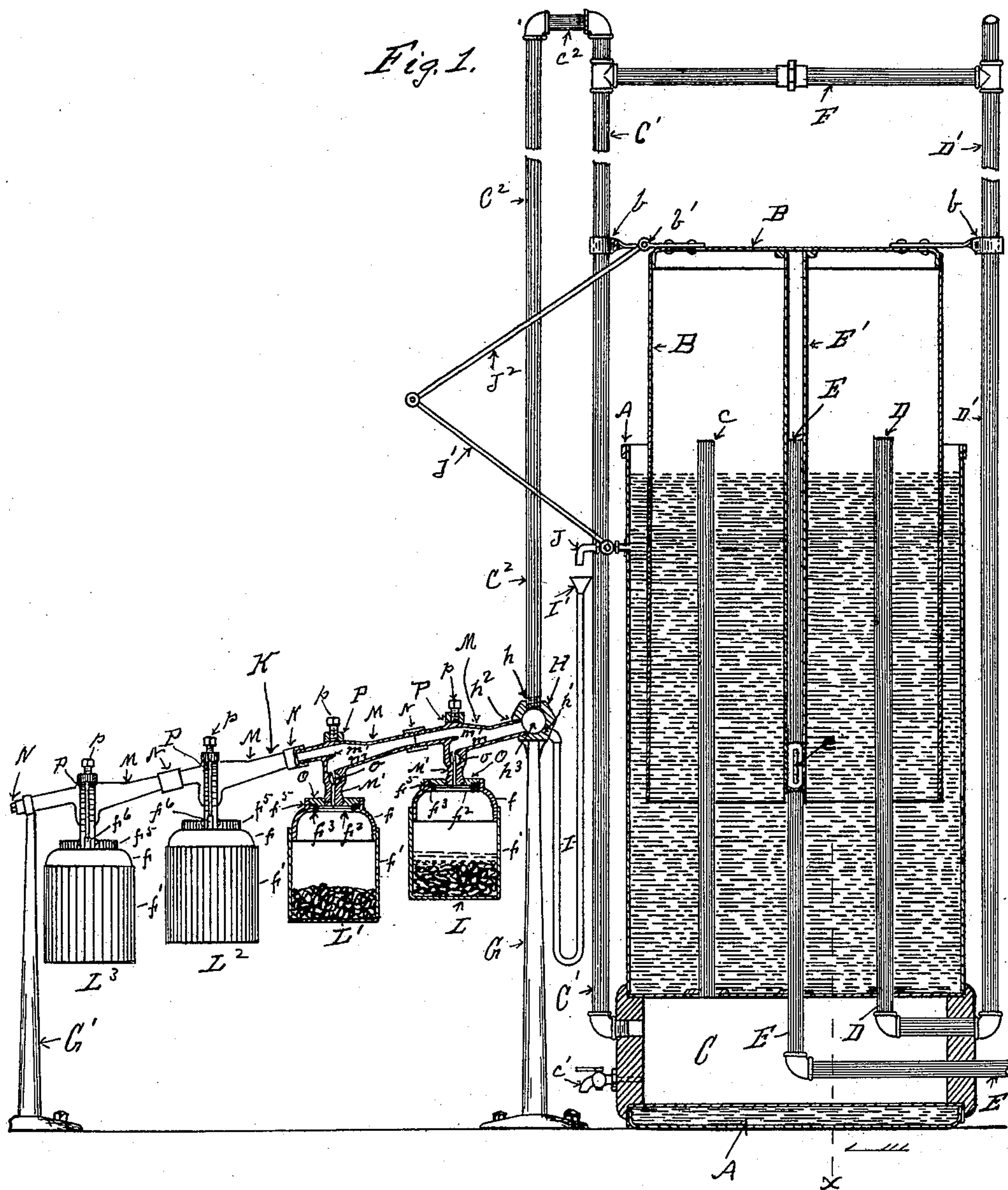
Patented Mar. 21, 1899.

F. LEONARD.
ACETYLENE GAS GENERATOR.

(Application filed Nov. 28, 1898.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

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2 Sheets—Sheet 2.

Fig. 5.

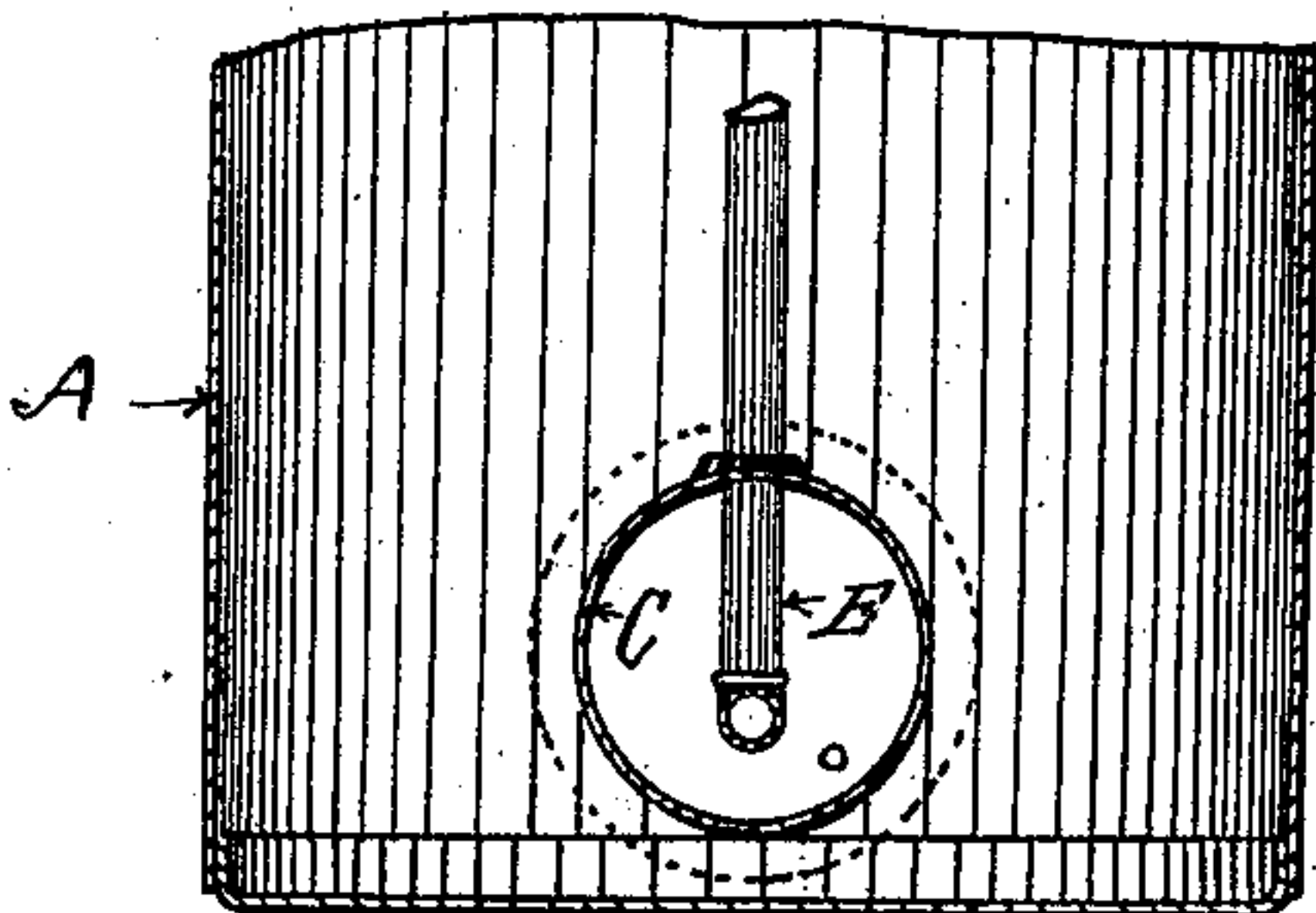


Fig. 3.

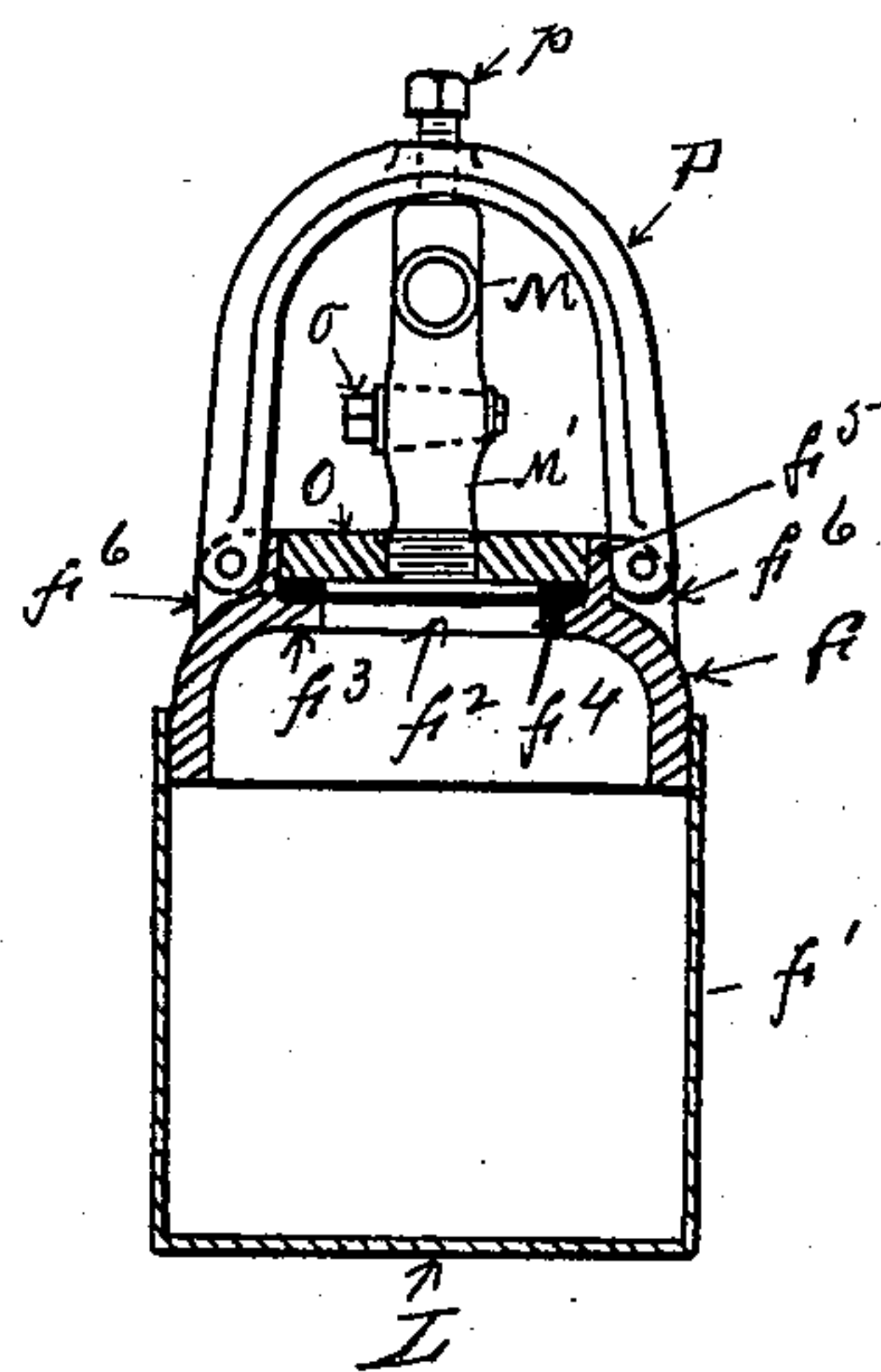


Fig. 2.

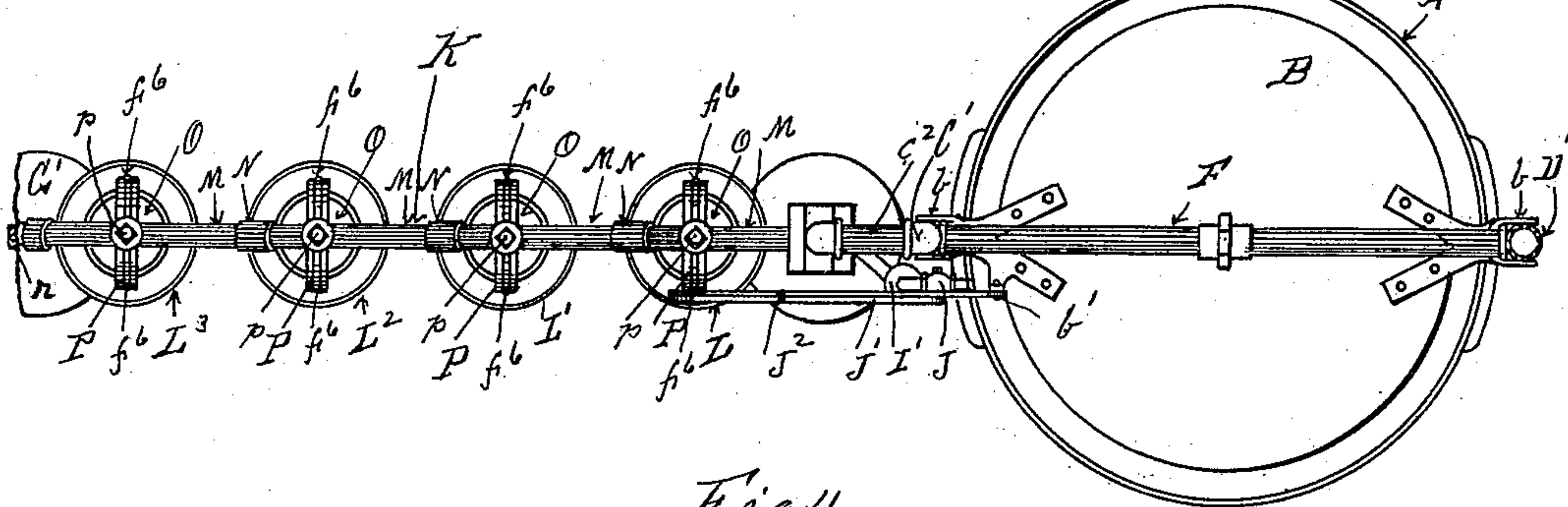
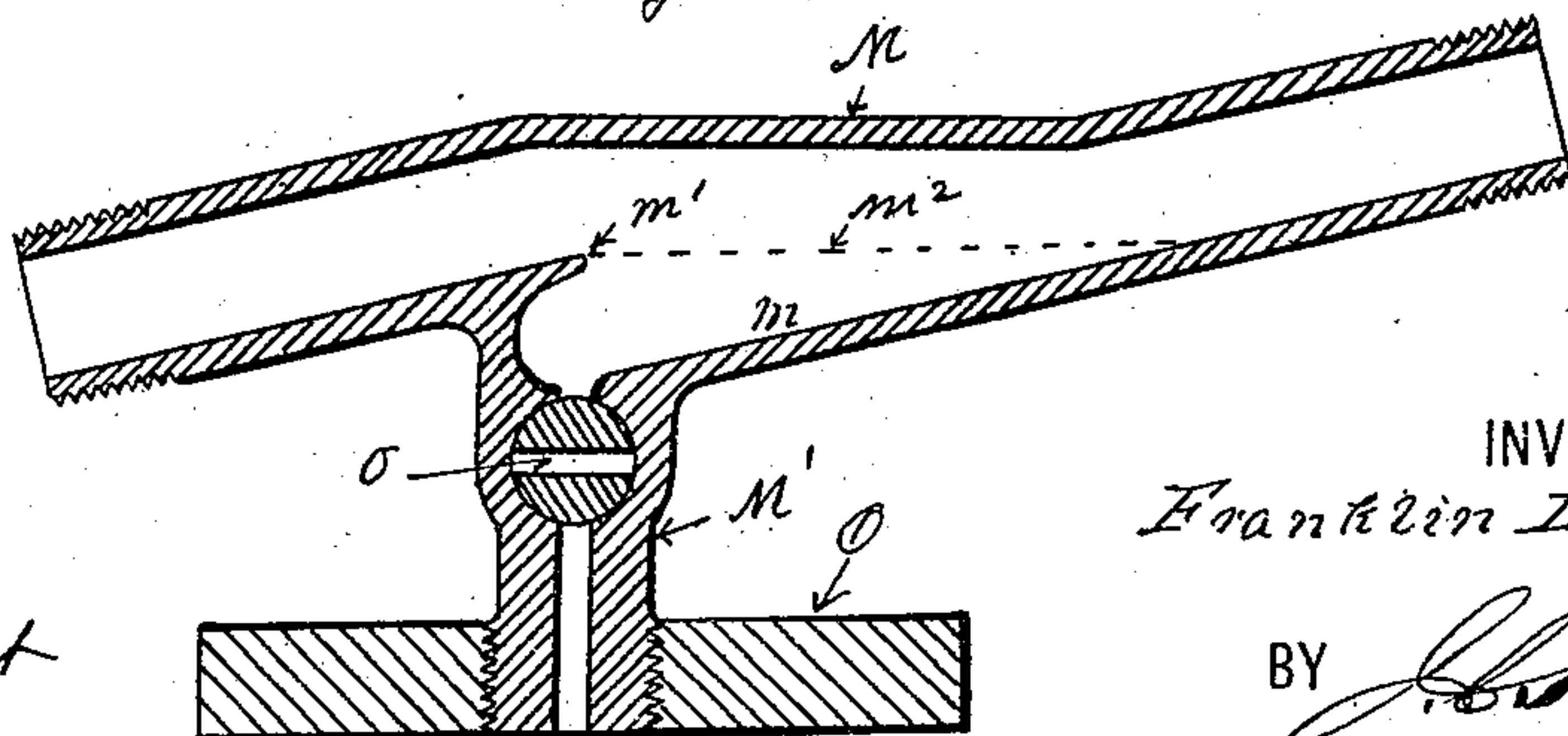


Fig. 4.



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UNITED STATES PATENT OFFICE.

FRANKLIN LEONARD, OF PATERSON, NEW JERSEY, ASSIGNOR TO THE KEY-STONE ACETYLENE GAS COMPANY, LIMITED, OF ERIE, PENNSYLVANIA.

ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 621,757, dated March 21, 1899.

Application filed November 28, 1898. Serial No. 697,647. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN LEONARD, a citizen of the United States, residing at Paterson, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Acetylene-Gas Generators; and I do hereby 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming part of this specification.

This invention relates to improvements in acetylene-generators; and it consists, substantially, in constructing the generators with a series of tanks or carbid-holders, adapted to be charged with carbid, so arranged as to operate consecutively one at a time in generating gas until the carbid in all of the carbid-holders is exhausted and in means for supplying water to the carbid in said carbid-holders one at a time by gravity and for automatically controlling the admission of the same thereto, and also means whereby any one or more of said carbid-holders can be removed and recharged at will without interfering with the continuous operation of the mechanism, these features being hereinafter fully set forth and described, and illustrated in the accompanying drawings, in which—

Figure 1 is a view of the same, partially in elevation and partially in section. Fig. 2 is a top or plan view of the same. Fig. 3 is an enlarged vertical section of one of the tanks or carbid-holders. Fig. 4 is an enlarged vertical section of a portion of the same. Fig. 5 is a vertical section of the lower part of the gas-holder tank on the line x , looking in the direction of the arrow.

In the drawings thus illustrating this invention, A is a gas-holder tank, and B a gas-holder operating telescopically within the tank in the usual manner. Across the bottom of the tank A is secured a cylindrical chamber C, into which the gas first passes from an inlet-pipe C', which operates to cool the gas, which finally passes up into the gas-holder B through a vertical pipe c , from which it passes down and out to the service-pipe

through the pipes D D'. In the center of the tank there is also a waste-pipe E, over which a pipe E', secured to the top of the gas-holder B, telescopes, so as to form a central guide therefor, and in the lower end of the pipe E' there is a slot e , which when the gas-holder is raised to nearly its highest point is above the upper end of the pipe E and allows the gas to escape until the gas-holder is lowered sufficiently to seal said opening by immersing it again in the water in the tank A. The supply-pipe C' and the discharge-pipes D' pass up vertically at each side of the tank A and are coupled together above the gas-holder by a brace F, which, however, does not allow the gas to pass through it, and on the top of the tank B are guides $b b$, which embrace and slide up and down on the pipes C' and D', so as to operate as guides to retain the upper end of the gas-holder B central in the tank A. In one end of the chamber C there is also a waste-cock c' , through which any water of condensation may be discharged therefrom.

At the side of the tank A, preferably adjacent to the inlet-pipe C', there is a standard G. Upon the top of this standard is secured a head H, having lateral passages $h h' h^2$, all joining in a central chamber h^3 therein. From the passage h a gas-pipe C² extends up and is joined by elbows and a nipple c^2 to the top of the pipe C', and in the opening h' is secured one arm of a U-shaped pipe I, the other arm of said pipe being provided with a funnel I', and above said funnel and adapted to deliver water therein there is a cock J, secured in the side of the tank A, and connected to the plug of said cock there is a lever J', which when it approaches a horizontal position operates to open the cock J, and when raised to an angle of, say, sixty degrees operates to close the cock J. For operating the lever J' there is a link J², which is pivoted to the outer end of said lever J' and extends to an eye b' at the top of the gas-holder B and is pivoted therein, so that the lowering or raising of the gas-holder B operates to open or close the cock J, as the case may be.

In the opening h^2 in the head H is secured the upper end of an inclined tubular support K, upon which a series of tanks or carbid-holders L L' L² L³ are secured, the lower end

of the support K resting upon a standard G' somewhat lower than the standard G, so that the support K continuously inclines downward from the standard G to the standard G'.

5 The support K is constructed of tubular sections M, Fig. 4, connected together by means of ordinary screw-thimbles N, so as to form a continuous passage from the chamber h^3 in the head H to the lower end thereof, 10 which is closed by a cap or plug n . Each of the sections M is provided with a downwardly-projecting hollow stem M', adapted to be secured to a disk O for closing the top of a carbid-holder, and also with a plug-cock o for 15 closing the passage therein. Each section M also has the bore thereof enlarged at its lower side, forming an inclined surface m , leading down to the opening in the stem M' and which terminates in a ledge or dam m' , so that no 20 water will flow past the opening in the stem M' until the water rises to a level with the top of the ledge, as shown by the dotted line m^2 in Fig. 4, after which it will flow to the next section. The carbid-holders L L', &c., 25 are preferably made of an upper cast section f , to which the lower section f' is secured. In the top of the upper section f there is a central opening f^2 , (see enlarged section, Fig. 3,) around which there is an annular 30 ledge f^3 . There is also a vertical collar f^5 on the top of the upper section, within which the closure-plate O fits down upon packing f^4 , placed upon the top of the annular ledge f^3 . On opposite sides of the vertical collar f^5 35 there are ears f^6 , into which the lower ends of a yoke P are secured, this yoke P passing up over the support K and operates as a medium for suspending the carbid-holder thereon, and for forcing the closure-plate O down 40 firmly upon the packing f^4 there is a set-screw p in the top of the yoke P, which contacts with the top of the support K and operates to draw the carbid-holder up against the closure-plate O.

45 The operation of the gas-holder mechanism is so well understood that no description thereof is deemed necessary, the raising and lowering thereof operating to close and open the cock J, thereby automatically supplying 50 water to the carbid-holders or shuts it off, as may be required, to control the quantity of gas generated. It is also plain that no water is supplied to the second carbid-holder until the first one is either filled or the cock o there- 55 in closed, and they are thus successively filled one at a time until the whole number are ex-

hausted. It is observed, however, that any one can be in use while one or all of the others can be readily removed and recharged without in any manner interfering with the 60 operation of the machine.

Having thus described my invention, so as to enable others to construct and use the same, what I claim as new, and desire to secure by Letters Patent of the United States, is— 65

1. The combination in an acetylene-gas generator, of a series of carbid-holders connected to openings in the lower surface of an inclined tubular support at gradually-decreasing elevations, a ledge in said tubular 70 support below the end of each of the openings in the lower surface thereof, and means for securing the carbid-holder to said openings, substantially as and for the purpose set forth.

2. The combination in an acetylene-gas 75 generator, of a series of carbid-holders secured to an inclined tubular support having depressions in the lower surface thereof, ledges at the lower ends of said depressions, downwardly-extending projections on said tubular 80 support having passages therein opening into the lower ends of the depressions therein, shut-off cocks in said passages, and means for securing the carbid-holders to the lower ends of the said downwardly-extending pro- 85 jections, substantially as and for the purpose set forth.

3. The combination in an acetylene-gas generator, of a series of carbid-holders mounted in series on an inclined tubular support 90 at gradually-decreasing elevations, and having openings adapted to be connected with said carbid-holders, a ledge in said tubular support below each of said openings, means for securing a carbid-holder to each of said 95 openings in said inclined support, a telescopic gas-holder, a pipe connecting the upper end of said inclined support with the gas-holder, a pipe for supplying water to the upper end of said inclined support, and mech- 100 anism operated by the raising and lowering of the gas-holder for automatically supplying or shutting off the water-supply from said pipe, substantially as and for the purpose set forth. 105

In testimony whereof I affix my signature in presence of two witnesses.

FRANKLIN LEONARD.

Witnesses:

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H. J. CURTZE.