

No. 626,437.

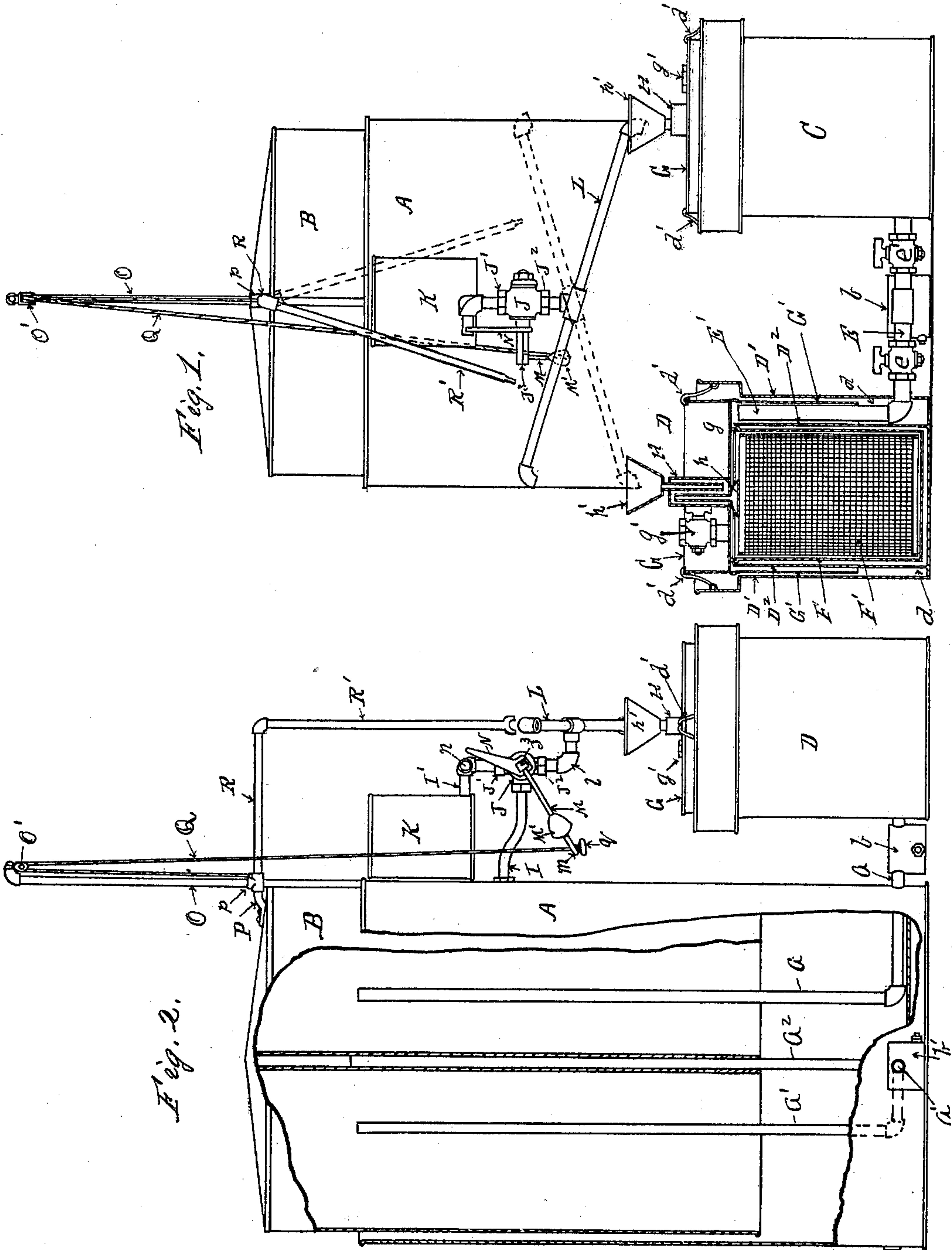
Patented June 6, 1899.

L. O. McLANE.
ACETYLENE GAS GENERATOR.

(Application filed Mar. 20, 1898.)

(No Model.)

2 Sheets—Sheet 1.



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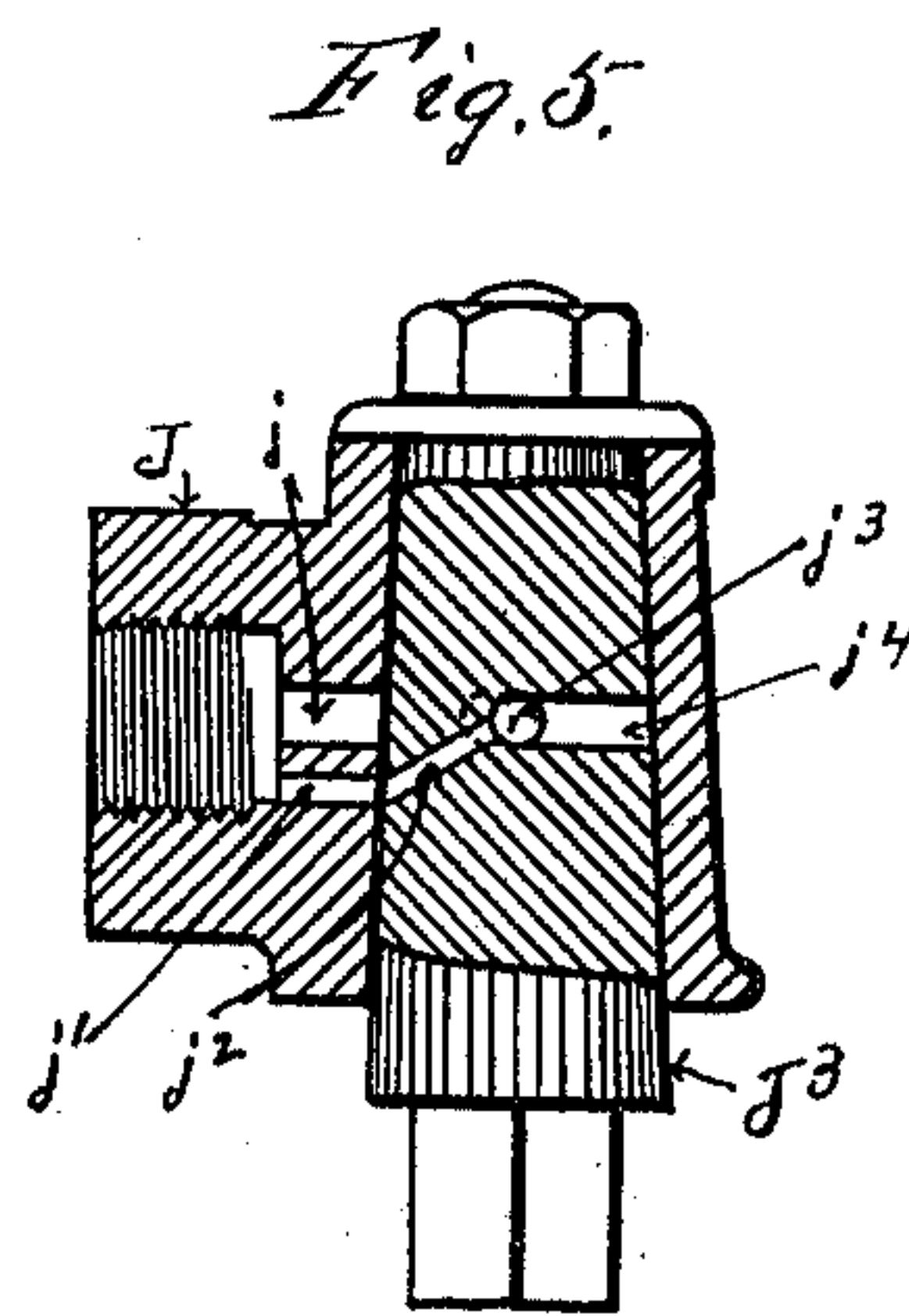
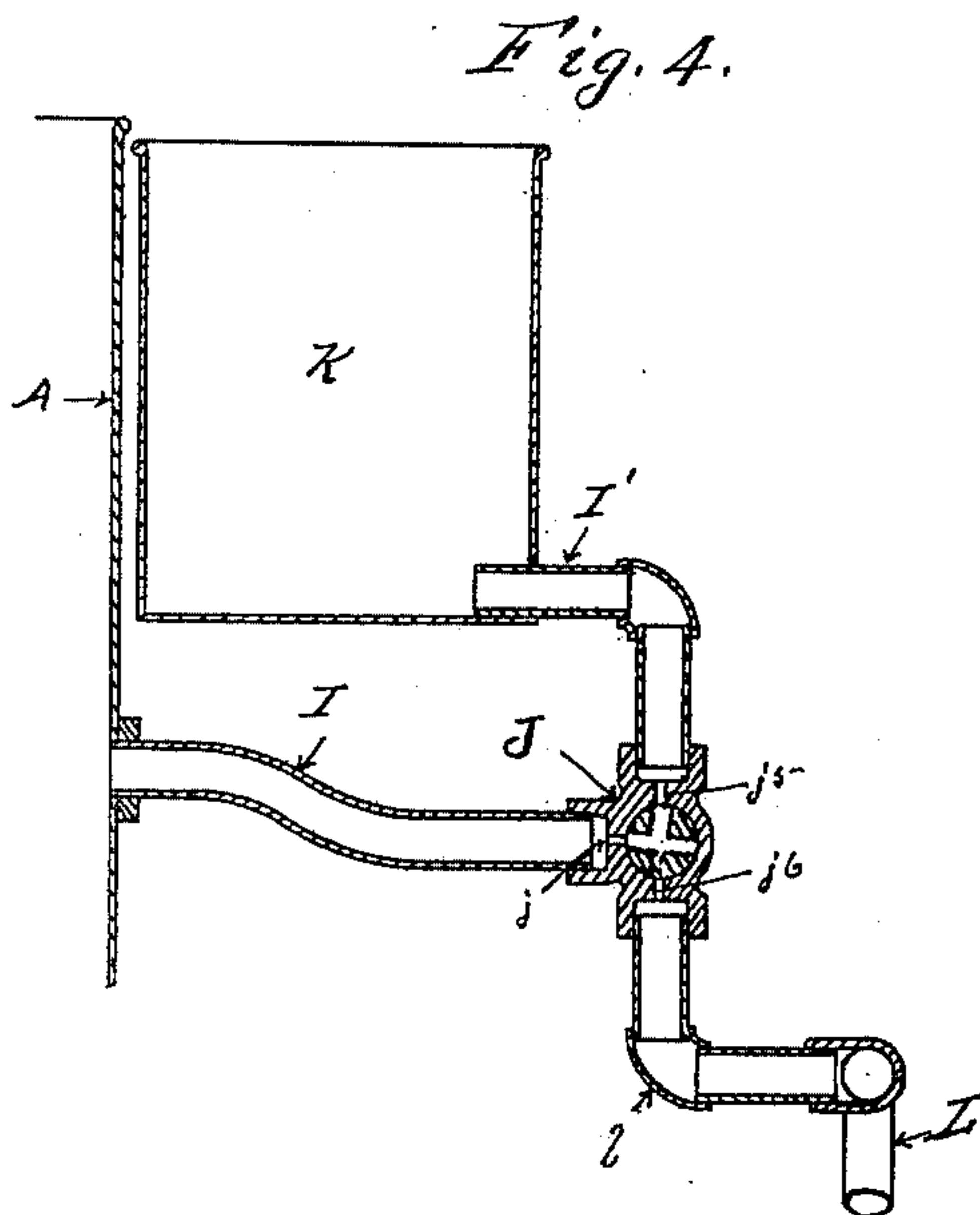
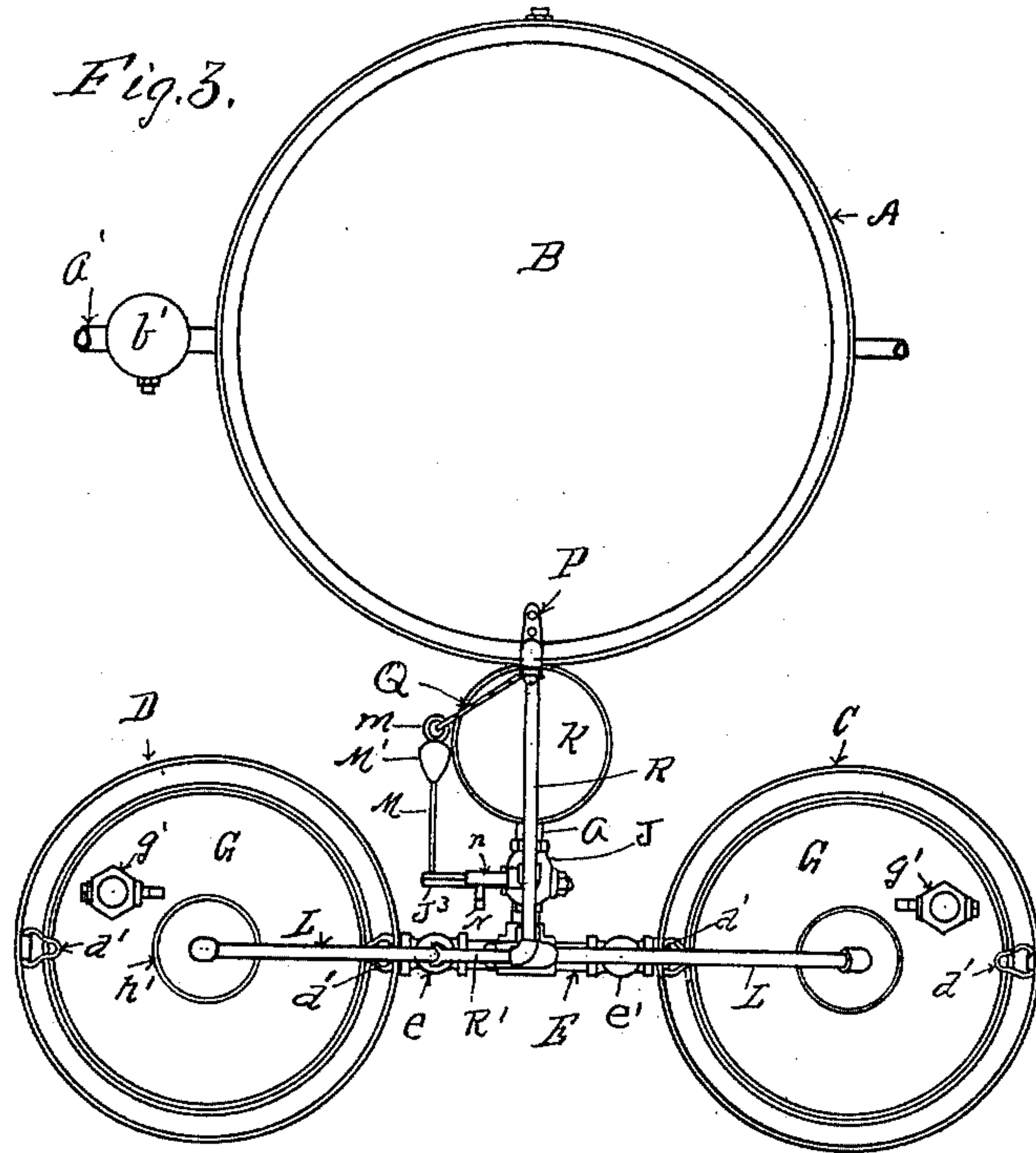
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UNITED STATES PATENT OFFICE.

LABAZURE O. McLANE, OF LINESVILLE, PENNSYLVANIA.

ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 626,437, dated June 6, 1899.

Application filed March 20, 1899. Serial No. 709,750. (No model.)

To all whom it may concern:

Be it known that I, LABAZURE O. McLANE, a citizen of the United States, residing at Linesville, in the county of Crawford and State of Pennsylvania, 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.

My invention relates to improvements in acetylene-gas generators; and it consists, substantially, in the improvements in the mechanism thereof hereinafter set forth and explained, and illustrated in the accompanying drawings, in which—

Figure 1 is a front view in elevation of my improved acetylene-gas generator with one of the carbid-holders in section. Fig. 2 is a side view of the same, partially in elevation and partially in section. Fig. 3 is a top or plan view of the same. Fig. 4 is a sectional detail view of a portion of the same. Fig. 5 is a horizontal section of the water-supply valve, showing features of its construction.

In the drawings thus illustrating my invention, A is the tank, in which the gas-holder B operates, and is provided with a gas-inlet pipe a , a gas-outlet or service pipe a' , and a waste-pipe a^2 , all of ordinary construction. The gas-inlet pipe a is also provided outside of the tank A with a drip-tank b , and service-pipe a' is likewise provided with a drip-tank b' , the arrangement and location of these drip-tanks b and b' being clearly shown in Fig. 2.

At one side of the tank A are placed two carbid-holders C and D, connected with the inlet-pipe a by a cross-pipe E, provided with shut-off cocks e and e' , so that either one of the carbid-holders C and D can be shut off when desired. These carbid-holders are constructed with double walls D' D^2 , so that there is an annular space d between them. This annular space d is wider at one side than the other, so as to admit an arm E' of the pipe E to extend up between them. The space d is adapted to be filled with water nearly to the

top of the pipe E' . Within the inner wall D^2 I place a pail F, provided with a bail (not shown) for conveniently lifting and carrying it, and within the pail F, I place a removable circular screen F' , within which the carbid is placed. For closing the top of the carbid-holder I use a cover G, provided with an annular rim G' , which extends down some distance into the water in the space d , so as to form a complete water seal, as clearly shown in Fig. 1. On the top of the cover G there is a space g , adapted to hold water, so that the carbid is surrounded at the sides and top by water for cooling purposes. In the top of the cover G is secured a trapped water-inlet H, provided at the bottom with a sprinkler h for distributing the water over the carbid in the pail F, and at the top with a funnel h' , into which the water is supplied. The cover G is also provided with a cock g' for allowing any gas remaining in the carbid-holder to escape before the cover G is removed. The carbid-holders are also provided with swinging hooks d' , adapted to engage the top G and hold the same in place.

For supplying the necessary water to the carbid-holders C and D there is a pipe I extending out from the tank A some distance above and midway between the carbid-holders C and D. On the end of this pipe I, I place a three-way cock J, and to the upper outlet J' of this cock is connected a pipe I' , leading to the bottom of a small tank K, and from the lower outlet J^2 of this valve is secured an elbow l , in which is pivoted a pipe L, adapted to swing, as illustrated in Fig. 1, so as to convey water from said cock J to either of the carbid-holders C and D, as desired.

The valve J is provided at its inlet side with two passages j and j' , as illustrated in Fig. 5, and the plug J^3 is provided with a small diagonal passage j^2 , adapted to communicate with the passage j' only when the plug J^3 is turned to a certain position, while the main passages j^3 and j^4 in the plug communicate, when the plug is properly turned, with the regular passages j , j^5 , and j^6 of the valve, as and for the purpose hereinafter explained.

For operating the valve-plug J^3 there is a lever M, provided with a weight M' , and there

is a ring *m* on the end of the lever *M*. There is also an arm *N* secured to the plug *J*³, adapted to engage a stop *n*, so as to limit the downward movement of the lever *M*. On the top of the tank *A* there is an upright post *O*, provided at its upper end with a pulley *O'*, and on the top of the gas-holder *B* there is an arm *P*, provided with a loop *p*, adapted to slide up and down on the post *O*, and to which loop *p* is secured one end of a cord or chain *Q*, which passes up over the pulley *O'* and down through the ring *m* on the lever *M*, where it is provided with a weighted button or plate *q*, adapted, as the gas-holder *B* settles down, to engage the ring *m* and raise the lever *M*, so as to open the valve *J*, and as the gas-holder continues to rise again close it, the valve being thus opened and closed, as the gas-holder rises and lowers, as desired.

In the loop *p* there is pivoted a laterally-projecting arm *R*, from the outer end of which depends a rod *R'*, forked at its lower end, so as to engage the oscillating pipe *L*. This rod *R'* is adapted to be swung from side to side, as illustrated by dotted line in Fig. 1, so as to engage either end of the oscillating pipe *L*.

In operation, the carbid-holders *C* and *D* being charged with carbid and the oscillating pipe *L* turned down, so as to deliver water from the tank *K*, say, to the carbid-holder *C*, as the gas generated therein passes into the gas-holder *B* it gradually rises, and after it has risen, say, one-half of its upward traverse it operates upon the valve *J* to cut off the water-supply, when it again lowers, the water is again turned on, and this operation continues until the carbid in the holder *C* is exhausted. After this as the gas is used from the holder *B* it gradually settles down until the arm *R'* engages the oscillating pipe *L* and connects it with the carbid-holder *D*. The water-supply now at first flows directly from the tank *A* through the diagonal hole *j*² in the valve-plug, meanwhile also flowing into and filling the tank *K* as the gas-holder begins to raise, the diagonal hole *j*² is cut off, and thereafter the water is supplied from the small tank *K*, as before. Meanwhile the cock *e'* can be closed and the carbid-holder *C* recharged and the rod *R'* swung over into the position shown in the dotted line in Fig. 1 ready to switch the pipe *L* when the carbid-holder *D* is exhausted. It will thus be seen that this

machine is automatic in its action and that one carbid-holder can be recharged at any time while the other is in use without in any wise interfering with the operation of the machine. Therefore,

Having thus described my invention and the operation thereof, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination in an acetylene-gas generator, of a gas-holder, two carbid-holders connected therewith, valve mechanism connected with the gas-holder and operated by the raising and lowering thereof, and an oscillating pipe adapted to connect said valve with one of said carbid-holders at a time, and mechanism on the gas-holder for switching said pipe from one carbid-holder to the other, substantially as and for the purpose set forth.

2. The combination in an acetylene-gas generator, of a gas-holder, two carbid-holders connected therewith, shut-off cocks and a drip-tank in the pipes connecting the carbid-holders with the gas-holder, an auxiliary tank for supplying water to the carbid-holders, a pipe and a three-way valve connecting the auxiliary tank to the gas-holder tank, and also with a pipe adapted to convey water to the carbid-holders, lever-and-weight mechanism connected to the gas-holder for operating said three-way valve, and an oscillating pipe connected to the outlet of said valve for conveying water to one of the carbid-holders at a time, and a swinging arm on the gas-holder adapted to move said oscillating pipe from one carbid-holder to the other, substantially as and for the purpose set forth.

3. The combination in the water-supply mechanism of an acetylene-gas generator, of an auxiliary tank connecting through a three-way valve both with the gas-holder tank and with a pipe for supplying water to carbid-holders, lever-and-weight, and stop mechanism for controlling said valve, and mechanism connecting said valve-lever with the gas-holder, substantially as and for the purpose set forth.

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

LABAZURE O. McLANE.

Witnesses:

JOHN MCKINNY,
N. A. WILLSON.