No. 630,195. Patented Aug. 1, 1899.

R. L. DOHERTY.

ACETYLENE GENERATOR.

(Application filed Apr. 25, 1899.)

(No Model.)

Fig. 1.

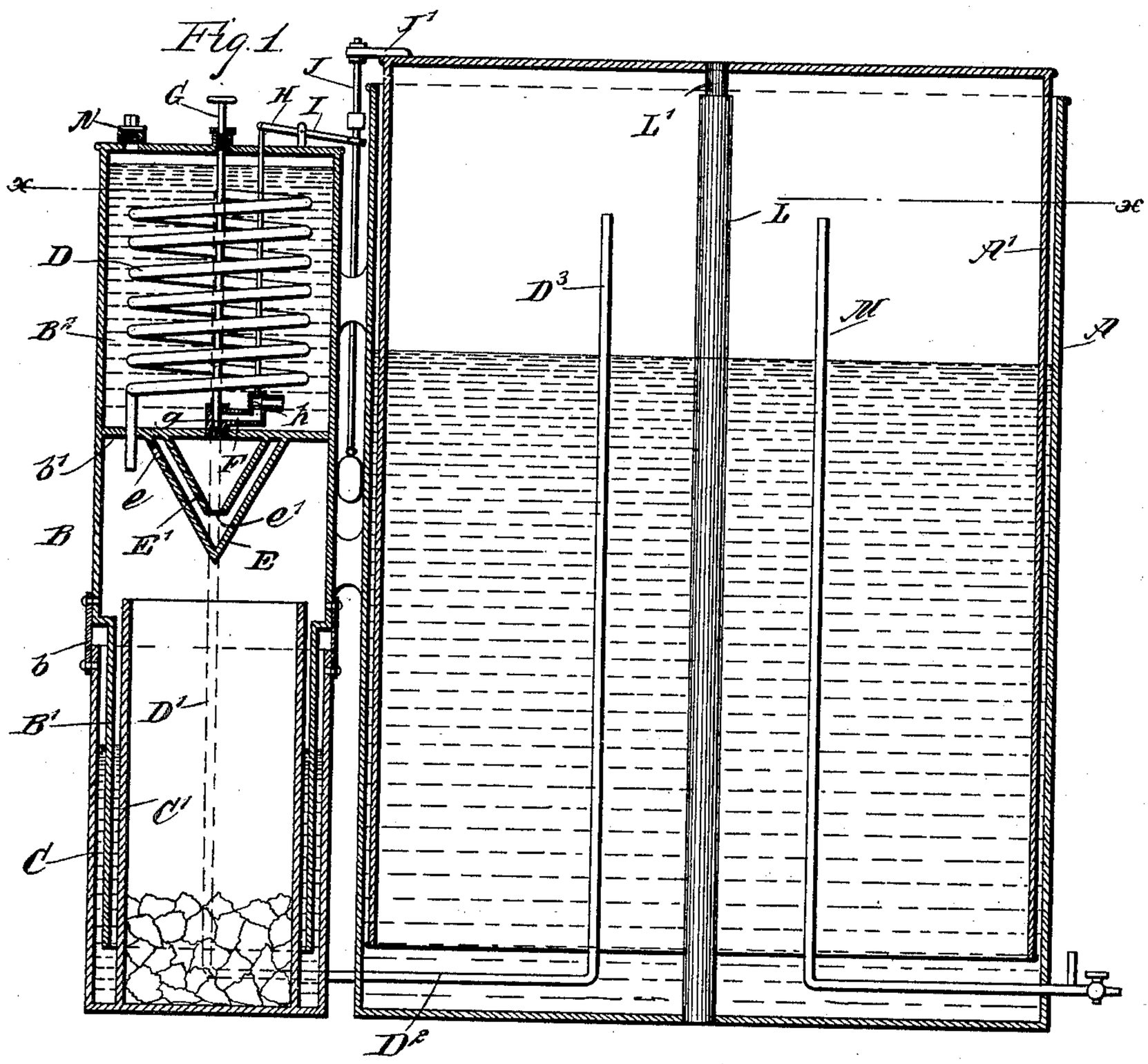
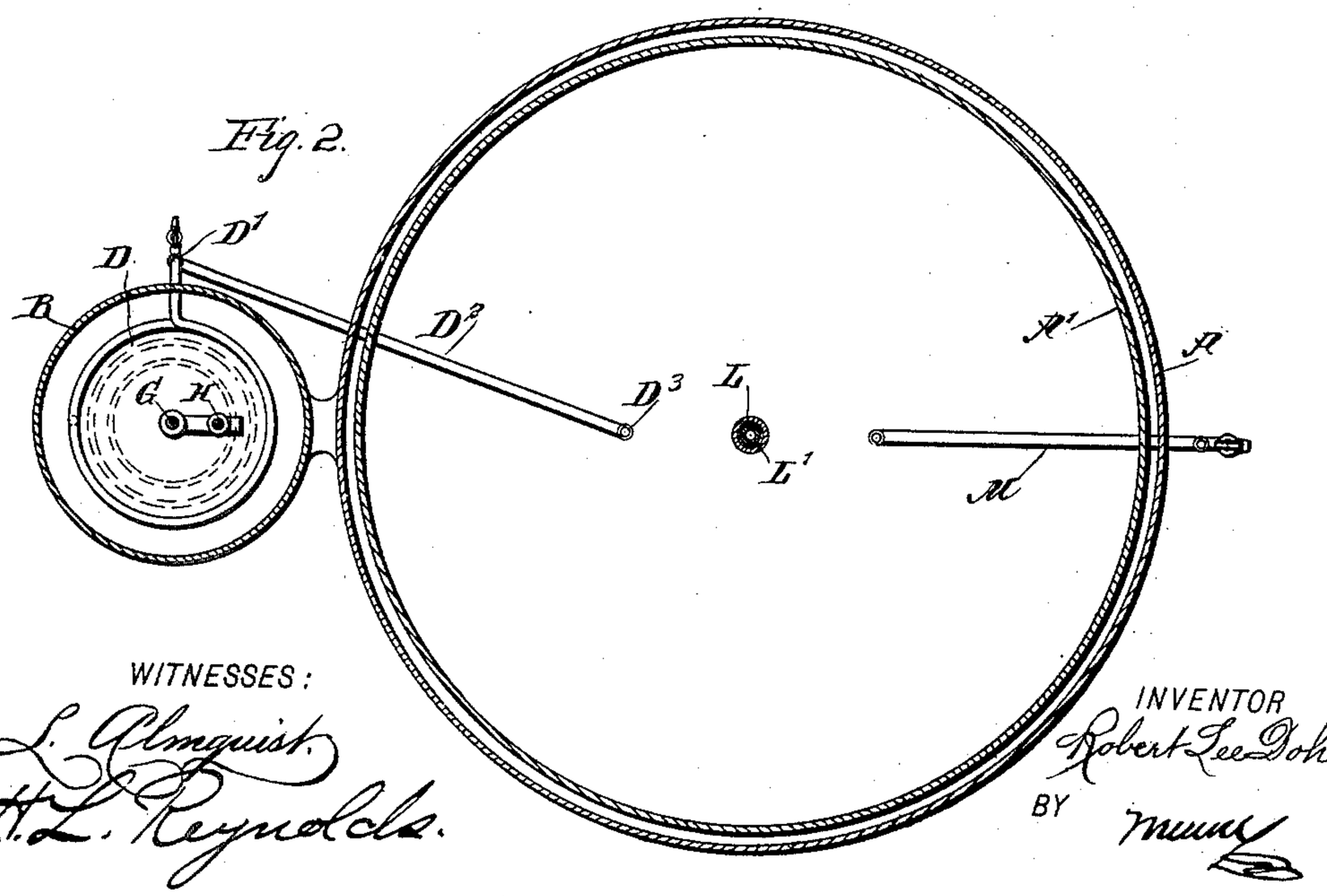


Fig. 2.



WITNESSES:

L. Almquist.

H. L. Reynolds.

INVENTOR

Robert Lee Doherty.

BY Munn & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

ROBERT LEE DOHERTY, OF PALMYRA, MISSOURI.

ACETYLENE-GENERATOR.

SPECIFICATION forming part of Letters Patent No. 630,195, dated August 1, 1899.

Application filed April 25, 1899. Serial No. 714,425. (No model.)

To all whom it may concern:

Be it known that I, ROBERT LEE DOHERTY, of Palmyra, in the county of Marion and State of Missouri, have invented a new and Improved Acetylene Generator, of which the following is a full, clear, and exact description.

My invention relates to an improvement in acetylene-generators and belongs to that class in which the water is permitted to drip upon the carbid.

The invention comprises the novel features hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both the figures.

Figure 1 is a sectional elevation of my device. Fig. 2 is a sectional plan on the line *x x* in Fig. 1.

In connection with the generator proper I use a gasometer which is of the usual construction, consisting of a water-tank A and an inverted bell A′, which rises and falls, according to the supply of acetylene which is on hand. The rise and fall of this bell is relied upon for operating the valve by which the admission of water to the generator is controlled. The generator and the water-tank are both included within a cylinder B, which is located at one side of the gasometer and is preferably secured to the outer tank A. The upper portion of this cylinder is separated from the lower portion by a partition *b*′, which forms a water-tank B^2, the upper end of which is closed and provided with a removable plug N, by which water may be supplied thereto. While it is preferable to have the upper end of the tank closed, it is not necessary, as the device will work satisfactorily if the upper end of the tank is left open.

The lower portion of the cylinder B is reduced in diameter, forming a section B′, which enters the space between the outer and inner cylinders C and C′, which, in connection with the reduced section B′, forms the generator. The space between the outer and inner cylinders C and C′ is filled with water, thus forming a gas-tight seal to prevent the escape of the acetylene.

The cylinders C and C′ are removably attached to the cylinder B by means of links or hooks *b*, which are pivoted upon one portion and secured to the other by hooking over a pin or in any other suitable manner. The inner cylinder C′ contains the carbid.

Within the tank B^2 is placed a spiral coil of pipe D, which has one end extending downward into the generator and at its upper end extends outward through the side of the tank and connects with a downwardly-extending pipe D′, which in turn has a horizontal portion D^2, connecting with a vertical leg D^3, which extends upward within the gasometer until it reaches a point above the water-level therein.

Beneath the partition *b*′ are placed two nesting cones E and E′, the inner cone E′ having an opening *e*′ at its lowermost point or apex and the outer cone an opening *e*, located near its upper portion or base. The partition *b*′ has an opening affording communication between the tank and the inner cone E′ and closed by a regulating-valve *g*, formed on the lower end of a rod G, which extends upward through the water in the tank and is provided with a threaded portion engaging a nut secured to the cover of the tank, so that the valve may be set to secure any rapidity of flow of water desired.

The water flows to the opening in the partition *b*′ through a pipe F, which is provided with a controlling-valve *h*, carried on the lower end of a rod H, which passes upwardly through the tank and projects from the upper end of the tank, at which point it is secured to one end of a lever I, the other end of said lever having a hole therein receiving a rod J, which depends from an arm J′, secured to the top of the bell A′. When the gasometer falls to the proper point, a tappet upon the rod J engages the end of the lever I and raises the valve *h*, so as to permit water to flow through the pipe F and thence through the cones E and E′ into the generator, where it trickles down the outside of the cone E and then drops upon the carbid in the inner cylinder C′. The valve *g* may be used to regulate the rapidity of the flow, so that the generator cannot become flooded by a rapid flow when the valve *h* is opened, and thus cause an excessive generation of gas.

Within the tank A is placed a central pipe L, which is secured to the bottom of the tank and receives a rod L′, secured to the upper

end of the bell A′, thus forming a guide for the bell. The gas is carried away from the gasometer through a valved pipe M.

This device is very simple and cheap in its construction and will also be found very efficient in its operation. The gas after generation is cooled by passage through the coil D and is thus delivered to the gasometer without any excessive heat. This cooling of the gas will also condense any aqueous vapors which may be carried over with the gas. It thus prevents condensation in the service-pipes and delivers the gas to the burners in a purer condition, thus preventing the burners from becoming clogged.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. An acetylene-generator, having two nested cones depending from the top thereof, the outer cone having an opening near its upper portion and the inner cone an opening near its lower portion, a water-supply communicating with the inner cone, and a controlling-valve in said communication operated by the rise and fall of the gasometer, substantially as described.

2. An acetylene-generator, having two nested cones depending from the top thereof, the outer cone having an opening near its upper portion and the inner cone an opening in its lower portion, a water-supply communicating with the inner cone, a hand-controlled regulating-valve and a closing-valve in said communication, and means for automatically actuating said closing-valve by the rise and fall of the gasometer, substantially as described.

3. An acetylene-generator, having nested cones depending from the top thereof, the outer cone having an opening near its upper portion and the inner cone an opening in its lower portion, a water-tank above the generator, a cooling-coil within said tank communicating with the generator and gasometer, water-supply connections between the tank and the inner cone, a hand-controlled regulating-valve, and means for automatically actuating said closing-valve by the rise and fall of the gasometer, substantially as described.

4. An acetylene-generator having two nested cones depending from the top thereof, the outer cone having an opening near its upper portion and the inner cone an opening in its lower portion, a water-supply communicating with the inner cone, a hand-controlled regulating-valve and a closing-valve in said communication, a lever having one end connected with the closing-valve, and an arm on the gasometer-bell adapted to engage said lever to open the closing-valve when the gasometer-bell falls to a determined point, substantially as described.

ROBERT LEE DOHERTY.

Witnesses:
C. L. JACKSON,
J. M. SOZEY.