

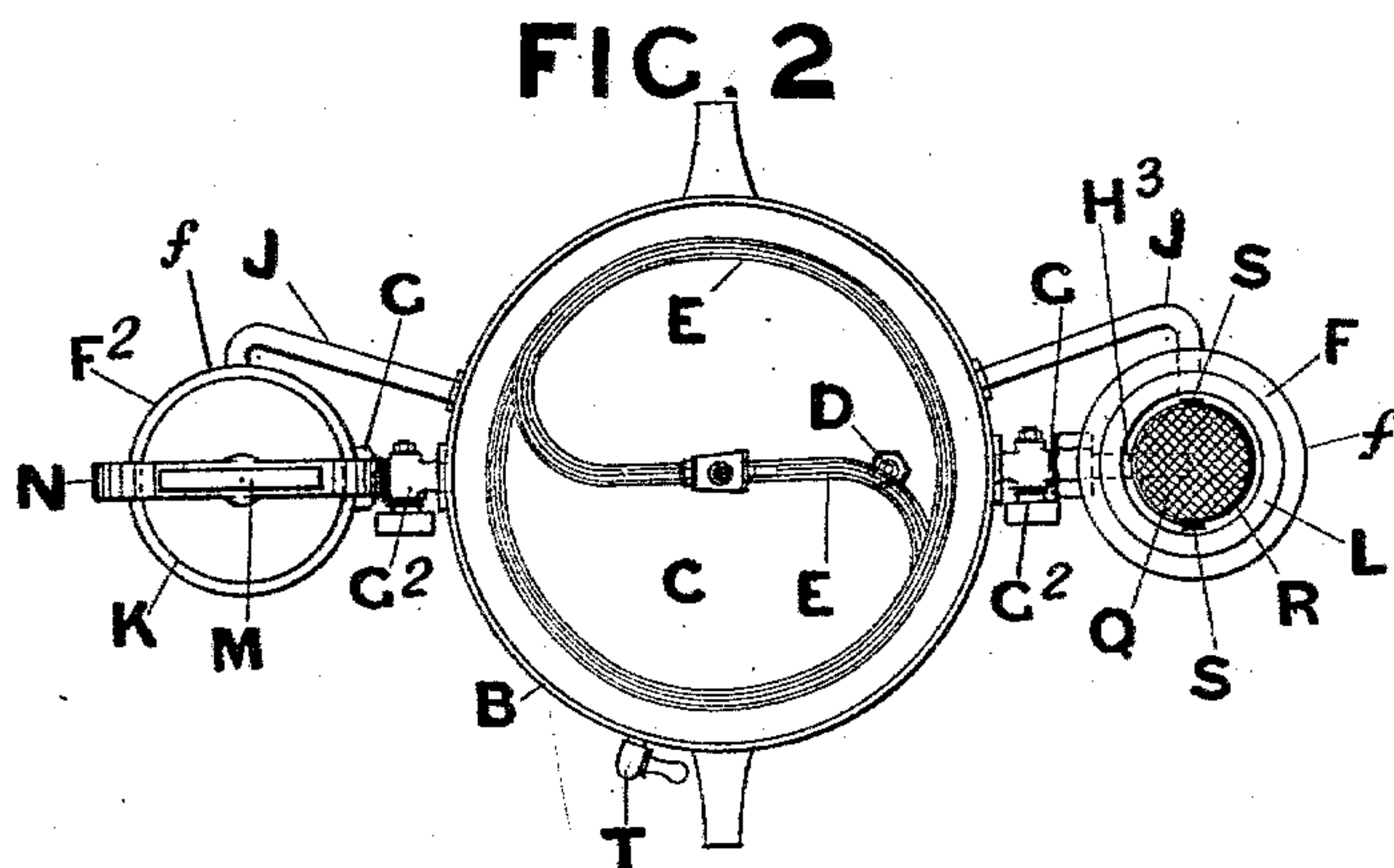
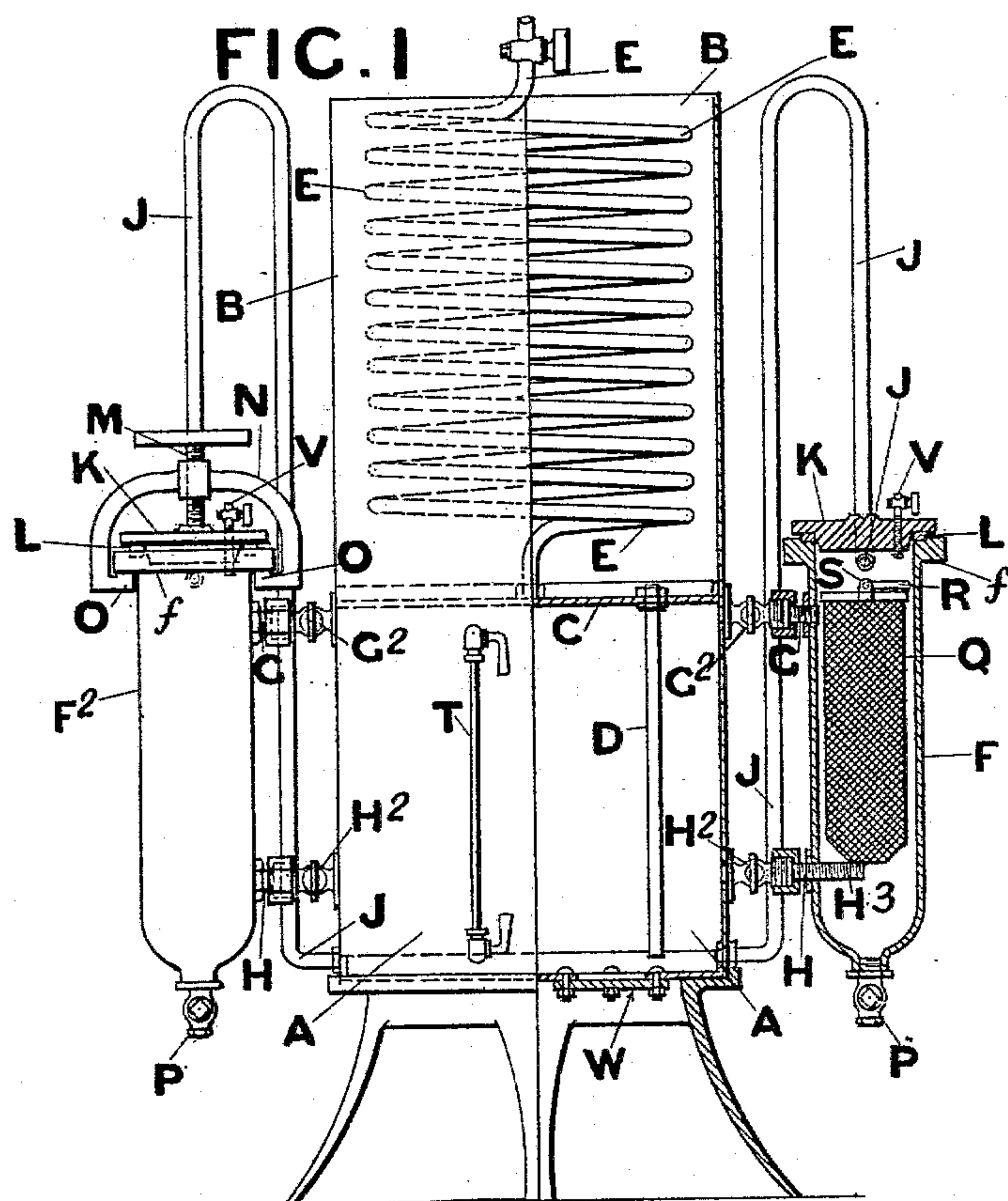
(No Model.)

J. H. EXLEY.

APPARATUS FOR MANUFACTURING ACETYLENE GAS.

No. 569,708.

Patented Oct. 20, 1896.



Witnesses:-

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UNITED STATES PATENT OFFICE.

JOHN HENRY EXLEY, OF BRADFORD, ENGLAND.

APPARATUS FOR MANUFACTURING ACETYLENE GAS.

SPECIFICATION forming part of Letters Patent No. 569,708, dated October 20, 1896.

Application filed August 31, 1895. Serial No. 561,066. (No model.)

To all whom it may concern:

Be it known that I, JOHN HENRY EXLEY, a subject of the Queen of England, residing at Bradford, England, have invented certain Improvements in Apparatus for the Manufacture of Acetylene Gas, of which the following is a specification.

The object of this invention is to provide a simple and compact apparatus requiring comparatively little attention for making acetylene gas, either continuously or intermittently.

In the accompanying sheet of drawings, forming a part of this specification, Figure 1 represents an elevation with half in section of my improved apparatus. Fig. 2 represents a plan view of the same.

The cylindrical receiver or holder A has a water-cistern B, of fully the same capacity, mounted above it, but separated therefrom by the diaphragm or horizontal partition C. A pipe D, connecting the receiver with the cistern, is fixed in this diaphragm and extends almost to the bottom of the receiver, and a delivery-pipe E from the receiver is also fixed in the said diaphragm and is carried out at the top of the cistern and connected to the service-pipe. The pipe E is preferably formed into a coil in the cistern for the purpose of cooling the gas passing through it.

Two vertical generators F and F² are fixed to the side of the receiver and are each connected to it by a top pipe G, fitted with a stop-cock G², and a bottom pipe H, also fitted with a stop-cock H². A safety-pipe J is fixed to the top of each generator and extends up above the maximum height of the water in the cistern and down again almost to the bottom of the receiver A. A lid K is fitted to the top of each generator, which may be held tightly down against the packing L by the screw M, fitted in the detachable bridge-piece N, placed diametrically across the top of the generator with its claws O O engaging the under side of the rim f of the generator. An air-tap V is fitted in each lid, and a drain-tap P is also fitted in the bottom of each generator to enable the water and residual matter to be drawn off when required.

A wire or perforated cage Q, filled with carbide of calcium, for instance, is placed in each generator and rests upon the end H³ of the

pipe H, projecting into the interior of the generator or it is supported above such pipe in any other convenient manner. An ordinary bow-handle R, pivoted to the lugs S S, secured on opposite sides of the top of the cage, is provided to facilitate removing the cage to discharge it. An ordinary water-gage T is preferably fitted to the receiver.

To put the apparatus into operation, the stop-cocks G² and H² are closed and the receiver is filled with water, as well as a few inches up the cistern, to form a reserve. Then the lids of the generators are removed and the cages filled with calcic carbide are placed in position in the generators and the lids again secured.

Assuming that the generator F is first used, the air-tap in its lid is opened, then the water is admitted to the generator by its cock H², and the generation of gas at once commences. As soon as the air is expelled from the generator the air-valve is closed, and the cock G² may be opened to pass the gas into the receiver, or it may be allowed to pass by the safety-pipe. The gas thus admitted displaces the water in the receiver, which is forced up into the cistern until the water in the receiver falls below the level of the pipe H or the bottom of the cage. Consequently its action on the carbide ceases, and it is only resumed when sufficient gas is withdrawn from the receiver to allow the water to again act on the carbide.

When the carbide is spent or exhausted, the generator F² may be brought into action, and the generator F may be disconnected by the cocks G² and H² and be recharged.

If desired, more than two generators may be fitted in a similar way.

To increase the pressure, the cistern may be raised above away from the receiver.

An opening fitted with a cover W is preferably made in the bottom of the receiver to enable the interior to be inspected and cleaned out.

I claim—

1. The combination with a receiver, a cistern arranged above the receiver, a pipe in communication with the lower portion of the cistern and with the receiver near the bottom of the latter, and a gas-delivery pipe communicating with the receiver at its upper end and

extending through and out of the cistern, of gas-generators in valved communication with the receiver, and adapted to receive liquid from the receiver, and to deliver gas there-
5 into as and for the purpose specified.

2. The combination with a receiver, a cistern arranged above the receiver, a pipe in communication with the lower portion of the cistern and with the receiver near the bottom
10 of the latter, and a gas-delivery pipe communicating with the receiver at its upper end and extending through and out of the cistern, of gas-generators in valved communication with the receiver and adapted to receive liquid

therefrom and to deliver gas thereinto, and 15 a safety-pipe communicating with the upper end of each generator, extending up above the maximum height of any liquid contained in the cistern, and also extending down and communicating with the receiver at the lower end 20 thereof, all as and for the purpose specified.

In testimony whereof I have hereunto set my hand in the presence of the two subscribing witnesses.

JOHN HENRY EXLEY.

Witnesses:

SAMUEL A. GRACUP,
CHARLES BONFIELD.