

No. 626,608.

Patented June 6, 1899.

J. GRAND.
ACETYLENE GAS GENERATOR.

(Application filed May 28, 1898.)

(No Model.)

FIG-1

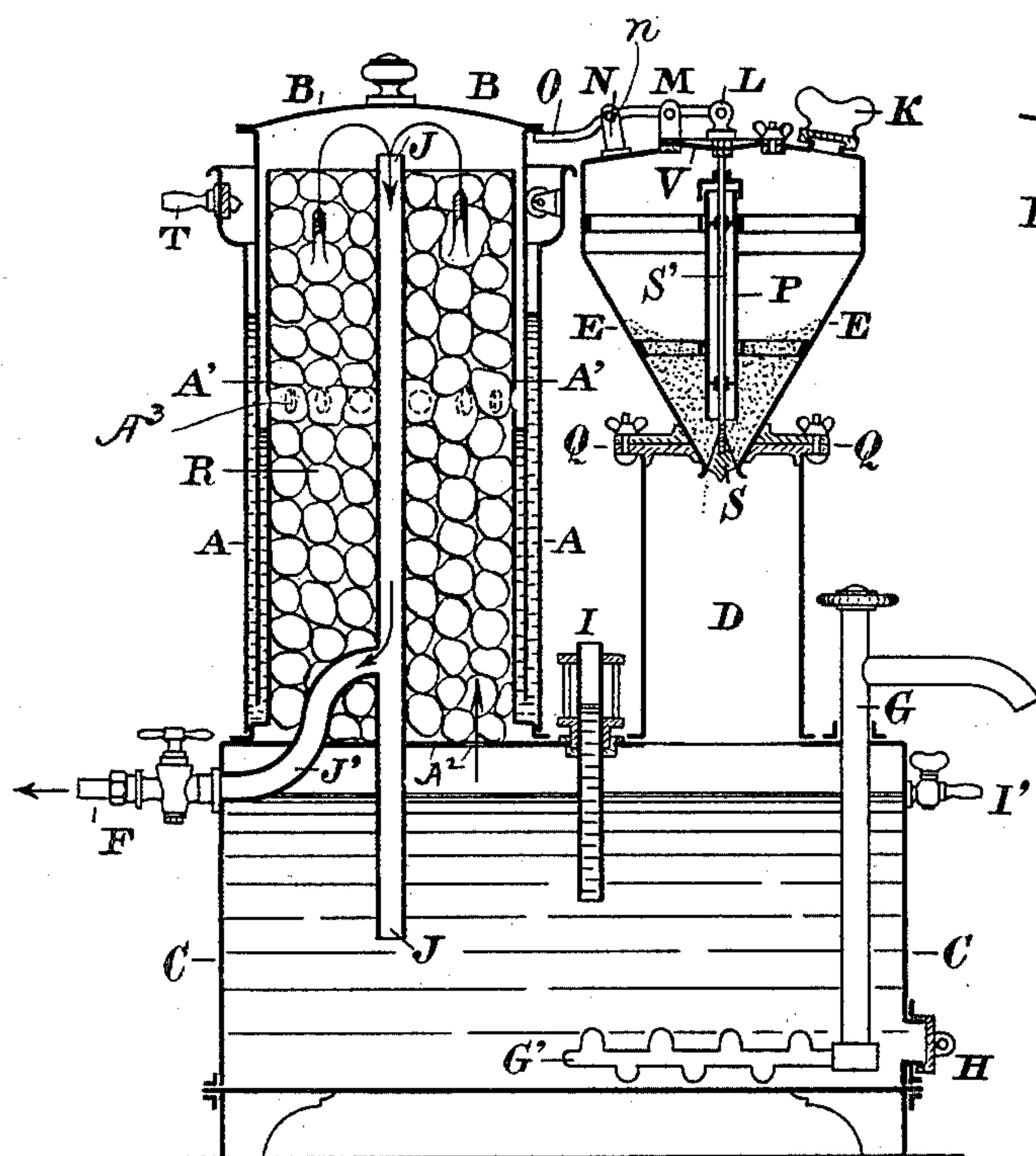


FIG-3

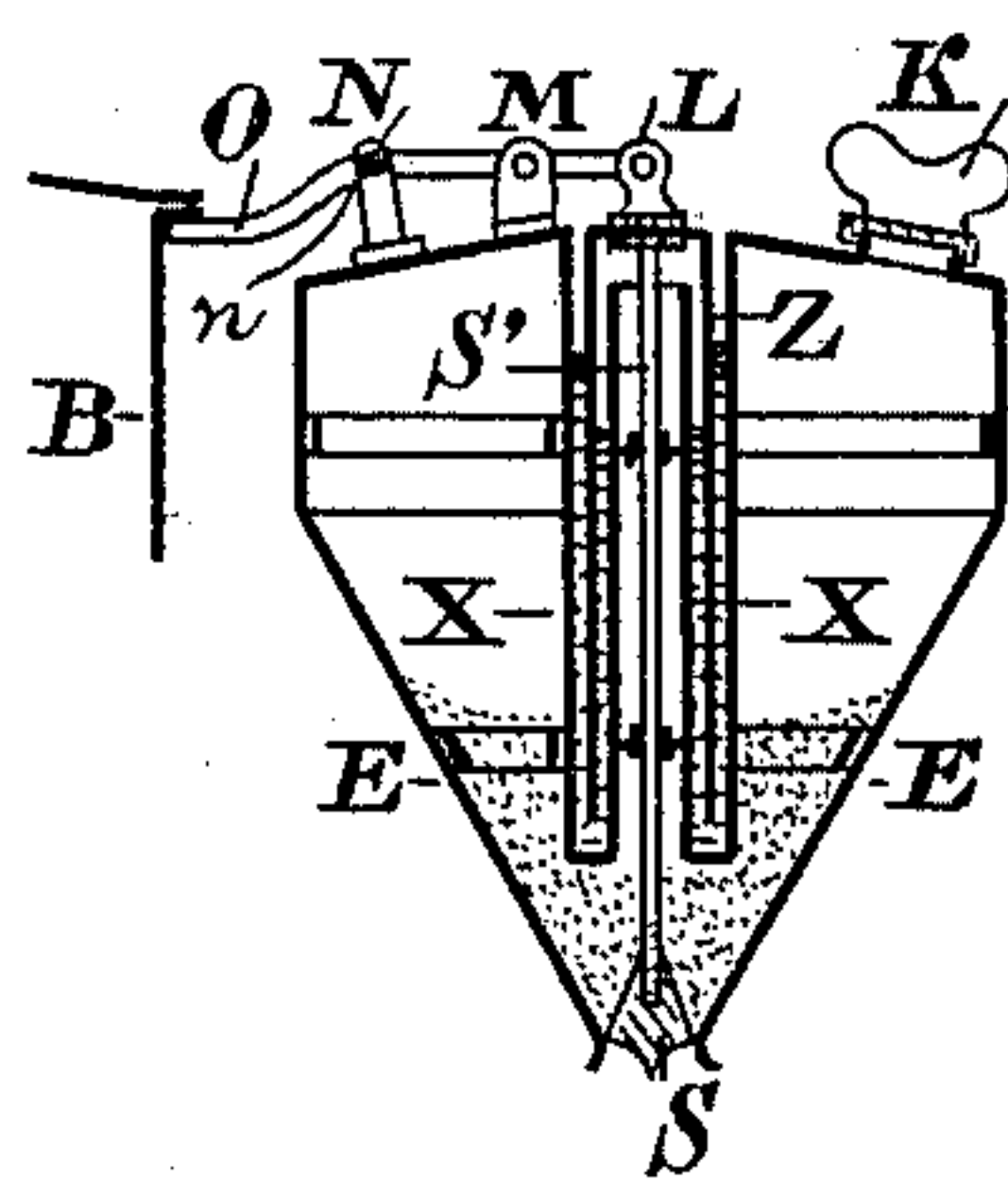
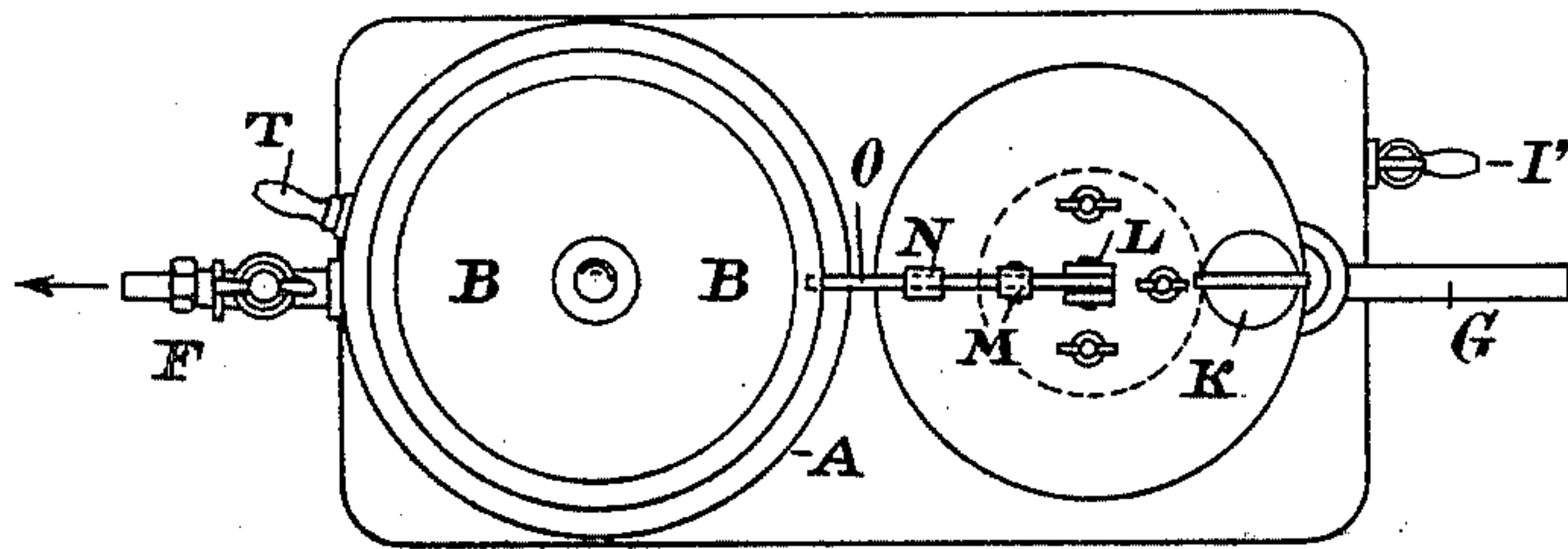


FIG-2



Witnesses

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JULIEN GRAND, OF LYONS, FRANCE.

ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 626,608, dated June 6, 1899.

Application filed May 28, 1898. Serial No. 682,046. (No model.)

To all whom it may concern:

Be it known that I, JULIEN GRAND, engineer, a citizen of the Republic of France, residing at 41 Rue Victor Hugo, Lyons, in the Republic of France, have invented certain new and useful Improvements in Acetylene-Gas Generators, of which the following is a specification.

This invention relates to special arrangements introduced into the construction of an acetylene-gas generator operating by means of the carbide falling into the water. In the greater number of apparatus of this kind the carbide-container or distributing-funnel is arranged directly within and at the center of the apparatus. As this arrangement presents numerous disadvantages, it has appeared to me to be more practical (while constructing the apparatus with one body only, which serves as its base) to arrange upon this body two distinct parts—that is to say, the gasometer dome or bell and the carbide-container or distributing-funnel upon which the said dome acts. By this means the carbide-reservoir is not subjected to the action of the water-vapors in the body of the apparatus, and it is independent and is thus capable of being rapidly removed in case of need. In addition to this inspection and maintenance of the apparatus are facilitated and the movements of the distributing-lever are more under control, this latter being capable of actuation by hand at will. In short, the apparatus which forms the subject of this invention constitutes an improvement upon and simplification of all carbide-distributing appliances hitherto constructed.

The apparatus is illustrated in the accompanying drawings, in which—

Figure 1 is a central vertical section through the same. Fig. 2 is a diagrammatic plan view, and Fig. 3 shows a modification which may be introduced in the construction of the apparatus.

My improved apparatus consists, as shown in Fig. 1, of a double circular casing A A and A' A', the latter of which is arranged within the former in such a manner as to constitute a water-joint, within which joint is displaced a dome B, the weight of which determines the pressure of the gas, which is thus rendered constant. This double casing A A

A' A' is rigidly fixed upon a reservoir C, containing the decomposing water. Upon the side of this reservoir is arranged the gas-supply cock F, which is in communication, by means of a pipe J', with a central vertical tube J, drawing the gas from the upper part of the apparatus after it has been purified, the said gas having for this purpose been caused to pass through any suitable purifying medium R—such as coke, iron filings, &c.—which is arranged within the casing A' A'. In order to permit the passage upward of the gas, as just described, the bottom of the casing A' is provided with a series of perforations A², and its side wall is provided with perforations A³ to permit the more ready escape of the gas through the purifying material. At the side of this double casing is fixed, likewise upon the water-reservoir C, and therefore above the decomposition-water, the support D, at the upper part of which is mounted, by means of a screw, bayonet, or other suitable joint Q, the carbide-distributor E E. Within this distributor is provided a vertical guide-tube P, in which slides the rod S' of a loaded valve S, closing downwardly by its weight alone the aperture for the escape of the carbide from the distributor. The upper extremity of this rod S' is provided with a fork L for the purpose of connecting the said rod with an operating-lever O, pivoted at M. The object of this lever is to raise the valve S when the dome B bears against the extremity of the said lever. A stop N, having an aperture n, is arranged upon the upper part of the distributor, and a pin inserted through this aperture and an aperture in the lever O serves to render the lever O immovable when desired, and so prevent the distributor from acting.

The joint between the valve-rod S' and the carbide-distributor E may be formed in any appropriate manner—for example, by means of the arrangement represented in Fig. 1, consisting of an india-rubber washer V, which, being fixed at its circumference to the distributor and at its center to the valve-rod S' between two nuts or washers, follows the movements of the said rod. The connection may, however, be made by means of a water, oil, glycerin, or other joint, as represented in Fig. 3, such arrangement consisting of a double tube X, forming the center of the distrib-

uter, between the walls of which a second tube Z, which forms a bell, so to speak, and is fixed to the valve-rod S', permits of the displacement of this latter. Either of these arrangements enables the valve-rod to be freely displaced, while at the same time a perfect joint, avoiding any escape of gas, is obtained.

The apparatus is also provided with an exhaust-pipe G, enabling the calcium-water to escape; a stirring-board G', for use when the calcium water is too thick to pass off readily; a clearing-out door H; a water-level tube I; a cock I', likewise indicating to what level the decomposition-water should rise; a stopper K, closing the aperture through which the granulated carbid is introduced into the distributor, and a water-supply cock T.

The operation is as follows: The base or decomposition-water reservoir C being filled with water up to the water-level cock I', the purifying medium R, placed within the envelop A' A', the dome or bell B, placed in its water-joint and this joint filled with liquid, it is only necessary to remove the plug K on the distributor and introduce within this latter the desired quantity of granulated carbid and then replace the plug K. Having effected this, it is only necessary to press lightly upon the lever O in order to produce a few initial distributions of carbid. Some grains of the carbid thus falling into the water, acetylene gas is immediately formed, which, as it cannot escape, raises the bell B slightly after having passed through the purifying medium. At this point the gas-cock F should be opened in order to allow the mixture of gas and air which is formed upon first starting the apparatus to escape from this latter, as the said mixture, owing to the large proportion of air, is non-combustible. In a few moments the burners may be lighted, and the gas required to supply them is thenceforth supplied automatically as required. Owing to the escape of gas from the bell to the burners resulting from the pressure of the said bell the latter will gradually descend, but in so doing strikes against the distributing-lever O, thereby momentarily raising the valve S and permitting a small quantity of carbid to escape, from which arises a fresh instantaneous production of a certain quantity of gas, which will cause the bell to again rise, and thus stop the escape of the carbid, and so on in succession.

The importance of this apparatus will readily be understood, since it enables the capacity of the distributing-reservoir to be increased without increasing the diameter of the bell, the two parts being quite distinct and independent. It may also be charged while in operation. All that is necessary to enable this to be effected is that a certain

quantity of the gas produced should be stored up in the bell B, whereupon the distributing-lever is fixed by means of its stop N. The plug K is rapidly unscrewed and the distributing-funnel filled while the gas which has been previously produced and accumulated in the bell is being consumed.

What I claim is—

1. In an acetylene-gas generator, the combination with a tank or water-reservoir affording the generator proper, of a gas-holder mounted upon and communicating with said generator and having a movable bell, a carbid-distributor having a valved outlet for supplying carbid to the generator, a lever operatively connected with the valve of said outlet and arranged to be operated by said bell, and a stop device on said distributor for holding the lever and valve in a fixed position, substantially as described.

2. In an acetylene-gas generator, the combination with a tank or water-reservoir affording the generator proper, of a gas-holder mounted upon and communicating with said generator and having a movable bell, a carbid-distributor mounted upon the generator independently of said gas-holder and having an outlet communicating with said generator, a weighted valve closing downwardly and controlling the discharge through said outlet, a rod connected at one end to said valve and extending upward through the distributor, and a pivoted lever connected at one end to the outer end of said rod and having its opposite end arranged in the path of the bell of the gas-holder, substantially as described.

3. In an acetylene-gas generator, the combination with a tank or water-reservoir affording the generator proper, of a gas-holder mounted upon and communicating with said generator and having a movable bell, a carbid-distributor mounted upon the generator independently of said gas-holder and having an outlet communicating with said generator, a valve controlling the discharge through said outlet, a rod connected at one end to said valve and extending upward through the distributor, a pivoted lever connected at one end to the outer end of said rod and having its opposite end arranged in the path of the bell of the gas-holder; and a movable gas-tight connection between said rod and distributor, substantially as described.

In testimony whereof I have hereunto set my hand, in presence of two subscribing witnesses, this 10th day of May, 1898.

JULIEN GRAND.

Witnesses:

JEAN GERMAIN,
GUILLAUME PIOCHE.