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Patented June 13, 1899.

J. D. BRIGGS & C. E. ELLIOTT.
ACETYLENE GAS GENERATOR.

(Application filed Nov. 23, 1898.)

(No Model.)

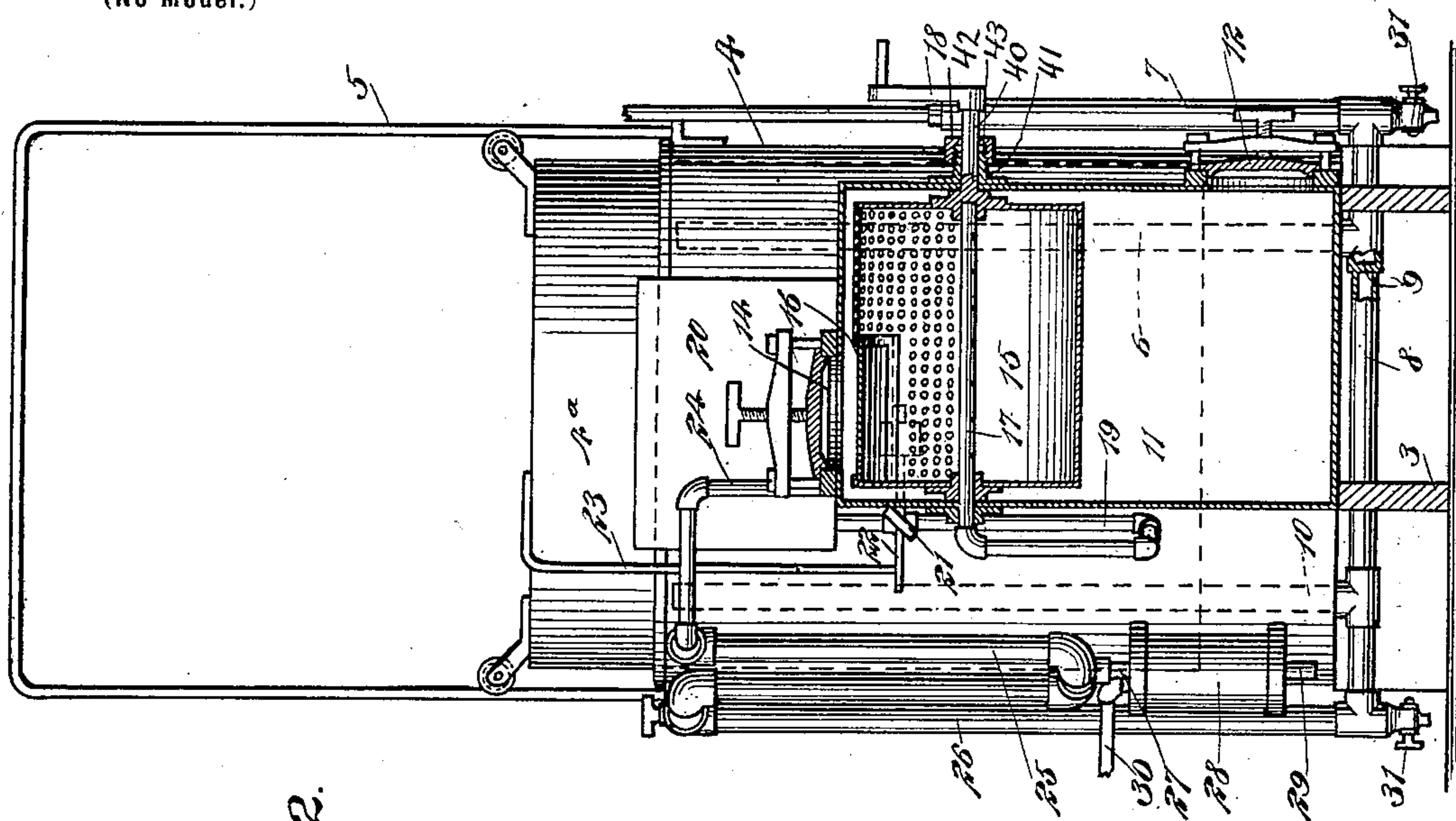


FIG. 2.

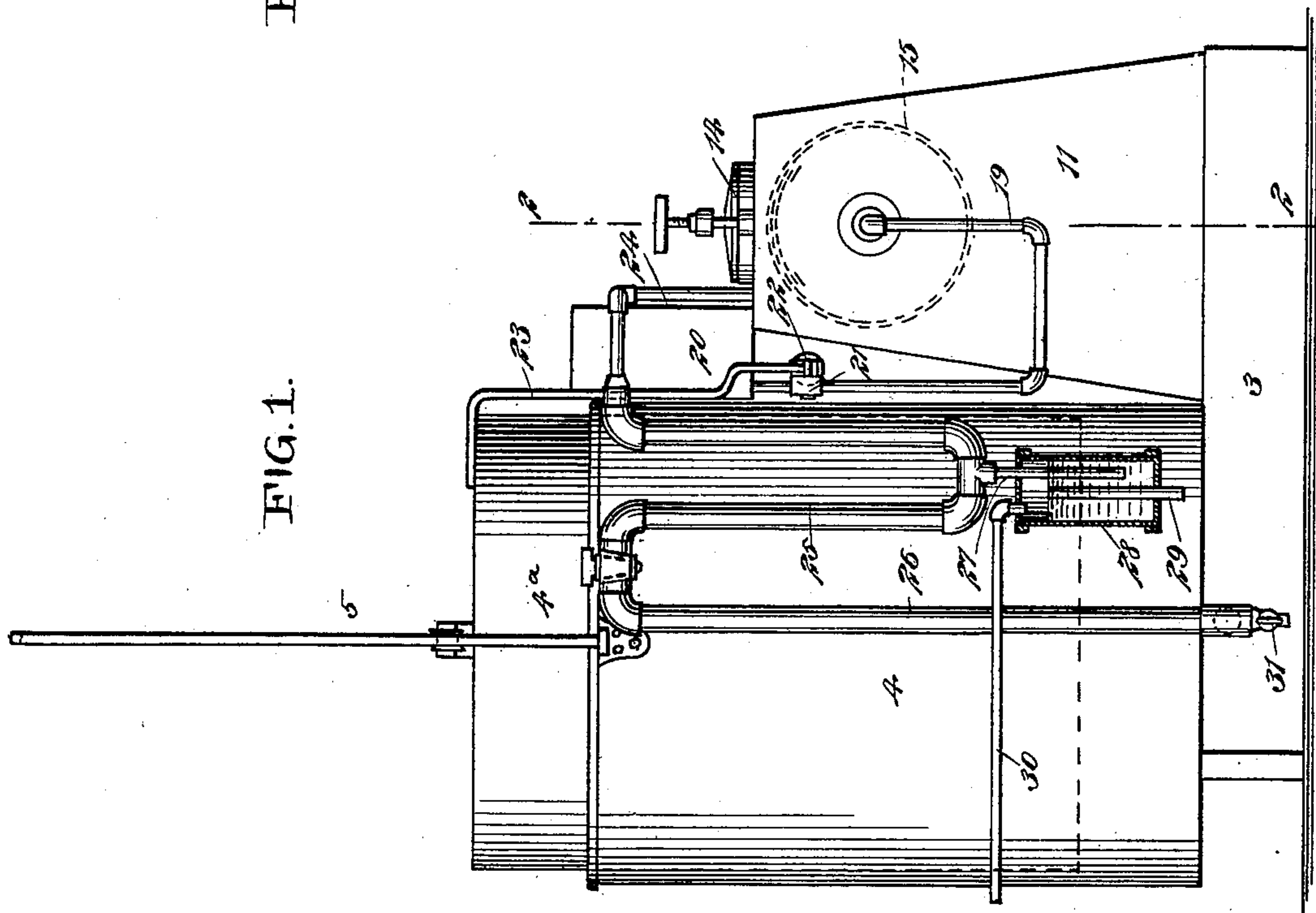


FIG. 1.

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ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 626,824, dated June 13, 1899.

Application filed November 23, 1898. Serial No. 697,265. (No model.)

To all whom it may concern:

Be it known that we, JOHN DORMAN BRIGGS and CHARLES EDWARD ELLIOTT, of Williamson, in the county of Wayne and State of New York, have invented certain new and useful Improvements in Acetylene-Gas Generators, of which the following is a full, clear, and exact description.

This invention relates to an acetylene-gas generator designed especially for the production of gas in comparatively small quantities and of that class in which the generator and gasometer are mounted immediately adjacent to each other and form a single and unitary structure.

This specification is a disclosure of one form of our invention, while the claims define the actual scope thereof.

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 views.

Figure 1 is a side elevation of the apparatus, and Fig. 2 is a sectional elevation on the line 2 2 in Fig. 1.

On the base 3 is mounted a gasometer 4, the stationary section of which carries a rectangular yoke 5, projecting upward to guide the movable section 4^a of the gasometer. The gasometer contains a vertically-extending pipe 6, open at its upper end and serving to conduct the gas out of the gasometer and to the service-pipe 7. The service-pipe 7 forms a continuation of a pipe 8, that runs horizontally beneath the gasometer, and is provided with a plug 9, by which to close the pipe. The pipe 8 communicates with a second pipe 10, which extends into the gasometer and serves to lead the gas thereto.

The generator 11 has at its lower portion a manhole 12, through which the ashes from the generator are removed, and said generator has at its top a manhole 14, through which the cylindrical carbid-basket 15 is filled. This basket 15 is perforated at one side and is provided with a sliding closure 16, and through the opening commanded by said closure the carbid may be passed into the basket. The basket is provided at one end with an axle extension 40, having an operating-handle 18 thereon, extending through a tubular bracket

41 at the side of the generator-casing, and said bracket is provided on its outer end with a cap or gland 42 for confining suitable packing 43 around the axle and forming a gas-tight joint. The end of the basket opposite the axle is provided with an aperture, through which passes the stationary water-feed pipe 17, secured to the casing, having its inner end fitting in a recess in the inner end of the axle extension 40, as shown, and serving, in connection with the axle 40, to effectively support the basket and permit it to rotate or be reversed to sift the ashes and allow them to fall into the lower part of the casing. The water-pipe 17 being stationary forms a tight joint with the casing by being screwed or otherwise fastened therein, and the gland around the axle extension 40 forms a gas-tight joint, so that the escape of gas is effectually prevented. The water-pipe is provided with small perforations on the lower side only, and therefore there is no opportunity for the perforations to become clogged by carbid or ashes, and a free water-supply is assured at all times. The basket being thus mounted to revolve may be rotated to carry the perforated portion of the basket downward, and thus sift the ashes from the basket. Normally the basket is held in the position shown in Fig. 2.

The water-supply pipe 17 is fed by a pipe 19, passing from a water-tank 20, located above the generator. The pipe 19 is commanded by a valve 21, which has attached thereto a counterbalanced rod 22, the influence of which is exerted to normally hold the valve 21 in a closed position; but when the movable section 4^a of the gasometer descends a rod 23, carried on said section, is caused to engage with the rod 22 and throw the same in such a manner as to open the valve 21. The carbid is introduced into the basket 15, and assuming that the gas in the gasometer is low to such a degree as will drop the section 4^a of the gasometer to the position shown in Fig. 2 the rod 23 will be engaged with the rod 22 and the valve 21 will be opened, so that the basket 15 will be supplied with water and the generation of gas will be effected. The gasometer being now supplied with a further volume of gas, the rod 23 will be moved

away from the rod 22 and the valve 21 will be closed by the action of the weight attached to the rod 22. This operation goes on continuously, the gasometer serving automatically to regulate the volume of gas generated.

The gas is led from the generator 11 by means of a pipe 24, which passes upward and then horizontally toward the gasometer, where it is joined with a U-shaped bend 25, forming part of a condensing-pipe, of which the vertical length of pipe 26 is a part. This condensing-pipe is of large diameter, so as to offer a large condensing-surface. The gas from the generator passes through these pipes 25 and 26, and such other vapor as may accompany the gas is condensed. The water of condensation thus produced is led from the bend 25 by means of a tube 27, that passes into a trap 28. The trap 28 is provided with an overflow-tube 29, which leads off the excess of liquid from the trap, the upper end of the tube being located slightly below the upper end of the trap. Such gas as may pass into the trap is led off by a pipe 30, passing to the outer air. Petcocks 31 are also provided for the service-pipe 7 and for the condenser-pipe 26.

The feature of employing a revoluble or reversible basket having a perforated upper portion and a solid or imperforate lower portion is very important in a dry generator, because a quantity of water is always held in contact with the carbid until it is formed into gas, and as there is always a surplus of carbid in the basket there is no chance of the escape of water into the ashes at the bottom of the generator to combine with any un-reduced carbid or to vaporize and combine with any dry carbid in the machine and generate gas when the apparatus is not in operation. The presence of moisture in any portion of the generator proper, excepting that in direct contact with the carbid to which it is intentionally supplied when the apparatus is in operation, is a source of annoyance, uncertainty, and danger, as the gas thus generated will probably be insufficient for use and will render it difficult to regulate the water-supply to the machine, so that only the proper quantity of gas will be generated without blowing off through the safety devices and being wasted. The location of the water-pipe inside the basket and the feature of perforating it on the lower side only contribute to the good results obtained by the use of our machine, as the water is thereby applied directly to the car-

bid and is not permitted to escape into the bottom of the generator-chamber, and there is no opportunity for clogging the small apertures in the pipe when the basket is reversed to sift the ashes or otherwise. If for any reason it is desirable to remove the perforated water-pipe from the generator, it can readily be accomplished in the apparatus shown without taking out or disturbing the basket, as the bearing 40 in the bracket 41 in the casing is sufficient to support it during the temporary removal of said pipe.

An apparatus such as shown and described herein has been in extensive operation for some time and is found to be admirably adapted for the purpose.

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

1. In an acetylene-generator, the combination of the casing, the reversible carbid-basket having the perforated portion and the imperforate portion adapted to retain the water in contact with the carbid, and means for supplying water to the carbid in the basket.

2. In an acetylene-generator, the combination with the casing, of the reversible carbid-basket having the perforated portion and the imperforate portion adapted to retain the liquid, and the perforated water-pipe located in the basket.

3. In an acetylene-generator, the combination with the casing, of the reversible carbid-basket having the perforated portion and the imperforate portion adapted to retain the liquid, and the perforated water-pipe extending through the basket and around which it turns.

4. In an acetylene-generator, the combination with the casing, of the cylindrical carbid-basket journaled at one end in the casing, the stationary perforated water-pipe on which the basket is journaled secured to the casing and extending through the basket.

5. In an acetylene-generator, the combination with the casing and the cylindrical carbid-basket therein, having the perforated portion and the imperforate portion for retaining the water, of the stationary water-pipe extending through the center of the basket and on which the basket turns, said pipe having the perforations in the lower side thereof only.

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