

No. 724,642.

PATENTED APR. 7, 1903.

G. L. WILSON.
ACETYLENE GAS GENERATOR.

APPLICATION FILED MAY 31, 1901.

NO MODEL.

2 SHEETS—SHEET 1.

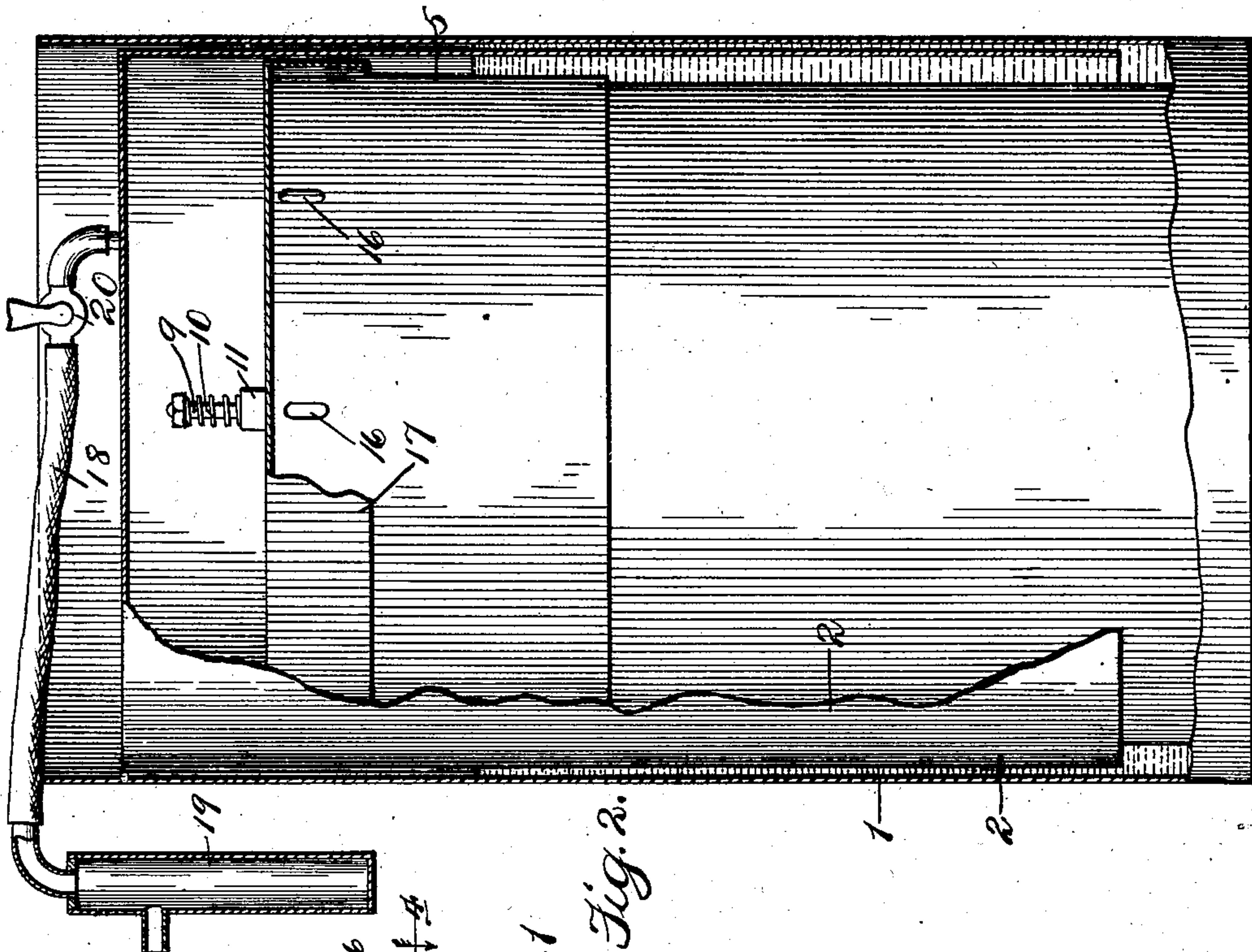


Fig. 1.

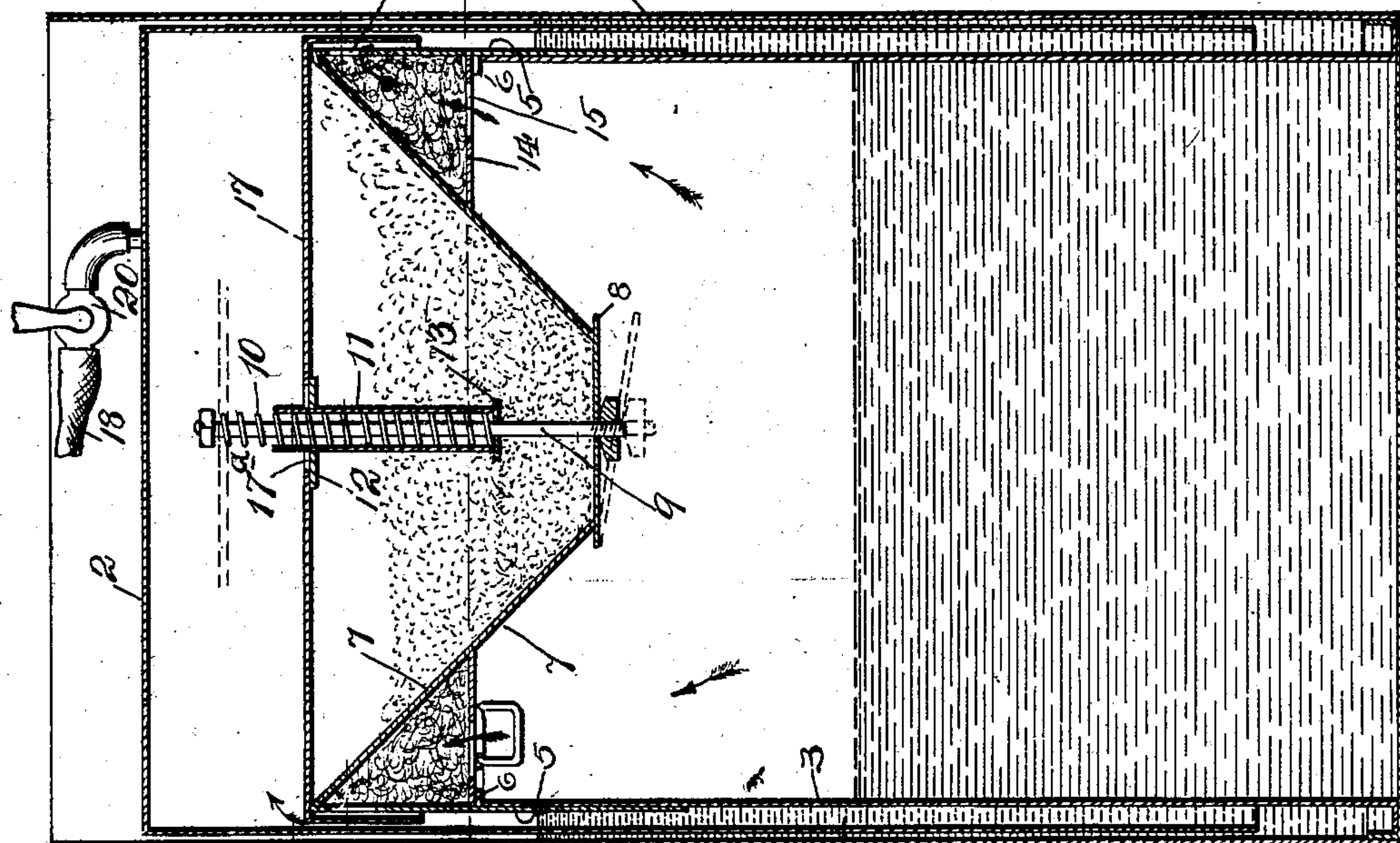


Fig. 2.

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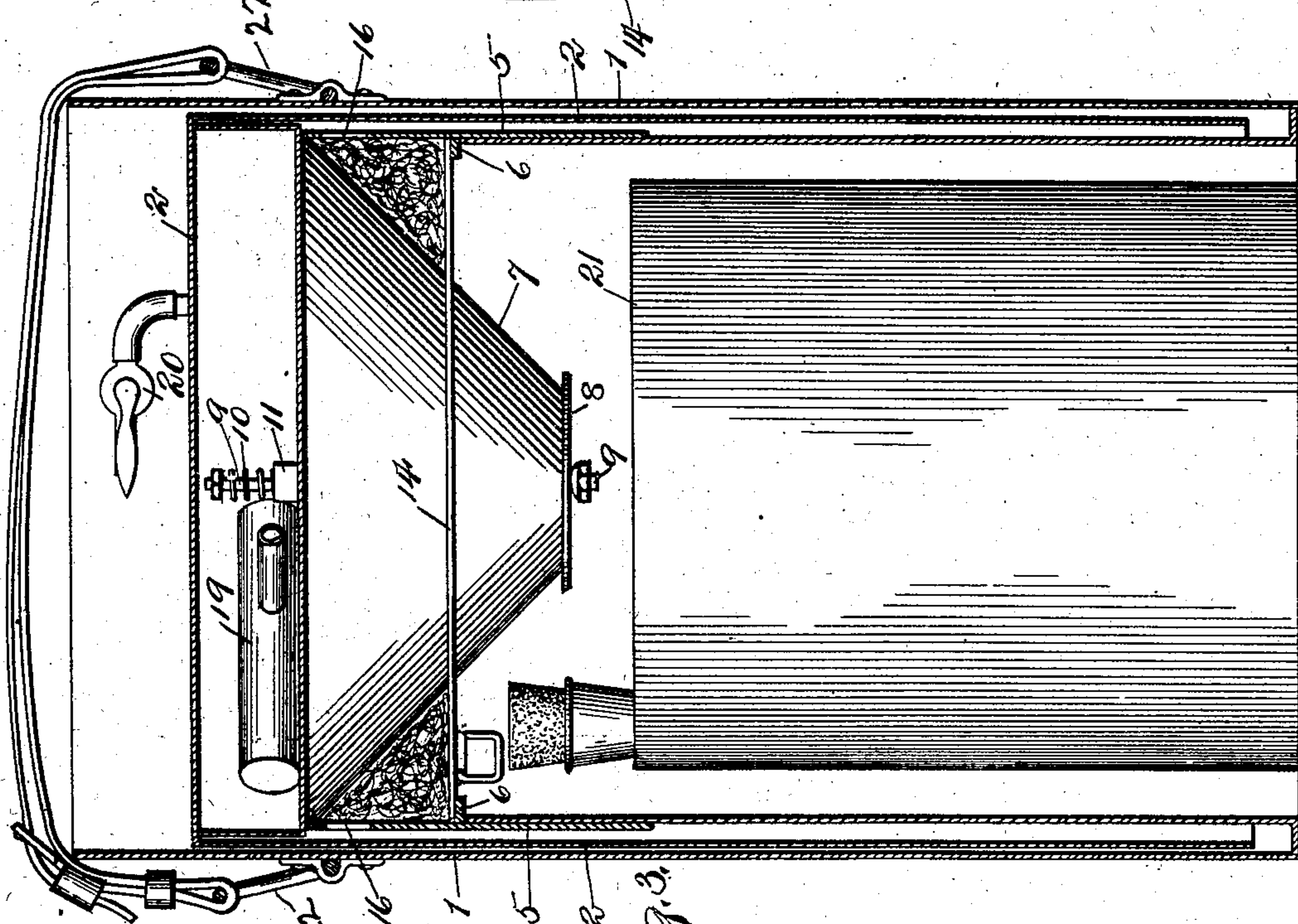
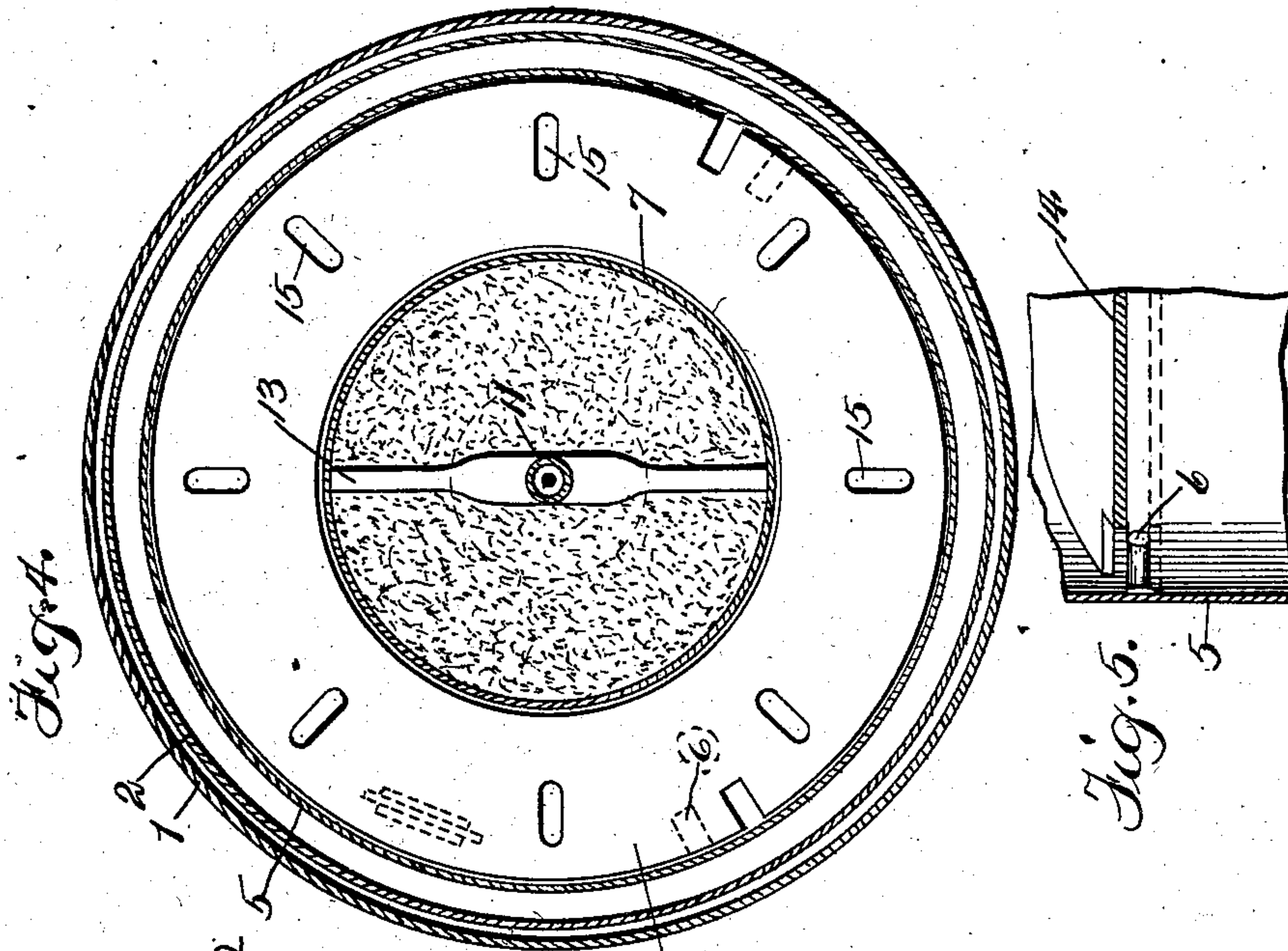
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Witnesses
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 J. B. Weir

Inventor
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UNITED STATES PATENT OFFICE.

GEORGE LANDIS WILSON, OF OAKPARK, ILLINOIS.

ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 724,642, dated April 7, 1903.

Application filed May 31, 1901. Serial No. 62,556. (No model)

To all whom it may concern:

Be it known that I, GEORGE LANDIS WILSON, a citizen of the United States, residing in the village of Oakpark, in the county of Cook, in the State of Illinois, have invented certain new and useful Improvements in Gas-Generators, of which the following is a specification.

This invention relates to gas-producing apparatus such as is commonly employed to generate acetylene gas by the reaction of water upon calcic carbide or the like, and more particularly to that type of such apparatus in which the dry carbide is dropped from time to time in small quantities into the water to produce generation as the demands of consumption may require. In the particular form herein shown the invention is embodied in a compact and desirable form of portable apparatus, although not necessarily confined thereto, so far as many of its features are concerned.

The object of the invention is to provide an improved apparatus of this character; and it consists in the matters herein set forth, and particularly pointed out in the appended claims, and will be fully understood from the following description of the construction set forth in the accompanying drawings, in which—

Figure 1 is a sectional elevation of a gas-generator constructed in accordance with my invention. Fig. 2 is a partly-sectional side elevation thereof. Fig. 3 is a similar view of the generator as packed for shipment. Fig. 4 is a top plan section taken on line 4-4 of Fig. 1. Fig. 5 is a detail showing the manner in which the filter-supporting screen is removably secured in place.

In said drawings, 1 designates an outer casing or tank, within which a floating gas container or bell 2 is inverted in the usual manner.

3 is an inner wall concentric with the wall of the tank 1, but separated therefrom by an annular space 4, which is partially filled with water and forms the sealing-chamber for the lower edges of the bell 2. The space within this inner wall forms the generating-chamber and is also partially filled with water, into which the carbide is dropped from an overhead carbide reservoir or receptacle 5. This latter is made just large enough to set

down over the upper end of the inner wall 3, being supported thereon by inwardly-projecting pins 6, provided on the inner surface of its outer wall. The carbide is provided within this receptacle in a downwardly-converging chamber 7, the lower end or mouth of which is guarded by a valve 8, supported by a stem 9, having mounted thereon a spring 10 of sufficient strength to normally force the valve closed against the weight of the carbide upon it. This valve-stem and spring are shown as inclosed, with a guiding-tube 11 extending between bridge-plates 12 and 13, upon the lower one of which the spring has its supporting-bearing. The upper end of the valve-stem projects into the space above the carbide-receptacle and beneath the top of the bell 2 into position to be struck by the latter as it descends, (see dotted lines in Fig. 1,) so that as the gas becomes exhausted the descending bell will come in contact with said valve-stem and open the valve 8, so as to drop a fresh supply of carbide into the water below until the resulting generation of gas causes the bell to rise again and permits the valve to close. In accordance with my improvements the valve 8 is not secured rigidly to the stem 9, but hangs loosely thereon, so as to be capable of tilting out of its normal horizontal position. This enables the valve to assume a slanting position, as shown in dotted lines in Fig. 1, and partially close the mouth of the carbide-chamber, even when prevented from tightly closing by the catching of a lump of carbide between it and the chamber at one side, as is always liable to happen unless the carbide be very carefully screened, and such partial closing of the valve will frequently prevent the undue escape of carbide and consequent overgeneration of gas under circumstances where the blocking open of a rigidly-attached valve might permit the entire charge of carbide to run through into the water, and thus cause an excessive amount of overgeneration. As a further point of improvement also a filtering and drying chamber is provided in the annular angular space around the upper portion of the carbide-chamber by the provision of an annular plate 14, perforated at 15, having marginal apertures which permit it to be passed over the pins 6 and then rotated until it rests removably

thereon. A filling of dry carbid or absorbent cotton or other suitable substance is inserted above this plate 14, and apertures 16 for the escape of the generated gas are also provided above the plate in the side walls of the receptacle 5, so that in passing out of said apertures the gas must necessarily traverse the absorbent filtering material and be more or less purified and relieved of moisture thereby. The body of fresh carbid within the chamber 7 is at the same time protected from any considerable slaking action of the gas by a centrally-apertured pan-shaped cover 17, which in the normal operation of the generator will be inverted over the upper end of the carbid-receptacle 5, with the valve-stem projecting through its central aperture 17^a, so as to form a cover loose enough to permit the gas to escape through the holes 16 beneath its outer flange, but tight enough to prevent any appreciable circulation of the gas in the carbid-chamber. This pan-like cover 17 is furthermore employed in packing the generator for storage and shipment by placing it open end upward upon the carbid-chamber, so that the bell 2 will rest upon its upper edges and be prevented from settling down upon the valve-stem, so as to maintain the spring thereof under compression. The space within the cover 17 beneath the bell may then be utilized as a storage-space for a flexible outlet-tube 18 and trap 19, with which the apparatus is desirably provided, said tube being adapted for connection with an outlet-cock 20 on the top of the gas-bell when the apparatus is arranged for operation. A can 21, of carbid, may also be conveniently stored and carried in the interior of the tank beneath the carbid-receptacle, as shown in Fig. 3, while a strap 21, extending over the top of the tank 1 between the usual metallic handles 22 on the sides of the latter, serves at once as a fastening for the complete package and as a handle by which it may conveniently be carried.

I claim as my invention—

1. In a gas-generator, the combination with a water-containing chamber, of a superposed

carbid-receptacle opening into said chamber, a valve-stem extending up through the opening and chamber, a valve loosely mounted upon a central support at the lower end of the valve-stem beneath the opening so as to be tiltable in various directions, a spring applied to normally lift the stem and close the valve, a gas-receiving bell inclosing the generating-chamber and carbid-receptacle, said bell floating normally free from the carbid-stem, but descending thereon to depress the stem and open the valve to supply carbid to the generating-chamber as the gas in the bell becomes exhausted, substantially as described.

2. In a gas-generator, the combination with a generating-chamber, of a carbid-receptacle opening into said chamber, a valve for closing the opening, a valve-stem projecting above the carbid-receptacle, a spring applied to normally close the valve, a floating bell inclosing the carbid-chamber and arranged to occasionally depress the valve-stem to open the valve, and an apertured flanged cover for the carbid-receptacle adapted to be inverted to support the bell clear of the valve-stem during storage and shipment.

3. A gas-generator comprising an outer tank, a gas-bell inverted within said tank, an inner generating-chamber inclosed by said bell, a superposed carbid-receptacle opening into the generating-chamber, a valve for closing the opening, a valve-stem carrying said valve and projecting upwardly into the bell, a spring applied to normally close the valve, and an apertured flanged cover normally closing the carbid-chamber but adapted to be inverted so as to support the bell out of contact with the valve-stem during storage and shipment.

In testimony that I claim the foregoing as my invention I affix my signature, in presence of two subscribing witnesses, this 27th day of May, A. D. 1901.

GEO. LANDIS WILSON.

Witnesses:

N. A. COSTELLO,
J. G. HALLIDAY.