No. 666,353. Patented Jan. 22, 1901.

J. W. PRITCHARD.

ACETYLENE GAS GENERATOR.

(Application filed Jan. 18, 1899.)

(No Model.)

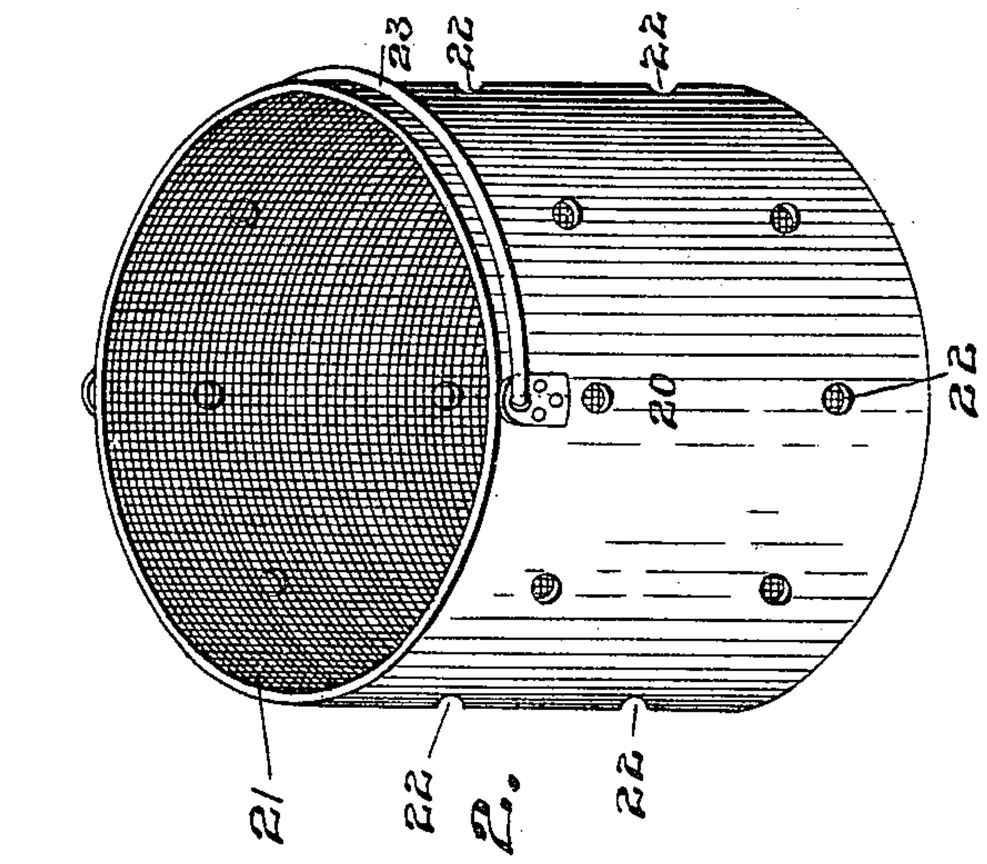

Fig. 2.

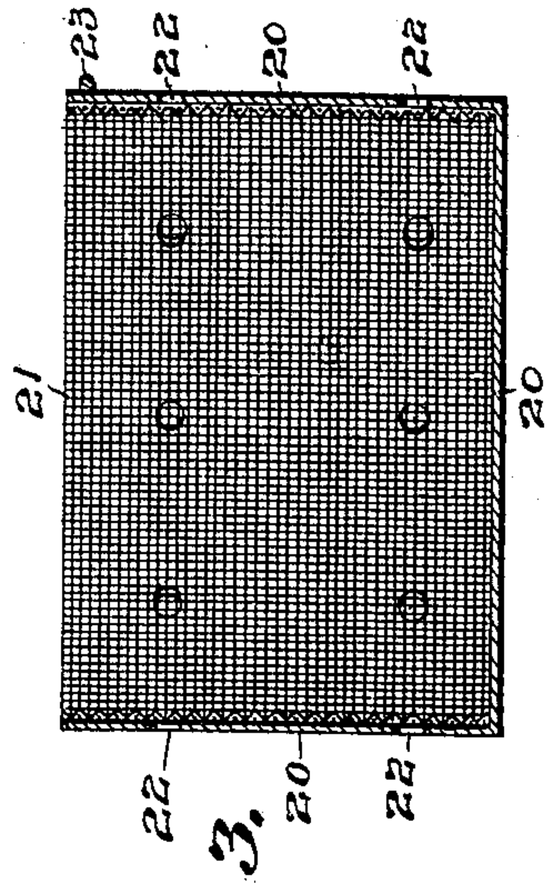

Fig. 3.

Fig. 1.

Witnesses

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ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 666,353, dated January 22, 1901.

Application filed January 18, 1899. Serial No. 702,545. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH W. PRITCHARD, a citizen of the United States of America, and a resident of Mitchellville, Polk county, Iowa, have invented certain new and useful Improvements in Acetylene-Gas Generators, of which the following is a specification.

The object of this invention is to provide improved means for generating gas from calcium carbid.

My invention consists in the construction, arrangement, and combination of elements hereinafter set forth, pointed out in my claims, and illustrated by the accompanying drawings, in which—

Figure 1 is a vertical section of the device. Fig. 2 is a perspective of one of the carbid-pails. Fig. 3 is a diametrical sectional view of one of the carbid-pails.

In the construction of the device as shown the numeral 10 designates a tank, preferably made of sheet metal and formed with a bottom and an annular side rigidly connected and sealed to contain water, said tank being open at its top.

The numeral 11 designates a bell, preferably made of sheet metal and formed with a top and an annular side rigidly connected and sealed to contain gas, said bell being open at its bottom. The bell 11 is of less diameter than the tank 10, and the top thereof extends over the upper edge of the tank. The bell 11 is positioned in the tank 10 and supported, when not containing gas, by the lower edge of the bell resting on the upper surface of the bottom of the tank. Rods 12 are vertically positioned and spaced apart and are fixed to the outer surface of the bell, between said bell and the tank, which rods guide the rise and fall of the bell by sliding engagement with the tank.

An open-ended cylinder 13 is positioned vertically in and traverses the central portion of the top of the bell 11, and the lower end of said cylinder is in the horizontal plane of the lower edge of the bell. The upper end of the cylinder 13 extends above the top of the bell 11 and is fitted with a cover 14. The cover 14 is notched in its periphery, and bolts 15 are hinged to the cylinder 13 and swing upwardly into the notches. The bolts are held upwardly and the cover is locked to the cylinder by winged nuts 16, screw-seated on the upper ends of the bolts and impinging the top of the cover. A gasket 17 of yielding material is interposed between the lower face of the cover and the upper edge of the cylinder. A supporting-rod 18 is mounted horizontally in and transversely of the central portion of the cylinder 13, or an angle-strip may be mounted on the inner face of the cylinder for the same purpose. A bucket 19 is mounted in the cylinder 13 and rests on the supporting-rod 18 or angle-strip. A bucket 20 is mounted in the cylinder 13 and rests on the bucket 19. The buckets 19 20 are of less diameter than the cylinder, thus providing a space for the passage of water and gas between the peripheries of the buckets and the interior face of the cylinder. The buckets are of identical construction, and in the drawings I have shown one of them in section and one in full lines that the construction thereof may be plainly read. Each of the buckets is perforated or apertured in its side and is provided with a screen of woven wire on its interior face, which screen is of small mesh, as indicated by the numerals 21 22. Each of the buckets is provided with a bail 23, whereby it may be lifted from the cylinder 13 when the cover is removed.

A safety-pipe 24 is mounted vertically in and traverses the top of the bell 11 and is open at both ends. The lower end portion of the safety-pipe extends below the top of the bell 11, nearly half-way to the horizontal plane of the lower edge of said bell, and receives the upper end portion of a telescoping pipe 24^a.

A gas-discharge pipe 25 is mounted in and traverses the side of the tank 10. One end portion of the pipe 25 extends vertically within the tank nearly to the top of the bell 11 and the other end portion of said pipe extends to the burners (not shown) and serves as a service-pipe, having as many branches of common form as is desired.

A bracket 26 is fixed to and extended horizontally outwardly from the side of the tank 10 and embraces and supports the outer portion of the discharge-pipe 25.

A gas-communicating pipe 27 traverses the upper end of the cylinder 13 and leads therefrom into the bell 11 and is open at both ends

to provide for the passage of gas from the upper portion of the cylinder into the bell. In the central portion of the communicating pipe 27 is mounted a cut-off valve 28, whereby the flow of gas from the cylinder to the bell may be stopped and backflow of the gas from the bell prevented when it is desired to open the cylinder to cleanse the same or replenish the carbid.

In practical use the calcium carbid is placed in the buckets 19 20, the buckets positioned, the cover 14 attached, the cut-off valve 28 opened, and the tank 10 nearly filled with water. The water rises into contact with the carbid through the interior of the cylinder. As the gas is generated the bell 11 rises and lifts the carbid-buckets out of the water in the tank 10. As gas is used the bell 11 descends into the water until the carbid is contacted thereby and more gas generated.

In the event that an excess of gas is generated in the device the bell 11 is lifted until the safety-pipe 24 is clear of the water and the excess of gas escapes through said pipe.

I claim as my invention—

1. In an acetylene-gas generator a bucket or pail for containing the carbid having an imperforate bottom, a perforated side, and a screen mounted in said bucket consisting of a smaller mesh than the perforations in the bucket, substantially as shown and described.

2. In an acetylene-gas generator a bucket or pail for containing the carbid having an imperforate bottom, a perforated side, a screen mounted in said bucket consisting of a smaller mesh than the perforations in the bucket and a handle or bail for moving said bucket, substantially as shown and described.

Signed by me at Mitchellville, Iowa, this 4th day of January, 1899.

JOSEPH W. PRITCHARD.

Witnesses:

JAMES B. UHL,

S. J. OLDFIELD.