

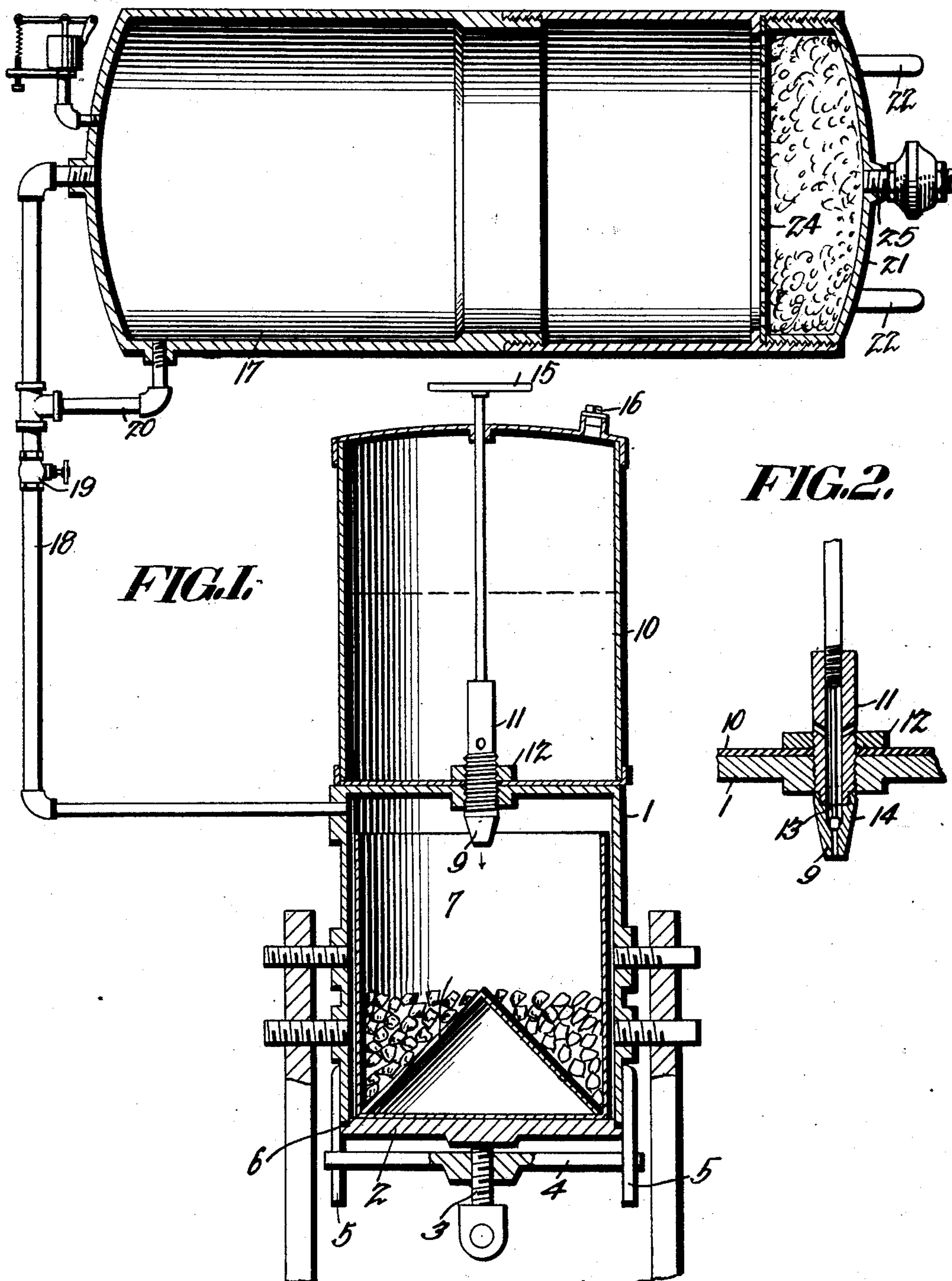
No. 714,929.

Patented Dec. 2, 1902.

W. S. MAY.
ACETYLENE GAS GENERATOR.

(Application filed Feb. 28, 1902.)

(No Model.)



Witnesses
E. J. Stewart
J. M. E. Parker

W. S. May, Inventor.
by *Chas. Snow & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

WALTER SHERMAN MAY, OF CLIFTON, ARIZONA TERRITORY.

ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 714,929, dated December 2, 1902.

Application filed February 28, 1902. Serial No. 96,118. (No model.)

To all whom it may concern:

Be it known that I, WALTER SHERMAN MAY, a citizen of the United States, residing at Clifton, in the county of Graham and Territory of Arizona, have invented a new and useful Acetylene-Gas Generator, of which the following is a specification.

My invention relates to certain improvements in apparatus for generating acetylene gas, and has for its principal object to construct an improved generator and reservoir more especially adapted for use in the lighting of railway-cars or for locomotive-headlights.

A further object of the invention is to so construct the generator as to permit of the ready renewal of the carbid without interfering with the gas-supply or shutting off the lights and to permit of the ready cleansing of the generator.

A further object is to so construct the generator as to bring the water into contact with the carbid at the bottom of the generating vessel without the necessity of traversing hydrated carbid at the top of the vessel, as is usual in devices of this class.

A still further object of the invention is to construct an improved form of reservoir and strainer for purifying and drying the gas previous to its passage to the burners.

With these and other objects in view the invention consists in the novel construction and combination of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a sectional elevation of a generating device, reservoir, and strainer constructed in accordance with my invention. Fig. 2 is a detail sectional view of the regulating-valve.

The generating vessel 1 is preferably formed of cast metal of suitable strength to resist the pressure of the gas, the bottom of the vessel being open and provided with a removable head 2, which may be firmly held in position by a jam-screw 3, adapted to a threaded opening in a cross-bar 4, which is seated in suitable recesses or slots in lugs 5, depending from the casing of the generator. In order to form an air-tight joint, a yield-

ing gasket 6 is usually placed between the generator and the removable head.

Within the generating-chamber is placed a carbid-holder 7, preferably formed of sheet metal and secured to the head 2, so that when the latter is loosened the carbid-holder may be removed with it and the hydrated carbid dumped out by merely reversing the position of the holder and without the necessity of handling its contents. On the bottom of the carbid-holder is placed a loose cone 8, the apex of which is immediately under a water-nozzle 9, through which water is fed from a tank 10, the cone being preferably formed of a piece of metal separate from the holder for convenience in cleansing. The water-tank 10, which may be formed of sheet metal, rests directly on the top of the generating-chamber and is secured thereto by a threaded tube 11, on which may be placed a jam-nut 12 on the inside of the water-tank in order to lock the tank in position. The tube 11 is threaded internally for the reception of the stem 12 of a needle-valve 13, adapted to a seat in a nozzle 14, which is screwed or otherwise attached to the lower end of said tube, the stem of the valve passing up through an opening in the top of the water-tank and being provided with an operating-handle 15. At the top of the water-tank is a filling-opening which may be closed by a plug 16.

The gas-reservoir 17 is preferably formed in two sections for convenience in manufacturing and is of a size sufficient to contain the quantity of gas necessary to supply the burners during the time required for dumping the hydrated carbid and renewing the supply. The generating-chamber and the reservoir are connected by a pipe 18, having a valve 19, which may be closed when the charge is being renewed, and at the bottom of the reservoir is a drain-pipe 20, which is tapped into the reservoir-pipe and serves to return to the generating-chamber any moisture which may be carried by the gas to the reservoir, the water draining into the space between the generating-tank and the carbid-holder and not coming into contact with the carbid.

At one end of the reservoir 17 is a removable head 21, adapted to the threaded end of the reservoir, suitable lugs 22 being cast with

the head to form a convenient means of placing in position or effecting its removal when necessary. Near the end of the reservoir is an inwardly-projecting annular flange forming a seat for the reception of a foraminated plate 24, which is held in place by the removable head 21, and in the space between the plate and the head is placed a mass of cotton or other suitable absorbent material through which the gas must pass from the reservoir to the outlet-pipe 25, the absorbent material serving to remove and retain all of the moisture in the gas and delivering the gas in a perfectly-dry condition to the burner-pipe 25. The head 21 may be readily removed in order to remove saturated absorbent and renew the supply whenever necessary, the foraminated plate serving to prevent the entrance of the absorbent material to the reservoir proper.

The generating apparatus and water-tank are placed in a convenient position in the car or on the running-board of the locomotive within convenient reach of the engineer or fireman, and the device is controlled by the operation of the single needle-valve 13. When this valve is turned, water is allowed to flow from the tank and, falling on the apex of the cone 8, runs to the bottom of the carbid-holder, coming into contact with all of the carbid resting against the cone. In this manner the water is distributed and more readily comes into contact with the carbid than when fed directly to the top of a mass of carbid and allowed to percolate through the hydrated carbid which accumulates at the top of the mass of carbid and in a measure retards the passage of both water and gas and prevents the proper and effective operation of the apparatus. When the supply is to be renewed, the jam-screw 3 is loosened to an extent sufficient to permit the ready removal of the cross-bar 4, after which the head 2 and the carbid-holder 7 are removed and the carbid slush is dumped out by simply reversing the position of the holder. The cone 8 being loose also drops out and may be readily cleaned, if necessary, before a fresh charge is placed in the holder. When the carbid is about to be renewed, the valve 19 is closed, so as to prevent any backward flow of gas from the reservoir to the generating-chamber.

While the construction herein described is the preferred form of the device, it is obvious that various changes in the form, proportion, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of my invention.

Having thus described my invention, what I claim is—

1. In an acetylene-gas generator, the combination of the generating-tank, a water-tank resting on the generating-tank, an externally-

threaded tube connecting the generating-tank and water-tank and forming a valve-chamber, a valve disposed therein and adapted to a valve-seat at the lower portion of the tube, a threaded valve-stem adapted to internal threads in the tube and extending up through the top of the water-tank, a removable bottom or head for the generating-tank, means for securing the same in position, a carbid-holder rigidly secured to and removable with the bottom, and a removable conical water-deflector arranged loosely within the carbid-holder.

2. In an acetylene-gas generator, the combination of the open-bottom generating-tank, a cup-shaped carbid-holder rigidly secured to and removable with the head of the tank, a conical water-deflector arranged loosely within the carbid-holder and having a base of a diameter approximately equal to the internal diameter of the holder, whereby when the head of the tank is removed and the carbid-holder inverted the deflector will in falling remove the slush from the holder, a water-tank arranged above the generating-tank and connected thereto, and a valved discharge-nozzle arranged directly above the apex of the deflector.

3. In an acetylene-gas generator, the combination of the generating-tank 1 having an open bottom, a removable lower head 2, a pair of diametrically-opposed recessed lugs depending from the walls of the generating-tank, a removable cross-bar 4 carried by said lugs, a set-screw 3 carried by the cross-bar and serving to confine the head of the tank in position, a carbid-holder 7 of cup-like form rigidly secured to and removable with the head, a loose cone 8 disposed between the carbid-holder and removable therefrom by gravity when the holder is inverted, said cone acting as a cross-bar to remove particles of carbid and slush clinging to the inner wall of the holder, a water-tank 10 arranged above the generator, a threaded tube 11 extending through both tanks and screwing into a threaded opening in the generating-tank, a nut 12 adapted to the threaded portion of the tube at a point within the water-tank, a valved seat formed in the tube, a needle-valve adapted to said seat, a threaded valve-stem carried by the tube and extending up through an opening in the top of the tank, and an operating-handle 15 secured to the upper end of the valve-stem, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WALTER SHERMAN MAY.

Witnesses:

J. LANDER,
C. S. EDMONDSON.