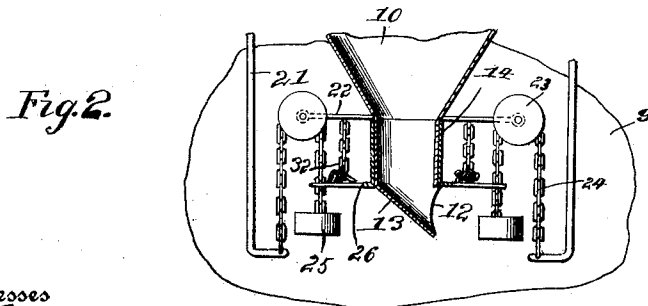
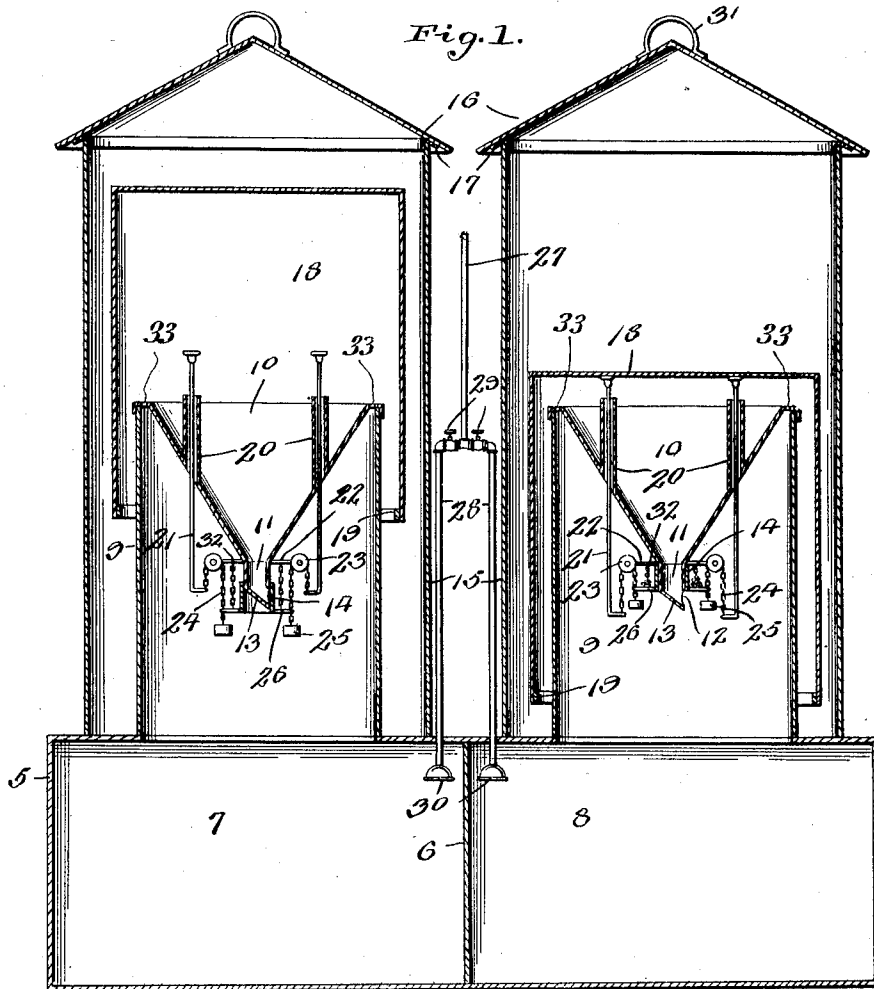


C. H. CANFIELD.
ACETYLENE GAS GENERATOR.
APPLICATION FILED JULY 23, 1913.

1,107,030.

Patented Aug. 11, 1914.



Inventor
C. H. Canfield,

Witnesses

[Signature]
F. O. [unclear]

By *Victor J. Evans*
Attorney

UNITED STATES PATENT OFFICE.

CHARLES H. CANFIELD, OF PAOLA, KANSAS.

ACETYLENE-GAS GENERATOR.

1,107,030.

Specification of Letters Patent.

Patented Aug. 11, 1914.

Application filed July 23, 1913. Serial No. 780,762.

To all whom it may concern:

Be it known that I, CHARLES H. CANFIELD, a citizen of the United States, residing at Paola, in the county of Miami and State of Kansas, have invented new and useful Improvements in Acetylene-Gas Generators, of which the following is a specification.

The invention relates to gas generators, and more particularly to the class of duplex acetylene gas generators.

The primary object of the invention is the provision of an apparatus of this character wherein the feed of the acetylene carbide is automatically controlled in a novel manner on the raising and lowering of the gasometer or gas bell.

Another object of the invention is the provision of an apparatus of this character which is of the duplex type so as to increase the capacity thereof, the carbide holders being formed with discharge spouts on which are mounted gates or valves automatically controlled on the movement of the gasometer or gas bell held within the sealing tanks rising from the water reservoir so that the feed of carbide from the holders to the reservoir will be regulated without requiring the attendance of an operator for this purpose.

A further object of the invention is the provision of an apparatus of this character which is simple in construction, thoroughly reliable and efficient in operation, and inexpensive in manufacture.

With these and other objects in view, the invention consists in the construction, combination and arrangement of parts as will be hereinafter fully described, illustrated in the accompanying drawing, and pointed out in the claim hereunto appended.

In the drawings:—Figure 1 is a vertical longitudinal sectional view through an apparatus constructed in accordance with the invention. Fig. 2 is an enlarged vertical longitudinal sectional view through one of the carbide holders, showing in detail the valve for controlling the feed of the carbide therefrom.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

Referring to the drawings by numerals, the acetylene gas generator comprises a water reservoir or tank 5 having a central vertical partition 6 forming independent or separate water compartments 7 and 8 respectively. Rising from the top of the reser-

voir of tank 5 and in direct communication with the compartments 7 and 8 are vertical cylindrical columns 9, which have hung from their upper ends hopper-shaped carbide holders 10, each being formed with a delivery spout 11 at its smaller end, the same being formed with a discharge port or hole 12 opposite the inclined bottom or mouth of the said spout and through which is fed the carbide from the holder 10 to the water compartment within the reservoir or tank 5, the spout being fitted with a slidable sleeve 14 which forms a gate or valve for closing the port or hole 12, the said gate or valve being operated in a manner presently described.

Arranged concentrically about the columns 9 and spaced therefrom are sealing cylinders 15 which are of considerably greater length than the columns 9 and have removably fitted thereon covers or lids 16, and these cylinders at their upper edges are provided with rings 17 reinforcing the said cylinders.

The lower portions of the cylinders 15 are supplied with water which rises to any desired level therein and forms a seal for the gasometers or gas bells 18 slidably fitted upon the columns 9, the open end of each gas bell 18 being provided with a stiffening ring 19 forming a weight, which latter serves to lower the gasometer or gas bell 18 when the volume of gas therein has become reduced.

Mounted upon and rising from the wall of each hopper-like holder 10 at diametrically opposite points are vertical guide tubes 20, the free ends of which terminate in a plane with the larger end of the said holder 10, and in these tubes 20 are slidably mounted valve operating rods 21 the said holder 10 being of less diameter at its larger end than the column 9 so that when gas is formed in the latter it will pass upwardly between the said column 9 and the holder 10 into the gas bell or gasometer as will be clearly apparent. The tubes 20 are designed to protect the valve rods 21 from the carbide contained in the holder.

Suitably mounted at diametrically opposite points on the spout 11 depending from the holders 10 are brackets 22 in which are journaled pulleys 23 over which are trained chains 24, the same being connected at one end to the valve rods 21, while the opposite ends carry weights 25, the sleeve 14 forming the valve for the spout 11 be-

ing formed with outturned extensions 26 which are engaged with the chains 24 so that on the raising of each gas bell or gasometer 18 the valve 14 will be caused to close under the influence of the weights 25, thereby shutting off the feed of carbid from the holder 10 to the water reservoir or tank 5, but on the lowering of the gasometer or gas bell 18 which descends to contact with the rods 21 the chains 24 will be moved over the pulley 23, thereby pulling upon the valve 14 which is lifted upon the spout 11, thus opening the port 12 to permit the carbid within the holder 10 to drop from the spout into the water reservoir or tank 5 for the generation of gas when contacting with the water within the latter. The variance of the gas volume causes the rise and fall of the bell and the corresponding operation of the valve, the escape of gas from the gasometer or bell 18 being prevented by the formation of the water seal in the cylinder 15.

The cylinders 15 are arranged in spaced relation to each other and between which is disposed a gas delivery pipe 27 having branches 28 leading from the respective compartments 7 and 8, the said branches being provided with cut off valves 29 so that the gas flow can be regulated through either of the branches 28 to the delivery pipe 27 as will be clearly apparent.

The points of communication of the branches 28 with the reservoir or tank 5 are covered with suitable foraminous disks or screens 30 which prevent the clogging of the branches as the said disks or screens obviate any foreign matter collecting within the branches. It is of course to be understood that the water reservoir or tank 5 can be filled in any desirable manner.

When the gasometer or bell 18 lowers the valve is open, and when the said gasometer or bell rises the valve 14 is lowered for closing the port or hole 12, and thereby shutting off the feed of carbid to the reservoir or tank.

The covers or lids 16 for the cylinders 15 are provided with bails or handles 31 which

permit the convenient removal of the same from the cylinders or the placing thereof on the same.

Connected to the brackets 22 and the extensions 26 are chains 32 which limit the sliding movement of the valve 14 when being lowered to closed position.

The gas passes from the columns 9 into the gasometers or bells 18 through the apertures 33 formed concentrically about the larger end of the carbid holder which is of hopper shape, as shown.

From the foregoing it is thought that the construction and manner of operation of the device will be clearly understood, and therefore a more extended explanation has been omitted.

What is claimed is:—

An acetylene gas generator comprising a water reservoir, a column rising from the reservoir and opening into the same, a hopper-shaped carbid holder at the top of the column and having perforations concentric to its larger end, a perforated discharge neck at the smaller end of the holder, a cut-off valve sleeve slidably fitted on the neck for closing the perforation therein, guide pulleys mounted at diametrically opposite sides of the neck, opposed guides rising from the side of the holder through the larger end thereof, push rods slidable in the guides, chains trained over the pulleys and connected with the rods and sleeve respectively, weights connected with the sleeve to simultaneously lower the sleeve and raise the rod, a gasometer telescoped over the column and adapted to depress the rods for movement of the sleeve to uncover the perforation in the neck of the holder, and an inclosure for the gasometer and column.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES H. CANFIELD.

Witnesses:

GEORGE L. ROBINSON,
MABEL HOLMES.