

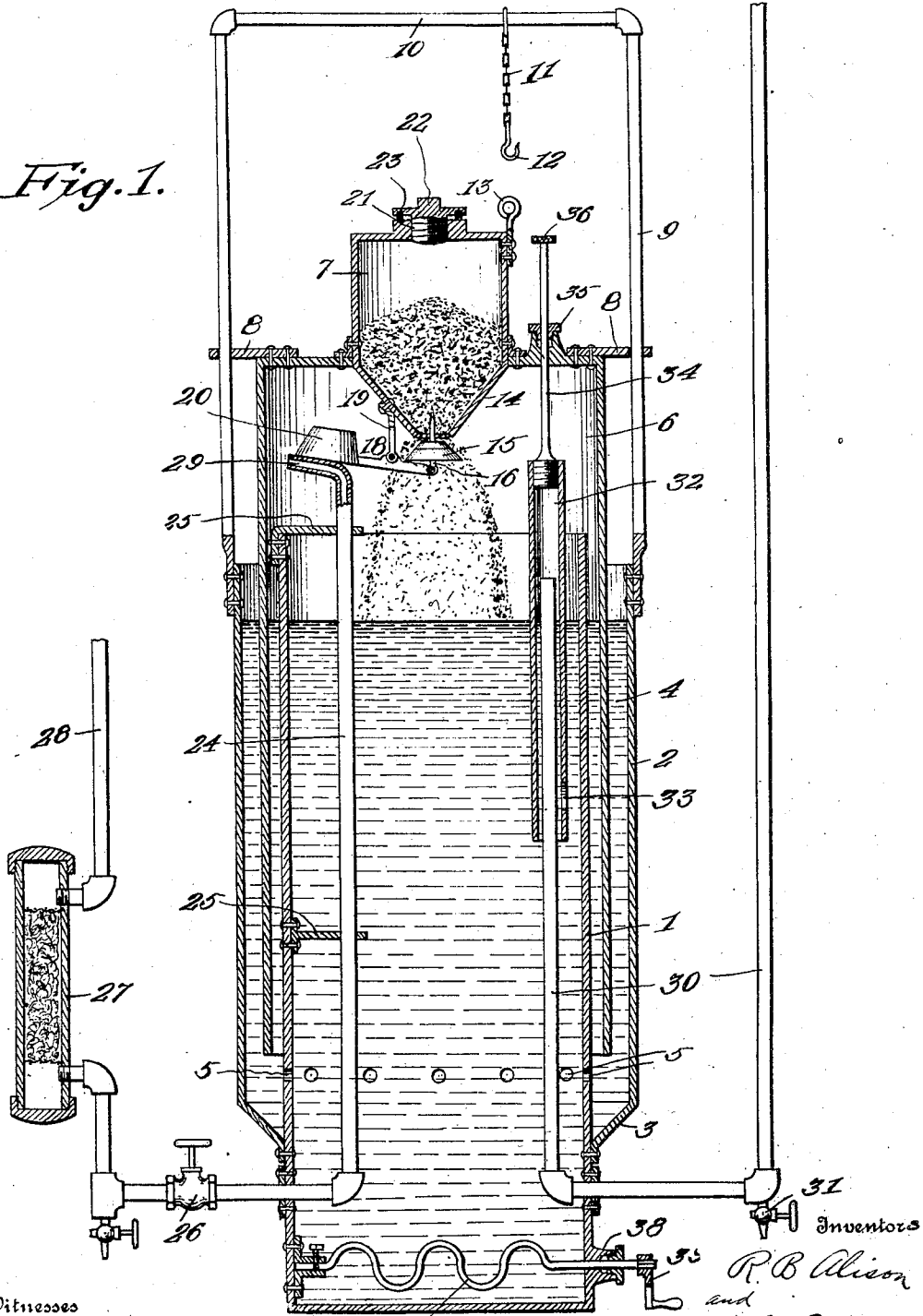
R. B. ALISON & W. G. ELLIOTT.
 ACETYLENE GAS GENERATOR.
 APPLICATION FILED JULY 1, 1909.

951,097.

Patented Mar. 8, 1910.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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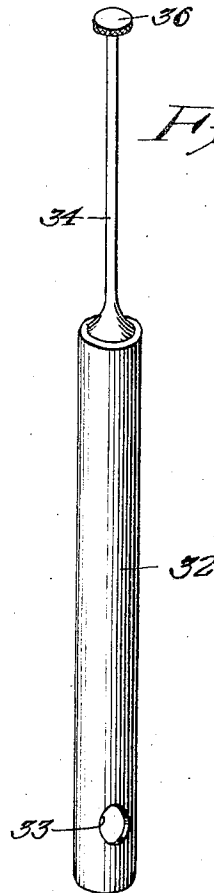
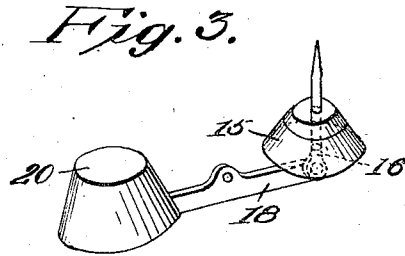
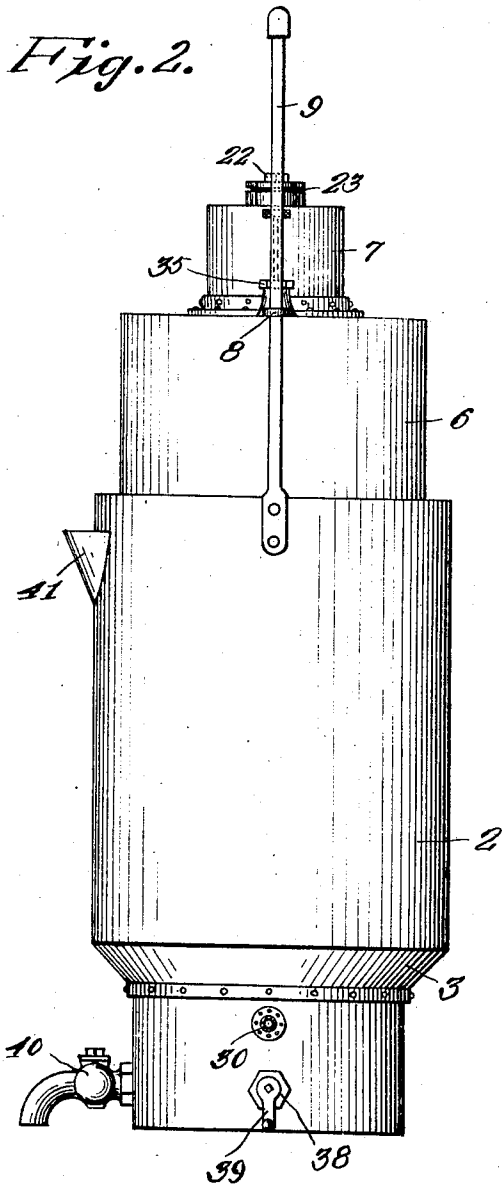
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UNITED STATES PATENT OFFICE.

RUFUS B. ALISON AND WILLIAM G. ELLIOTT, OF VALLEJO, CALIFORNIA.

ACETYLENE-GAS GENERATOR.

951,097.

Specification of Letters Patent.

Patented Mar. 8, 1910.

Application filed July 1, 1909. Serial No. 505,481.

To all whom it may concern:

Be it known that we, RUFUS B. ALISON and WILLIAM G. ELLIOTT, citizens of the United States, residing at Vallejo, in the county of Solano and State of California, have invented certain new and useful Improvements in Acetylene-Gas Generators, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improvements in acetylene gas generators and consists of the novel construction, combination and arrangement of parts hereinafter fully described and claimed.

The objects of the invention are to provide a simple and practical generator of this character which will be reliable and safe in operation and from which it will be impossible for any gas to leak.

The above and other objects of the invention are attained in its preferred embodiment illustrated in the accompanying drawings, in which—

Figure 1 is a vertical sectional view through the improved gas generator; Fig. 2 is a side elevation showing the safety outlet pipe in section; Fig. 3 is a detail perspective of the valve; and Fig. 4 is a perspective view of the adjustable tube which closes the safety outlet pipe.

The invention comprises a water tank 1 preferably of cylindrical form and surrounding this tank is a cylinder 2, the bottom portion of which has an angular flange 3 which is attached to the outer face of the tank 1 adjacent its bottom so as to form an annular water sealing chamber 4 between the parts 1, 2, said chamber 4 being in communication with the interior of the tank 1 through openings 5, as clearly shown in Fig. 1.

The liquid in the annular space or chamber 4 forms a seal for a gas bell 6, which latter is in the form of an inverted cylinder and has secured in its flap top a cylindrical carbid receptacle or hopper 7. The bell is guided in its sliding movement by means of brackets 8 which receive and slide upon upright guide rods 9 secured at their lower ends to the wall or cylinder 2 at diametrically opposite points and having their upper ends united by a cross bar 10. The latter has suspended from it by means of a chain or the like 11 a hook 12 adapted to be engaged with an eye 13 on the carbid re-

ceptacle 6 when the bell is elevated for the purpose of holding the same in such elevated position while the receptacle 7 is being filled. The carbid receptacle or hopper 7 is centrally arranged in the top of the bell and has a cone-shaped bottom 14 formed with an opening which provides a seat for a cone-shaped valve 15. The latter is arranged on the intermediate portion of a stem 16, the upper end of which is pointed and projects into the carbid in the hopper or holder 7 so as to loosen the same when the valve is moved.

The lower end of the valve stem 16 is pivoted to a lever 18 fulcrumed intermediate its ends on a bracket 19 depending from the bottom of the carbid receptacle and having its other end provided with a weight 20 which is sufficient to hold the valve 15 closed against the contents of the receptacle or holder 7. The latter is filled with carbid through a centrally arranged opening 21 in its top, said opening 21 being closed by the removable screw plug 22 having a grooved flange in which latter is a packing ring or gasket 23, as clearly shown in Fig. 1. This construction, it will be noted, effectively prevents gas from leaking from the carbid holder or receptacle.

24 denotes a service pipe arranged vertically in the tank 1 and supported rigidly in by means of upper and lower brackets 25. The lower end of the pipe 24 extends through the wall of the tank, contains a controlling valve 26 and is in communication with the lower end of a suitable gas filter or purifier 27 from the upper end of which latter projects a pipe 28 which supplies the gas to the burners. The upper end of the service or supply pipe 24 is bent angularly, as shown at 29, and so disposed that it forms a trip or stop for the weighted end 20 of the valve lever 20, whereby when the gas bell lowers to a predetermined point the engagement of the weight 20 with said part 29 of the pipe will cause the valve to be lowered, as shown in Fig. 1, so that the carbid in the holder or receptacle 7 will drop into the water in the tank 1.

30 denotes a safety outlet pipe arranged vertically in the tank 1 and having its upper end disposed above the water level therein and its lower end extending through the wall of said tank and from thence to the atmosphere, a drip cock 31 being arranged in the lowermost part of said pipe 30. Ar-

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ranged to telescope the upper open end of the portion of the pipe 30 within the pipe is a tube 32 having adjacent to its bottom an opening 33 and its upper end closed and suitably connected to an operating and adjusting rod 34. The rod 34 slides through a stuffing box 35 in the top of the bell 6 and has at its upper or outer end a finger piece 36 by means of which latter said rod may be raised or lowered in the stuffing box to adjust the position of the telescoping tube 32. By reason of the adjustment of the latter it will be seen that the instant the bell rises to a predetermined position the gas within it will escape to the atmosphere, thereby preventing all danger of explosions due to over generation of gas.

37 denotes an agitator arranged in the bottom of the tank 1 and in the form of a shaft having a plurality of crank portions. One end of the shaft 37 extends through a stuffing box 38 and is provided with a crank handle 39.

40 denotes a cleaning out valve or cock through which latter the water and settlings in the tank may be removed when the agitator 37 is rotated.

41 denotes a filling spout arranged on one side of the wall or cylinder 2 adjacent its top. In operation, it will be seen that as the gas is consumed, the bell 6 lowers until the weight 20 is lifted by its contact with the end 29 of the service pipe, whereupon the valve 15 will be lowered to open position, as shown in Fig. 1. When this happens, the carbid falls from the holder 6 into the water of the tank and the gas generated from the carbid collects in the bell and causes the same to rise, thereby lifting the weight 20 off of the end 29 of the service pipe so that said weight will close the valve 15. When it is desired to refill the carbid holder or receptacle the bell is secured in an elevated position by engaging the hook 12 in the eye 13, thereby allowing the weight 20 to close valve 15 so that little, if any, gas will be allowed to escape into the room or building through the filling opening 21 of the carbid holder. Should more gas be generated than is consumed the surplus gas will escape to the atmosphere through the pipe 30 the instant the opening 33 in the telescoping tube 32 passes above the water level in the tank.

From the foregoing it will be seen that 55 the construction of the improved generator

is such that it will occupy but little floor space and will be exceedingly strong and durable.

The safety escape for an excessive amount of gas contains no springs or other parts liable to get out of order so that it is exceedingly reliable in operation.

All parts of the generator are so constructed that it will be impossible for gas to leak and hence the liability of explosions is reduced to a minimum.

Having thus described the invention what is claimed is:

The herein described acetylene gas generator comprising a cylindrical water tank formed with an open top and having adjacent its bottom an annular series of openings, a cylinder surrounding the upper portion of the tank and formed at its bottom with an inwardly extending flange united to the wall of the tank at a point beneath said annular series of openings, whereby an annular chamber is formed between said cylinder and the wall of the tank, such space being in communication with the tank through said openings, an inverted cylindrical gas bell arranged over the tank and having its open lower end sealed by the water in said annular chamber, and an inverted U-shaped supporting and guiding frame secured to and rising from said cylinder, brackets upon the top of the bell and slidably engaged with said frame, a carbid holder centrally arranged in the top of the bell and having an outlet in its bottom, a weight controlled valve to control said outlet opening, brackets projecting inwardly from the wall of the water tank, an upright gas outlet pipe arranged in the last mentioned brackets and having its upper end turned outwardly and adapted to be engaged by the weight of said valve, an eye upon the carbid holder, and a flexibly suspended hook upon the top of said supporting and guiding frame and adapted to engage said eye for the purpose set forth.

In testimony whereof we hereunto affix our signatures in the presence of two witnesses.

RUFUS B. ALISON.
WILLIAM G. ELLIOTT.

Witnesses:

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