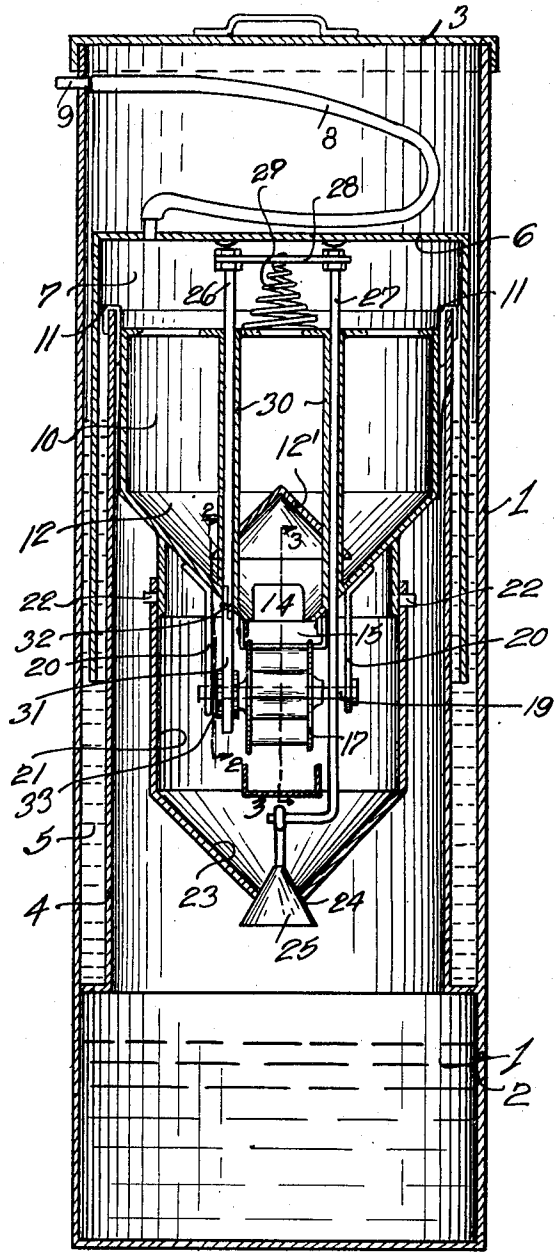
Jan. 14, 1930. G. GRIPP 1,743,541

ACETYLENE GAS GENERATOR

Filed March 23, 1927

Fig. 1



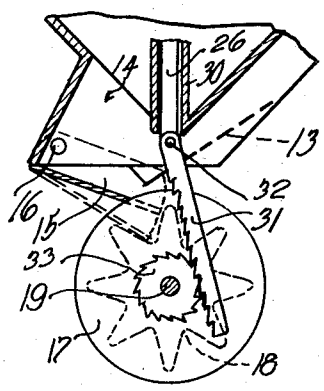
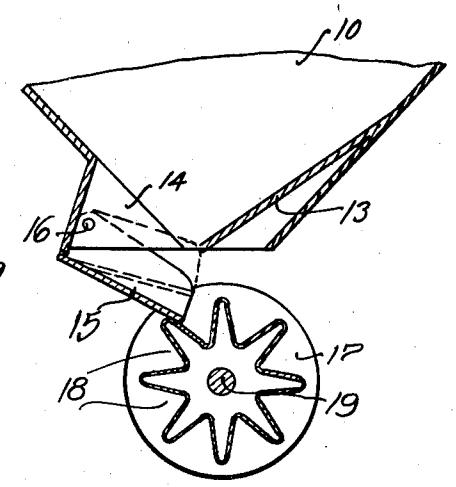


Fig. 2



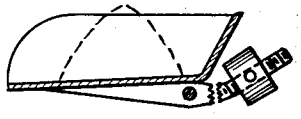


Fig. 3

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UNITED STATES PATENT OFFICE

GUSTAV GRIPP, OF CLARKSTON, WASHINGTON

ACETYLENE-GAS GENERATOR

Application filed March 23, 1927. Serial No. 177,600.

My present invention relates to an improved acetylene gas generator which while adapted for use in various other ways is especially designed for domestic use in providing a continuous supply of gas for lighting and cooking purposes in a dwelling.

The generator is of that type using a carbide feed to a water chamber and the feed is controlled by a rotary carrier designed to measure and control the feed of successive charges to the charge-feeding hopper. From the charge-feeding hopper the measured charge of calcium carbide is fed to the water chamber and means are provided for regulating and controlling this feed of calcium carbide to the water in the water chamber.

Automatic means co-acting with the gas bell or reservoir are provided for operating the charge forming device or carrier and also for controlling the feed of a charge of carbide to the water chamber for dissolution and formation of gas.

The invention consists in certain novel combinations and arrangements of parts as will hereinafter be more fully set forth and claimed. In the accompanying drawings I have illustrated one complete example of the physical embodiment of my invention wherein the parts are combined and arranged in accord with the best mode I have thus far devised for the practical application of the principles of my invention.

Figure 1 is a vertical sectional view of the generator with some parts in elevation.

Figure 2 is an enlarged sectional detail view at line 2—2 of Figure 1.

Figure 3 is an enlarged sectional detail view at line 3—3 of Figure 1.

In carrying out my invention I utilize the customary outside shell or cylinder 1 having the water chamber 2 in its bottom for the dissolution of the calcium carbide fed thereto in measured charges, and a removable lid 3 is provided for the outside cylinder in which all the operating parts are contained.

Within the outer or main cylinder is contained a second smaller cylinder 4 with its wall spaced from the larger cylinder walls to form the annular space 5 forming a water seal for the generator, the bottom of this space being closed by the horizontal flange 4′ of the inner cylinder.

The lower open end or edge of the bell 6 extends down into the water seal in the space 5 to prevent escape of the generated gas from the gas chamber or reservoir 7 in the upper closed end of the bell, and a flexible pipe or hose 8 is attached at the top of the gas reservoir. This hose is carried on the top of the bell in the top portion of the main cylinder and one end is provided with a nipple 9, projecting through an opening in the inwall of the main cylinder, to which the gas supply pipe may be attached to convey the generated gas to its place of consumption.

Within the upper open end of the inner shell an open top cylindrical carbide hopper 10 is suspended by hooks 11 that engage over the top edge of the inner shell as seen in Figure 1.

The calcium carbide is furnished to the hopper in suitable quantities and at regular intervals, or when required, and at its lower end the cylindrical hopper is fashioned with a tapered bottom portion 12 in which an inclined guide plate 13 is provided to direct the material toward the opening 14 in the conical bottom of the hopper. Above this opening a conical or tapered shield 12′ is centrally located in the lower portion of the hopper to prevent undue weight at the central opening 14 by supporting the load of the carbide at the center of the hopper. The carbide of course falls by gravity toward the opening 14 over the projecting edge of the conical shield or deflector 12′.

Below the opening 14 is located a flipper chute or charge chute 15 pivoted to the hopper at 16, with its free end resting on the top portion of a rotary carrier 17 which measures and forms charges of the carbide and controls the feed of these measured charges to the water chamber of the generator. The rotary receiver is fashioned with a corrugated wall that forms pockets 18 and the carrier is provided with a central longitudinally extending shaft 19 journaled in bearings in the ends of hangers or brackets 20 secured at their upper ends to the outer faces of the conical bottom 12 of the carbide hopper. The

free end of the flipper chute or charge forming chute, it will be apparent, rests upon the carrier as indicated in Figure 3 and successive charges are deposited in the pockets of the carrier as the latter rotates on its shaft, the free end of the chute at all times resting on the top of the carrier.

The charge forming, rotary-carrier is enclosed by a charge-feeding hopper in the form of a cylinder 21 supported by pins 22 below the main hopper 12, and this charge-feeding hopper is provided with a conical or tapered feed end or bottom 23 into which the charges of carbide fall from the rotary carrier, and when an opening 24 in the bottom of the tapered part of the hopper (23) is clear, the carbide falls therethrough to the water in the water chamber 2 below. This opening is normally closed by a tapered plug-valve 25 to prevent entrance of moisture or gas to the interior of the charge-feeding hopper as well as to prevent carbide from falling through to the water chamber except at proper times.

The movement of the rotary charge-feeding carrier and the movement of the valve 25 are governed by movement of the bell 6, which of course rises as the gas accumulates in the gas reservoir, but when the gas supply reaches a minimum point and the reservoir or bell falls to a certain location the charge forming carrier is operated to empty a charge or charges into the discharge hopper 23 and the valve 25 is opened to permit the carbide from the discharge hopper to pass through the opening 24 and fall into the water for the generation of an additional supply of gas. This automatic operation of the carrier and valve are accomplished through the movement of an operating frame comprising a pair of spaced, vertical, parallel rods 26 and 27 that are rigidly joined at the top by means of a cross rod or bar 28 and bolts or nuts. A spring 29 interposed between the cross bar and the top of the stationary feed hopper tends to hold the frame in uplifted position to close the valve and prevent rotation of the carrier, but the weight of the falling bell overcomes the strength of the spring to depress this frame.

The two vertical rods of the operating frame are guided as they reciprocate in tubular guides 30, 30 rigidly fixed to the feed hopper at the tapered bottom and they extend upwardly and through the open top of the hopper, so that the frame may normally project above the top of the hopper. The rods are spaced at the sides of the vertical central axis of the main feed hopper and the rod 26 terminates at its lower end adjacent the rotary carrier. On the end of this rod is carried a rack bar 31 pivoted at 32 to the rod, and this rack bar is in position to co-act with a toothed ratchet wheel 33 on the shaft 19 of the rotary carrier. Thus, as the frame falls or is pressed downwardly by the weight of the bell, the rod 26 causes its pivoted rack bar 31 to engage and turn the ratchet wheel, thus turning over or rotating the charge forming or feeding carrier to empty one or more of its pockets of carbide into the discharge hopper.

On the lower end of the rod 27 a horizontal arm 34 is provided which is located in the discharge hopper and projects to a central point on the vertical axis of the discharge hopper beneath the rotary carrier and above the valve 25. The stem 35 of the valve has an eye thereon which slips over the end of the horizontal arm 34, and it will be apparent that as the operating frame is depressed by the weight of the bell, the valve is dropped to open position to permit the measured carbide in the discharge hopper to pass into the water in the water chamber. When the gas generated is of sufficient volume to lift the bell from pressure on the operating frame, the spring 29 lifts the frame to normal position to be again depressed for further replenishing the supply of gas.

If it is desired to provide a charge of carbide measured to an exact amount a weighted tipping receptacle 36 may be mounted directly below the rotary carrier 17. This receptacle is in the form of a scoop mounted on an arm 37 pivoted at 38 and having a threaded extension 39 carrying an adjustable weight 40 likewise threaded and having a set screw 41 to lock it in a fixed position when set.

The scoop 36 will receive a predetermined charge of carbide from the carrier 17 and when the weight of the carbide overbalances the weight 40 the whole charge will be tipped at one time and flow into the hopper 23 and through into the water chamber 2.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is—

An acetylene gas generator comprising a feed hopper, a rotary charge forming carrier having a succession of horizontal pockets therein, a flipper chute pivoted at the outlet opening of the hopper with its free end resting on the wall of a pocket of the carrier, a bell, a vertically reciprocal frame adapted to engage and be operated by said bell, said frame including a rod and guide therefor, a pivoted rack on said rod, a shaft for the carrier, and a rack wheel on said shaft for co-action with the rack bar.

In testimony whereof I affix my signature.

GUSTAV GRIPP.