

No. 836,695.

PATENTED NOV. 27, 1906.

G. W. MILLER.
ACETYLENE GENERATOR.
APPLICATION FILED JAN. 26, 1906.

2 SHEETS—SHEET 1.

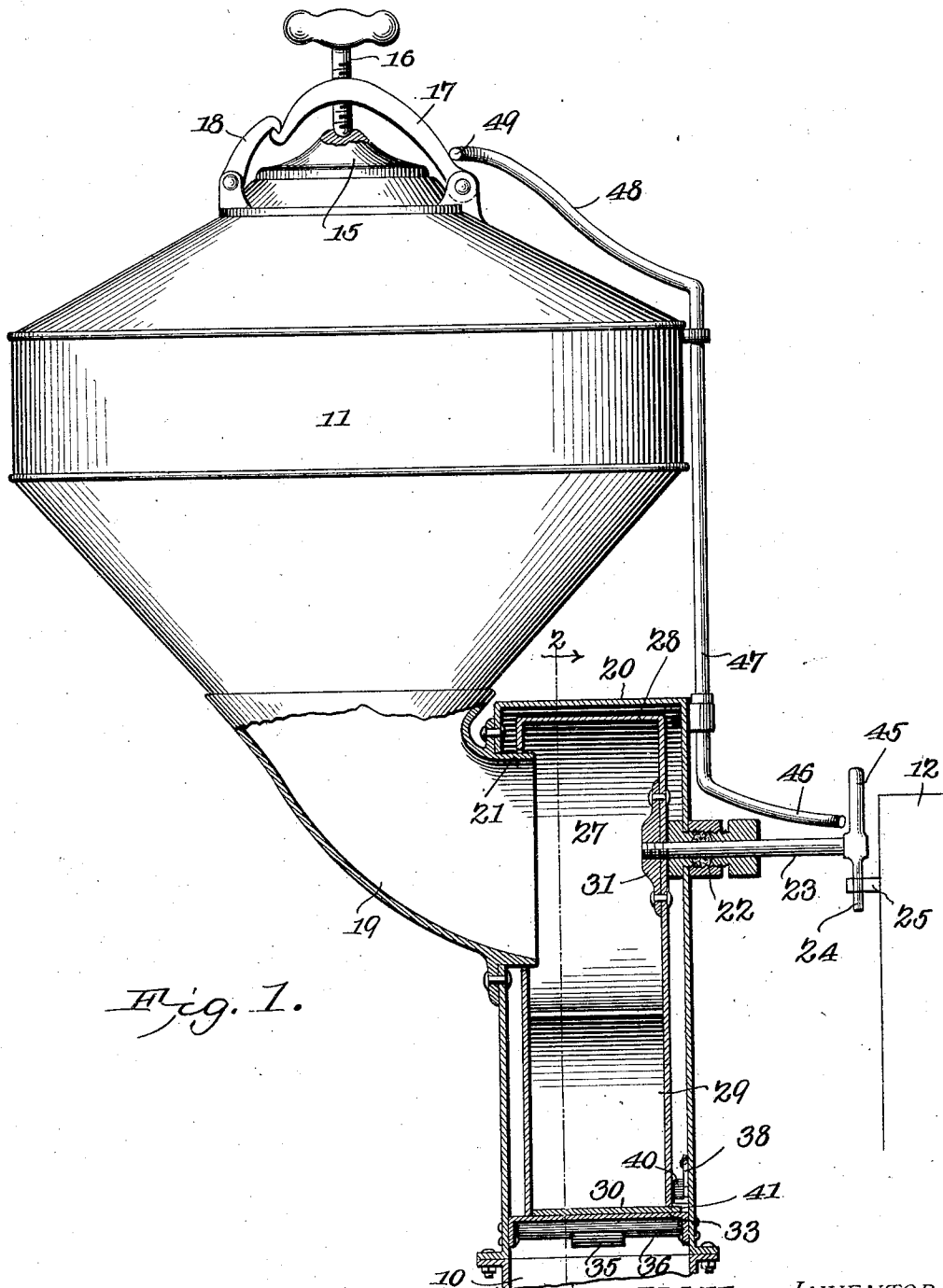


Fig. 1.

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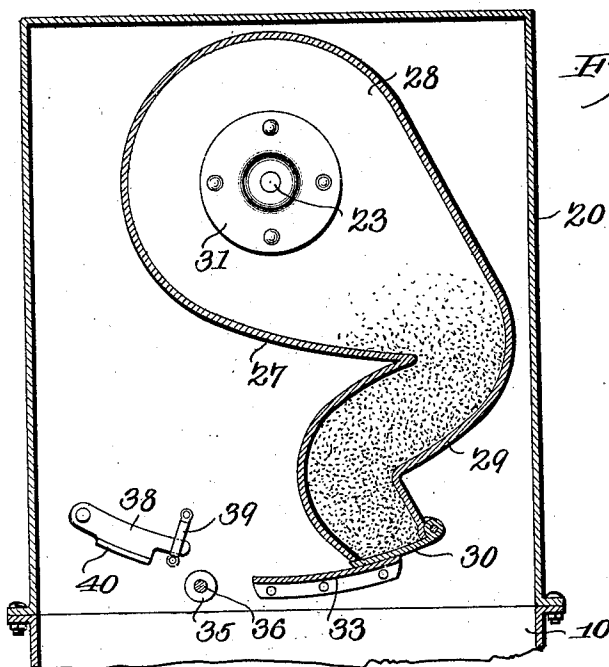


Fig. 2.

Fig. 4.

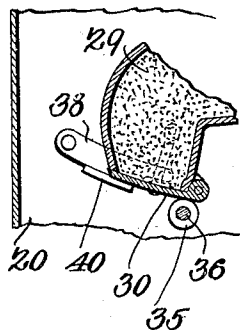


Fig. 3.

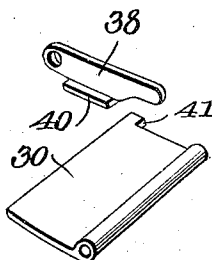
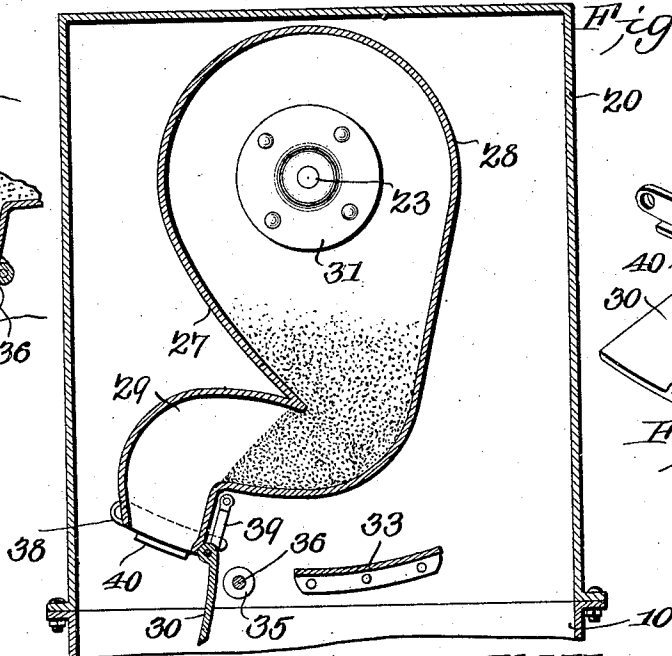


Fig. 5.

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UNITED STATES PATENT OFFICE.

GEORGE W. MILLER, OF OSCEOLA, WISCONSIN.

ACETYLENE-GENERATOR.

No. 836,695.

Specification of Letters Patent.

Patented Nov. 27, 1906.

Application filed January 26, 1906. Serial No. 298,058.

To all whom it may concern:

Be it known that I, GEORGE W. MILLER, a citizen of the United States, residing at Osceola, in the county of Polk and State of Wisconsin, have invented a new and useful Acetylene-Generator, of which the following is a specification.

This invention relates to carbid-feed apparatus for acetylene-gas generators, and has for its principal object to provide a mechanism of simple construction by which measured quantities of carbid may be supplied to the generating-tank, provision being made for operating the feed automatically so that as the supply of gas is consumed and the gasometer-bell lowers it will actuate the feeding device and permit the flow of a predetermined quantity of carbid into the generating-tank.

A further object of the invention is to provide a novel form of carbid-feeding device of the automatically-actuated type in which provision is made for insuring the locking of the feeding mechanism before the carbid-holder can be recharged.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a sectional elevation of a portion of an acetylene-gas apparatus showing a carbid-feed mechanism constructed and arranged in accordance with the invention. Fig. 2 is a transverse sectional view of the feeding device on the line 2 2 of Fig. 1, the parts being in carbid-receiving position. Fig. 3 is a similar view with the parts in carbid-dumping position. Fig. 4 is a detail sectional view of the lower portion of the delivery neck and valve, showing the opening movement of the valve. Fig. 5 is a detail perspective view of the valve and the flanged lever which controls the opening movement of the same.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

In Fig. 1 is illustrated the upper portion of the generating-tank 10, above which is arranged a carbid-holder 11, and at one side is shown a portion of a gasometer 12, the movable bell of the gasometer being designed to actuate the carbid-feed.

The carbid-holder 11 is provided at the top with a charging opening, which is normally closed by a cap 15, and to the cap is swiveled the lower end of a clamping-screw 16, the screw being carried by a pivotally-mounted arm 17, the free end of which is arranged to be engaged by a catch 18, pivoted to the upper portion of the holder. These parts are so arranged that before the cover can be removed it is necessary to throw back the catch 18 and then throw back the arm 17 and the cover, and advantage is taken of this by providing means whereby the carbid-feed mechanism is locked when the cover is moved to open position, as will hereinafter appear.

The bottom of the carbid-holder is connected by an elbow 19 to a casing 20, which may be of rectangular form, said casing being provided at one side with an opening through which projects an annular flange 21, forming the lower end of the elbow. At that side of the casing opposite the elbow is arranged a stuffing box 22, the axis of which is in horizontal alinement with the center of the flange 21, and through this stuffing-box extends a shaft 23, that is provided with an arm 24, arranged to be engaged by a projecting pin 25, carried by the bell of the gasometer 12, so that as the bell moves up and down the pin will engage the arm 24 and the shaft 23 will be rocked.

The bottom of the casing 20 is provided with a bolting-flange for securement to the top of the generating-tank, and arranged within the upper portion of the casing is an oscillatory carbid-feeder 27, comprising an approximately circular upper casing 28, from which leads a curved discharge-neck 29, terminating in a discharge-mouth, that is normally closed by a pivoted valve 30.

The shaft 23 extends through one side wall of the casing and is rigidly secured to a disk 31, that is riveted or bolted to said side wall. The opposite side wall of the casing is provided with a circular opening through which the flange 21 of the elbow 19 projects, the flange forming a bearing for the support of one side of the casing, while the shaft forms a support of the opposite side thereof, and the

casing as a whole is free to rock around the common axial line of the shaft or flange.

Arranged in the lower portion of the casing 20 is an arcuate plate 33, on which the valve 30 rests and by which said valve is held in closed position. This plate is arranged on a curved line struck from the axis of the shaft 23, and on the same curved line and at a short distance from the edge of the plate 33 is the upper portion of the periphery of a roller 35, that is carried by a transversely-disposed shaft 36, the ends of which are supported by the side walls of the casing. During the movement of the feeder from the position shown in Fig. 2 to the position shown in Fig. 3 this roller serves to engage the valve 30 and maintain the same in closed position until after the pivoted end of the valve has passed beyond said roller.

Pivoted to one side of the casing is a lever 38, the free end of which is free to move in a guide or strap 39, that is riveted to the inner face of the casing. This lever carries a projecting flange 40, that also is arranged in the curved line of the plate 33, and roller 35 and said flange is designed to engage with a projecting lug or finger 41, that extends from one side of the valve 30 in order to support said valve in closed position until the lug or finger shall have passed beyond the end of said flange.

In the operation of the mechanism as thus far described the parts are normally in the position shown in Fig. 2, and the carbid from the holder 11 will flow through the elbow 19 into the casing of the feeder and will fill the discharge-neck 29 to a greater or less extent, the carbid resting on the valve 30, the latter being held in closed position by the plate 33. As the gas in the gasometer is consumed the movable bell will gradually fall and pin 25 will be brought into engagement with the arm 24 of shaft 23, rocking said shaft and moving the feeder from the position shown in Fig. 2 to the position shown in Fig. 3. During the first part of this movement the valve 30 will travel on the plate 33, and passing from thence the forward edge of the valve will be engaged and held in closed position by the roller 35, and then the finger or lug 41 will engage the flange 40 of the lever 38, the valve being maintained in this closed position during all of the movement until the lug or finger passes beyond the end of the flange 40, whereupon the weight of the carbid resting on the valve will open the latter and the carbid will fall from the discharge-neck, the volume discharged being precisely the same at each operation. The flow of carbid continues until all above the angle of repose at the bend of the discharge-neck has fallen from the feeder. As the gasometer bell moves up the pin 25 leaves the arm 24 and shaft 23 rocks in the reverse direction, the valve 30 engaging against the roller 35 and being gradually moved up to closed position. As the valve nears the closed

position the lug or finger 41 will engage against the lower side of the flange 40 at a point near the end of the flange, and the lever 38 will be tilted up slightly, so that the valve will be allowed to move to full closed position. As the movement continues the lug or finger moves clear of the flange and the lever 38 will then fall to its normal initial position, while the feeder continues to move back to the position shown in Fig. 2.

It is obvious that during the operation of the device the lever 38 allows the valve to drop suddenly after the lug or finger has traveled beyond the end of the flange and compels the valve to travel some appreciable distance before being closed again, while the roller 35 reduces friction and wear.

Projecting from the shaft 23 is an arm 45, with which may engage an arm 46, carried by the lower end of a rock-shaft 47. This rock-shaft extends vertically along the holder and the casing 20, being held in suitable bearings projecting therefrom, and at the upper end of the shaft is a rocker-arm 48, having a cam-shaped end 49 arranged adjacent to the arm or lever 17, so that when said arm 17 is thrown back for the purpose of opening the valve 15 it will engage the cam 49 and rock the arm 48, and arm 40 will be moved against the arm 45 and lock the shaft 23, so that no carbid can be fed by accident to the generating-tank while the cover of the carbid-holder is open.

I claim—

1. In an acetylene-gas generator, a pivotally-mounted carbid-feeder having a bottom discharge-opening, a valve movable to open position as the feeder moves in one direction, and to closed position as the feeder moves in the opposite direction, means for supporting said valve in closed position, the surface of the supporting means being shorter than the distance moved by the feeder in assuming dumping position.

2. In a carbid-feed, a pivotally-mounted casing having a bottom discharge-opening, a pivotally-mounted valve normally closing the discharge-opening, means for holding the valve in closed position, and a pivotally-mounted lever having a valve-supporting flange over which the valve travels in assuming dumping position.

3. In a carbid-feed, a movable casing having a bottom discharge, a pivoted valve normally closing said discharge, means for holding the valve in closed position and a supporting flange for the free end of the valve, the supporting-surface of said flange being of a length less than the extent of movement of the casing in assuming dumping position.

4. The combination with a movable feed-casing having a bottom discharge, of a valve pivoted at one end and provided at its free end with a laterally-projecting lug or finger, a lug or finger supporting flange beyond which

said lug travels to permit opening movement of said valve, and means normally holding said valve in closed position.

5 The combination with a pivotally-mounted feed-casing having a bottom discharge, of a pivoted valve normally closing the discharge, means for holding the valve in closed position, a lug or finger at the free end of said valve, a pivoted supporting-lever having a flange over which said lug travels toward dumping position, and means for limiting movement of said supporting-lever.

15 6. The combination with a pivotally-mounted feed-casing having a bottom discharge, of a valve normally closing the discharge, a pivotal connection between one end of the valve and casing, means for holding the valve in closed position, a lug projecting laterally from the free end of the valve, a pivoted lever having a flange for supporting said

lug, and a guide or strap in which the free end of the lever is arranged.

7. In a carbid-feeder, a housing, an oscillatory feed-casing arranged therein and provided with a discharge-neck, a valve for closing the mouth of the neck, an arcuate plate normally supporting the free end of the valve in closed position, a roller over which said valve moves as the casing assumes discharge position, and means for releasing the valve to permit the same to move to open position, the roller serving to close the valve as the casing reassumes its initial position.

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

GEO. W. MILLER.

Witnesses:

CHARLES H. OAKEY,
HARRY C. HARDING.