G. B. DUTCHER.

FEED MECHANISM FOR GAS GENERATORS.

APPLICATION FILED MAR. 9, 1914.

1,126,736. Patented Feb. 2, 1915.

Fig. 7.

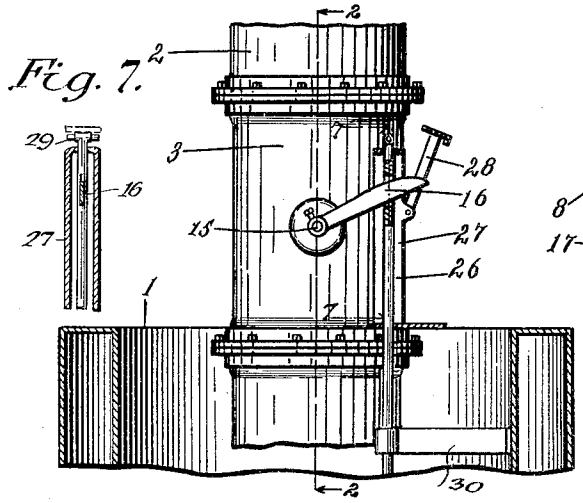


Fig. I.

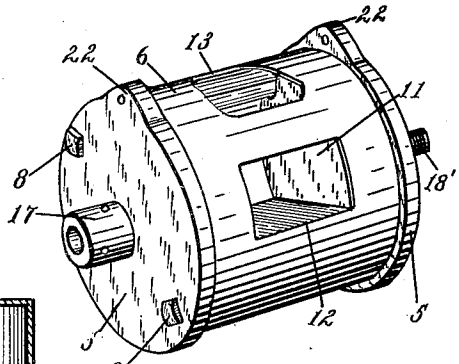


Fig. IV.

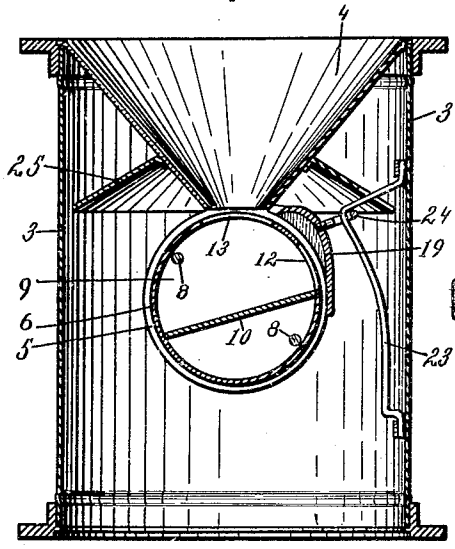


Fig. III.

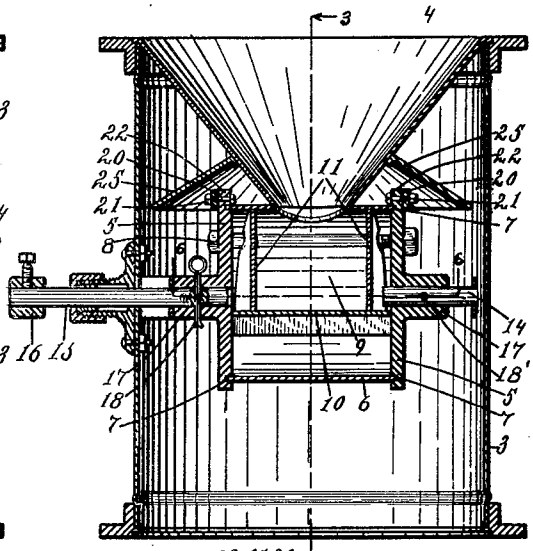


Fig. II.

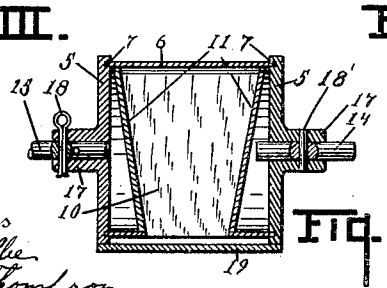


Fig. VI.

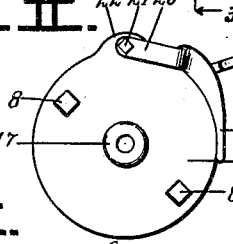


Fig. V.

Witnesses
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THE NORRIS PETERS CO. PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

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FEED MECHANISM FOR GAS-GENERATORS.

1,126,736. Specification of Letters Patent. Patented Feb. 2, 1915.

Application filed March 9, 1914. Serial No. 823,343.

To all whom it may concern:

Be it known that I, GEORGE B. DUTCHER, a citizen of the United States, residing at Jackson, Michigan, have invented certain new and useful Improvements in Feed Mechanism for Gas-Generators, of which the following is a specification.

This invention relates to improvements in feed mechanism for gas generators.

My improvements relate particularly to the carbid feed means for acetylene gas generators.

The main objects of this invention are: First, to provide in an acetylene gas generator an improved automatic carbid feed device. Second, to provide an improved carbid feed device which is simple in structure and one which is not likely to become clogged or to get out of repair in use.

Further objects, and objects relating to structural details, will definitely appear from the detail description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification.

The invention is clearly defined and pointed out in the claims.

A structure which is a preferred embodiment of my invention is clearly illustrated in the accompanying drawing, forming a part of this specification, in which:

Figure I is a detail side elevation of portions of a gas machine embodying the features of my invention. Fig. II is a detail vertical section through the feed mechanism on a line corresponding to line 2—2 of Fig. I. Fig. III is a detail vertical section of the feed mechanism on a line corresponding to line 3—3 of Fig. II. Fig. IV is a perspective view of the feed bucket, the delivery or discharge closure being removed. Fig. V is an end view of the feed bucket with the closure in place. Fig. VI is a longitudinal section through the feed bucket on a line corresponding to line 6—6 of Fig. II. Fig. VII is a detail vertical section on a line corresponding to line 7—7 of Fig. I, showing details of the connection for the gasometer bell to the feed mechanism.

In the drawing similar reference characters refer to similar parts throughout the several views, and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Referring to the drawing, I have not illustrated the outer casing which is usually adapted to contain a generating chamber, gasometer and the carbid hopper or receptacle, and I have only shown the bell 1 of the gasometer, as the general arrangement of parts is old and well-known in the acetylene generator art.

The carbid receptacle 2 is mounted on the cylindrical casing 3 which serves as a support for the bottom 4 of the hopper and for the feed bucket. The hopper bottom 4 is preferably tapered, as illustrated, to avoid clogging.

The feed bucket is journaled below the hopper to constitute a valve therefor and, in the structure illustrated, comprises a pair of end members 5 and a cylindrical body member 6 clamped between the end members, the body member being of sheet metal, the end members being castings provided with annular channels 7 to receive the ends of the body member. The longitudinal bolts 8 hold the parts together. The feed chamber 9 is formed within the cylindrical body by the longitudinal partition 10 and the transverse partitions 11. These transverse partitions 11 are disposed so as to converge to the discharge opening 12. The inlet opening 13 is of such a size and is positioned so that when the bucket is in its receiving position the opening is directly below the mouth of the hopper; when in its discharge position the wall of the bucket closes the hopper opening.

The body member of the bucket is preferably arranged so that the peripheries of the end members project beyond the same, as illustrated in the drawing. The end members are provided with journals 14 and 15, the journal 15 being extended through the casing to receive the arm 16 through which the bucket is operated. The end members have hub-like projections 17 adapted to receive the journals which are secured thereto by means of keys 18 and 18′. The closure 19 is provided with pivot arms 20 connected by the pivots 21 to the peripheral ears on the bucket end members. The closure member is pivoted so as to rest on the peripheries of the end members and is preferably curved outwardly at its upper end so that its upper portion is substantially spaced from the wall of the bucket allowing the closure to close even while the carbid is being discharged from the bucket, that is, should the bucket be returned to its receiving position before all the carbid is dis-

charged therefrom, the closure is not prevented from effectively closing by material that might be caught between the bucket and closure. By providing the pivot arms 20 the pivots 21 are located so that the weight of the closure is effective in closing and retaining the closure in its closed position. To insure quick opening I mount a rod 23 on the side of the casing 3 so as to engage an eye 24 on the closure. This rod is curved away from the bucket so that as the bucket is rocked forwardly on its journals the closure is fully and positively opened.

Above the bucket is a downwardly flaring shield 25 which prevents any considerable amount of condensation from dropping upon the bucket. The bucket is operatively connected to the gasometer bell 1 by means of the rod 26 which engages the arm 16 on the journals 15 so that as the gasometer bell rises and falls the bucket is opened and closed. The gasometer bell is provided with a standard or upright 27 in the form of a loop. The rod 26 is arranged through the top of the loop and is slidable through the arm 30 which serves as a guide therefor. The rod is locked to the upright by the catch 28 which swings over its upper end. The downward movement of the rod in the upright is limited by its crosshead 29. The object of this arrangement is to permit the manipulation of the valve independently of the gas bell when the hopper is to be filled or for starting the apparatus. With the catch 28 released, the rod 26 can be pulled up to close the hopper while the gas bell remains in its lower position. A downward push on the rod discharges the bucket to deliver the initial supply of carbid. The gas will raise the gas bell. The catch 28 is then engaged and the action becomes automatic.

It is believed that the operation of the device will be readily understood from the foregoing description. The structure is one which is not likely to become clogged or get out of repair in use and the bucket is readily controlled through the gas bell. I have not attempted in the accompanying drawings to maintain the relative proportion of the parts.

I have illustrated and described my improvements in detail in a simple and practical embodiment. I have not attempted to illustrate or describe various modifications which I contemplate as possible, as I believe the disclosure made will enable those skilled in the art to which this invention relates to embody or adapt the same as may be desired. I desire, however, to be understood as claiming my invention specifically in the form illustrated as well as broadly within the scope of the appended claims.

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

1. In a structure of the class described, the combination of a casing, a hopper mounted within said casing, a feed bucket journaled below said hopper and comprising a pair of end members provided with journals and having peripheral pivot ears, a cylindrical body clamped between the end members with the edges of said end members projecting beyond the body, said body being provided with inlet and discharge openings, longitudinal and transverse partitions arranged within said body to provide a chamber having side walls converging toward said discharge opening, a closure having pivot arms pivoted on said pivot ears on said end members so that said closure member rests on the edges of said end members when closed, the upper part of said closure member being curved outwardly so that there is a substantial space between it and the wall of the bucket, means for actuating said feed bucket, and a rod disposed vertically on the side of said casing to engage an eye on said closure, said rod being curved away from said bucket, whereby as the bucket is rocked forwardly on its journals the closure is opened.

2. In a structure of the class described, the combination of a casing, a hopper mounted within said casing, a feed bucket journaled below said hopper and comprising a pair of end members provided with journals and having peripheral pivot ears, a cylindrical body clamped between the end members with the edges of said end members projecting beyond the body, a closure having pivot arms pivoted on said pivot ears on said end members so that said closure member rests on the edges of said end members when closed, the upper part of said closure member being curved outwardly so that there is a substantial space between it and the wall of the bucket, means for actuating said feed bucket, and a rod disposed vertically on the side of said casing to engage an eye on said closure, said rod being curved away from said bucket, whereby as the bucket is rocked forwardly on its journals the closure is opened.

3. In a structure of the class described, the combination of a casing, a hopper mounted within said casing, a feed bucket journaled below said hopper and comprising a pair of end members provided with journals, a cylindrical body clamped between the end members projecting beyond the body, said body being provided with inlet and discharge openings, longitudinal and transverse partitions arranged within said body to provide a chamber having side walls converging toward said discharge opening, a closure pivoted on said end members so that said closure member rests on the edges

of said end members when closed, means for actuating said feed bucket, and a rod disposed vertically on the side of said casing to engage an eye on said closure, said rod being curved away from said bucket, whereby as the bucket is rocked forwardly on its journals the closure is opened.

4. In a structure of the class described, the combination of a casing, a hopper mounted within said casing, a feed bucket journaled below said hopper and comprising a pair of end members provided with journals, a cylindrical body clamped between the end members with the edges of said end members projecting beyond the body, a closure pivoted on said end members so that said closure member rests on the edges of said end members when closed, means for actuating said feed bucket, and a rod disposed vertically on the side of said casing to engage an eye on said closure, said rod being curved away from said bucket, whereby as the bucket is rocked forwardly on its journals the closure is opened.

5. In a structure of the class described, the combination of a casing, a hopper mounted within said casing, a feed bucket journaled below said hopper and comprising a pair of end members, a cylindrical body provided with inlet and discharge openings, longitudinal and transverse partitions arranged within said body to provide a chamber having side walls converging toward said discharge opening, a closure pivoted on said bucket, means for actuating said feed bucket, and a rod disposed vertically on the side of said casing to engage an eye on said closure, said rod being curved away from said bucket, whereby as the bucket is rocked forwardly on its journals the closure is opened.

6. In a structure of the class described, the combination of a casing, a hopper mounted within said casing, a feed bucket journaled below said hopper and comprising a pair of end members, a cylindrical body, a closure pivoted on said bucket, means for actuating said feed bucket, and a rod disposed vertically on the side of said casing to engage an eye on said closure, said rod being curved away from said bucket, whereby as the bucket is rocked forwardly on its journals the closure is opened.

7. In a structure of the class described, the combination of a hopper, a feed bucket journaled below said hopper, a closure pivoted on said bucket, means for actuating said feed bucket, and a rod disposed vertically on the side of said casing to engage an eye on said closure, said rod being curved away from said bucket, whereby as the bucket is rocked forwardly on its journals the closure is opened.

8. In a structure of the class described, the combination of a hopper, a feed bucket journaled below said hopper and comprising a pair of end members provided with journals and having peripheral pivot ears, a cylindrical body clamped between the end members with the edges of said end members projecting beyond the body, said body being provided with inlet and discharge openings, longitudinal and transverse partitions arranged within said body to provide a chamber having side walls converging toward said discharge opening, a closure having pivot arms pivoted on said pivot ears on said end members so that said closure member rests on the edges of said members when closed, the upper part of said closure being curved outwardly so that there is a substantial space between it and the wall of the bucket, means for actuating said feed bucket, and a member having operative connection with said closure whereby as the bucket is rocked on its journals said closure is opened and closed.

9. In a structure of the class described, the combination of a hopper, a feed bucket journaled below said hopper and comprising a pair of end members provided with journals, a cylindrical body clamped between the end members with the edges of said members projecting beyond the body, said body being provided with inlet and discharge openings, longitudinal and transverse partitions arranged within said body to provide a chamber having side walls converging toward said discharge opening, a closure pivoted on said end members so that said closure member rests on the edges of said members when closed, means for actuating said feed bucket, and a member having operative connection with said closure whereby as the bucket is rocked on its journals said closure is opened and closed.

10. In a structure of the class described, the combination of a hopper, a feed bucket journaled below said hopper and comprising a pair of end members provided with journals and having peripheral pivot ears, a cylindrical body clamped between the end members with the edges of said end members projecting beyond the body, said body being provided with inlet and discharge openings, longitudinal and transverse partitions arranged within said body to provide a chamber having side walls converging toward said discharge opening, a closure having pivot arms pivoted on said pivot ears on said end members so that said closure member rests on the edges of said members when closed, the upper part of said closure being curved outwardly so that there is a substantial space between it and the wall of the bucket, and means for actuating said feed bucket.

11. In a structure of the class described, the combination of a hopper, a feed bucket journaled below said hopper, a closure piv-

oted on said bucket, the upper part of said closure being curved outwardly so that there is a substantial space between it and the wall of the bucket, means for actuating said feed bucket, and a member supported independently of and having operative connection with said closure whereby as the bucket is rocked on its journals said closure is opened and closed.

12. In a structure of the class described, the combination of a hopper, a feed bucket journaled below said hopper, a closure pivoted on said bucket, means for actuating said feed bucket, and a member supported independently of and having operative connection with said closure whereby as the bucket is rocked on its journals said closure is opened and closed.

13. In a structure of the class described, the combination of a hopper, a feed bucket journaled below said hopper, said feed bucket being provided with inlet and discharge openings, a discharge closure pivoted on said bucket, means for actuating said feed bucket, a member supported independently of and having operative connection with said closure whereby as the bucket is rocked on its journals said closure is opened and closed, and a downwardly flaring shield mounted on said hopper to overhang said bucket.

14. In a structure of the class described, the combination of a hopper, a feed bucket journaled below said hopper, a closure pivoted on said bucket, means for actuating said feed bucket, and a relatively fixed member with which said closure has sliding engagement whereby as the bucket is rocked on its journal said closure is opened and closed.

In witness whereof, I have hereunto set my hand and seal in the presence of two witnesses.

GEORGE B. DUTCHER. [L. S.]

Witnesses:

E. B. WOOD,

G. W. MYES.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."