No. 665,442. Patented Jan. 8, 1901.

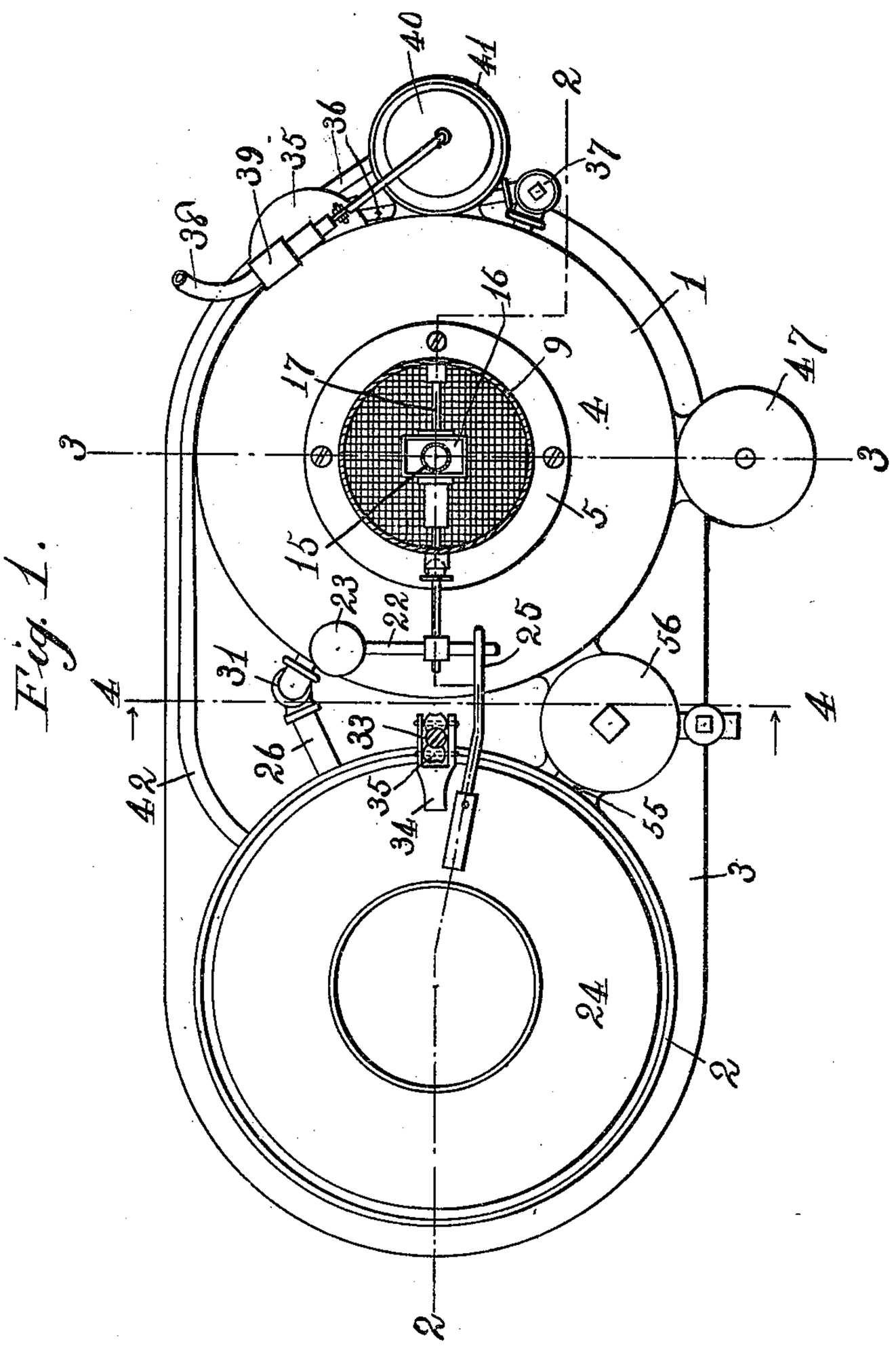
T. KAUTNY & R. W. LOTZ.

ACETYLENE GAS GENERATOR.

(Application filed July 1, 1899.)

(No Model.) 3 Sheets—Sheet 1.

Fig. 1.



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(No Model.) 3 Sheets—Sheet 2.

Fig. 2.

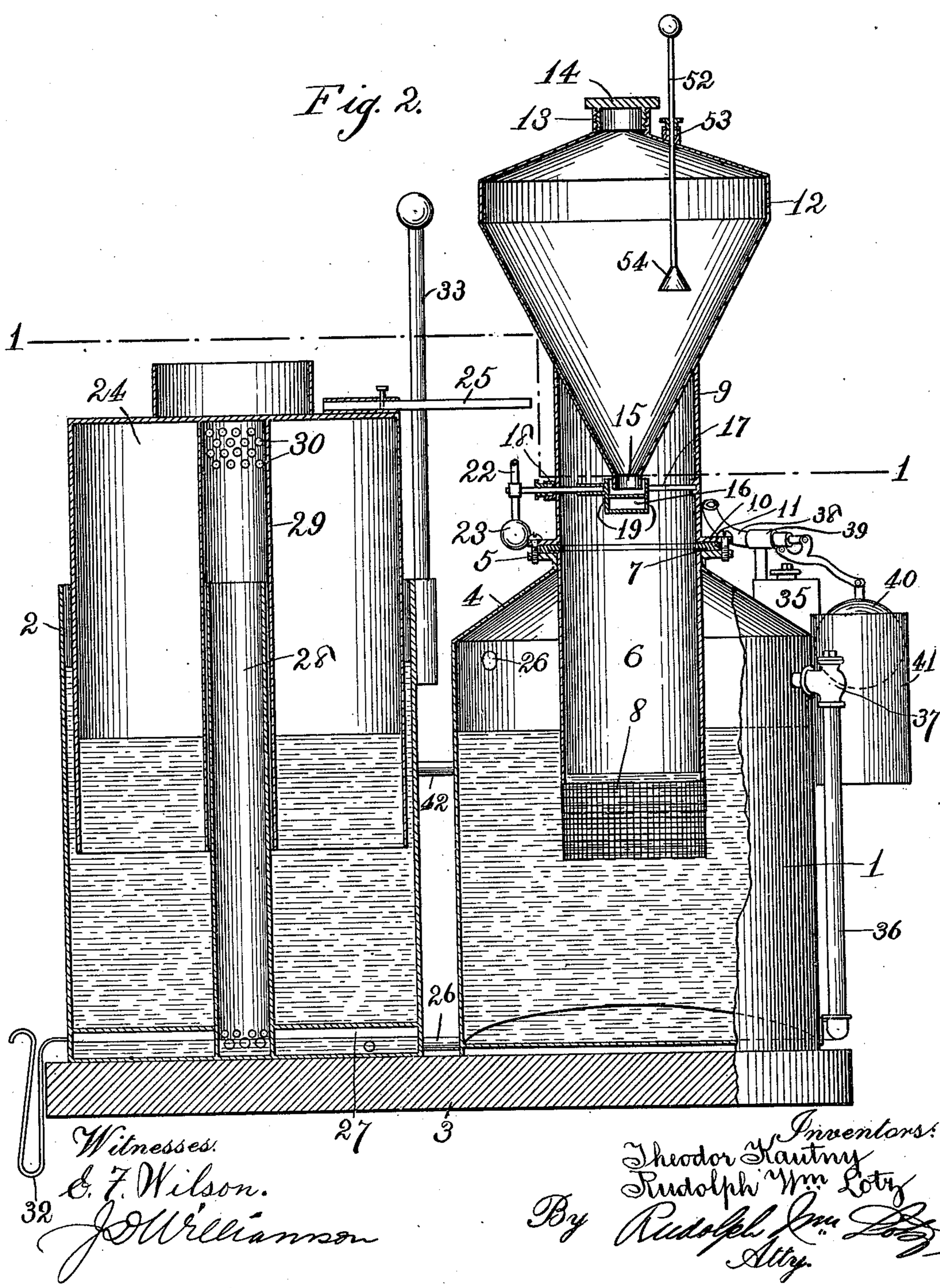

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Fig. 4.

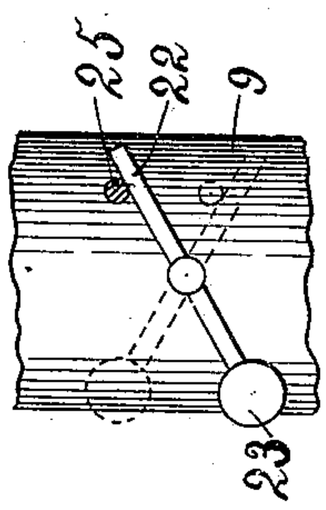


Fig. 5.

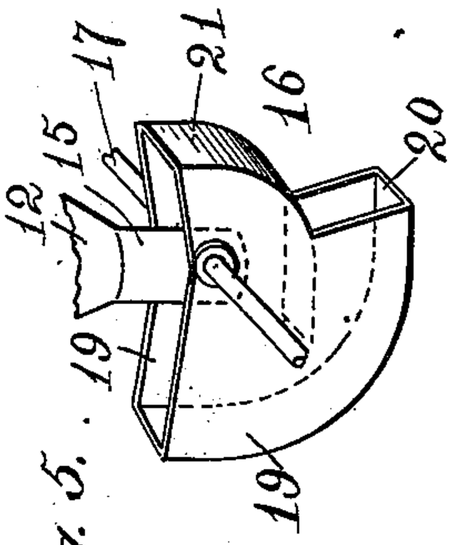
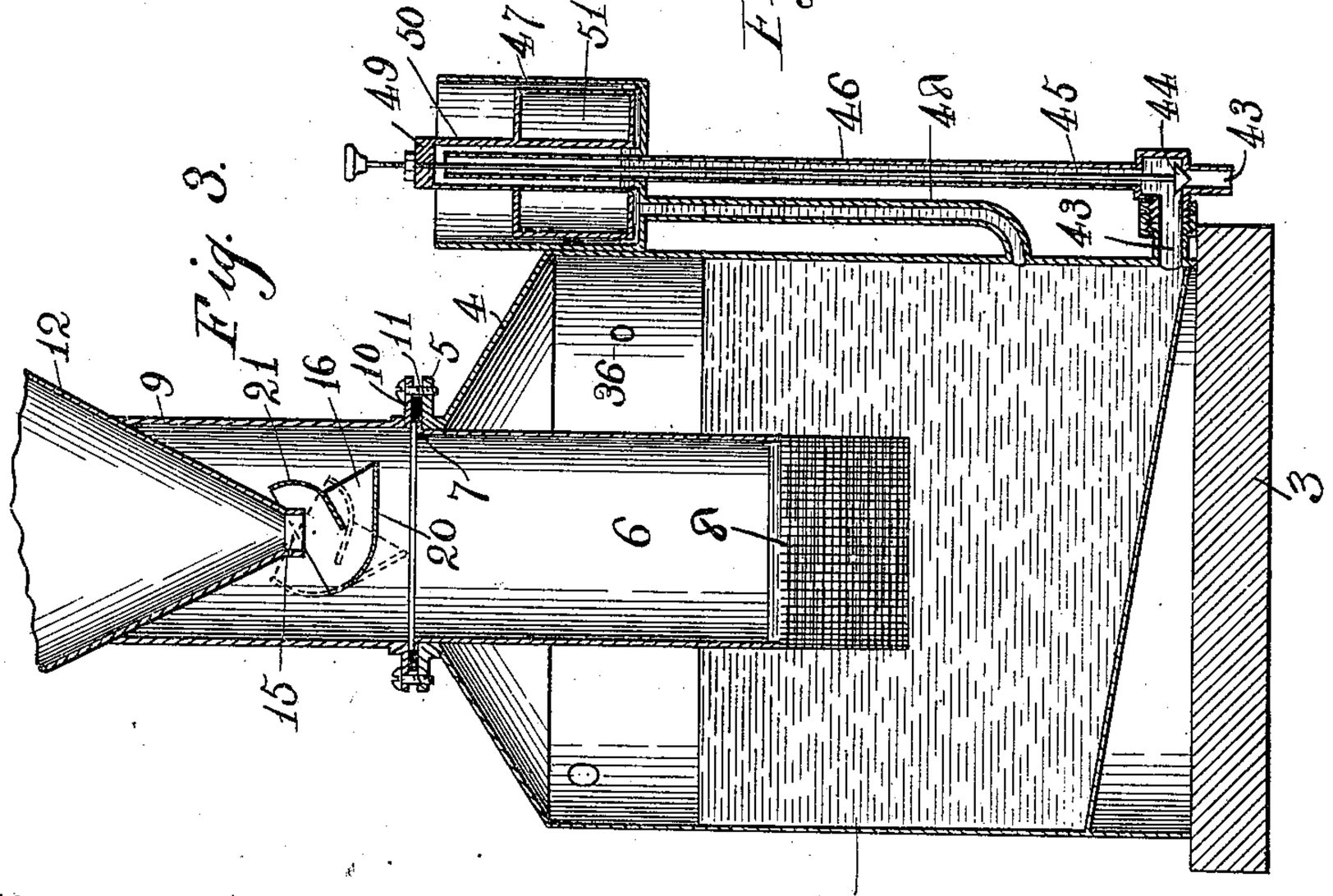


Fig. 3.



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UNITED STATES PATENT OFFICE.

THEODOR KAUTNY AND RUDOLPH WM. LOTZ, OF CHICAGO, ILLINOIS; SAID KAUTNY ASSIGNOR TO SAID LOTZ AND ARTHUR C. LOTZ, OF SAME PLACE.

ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 665,442, dated January 8, 1901.

Application filed July 1, 1899. Serial No. 722,497. (No model.)

To all whom it may concern:

Be it known that we, THEODOR KAUTNY, a subject of the Emperor of Austria-Hungary, and RUDOLPH WM. LOTZ, a citizen of the United States, both residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Acetylene-Gas Generators; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to a novel construction in an acetylene-gas generator of the carbid-feed type, the object being to provide a device of this description which can be recharged with carbid at any time during the operation of the same and which will automatically clean itself while in operation; and it consists in the features of construction and combinations of parts hereinafter fully described and claimed.

In the accompanying drawings, illustrating our invention, Figure 1 is a plan sectional view of a generator constructed in accordance with our invention, taken on the line 1 1 of Fig. 2. Fig. 2 is a vertical longitudinal section of same on the line 2 2 of Fig. 1. Fig. 3 is a vertical transverse section of same on the line 3 3 of Fig. 1. Fig. 4 is a detail view showing the devices for operating the carbid-dumping device. Fig. 5 is a detail perspective view of the carbid-dumping device.

One object of the present invention is to provide a device in which a specified quantity of carbid is fed to an excess of water at intervals dependent upon the rapidity of consumption of the gas.

Another object of our invention is to provide a device which can be connected to water-service and waste pipes of a house to aumatically control the water-level in the generating-chamber and which after every generation will cause a limited amount of water containing residue to be expelled and a like quantity of fresh water introduced to replace the expelled water.

Still another object of our invention is to provide a device which can be fed with carbid at any time irrespective of whether the device is in operation or not without the escape of the contained gas and without danger to the operator or pernicious odor.

To these and other ends our device consists of a generating-chamber 1 and a gasometer 2 mounted side by side on a base 3. Said generating-chamber 1 is preferably provided with a conical top 4, in the center of which is a circular opening surrounded by a coupling member 5. A cylinder 6, provided at its upper end with an annular flange 7, adapted to rest upon and engage the coupling member 5 to support said cylinder, is adapted to project downwardly into said generating-chamber 1, and is provided at its lower end with a foraminated metal bottom portion 8. This foraminated portion constitutes not only a continuation of the lower end of cylinder 6, but also extends across the bottom of the latter. A cylinder 9, carrying a coupling member 10 at its lower end, is adapted to be mounted upon said generating-chamber 1 and coupled thereto, a gasket 11 being adapted to be inserted between said coupling members 5 and 10 to form a gas-tight joint. Said cylinder 9 carries a carbid-hopper 12 at its upper end, the conical bottom of which projects downwardly into said cylinder. Said hopper 12 is adapted to be fed with carbid through an opening 13 in its upper end, adapted to be sealed by a screw-cap 14. The bottom of said hopper 12 terminates in a short tube 15, which is open at its lower end and projects into a carbid-dumping device 16, rigidly mounted upon a two-part shaft 17, extending diametrically across said cylinder 9 and journaled in bearings in same, one of said bearings comprising a stuffing-box 18. Said carbid-dumping device 16 consists of two parallel side plates 19 of irregular shape, which are straight on the front portion of their lowermost edges and round on the rear portion thereof and on their rear edges. A plate 20, bent to follow the contour of said lower and rear edges of said plates 19, joins said plates along said edges. The front edges of said plates 19 are partially cut away on a straight line and partially on a curve, the latter being preferably concentric with said shaft 17 and overhanging the straight portion and the latter extending preferably at an acute angle to the straight portion of the

lower edges. A plate 21, curved to follow the contour of said curved cut-away portion, but of greater length than same, is mounted between said plates 19 along said edges and projects inwardly between said plates to about the middle portion thereof. Said shaft 17 is rigidly secured to said plates 19 at or about the upper middle portion thereof. By means of this arrangement a pivotal movement of said dumping device will bring said plates 20 and 21 alternately below the mouth of said tube 15, thus causing the carbid to be fed alternately upon each of same. The plate 21 is located sufficiently far below the mouth of the tube 15 to permit the flow of carbid at all times, and is of such dimensions that at no point in the movement of said dumping device can any carbid overflow said plate 21 without flowing upon the plate 20. Said plate 20 at intervals receives a quantity of carbid, and when said dumping device is turned to bring said plate 21 under the mouth of said tube 15 the inclination of said plate 20 becomes such as to cause the carbid thereon to slide or flow from the mouth of said dumping device into the water in the generating-chamber. Said dumping device 16 is actuated and given a rocking motion by means of mechanism receiving its motion by variations in the gas volume, and any suitable mechanism may be employed for this purpose. Obviously innumerable different mechanisms could be designed, and we do not wish to be limited to any particular means for accomplishing this purpose. For purposes of illustration we have shown a lever 22 on one end of said shaft 17, which between its ends is rigidly connected with said shaft and carries a weight 23 at one end which is adapted to normally hold said dumping device 16 in position to permit the flow of carbid on the plate 20. The bell 24 of the gasometer 2, which receives its motion by variations in the gas volume, carries a projection 25, in the path of which the unweighted end of said lever 22 projects and upon which said projection 25 is adapted to bear as said bell 24 sinks to turn said shaft 17, and likewise said dumping device, until the carbid on the plate 20 of the latter has reached the necessary inclination to cause the carbid thereon to be dumped. As said carbid comes into contact with the water the generation of gas is instantaneous, and such gas flows from said generating-chamber 1 into said gasometer 2 through a pipe 26, leading from the upper portion of the former to a chamber 27 in the bottom of the latter. A stand-pipe 28 leads through perforations in the upper part of that portion of said stand-pipe contained within the chamber 27, from said chamber 27 into a telescopic pipe 29, depending from the top of said bell 24, and the gas passes from the latter into the main portion of said bell 24 through perforations 30 in the upper portion of said pipe 29. A check-valve 31 is preferably interposed in said pipe 26 to prevent the reflux of gas into said generating-chamber 1. Said chamber 27 is adapted to serve as a condensing-chamber and is provided with an automatic drain-trap 32 for draining off condensed water. We do not claim this as any part of our invention. Said bell 24 is preferably guided and prevented from turning by means of a standard 33, rigidly mounted on said gasometer 2 and adapted to pass through a fork 34 on said bell, in which antifriction-rollers 35 are journaled, such guide being necessary to hold said projection 25 in position to engage said lever 22. The water-level in said gasometer is maintained at a sufficient height to cover the lower end of the solid portion of said cylinder 6 and filling the foraminated bottom portion of the latter. In this manner a sufficient quantity of water is maintained to receive and decompose the carbid immediately, while at the same time a water seal is maintained between the cylinder 6, and likewise the hopper 12 and the main portion of the generating-chamber 1, so that when it is desired to feed carbid only a very small percentage of the entire contained gas can escape, said water seal performing the functions of a check-valve. Thus carbid can be readily fed at any time, it being necessary only to be careful not to attempt to feed carbid when the dumping device is about to unload during the operation of the machine. Even though such care were not observed the only result would be that the gas generated while the cap 14 is removed would escape and the machine consequently cease to operate as soon as the bell 24 had sunk to its lowest limit. If, however, the feeding is effected immediately after a generation of gas, there will be sufficient time to complete such feeding and replace the cap before the next generation. In this manner the waste of gas now generally occasioned when recharging generators and the odor consequent thereon is entirely avoided.

The water-feed mechanism is of the automatic type and consists, preferably, of a stand-pipe 35 or its equivalent mounted on one side of said generating-chamber 1, from the lower end of which a pipe 36 leads horizontally and thence upwardly and enters said chamber 1, preferably above the water-level therein, a check-valve 37 being interposed in said pipe. Said stand-pipe 35 is connected with a water-supply pipe 38, leading to any suitable source of supply of water under pressure, a float-valve 39 being interposed in said connection and the float 40 actuating same, receiving its motion from variations in the water-level in a small tank 41 adjacent said stand-pipe 35 and connected with the latter. The water-level in said stand-pipe and said tank 41 would obviously always be as much higher than the water-level in said generating-chamber as the difference between the pressure in the generating-chamber and the outer air measured by water-column and the pressure in said generating-chamber would generally be practically equal with the pres-

sure in the gasometer. Hence to maintain a given water-level in the generating-chamber the float must be set to close the valve 39 when the water-level in the tank 41 reaches a level a given distance above the desired water-level in chamber 1. Thus if the gas-pressure is maintained at two inches of water the float must be set to close the valve 39 when the water-level in tank 41 rises two inches above the desired water-level in the generating-chamber 1. We prefer to cause fresh water to enter the generating-chamber 1 above the water-level therein, as this water is generally colder and will precipitate the residue, besides preventing the upper strata of water from reaching an undesirably high temperature. A pipe 42 connects said stand-pipe 35 with the gasometer 2, thereby also maintaining a given water-level in the latter.

It will be obvious that the instantaneous generation of gas must cause a momentary rise in pressure in the generating-chamber, the duration of increased pressure being dependent upon the size of the pipe 26 and the resistance of check-valve 31, leading to the gasometer, which relieves such pressure. This momentary rise in pressure we have utilized to actuate an outlet-valve to cause a limited quantity of water to be expelled after every generation of gas, such water being replaced automatically by the water-feed devices.

Referring to Fig. 3, we have provided a water-discharge pipe 43, leading from the lower end of the generating-chamber 1, which is controlled by a valve 44. The stem 45 of said valve 44 extends upwardly through a pipe 46, passing through the bottom of a tank 47, mounted on said generating-chamber and connected with the latter by means of a pipe 48 entering said generating-chamber at the lower portion of the latter, whereby a water-level is maintained in said tank 47 equal to that in the tank 41. The upper end of said valve-stem 45 is screw-threaded and enters the screw-threaded opening in a cap 49 on a tube 50, carrying a float 51, said tube 50 being adapted to fit telescopically over said tube 46. By means of the screw-threaded connection between the valve-stem 45 and said float 51 the latter can be adjusted on said valve-stem. Obviously a rise in pressure in said generating-chamber 1 would cause a rise in the water-level in the tank 47, thus raising said float 51 and opening said valve 44. As the pressure in said generating-chamber is relieved the water in tank 47 would resume its normal level and the valve 44 would again close. By adjusting the float 51 on said valve-stem 45 the quantity of water discharged after every generation of gas can be very nicely regulated. For example, if the float is set high it will take longer for the water-level to rise sufficiently to raise the same and would recede to a point at which said valve 44 closes more rapidly, thereby causing only a small quantity of water to be discharged, while if said float is set low the quantity of water discharged would be increased. It is intended to connect said discharge-pipe 43 with the waste-pipe of the building, whereby the residue would obviously require no handling. Thus the operator is required only to feed carbid to the generator as same automatically cleans and recharges itself with water. Attention is called to the fact that said cylinder 6 may be termed the "generating-chamber," as the gas is actually generated therein, as will be obvious, and forces its way into chamber 1 by passing through the water therein to the space above the water-level. Some of the carbid falling into the water in the bottom of the cylinder 6 will undoubtedly find its way into the water surrounding the cylinder 6 before being entirely decomposed, so that both the chambers 1 and 6 are, in fact, generating-chambers.

It may here be said that the sole purpose of the check-valve 37 is to prevent the rise in pressure in the generating-chamber to be communicated to the stand-pipe, as this would cause the water-level in tank 41 to rise.

To enable the operator to ascertain when it is necessary to recharge the device, we have provided a rod 52, passing through a stuffing-box 53 in the top of the carbid-hopper 12 at one side of the opening 13, the lower end of which is conically enlarged, as at 54, so that by moving said rod downwardly the level of the carbid can be ascertained.

The gas passes from the gasometer through a pipe 55 into a purifying-chamber 56 and thence into the service-pipes.

The capacity of the dumping device is so regulated relatively to the capacity of the gasometer that at no time can the volume of gas generated exceed the capacity of the bell 24. In this manner the necessity of a safety-valve is entirely avoided, as is likewise all waste of gas.

We claim as our invention—

1. In an acetylene-gas generator, the combination with a carbid-receptacle open at its lower end, of a carbid receiving and dumping device pivotally mounted at the lower end of said receptacle and into which said lower end of said receptacle projects, said dumping device comprising two side plates and two cross-plates, the latter being mounted one above the other and partially overhanging each other, the lowermost of said cross-plates and the side plates being adapted to form a pocket to receive a specified quantity of carbid from said receptacle when said dumping device is at one limit of its movement, and the uppermost of said cross-plates being adapted to interpose itself below the mouth of said receptacle to interrupt the flow of carbid when said dumping device reaches the other limit of its movement, said pocket being adapted at this time to discharge its contents.

2. In an acetylene-gas generator, the com-

bination with a carbid-receptacle open at its lower end, of a dumping device pivotally mounted adjacent said open end of said receptacle and comprising parallel side plates between which the mouth of said receptacle projects, cross-plates connecting said side plates and adapted with same to form pockets for receiving carbid, one of said plates projecting below one end of the other to leave a free discharge for carbid, said pockets being relatively so placed that while one of same receives carbid the other discharges it.

3. In an acetylene-gas generator, the combination with a carbid-receptacle open at its lower end, of a carbid-dumping device pivotally mounted adjacent said open end of said receptacle and adapted to receive carbid therefrom, said dumping device comprising two side plates and two practically-concentric cross-plates, the said side and cross plates being adapted to form two pockets for carbid of varying depth, the deeper of said pockets being adapted to receive carbid from said other pocket and said receptacle simultaneously and to dump its contents when said other pocket is receiving carbid from said receptacle.

4. In an acetylene-gas generator, the combination with a carbid-receptacle open at its lower end, of a carbid-dumping device mounted below and surrounding said open end of said receptacle, said dumping device having four walls and a divided bottom, one part of said bottom being offset above and overhanging the other part thereof so as to leave a discharge-opening, said walls and bottom forming two differential carbid-pockets adapted to alternately receive and discharge carbid, the smaller pocket being adapted to discharge its contents into the larger.

5. In an acetylene-gas generator, the combination with a carbid-receptacle open at its lower end, of a dumping device pivotally mounted below said opening and comprising two plates moving in concentric arcs and so placed relatively to each other as to be alternately brought in position to receive carbid, one of said plates being adapted to dump said carbid while the other thereof is receiving same.

6. In an acetylene-gas generator, the combination with a carbid-receptacle open at its lower end, of a dumping device pivotally mounted below said opening and comprising two plates moving in concentric arcs and so placed relatively to each other as to be alternately brought in position to receive carbid, one of said plates forming a dump for the carbid and the other thereof being adapted to interrupt the flow while said first named is in position to dump.

7. In an acetylene-gas generator, the combination with a carbid-receptacle open at its lower end, of a dumping device pivotally mounted adjacent said open end of said receptacle and having four walls surrounding the latter, two of said walls being bent to partially overhang each other, thereby forming a divided bottom having a discharge-opening, and forming two differential carbid-pockets adapted alternately to receive and discharge carbid, the smaller pocket discharging its contents into the larger.

8. In an acetylene-gas generator, the combination with a carbid-receptacle open at its lower end, of dumping devices pivotally mounted below said receptacle and into which the mouth of the latter projects, said dumping devices comprising two differential carbid-pockets adapted alternately to be interposed below said mouth of said receptacle, the smaller of said pockets discharging into the larger thereof and the latter into a generating-chamber.

9. In an acetylene-gas generator, the combination with a carbid-receptacle open at its lower end, of carbid-dumping devices interposed below said receptacle and into which the mouth of the latter projects, said dumping devices comprising two differential carbid-pockets adapted to be alternately interposed below the mouth of said receptacle, the smaller of said pockets discharging into the larger and the latter into a generating-chamber, and devices actuated by variations in gas volumes in said generator for operating said dumping devices.

10. In an acetylene-gas generator, a carbid-chamber, a water-chamber, means for automatically bringing carbid and water in contact at intervals to generate gas, connection between said water-chamber and a source of supply of water, devices interposed in said connection for automatically maintaining a given water-level in said water-chamber, a water-outlet valve on said water-chamber, and devices operated by variations in the water-level in said generator induced by variations in gas-pressure therein for opening said valve at intervals.

11. In an acetylene-gas generator, the combination with a carbid-receptacle, a water-chamber, and connection between said water-chamber and a source of supply of water, of devices interposed between said carbid-chamber and said water-chamber for automatically feeding carbid to said water-chamber at intervals to generate gas, a water-discharge pipe leading from said water-chamber, a valve in said pipe, connection between said valve and devices operated by variations in the water-level in said generator induced by variations in gas-pressure therein for automatically opening said valve and discharging water from said chamber at intervals, and devices interposed between said water-chamber and the water-supply for automatically replacing the discharged water.

12. In an acetylene-gas generator, a carbid-receptacle, a water-chamber below the same, means for automatically feeding carbid to said water-chamber at intervals to generate gas, connection between said water-chamber and a water-supply for automatic-

ally maintaining a given water-level in said water-chamber, a water-discharge for said water-chamber, a valve contolling same, a water-tank connected with said water-chamber, a float in said tank, and connection between said float and said valve, said float being adapted to be operated by variations in the water-level in said tank induced by variations in gas-pressure in said water-chamber to open and close said valve at intervals.

13. In an acetylene-gas generator, the combination with a carbid-receptacle, a gas-reservoir, and a generating-chamber interposed between said reservoir and said carbid-receptacle, of means for maintaining a given water-level in said generating-chamber, devices for automatically dumping carbid into said water at intervals to generate gas, and devices operated by variations in the water-level in said generator induced by variations in gas-pressure therein for automatically discharging water from said generating-chamber at intervals, whereby the residue formed by the generation of gas is discharged.

14. In an acetylene-gas generator, the combination with devices for automatically bringing carbid and water in contact at intervals to generate gas, of devices actuated by variations in the water-level in said generator induced by variations in gas-pressure therein for automatically discharging the residue produced by the gas generation.

15. In an acetylene-gas generator, the combination with a carbid-receptacle and a water-chamber, of devices actuated by variations in the water-level in said generator induced by variations in gas volumes therein to bring carbid and water in contact at intervals to generate gas, and devices similarly actuated for discharging the residue produced by the gas generation.

16. In an acetylene-gas generator, the combination with a carbid-receptacle open at its lower end, a water-chamber below the same, connection between said water-chamber and a water-supply for automatically maintaining a given water-level therein, and connection between said water-chamber and a gas-reservoir, of a carbid-dumping device mounted below said carbid-receptacle, and actuated by variations in gas volume to dump carbid into said water at intervals, and a water-discharge from said water-chamber adapted to be actuated by variations in the water-level in said water-chamber induced by the feeding of carbid thereto, to discharge water at intervals corresponding with the generation of gas, whereby the residue resulting from gas generation is discharged from the apparatus.

17. In an acetylene-gas generator, the combination with a carbid-receptacle, a water-reservoir below the same, a cylinder extending from said carbid-receptacle into the water in said reservoir and forming a generating-chamber, a gas-reservoir connected with said water-reservoir, and an opening in the bottom of said carbid-receptacle, of devices actuated by variations in gas volume for feeding carbid to said generating-chamber at intervals whereby gas is generated therein and the volume thereof in excess of the capacity of said generating-chamber is obliged to pass upwardly through the water in said reservoir, whereby said gas is cleaned, and means for utilizing the variations in the water-level in said generator induced by variations in the gas-pressure created in the generator for automatically changing the water in said reservoir at intervals, whereby the residue resulting from the generation of gas is discharged.

18. In an acetylene-gas generator, the combination with devices for automatically bringing carbid and water in contact at intervals to generate gas, and a receptacle adapted to receive the residue resulting from such generation, of devices actuated by variations in the water-level in said generator induced by variations in gas volumes in said generator, for discharging said residue at intervals.

19. In an acetylene-gas generator, a gas-generating chamber and a gas-reservoir mounted side by side, a carbid-receptacle carried by said generating-chamber, devices for feeding carbid to said generating-chamber at intervals, a pipe connection between said generating-chamber and said reservoir, a water-supply, connection between said water-supply and said generating-chamber, connection between said water-supply and said gas-reservoir, devices common to both said connections for automatically maintaining a given water-level in said generating-chamber and said reservoir, and devices actuated by variations in gas volumes for automatically changing the water in said generating-chamber at intervals.

20. In an acetylene-gas generator, a carbid-receptacle open at its lower end, a carbid-dumping device pivotally mounted below said receptacle, a generating-chamber adapted to receive carbid from said dumping device at intervals, a gas-reservoir connected with said generating-chamber, connection between said generating-chamber and a water-supply, connection between said gas-reservoir and said water-supply, a valve actuated by a float and common to both said connections for automatically maintaining a given water-level in said generating-chamber and said reservoir, connection between said gas-reservoir and said carbid-dumping device for actuating the latter in accordance with the variations in the gas volume, a water-outlet from said generating-chamber, a valve in said outlet, and connection between said valve and a member actuated by variations in gas volume for opening said valve at intervals, whereby residue is discharged from said generating-chamber and fresh water introduced.

21. In an acetylene-gas generator, the combination with a carbid-receptacle and a water-chamber below the same, of means for intermittently feeding carbid to said water-chamber, means actuated by variations in

the water-level in said generator induced by variations in pressure therein for automatically causing the discharge of water containing residue from the lower end of said water-chamber after each generation of gas, and connection between said water-chamber and a source of supply of water for automatically replacing the discharged water.

22. In an acetylene-gas generator, the combination with a carbid-receptacle, a water-reservoir below the same, a cylinder extending from said carbid-receptacle into the water in said reservoir and forming a generating-chamber, and an opening in the bottom of said carbid-receptacle, of devices actuated by variations in gas volume to dump carbid into the water in said generating-chamber at intervals whereby gas is generated therein and the volume thereof in excess of the capacity of said generating-chamber is obliged to pass upwardly through the water in said reservoir whereby said gas is cleansed.

23. In an acetylene-gas generator, the combination with a water-chamber and devices for feeding carbid thereto at intervals, of a discharge-pipe leading from the lower end of said water-chamber, a valve interposed in said pipe, a tank mounted on the upper end portion of said water-chamber, a movable member contained in said tank and connected with said valve, and connection between said tank and said water-chamber whereby increase in pressure in said water-chamber is transmitted to said tank to impart motion to said movable device therein to open said valve.

24. In an acetylene-gas generator, the combination with a water-chamber and devices for feeding carbid thereto at intervals, of a discharge-pipe leading from said water-chamber, a valve interposed in said pipe, a receptacle adjacent said water-chamber and connected therewith, a movable member in said receptacle adapted to be actuated by variations in pressure in said water-chamber, and connection between said movable member and said valve for opening the latter at intervals to discharge water and residue with the increase of the pressure.

25. In an acetylene-gas generator, the combination with a water-chamber and devices for feeding carbid thereto at intervals, of devices for discharging water and residue from said water-chamber, a valve controlling said devices, a receptacle connected with said water-chamber, a movable member in said receptacle adapted to be actuated by increases in the pressure in said water-chamber, and connection between said movable member and said valve for opening the latter at intervals with the increase in pressure to discharge water containing residue.

26. In an acetylene-gas generator, the combination with a water-chamber and devices for feeding carbid thereto at intervals, of devices for discharging water and residue from said water-chamber, a valve controlling said devices, a receptacle connected with said water-chamber, a float in said receptacle adapted to be actuated by increases in pressure in said water-chamber, and connection between said float and said valve for opening the latter at intervals with the increase in the pressure to discharge water containing residue.

27. In an acetylene-gas generator, the combination with a water-chamber and devices for feeding carbid thereto at intervals, of an outlet-pipe leading from the lower end of said water-chamber, a valve in said pipe, a receptacle mounted above said pipe and connected with the latter and said water-chamber, a float in said receptacle and a rod connecting said float and carrying the valve.

28. In an acetylene-gas generator, the combination with a water-chamber and devices for intermittingly dumping carbid into the same at intervals in measured quantities, of a water-outlet from the lower end of said water-chamber, a valve controlling said outlet, and devices connected with said valve and actuated by the initial increase in pressure resulting from the sudden generation of gas in said water-chamber for opening said valve after each dump of said measured quantity of carbid therein to discharge water and residue from said water-chamber.

29. In an acetylene-gas generator, the combination with the carbid-receptacle and means for feeding a measured charge of carbid automatically to the water-chamber in stated quantities, of a water-chamber in which a substantially constant level of water is maintained, means for feeding fresh water to maintain said level, and means for automatically discharging portions of the water from the bottom of the chamber, said means actuated by the initial increase in pressure resulting from the sudden generation of gas in said water-chamber, whereby the residue is prevented from accumulating in the water-chamber, substantially as specified.

30. In an acetylene-gas generator, the combination with the carbid-receptacle and means for feeding the carbid automatically to the water-chamber in stated quantities, of a water-chamber in which a substantially constant level of water is maintained, means for feeding fresh water to maintain said level, and means operable by the increase in the gas volume at each generating operation for automatically discharging portions of the water from the bottom of the chamber, whereby the residue is prevented from accumulating in the water-chamber, substantially as described.

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

THEODOR KAUTNY.
RUDOLPH WM. LOTZ.

Witnesses:
ARTHUR C. LOTZ,
JOHN D. WILLIAMSON.