No. 820,103. PATENTED MAY 8, 1906.

A. L. EASTMAN.

ACETYLENE GENERATOR.

APPLICATION FILED JUNE 30, 1906.

3 SHEETS—SHEET 1.

Fig. 2.

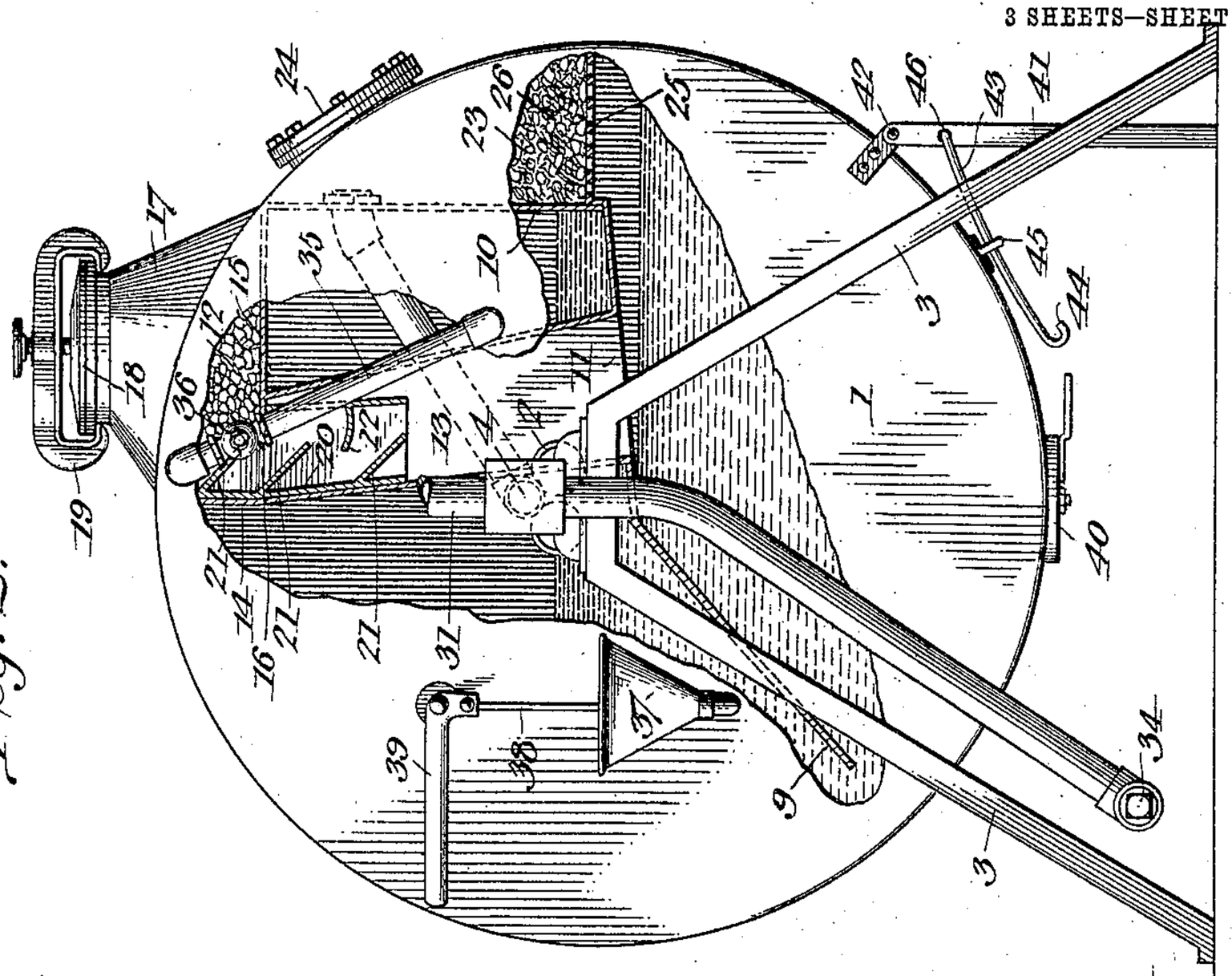
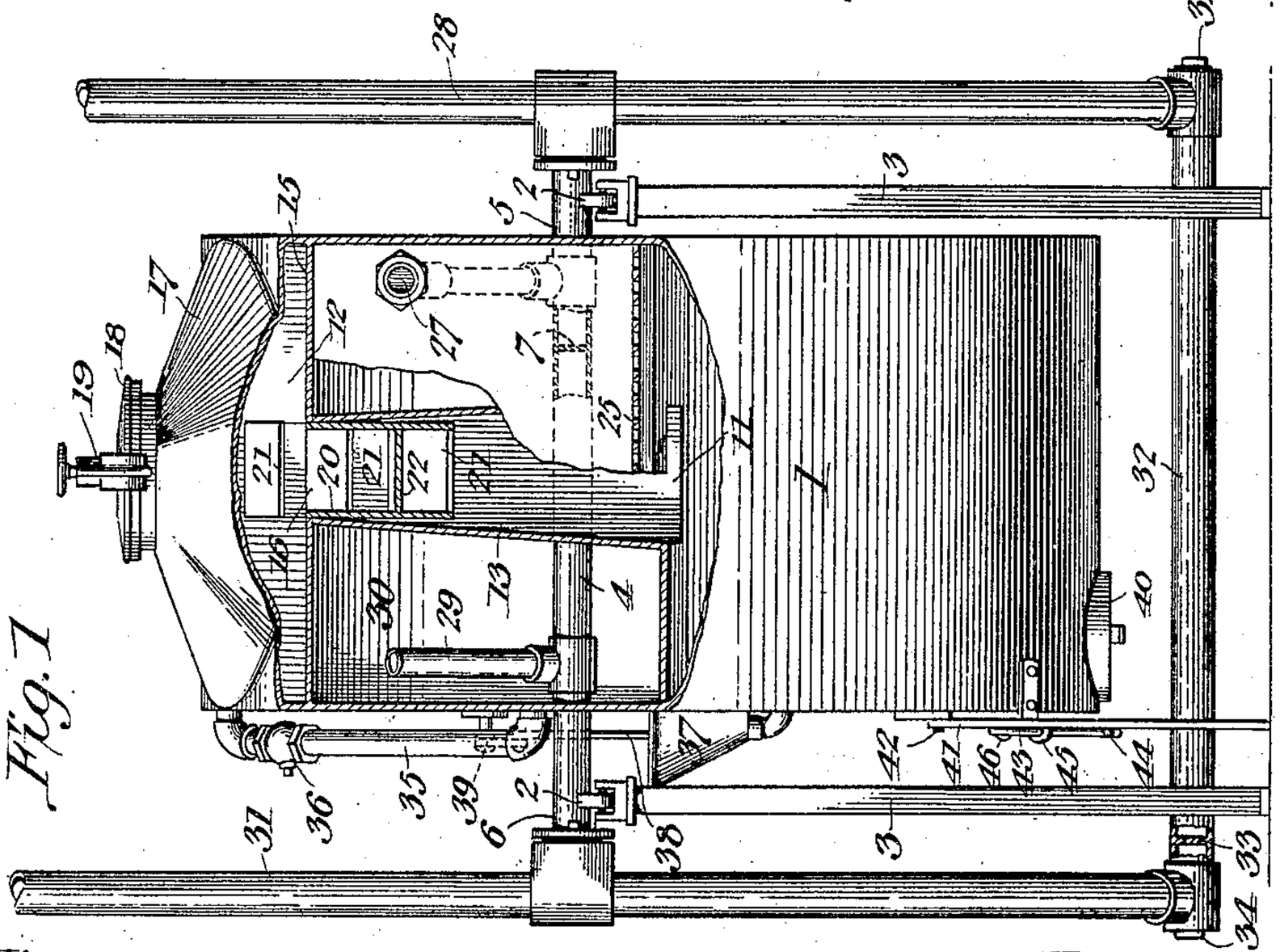


Fig. 1.



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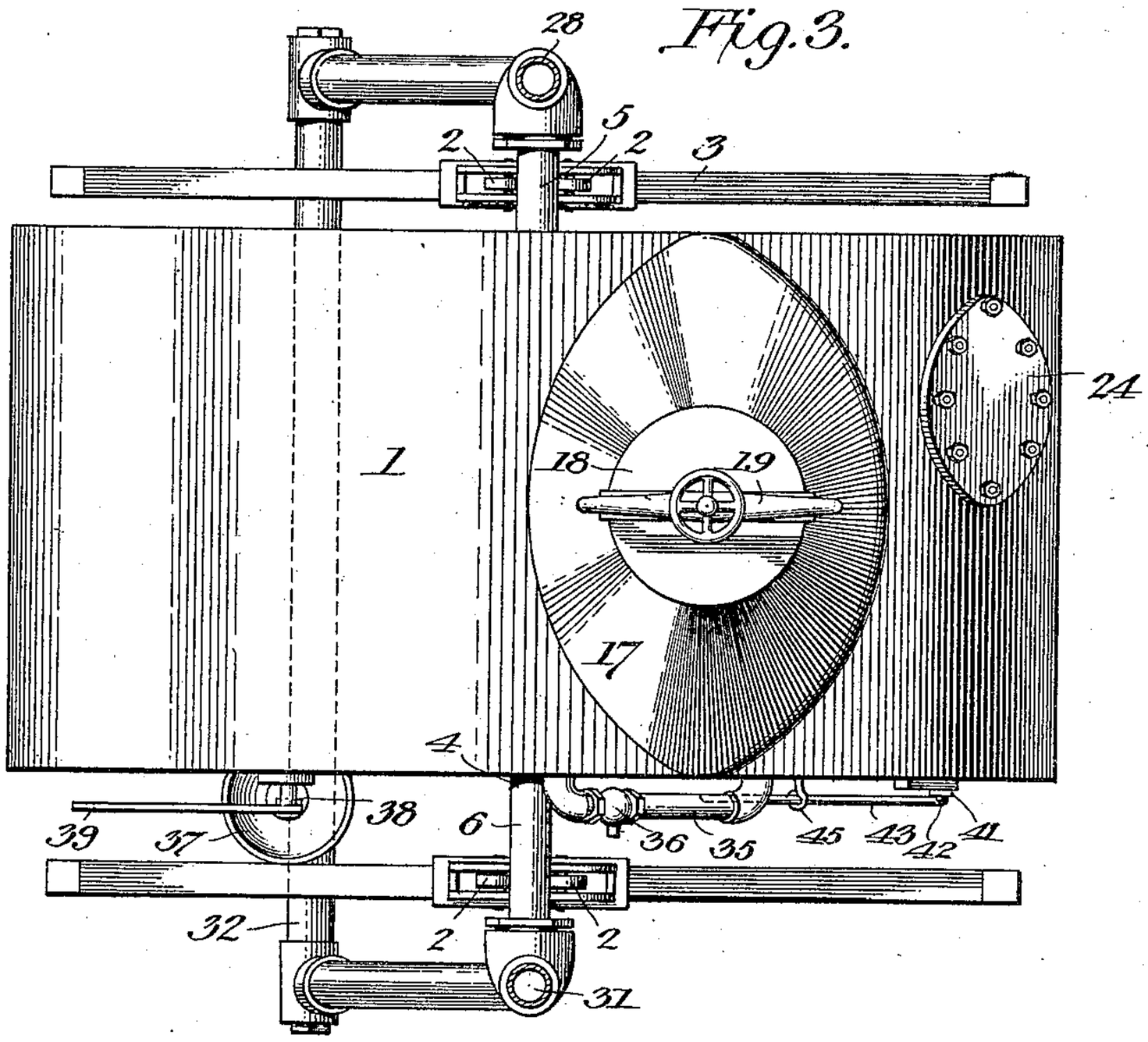
3 SHEETS—SHEET 2.

Fig. 3.



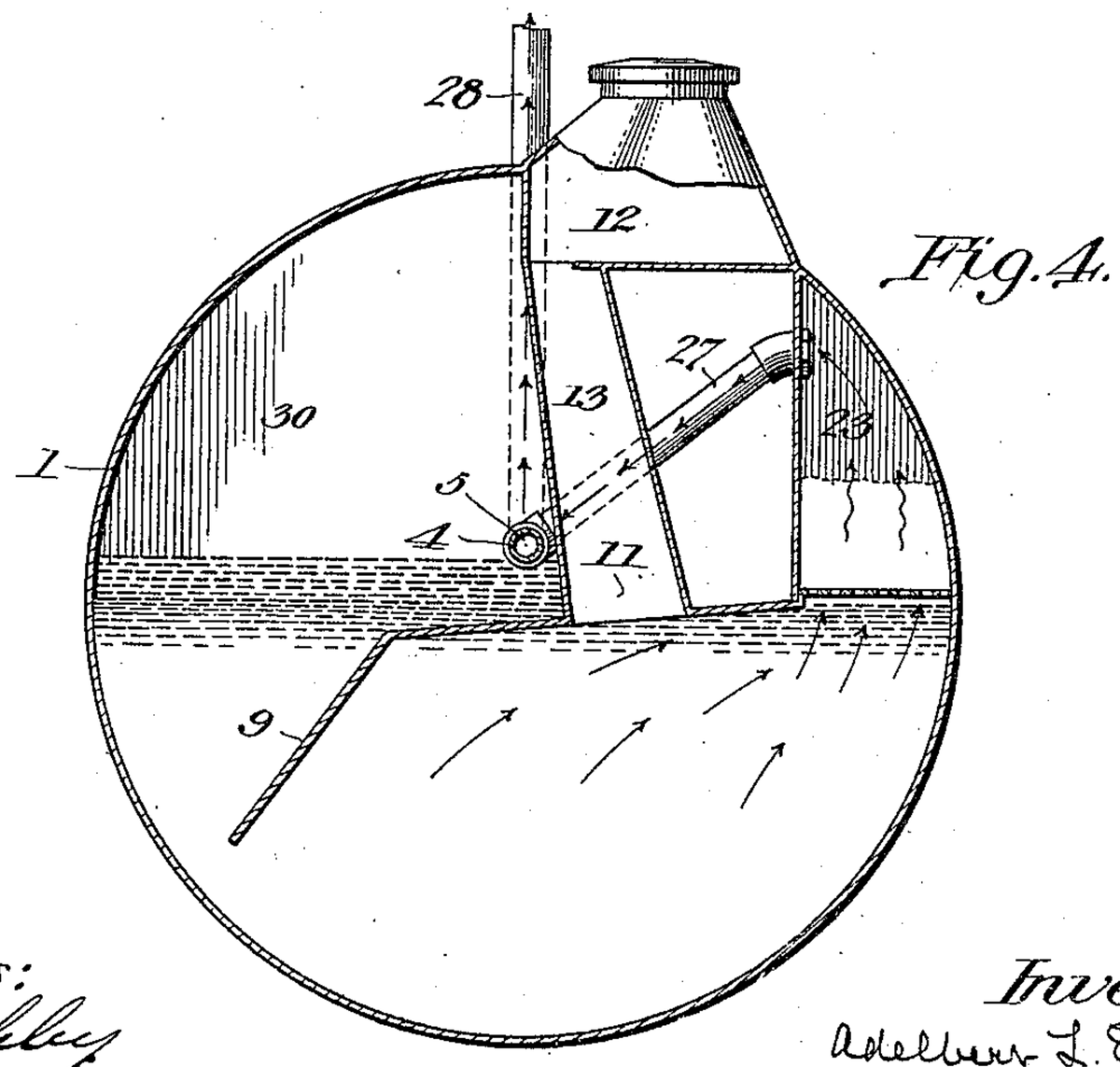


Fig. 4.

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3 SHEETS—SHEET 3.

Fig. 6.

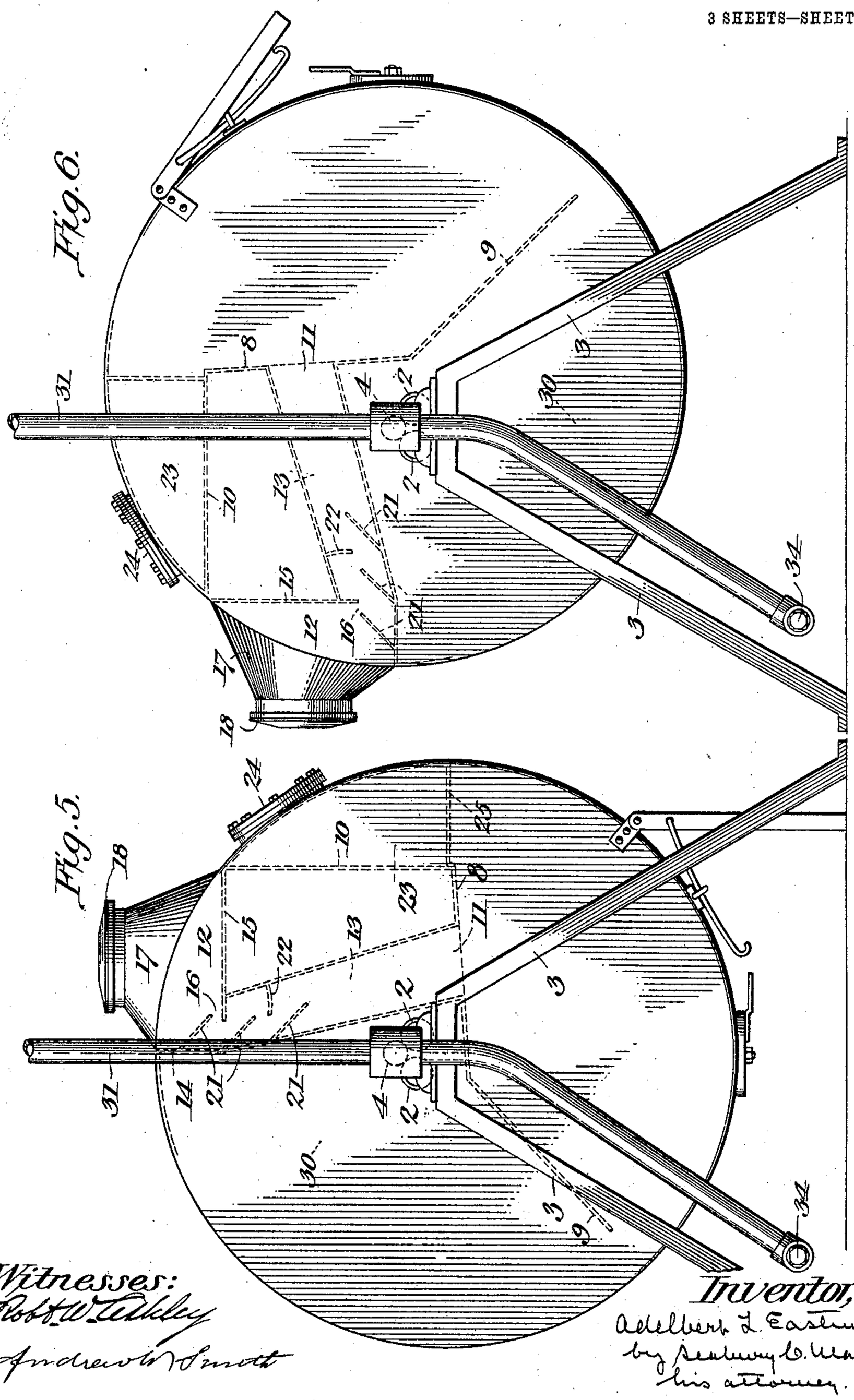

Fig. 5.

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UNITED STATES PATENT OFFICE.

ADELBERT L. EASTMAN, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR OF ONE-HALF TO WILLIAM H. LOCKE, JR., OF NEW YORK, N. Y.

ACETYLENE-GENERATOR.

No. 820,103. Specification of Letters Patent. Patented May 8, 1906.

Application filed June 30, 1905. Serial No. 267,754.

To all whom it may concern:

Be it known that I, ADELBERT L. EASTMAN, a citizen of the United States, and a resident of the city of Bridgeport, county of Fairfield, State of Connecticut, have invented a certain new and useful Improvement in Acetylene-Generators, of which the following is a specification.

My invention relates to an improvement in acetylene-generators; and it consists in the arrangement of devices hereinafter disclosed.

In the following I have described with reference to the accompanying drawings a structure embodying one form of my invention, the features thereof being more particularly pointed out hereinafter in the claims.

In the drawings, Figure 1 is a side elevation, partly in section and partly broken away, of an acetylene-generator illustrating my invention. Fig. 2 is an end elevation, partly in section and partly broken away, of the structure shown in Fig. 1. Fig. 3 is a top plan view of the same. Fig. 4 is a diagrammatic end view showing the course of the gas as it passes from the generating-chamber to the service-pipe. Fig. 5 is an end view, partly diagrammatic, showing the position of the cylinder when the carbid-chute is in feeding position. Fig. 6 is a diagrammatic view similar to Fig. 5, showing the position of the cylinder when the carbid-chamber is in closed position by reason of the gas-pressure.

Similar numerals indicate similar parts throughout the several views.

1 indicates a metal cylinder, made gas and water tight, mounted on roller-bearings 2 2, suitably supported on standards 3 by means of a pipe 4, which passes through the cylinder 1, preferably at a point a little above the center thereof, as illustrated, and projects at either end to form hollow trunnions 5 and 6. The pipe 4 is separated into two parts by means of a partition 7, for the purpose hereinafter described.

The generating-chamber is formed by a partition 8, riveted to the walls of and extending nearly across the cylinder 1. The partition 8 is provided with a downwardly-projecting portion 9 and an upwardly-projecting portion 10 for the purposes hereinafter described and has an opening 11 adapted to permit the carbid to fall from the carbid-chamber 12 into the generating-chamber through the chute 13. The carbid-chamber 12 is formed with a wall 14 and a floor 15, preferably extending across the width of the cylinder and riveted thereto. The floor 15 has an opening 16, through which the carbid is adapted to pass into the chute 13. The top of the carbid-chamber is formed by means of a hood 17, provided with a cover 18 and locking-clamp 19. A box 20, provided with inclined plates 21 21 21 on one side and plate 22, substantially parallel with floor 15, and preferably slightly curved, on the other side, is adapted to be supported in opening 16, depending from said opening into chute 13. A drying-chamber 23, to which access is had through hand-hole 24, closed by any suitable means, is formed between the wall of cylinder 1 and the upwardly-projecting portion 10 of partition 8 by placing a suitable grating 25 across from the wall of cylinder 1 to partition 8 and filling said drying-chamber 23 with material 26 suitable for absorbing or straining moisture or other impurities.

The gas-outlet pipe 27 connects the drying-chamber 23 with trunnion 5 of pipe 4, trunnion 5 in turn being connected with service-pipe 28. Blow-off pipe 29 connects chamber 30 of cylinder 1 with trunnion 6 of pipe 4, trunnion 6 being in turn connected with blow-off pipe 31. Service-pipe 28 and the blow-off pipe 31 both extend downwardly to pipe 32, separated into two parts by partition 33, pipe 32 forming a drip-pipe into which any moisture from the escaping gas is allowed to drip and is removed through a suitable opening 34, there being one of said openings at each end of pipe 32. The vent-pipe 35 connects chamber 30 and carbid-chamber 12, which latter is in free communication with the generating-chamber, said vent-pipe being controlled by means of a valve 36.

37 is a filling-lip communicating with the interior of the cylinder and controlled by valve 38, pivoted on lever 39 for the purpose of permitting water to be poured into the cylinder and of determining the water-level.

40 is a sludge-gate suitably controlled, adapted to permit sludge and water to be drawn off when desired.

41 is a leg pivoted to the cylinder at 42 and adapted to prevent the cylinder from turning downward farther than desired. A link 43, provided with a hook 44, adapted to coact with eye 45, is pivoted to leg 41 at 46.

The operation of the apparatus is as follows: The carbid-chamber is filled with carbid and the cylinder is filled with water through filling-lip 37 to as great an extent as the filling-lip will permit. Some of the carbid will pass through the opening 16 onto plate 22; but most of the carbid will remain on the floor 15. The carbid-chamber being closed, the machine is tilted to about one-sixteenth of a turn by grasping leg 41 and pulling it upward so that hook 44 engages eye 45. The carbid on plate 22 is then discharged onto the lowermost of plates 21, the arrangement of parts forming a pocket. During the operation described the vent-pipe 35 has been left open to allow free access of air for the purpose of permitting the cylinder to be tilted easily. The cylinder is then permitted to return to its normal position, vent-pipe 35 permitting the air in the cylinder to pass out and remaining open until the carbid on lowermost plate 21 falls into the generating-chamber through chute 13 and opening 11, at which point the vent-pipe should be closed. Thereafter the machine will operate automatically as the gas-pressure throws cylinder 1 around so that it tends to assume the position shown in Fig. 6, thus throwing the carbid onto the lowermost of plates 21, as described, and discharging it as the gas is drawn off. The supporting of the cylinder from a point above its center provides for a counterweighting effect, which causes the cylinder to return to its normal position as the gas-pressure therein is reduced, and, furthermore, is adapted to prevent the cylinder from turning more than a quarter-turn.

It is obvious that the details of construction may be varied and the arrangement of parts changed without departing from the spirit of my invention, and I do not restrict myself to any of the details shown and described or the arrangement of parts illustrated; but

What I claim, and desire to secure by Letters Patent of the United States, is—

1. An acetylene-generator comprising a rotatably-supported body divided into a plurality of chambers one of said chambers being adapted to form a generating-chamber, the parts being so arranged with relation to each other that the pressure of the gas in the generating-chamber causes the body to rotate.

2. An acetylene-generator comprising a rotatably-supported body divided into a plurality of chambers, one of said chambers being adapted to form a generating-chamber, and a carbid-receptacle adapted to communicate with the generating-chamber, the parts being so arranged with relation to each other that the pressure of the gas in the generating-chamber causes the body to rotate.

3. An acetylene-generator comprising a rotatably-supported body divided into a plurality of chambers, one of said chambers being adapted to form a generating-chamber and another a displacement-chamber, means for communicating between said chambers and a carbid-receptacle adapted to communicate with the generating-chamber the parts being so arranged with relation to each other that the pressure of the gas in the generating-chamber causes the body to rotate.

4. An acetylene-generator comprising a rotatably-supported body divided into a plurality of chambers, one of said chambers being adapted to form a generating-chamber and another being adapted to form a displacement-chamber, means for communicating between said chambers and a carbid-receptacle adapted to carry carbid into intermittent contact with the water in the generating-chamber, the parts being so arranged with relation to each other that the pressure of the gas in the generating-chamber causes the body to rotate.

5. An acetylene-generator comprising a rotatably-supported body divided into a plurality of chambers, one of said chambers being adapted to form a generating-chamber and another being adapted to form a displacement-chamber, means for communicating between said chambers, means for venting the displacement-chamber, and a carbid-receptacle adapted to discharge intermittently into the generating-chamber, the parts being so arranged with relation to each other that the pressure of the gas in the generating-chamber causes the body to rotate.

6. An acetylene-generator comprising a rotatably-supported body, a generating-chamber and a displacement-chamber within said body in communication with each other and a carbid-receptacle adapted to discharge into the generating-chamber, the generating-chamber, displacement-chamber and carbid-receptacle being in fixed relation to each other and so arranged that the pressure of the gas in the generating-chamber will cause the body to rotate and carry the carbid-receptacle alternately toward and away from the water in the generating-chamber.

7. An acetylene-generator comprising a body rotatably supported at a point above its center of gravity, within said body and supported in fixed relations to each other thereby a generating-chamber, a displacement-chamber in communication with the generating-chamber, a carbid-receptacle and a drying-chamber in communication with the generating-chamber and without said body and supported independently thereof a

gas-outlet pipe and a blow-off pipe, means for communication between the generating-chamber and the gas-outlet pipe and between the displacement-chamber and the blow-off pipe, the parts being so arranged with relation to each other that the pressure of gas in the generating-chamber causes the body to rotate and the carbid-receptacle to discharge intermittently into the generating-chamber.

8. An acetylene-generator comprising a body rotatably supported at a point above its center of gravity, within said body and supported in fixed relation to each other thereby a generating-chamber, a displacement-chamber in communication with the generating-chamber, a carbid-receptacle and a drying-chamber in communication with the generating-chamber, and without said body and supported independently thereof a gas-outlet pipe and a blow-off pipe, means for communication between the generating-chamber and the gas-outlet pipe and between the displacement-chamber and the blow-off pipe, and means mounted on said body for venting from the displacement-chamber into the carbid-receptacle, the parts being so arranged with relation to each other that the pressure of gas in the generating-chamber causes the body to rotate and the carbid-receptacle to discharge intermittently into the generating-chamber.

9. An acetylene-generator comprising a rotatably-supported body, a generating-chamber and a displacement-chamber within said body, means for partially filling said body with water and a carbid-receptacle, the parts being so arranged with relation to each other that the pressure of gas in the generating-chamber will cause the body to rotate and the carbid-receptacle to intermittently bring its carbid into contact with the water in the generating-chamber.

10. An acetylene-generator comprising a rotatably-supported body adapted to receive less than its full capacity of water, a diaphragm within said body and extending partly across the same, a carbid-receptacle adapted to communicate with the water on one side of said diaphragm and a chamber on the other side of said diaphragm, the parts being so arranged that the pressure of the gas acting against the diaphragm will cause the body to rotate and the water to flow to the other side of said diaphragm.

11. An acetylene-generator comprising a rotatably-supported body, a diaphragm within said body extending partly across the same, a carbid-receptacle adapted to bring its carbid into contact with the water on one side of said diaphragm, the parts being so arranged that the pressure of the gas acting against the diaphragm will cause the body to rotate intermittently bringing carbid into contact with the water on one side of said diaphragm and means for limiting the amount of rotation of said body.

12. An acetylene-generator comprising a movable container eccentrically pivoted and adapted to hold carbid and water and means within the container whereby an increase in gas volume will swing the container on its pivots to stop the generation of gas.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ADELBERT L. EASTMAN.

Witnesses:

CLARENCE D. ANDERSON,

H. C. REID.