

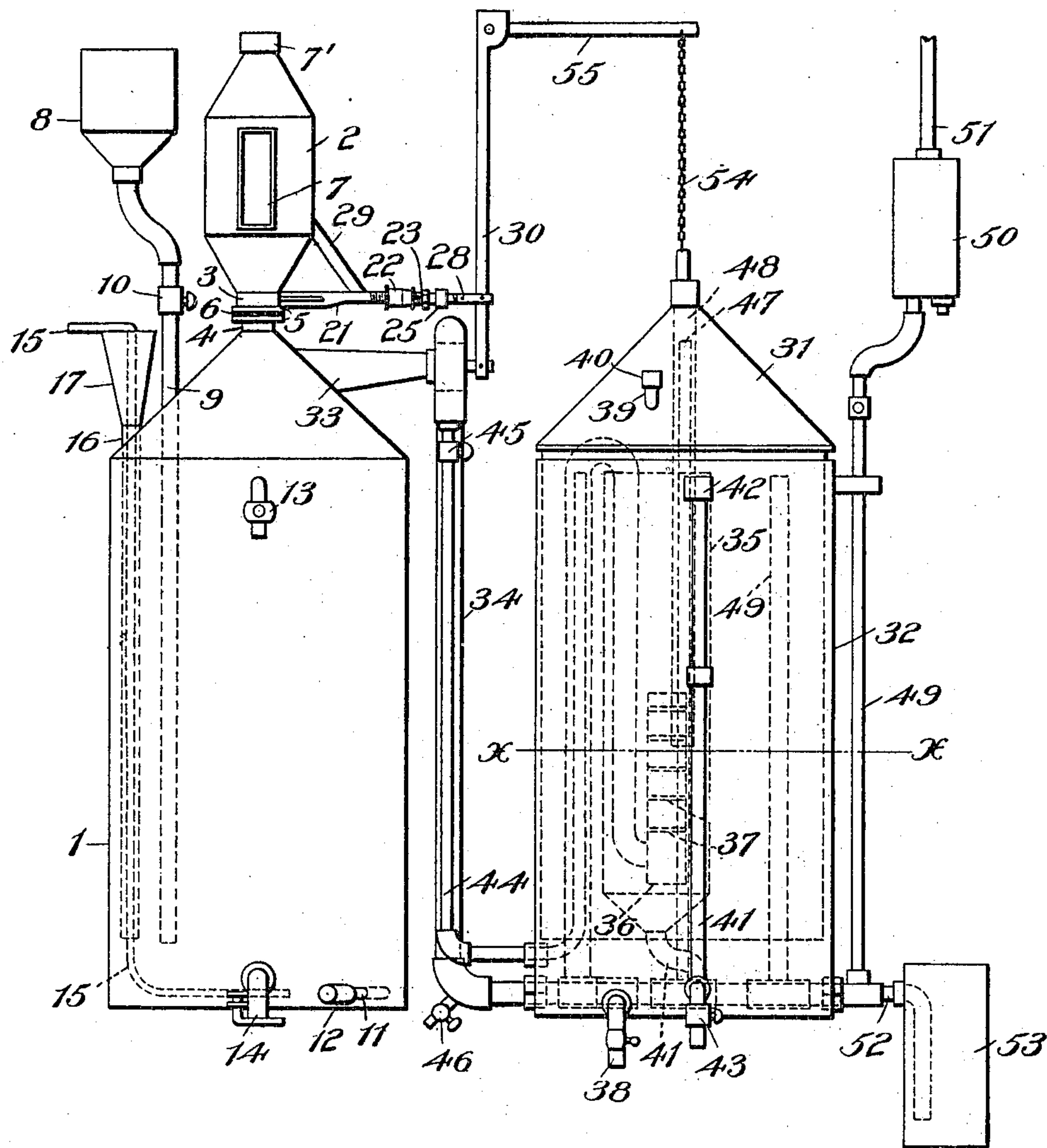
No. 831,560.

PATENTED SEPT. 25, 1906.

L. H. LITTLE.
ACETYLENE GAS GENERATOR.
APPLICATION FILED FEB. 13, 1906.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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Inventor

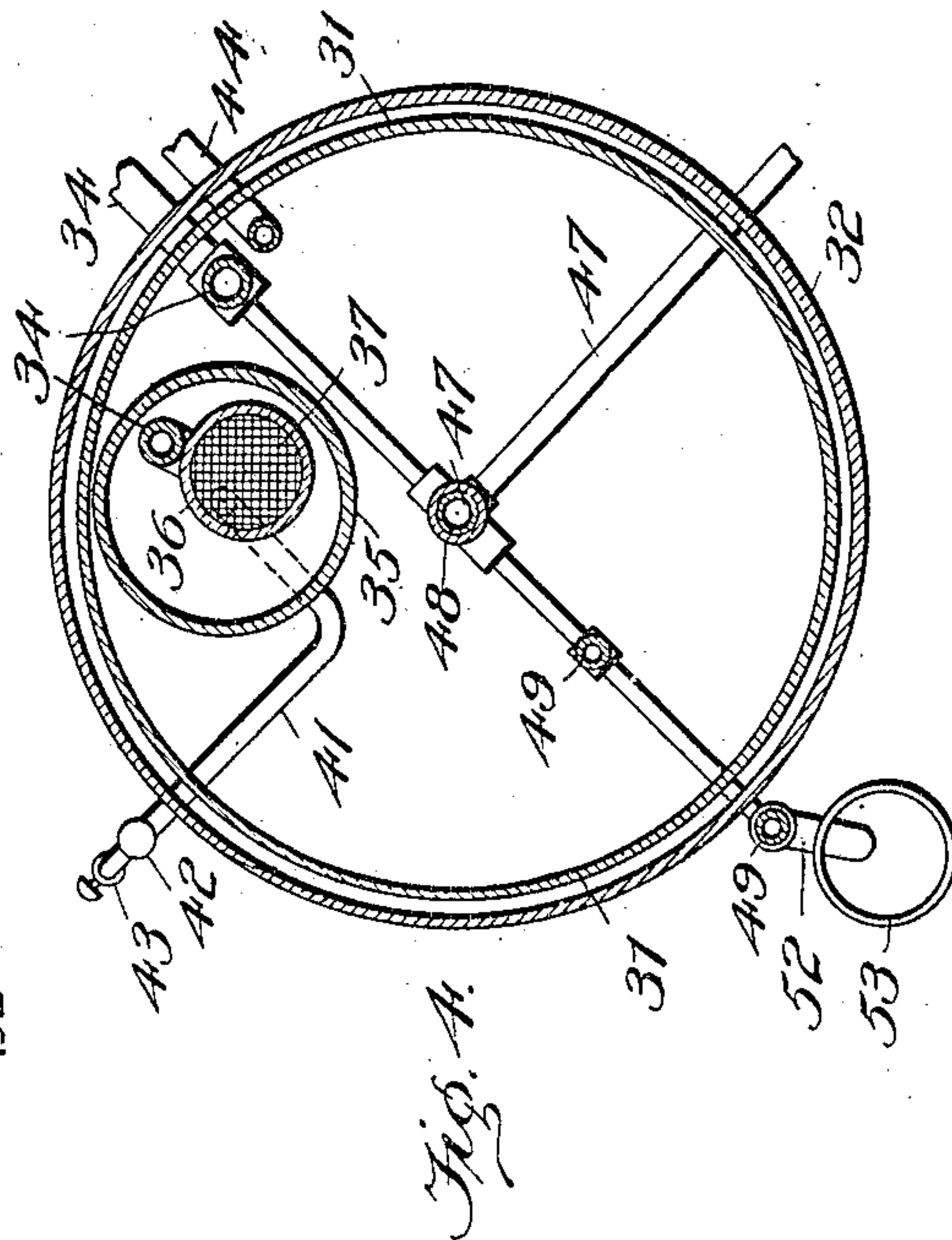
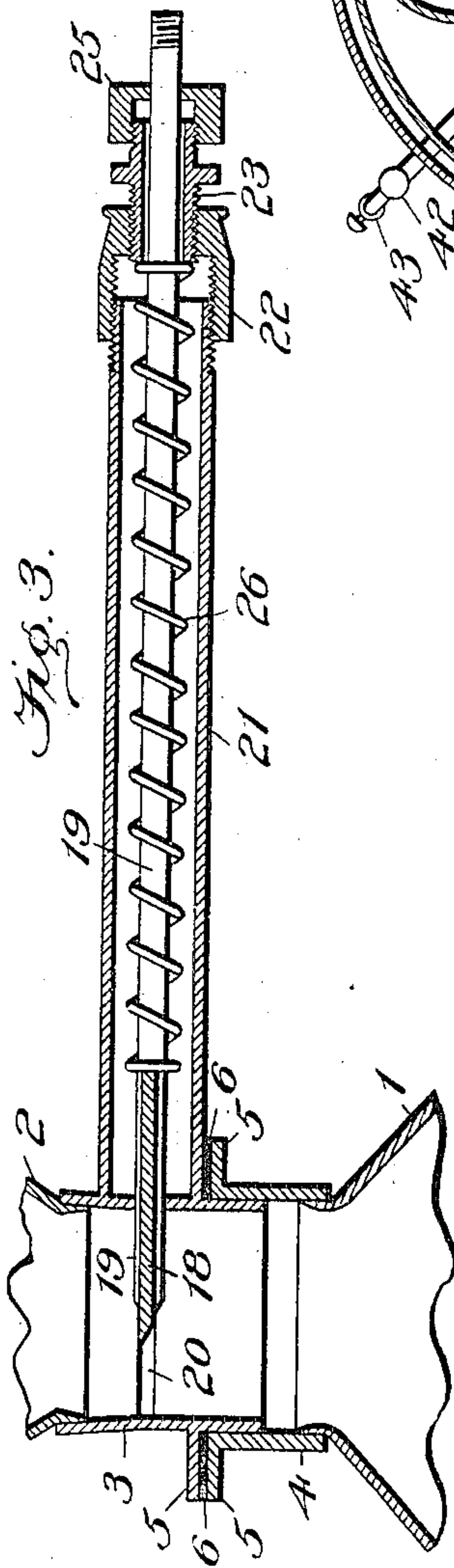
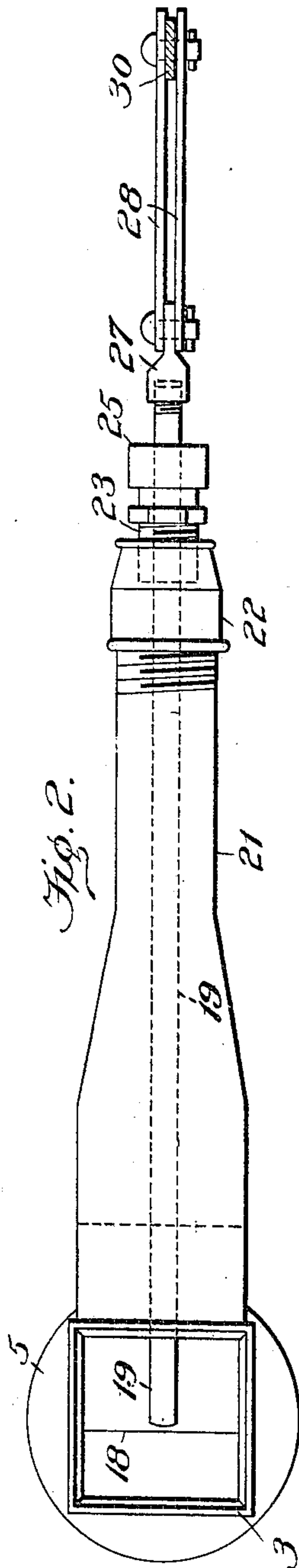
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By A. D. Jackson,
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UNITED STATES PATENT OFFICE.

LEANDER H. LITTLE, OF FORT WORTH, TEXAS, ASSIGNOR TO AMERICAN
ACETYLENE GAS LIGHT COMPANY, A CORPORATION OF TEXAS.

ACETYLENE-GAS GENERATOR.

No. 831,560.

Specification of Letters Patent.

Patented Sept. 25, 1906.

Application filed February 13, 1906. Serial No. 300,870.

To all whom it may concern:

Be it known that I, LEANDER H. LITTLE, a citizen of the United States, residing at Fort Worth, Texas, have invented certain new and useful Improvements in Acetylene-Gas Generators, of which the following is a specification.

This invention relates to gas-generators, and more particularly to machines for feeding carbid into water and for collecting the gas generated therefrom into suitable vessels for distribution; and the object is to provide a machine which will automatically feed carbid and which is provided with suitable vessels in which the gas is generated and suitable vessels in which the gas is collected and to equip the machine with safety devices for preventing explosions.

One of the advantages of machines constructed in accordance with this invention is that a gas-bell is provided which is capable of rising and falling two or three feet or more, and yet feeding devices are provided which will be operated so perfectly and automatically by the movement of the gas-bell that the rise and fall of the gas-bell will be very little, if any, more than one inch. The advantage of this is that the lights furnished by the gas will be steady and of uniform strength.

Other objects and advantages will be fully explained in the following description, and the invention will be more particularly pointed out in the claims.

Reference is had to the accompanying drawings, which form a part of this application and specification.

Figure 1 is a side elevation of the complete machine. Fig. 2 is a plan view of the improved feeder. Fig. 3 is a vertical section of the same. Fig. 4 is a horizontal section of the gas-bell along the line *x x* of Fig. 1.

Similar characters of reference are used to indicate the same parts throughout the several views.

This invention is provided with a generating-tank 1, called herein the "generator." A carbid-receptacle 2 is mounted above the generator 1 and connected thereto by a coupling composed of a male part 3 and a female part 4, each part having horizontal flanges 5, with suitable packing 6 placed between the flanges. The carbid-holder 2 is provided with a glass 7, through which the carbid can

be seen. Carbid may be placed in the receptacle through a screw-capped orifice 7. Water may be poured in the tank 1 through a hopper 8, which is mounted on a pipe 9, which projects down in the tank or generator 1 near the bottom thereof. The pipe 9 is provided with a cut-off cock 10. Water may also be placed in the generator 1 through a pipe 11, which is provided with a cap 12. The pipe 11 may be connected with a pipe from the water-supply source. The generator 1 is provided with a gage-cock 13, located at the water-line of the generator. Water is run into the generator, and the cock 13 is left open. As soon as water commences to run out of the cock 13 the cock is closed. Means are provided for cleaning spent carbid out of the generator. An ordinary faucet 14 is connected in the generator at the bottom thereof. A rod 15 for stirring the spent carbid is on the bottom of the generator. This rod projects through the upper part of the generator down to the bottom of the generator and is bent at right angle, so that it will sweep about the bottom of the generator. A seal is provided, which consists of a pipe 16, having a funnel-shaped top 17, and which enters the upper part of the generator and projects far below the water-line.

Means are provided for feeding the carbid to the generator. A horizontal cut-off 18 operates in the coupling 3. The slide or cut-off 18 is carried by a rod 19, and the cut-off operates in grooves 20 at the sides thereof in the coupling 3. The slide and the rod 19 may be called the "feeder." The rod 19 is partly inclosed by a casing 21, which is provided with a reducer 22. A spring-seat 23 is screwed into the reducer 22, and a packing box or gland 25 is screwed on the spring-seat 23. A spiral spring 26 is mounted on the rod 19 and operates to hold the feeder in a closed position and to force the feeder to cut through the carbid to stop the carbid from falling through the couplings into the water in the generator. The spring 26 presses against the seat 23 at one end and against the rear edge of the blade 18 at the other end. The seat 23 may be screwed farther in or farther out of the reducer 22 to regulate the tension of the spring 19. A coupling 27 is screwed on the end of rod 19 for making connection with the links 28. The casing 21 is made rigid by the brace 29, which may be soldered to the casing

21 and to the carbid-receptacle 2. The feeder is operated by a lever 30, hereinafter explained.

Means are provided for collecting and storing the gas as it is generated. A gas-bell 31 is mounted in a tank of water 32. The gas-bell rises and falls in the tank 32. The generator 1 is provided with a funnel-shaped discharge 33. The object of this particularly-described discharge is that there may be a large escape for the gas to prevent explosions if too much carbid should be fed to the water in the generator 1. The discharge 33 connects with a large pipe 34, which conducts the gas to the tank 32 and up within the bell 31 and then down in the gasoline-tank 35. The tank 35 is used to purify the gas and gasoline, or some suitable liquid is placed in the tank 35 to purify the gas by retaining therein the incombustible matter that may be carried by the gas. A smaller vessel 36 is placed within the tank 35 for the purpose of disintegrating the particles of gas as they come from the generator, so that the gas will be thoroughly washed or purified. Horizontal partitions 37, of meshed wire, are placed in the vessel 36, so that the gas must rise up through the mesh of the wire and be broken into small pieces or particles. The gas rises up through the gasoline and passes up within the bell 31. The tank 32 is provided with a drain-cock 38. The gasoline vessel 36 is filled by means of a pipe 39, inserted in the gas-bell. This pipe is closed by a cap 40 when not in use for filling the gasoline vessel. A gage-pipe 41 is provided for determining when the gasoline vessel is full or has sufficient gasoline therein. This pipe is connected with the bottom of the vessel 35, and after extending out of the lower part of the tank 32 is bent up, extended as high as the vessel 35, and provided with a cap 42. The cap 42 is left off while the vessel 35 is being filled, and when the gasoline rises to the top of the pipe 41 this indicates that the vessel 35 is full. The cap 42 can then be screwed on. The gasoline may be drawn out of the vessel 35 by means of a cock 43, connected with the pipe 41. The gas may be siphoned back into the generator from the gas-bell by means of a pipe 44, which projects above the water-line in the gas-bell and leaves the gas-bell below the bottom rim thereof and extends out of the tank 32 and connects with the pipe 34. The pipe 44 is provided with a cut-off valve 45, which normally closes the pipe 44. If the gas-bell is full of gas, the water in the generator 1 may be drawn out and the cock or valve 45 opened. The gas in the bell will pass back to the generator under these conditions. The pipe 34 is provided with a pet-cock 46 for drawing out any water that may accumulate in the pipe 34. The gas-bell is provided with a safety-valve or blow-off consisting of a pipe 47, which projects far above

the water-line in the gas-bell and extends out of the tank 32. The gas-bell 31 carries a pipe 48, attached to the highest part of the interior thereof and telescopes over the pipe 47 and extends far below the water-line in the gas-bell. If the gas-bell rises high enough to draw the pipe 48 out of the water, gas will escape down the pipe 47 until the pipe 48 again goes down into the water. The gas may be taken from the gas-bell by means of a pipe 49, which leaves the gas-bell below the bottom thereof and leaves the tank 32 and extends up to the drier 50, from which it may be carried away by the pipe 51. Another safety-valve is provided, and this consists of a pipe 52, which is connected with the pipe 49 and extends near the bottom of tank 53 of water.

The lever 30 is actuated by the fall of the gas-bell 31. When the gas-bell descends, it will pull on the lever 30 by reason of the chain 54, which is connected to the lever and to the gas-bell. The lever 30 has a jointed arm 55, which will break upward, but not downward. When the gas-bell pulls on the lever 30, the lever draws plunger-rod 19 against the tension of the spring 26, and thus opens the cut-off valve 18. When the bell ceases to pull on the lever 30, the spring 19 will close the valve 18. Whenever the gas-bell causes the valve 18 to be opened, carbid will fall into the water in generator 1 and gas will be generated immediately, and the gas will cause the gas-bell to rise, so that the spring 26 will close the cut-off valve 18. The lever 30 is jointed, so that if the gas-bell should come in contact with the lever it would not break the lever. The lever would simply break upward and would resume its normal position, when the bell should go down.

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

1. A gas-machine provided with a gas-generator, a gas-bell, and suitable pipes connecting said generator and the bell; a carbid-holder having a discharge into said generator, a valve intercepting said discharge, a casing projecting from said discharge, a horizontally-acting plunger traversing said casing and carrying said valve and projecting out of said casing, means for sealing the passage of said plunger through said casing, a spiral spring mounted on said plunger and acting normally to close said valve, and a lever having a link connection with said plunger and capable of being actuated by said gas-bell to open said valve.

2. A gas-machine having a gas-generator, a gas-bell, a pipe for conveying gas from said generator within said gas-bell, a carbid-holder having a discharge at the lower part thereof into said generator, a valve consisting of a blade intercepting said discharge, said discharge having grooves for the edges of said

blade, a plunger-rod carrying said blade, a casing for said blade and said plunger projecting from said discharge, a spring-seat mounted loosely on said rod and screwed into said casing, a spiral spring mounted on said rod between said seat and said blade and acting to cause said valve to close the passage through said discharge, links pivotally connected to said plunger-rod, and a lever pivotally connected to said links and adapted to be operated by said gas-bell.

3. In a gas-machine, a generator containing water, a gas-bell, a carbid-receptacle, a coupling uniting said receptacle with said generator, a valve intercepting said coupling, a horizontally-operated plunger carrying said valve, a pipe connected to said generator and to said gas-bell, and a lever fulcrumed on said pipe and pivotally connected to said plunger and capable of being actuated by said gas-bell to open said valve.

4. In a gas-machine, a generator containing water, a gas-bell, and means for feeding

carbid to said generator consisting of a carbid-receptacle, a coupling uniting said receptacle and said generator, a valve intercepting said coupling, said valve consisting of a blade operating in grooves in the sides of said coupling and a plunger, a spring mounted on said plunger and operating to hold said valve normally closed, a casing for said plunger and spring projecting from said coupling, a brace engaging said casing and said carbid-receptacle, a pipe connecting said generator and gas-bell, links connected to said plunger pivotally, and a lever fulcrumed on said pipe and pivotally connected to said links and capable of being actuated by said gas-bell to open said valve.

In testimony whereof I set my hand, in the presence of two witnesses, this 23d day of January, 1906.

LEANDER H. LITTLE.

Witnesses:

A. D. JACKSON,
J. W. STITT.