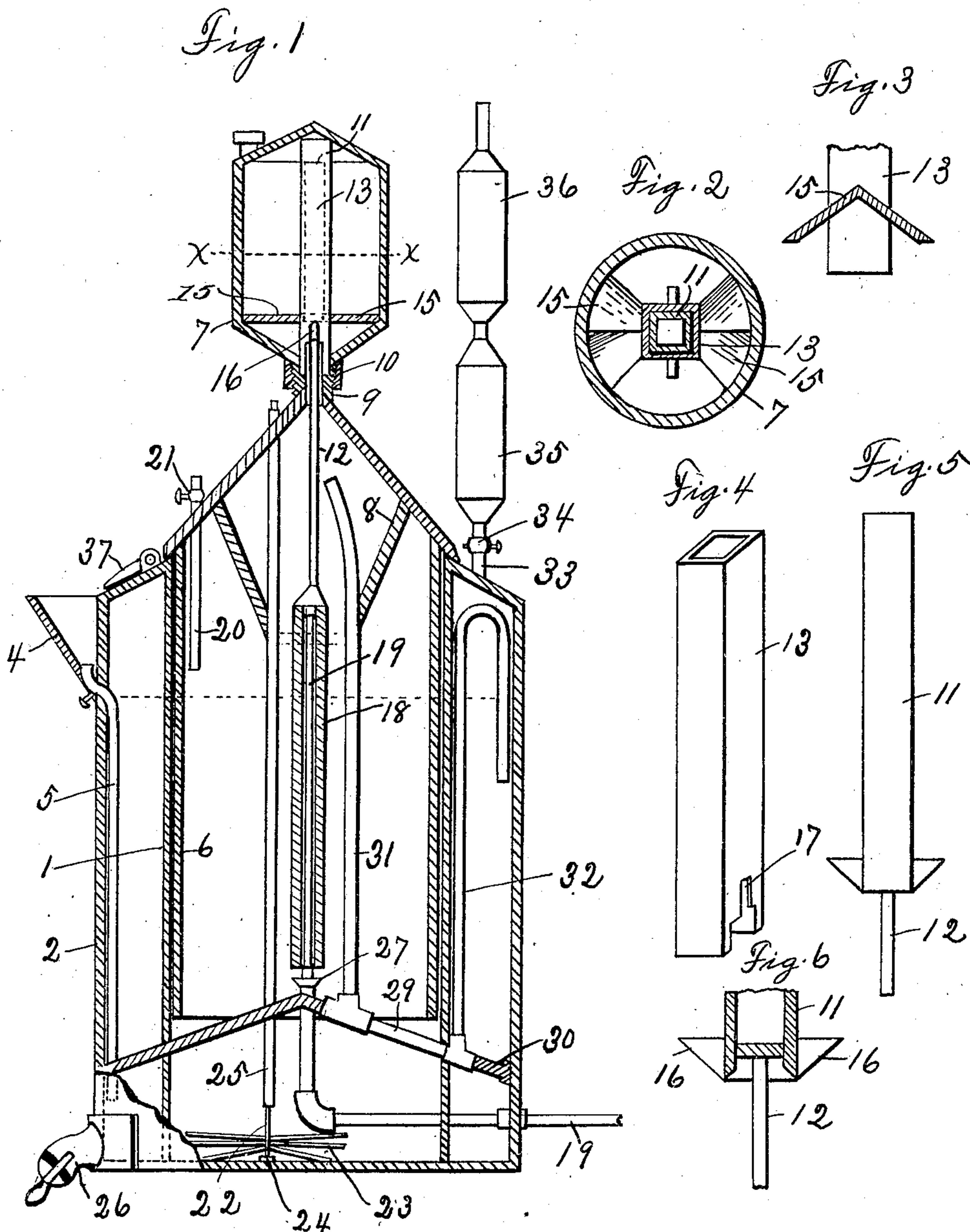


No. 832,521.

PATENTED OCT. 2, 1906.

J. W. WOODSON.
ACETYLENE GAS GENERATOR.
APPLICATION FILED MAR. 9, 1906.



Witnesses:-

Bruno Lorkowski
J. W. Pitt.

Inventor,

J. W. Woodson,
By A. L. Jackson,
Attorney.

UNITED STATES PATENT OFFICE.

JACOB W. WOODSON, OF FORT WORTH, TEXAS.

ACETYLENE-GAS GENERATOR.

No. 832,521.

Specification of Letters Patent.

Patented Oct. 2, 1906.

Application filed March 9, 1906. Serial No. 305,127.

To all whom it may concern:

Be it known that I, JACOB W. WOODSON, a citizen of the United States, residing at Fort Worth, in the county of Tarrant and State of Texas, have invented a new and Improved Acetylene-Gas Generator, of which the following is a specification.

My invention relates to gas-generators, and more particularly to gas-machines for making acetylene-gas; and the object is to construct or produce machines which will be perfectly automatic in action and which may be protected with non-freezing fluids and which are to be provided with brakes to prevent the water from being thrown in the upper part of the machine when the machine is used on a railway-train or on a steamer or ship.

Another advantage is that the machine is made with all the different parts in a compact inclosure, whereby less pipes are required.

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 vertical section of the carbid-hopper, the generator, the gas-bell, and the surrounding jacket for containing a non-freezing fluid. Fig. 2 is a horizontal section of the carbid-hopper, taken along the line xx of Fig. 1. Fig. 3 is a broken sectional view showing the means for shifting the carbid. Fig. 4 is a perspective view of the casing for the vertically-operated valve. Fig. 5 is a side elevation of the valve which operates in the casing shown in Fig. 4. Fig. 6 is a broken sectional view illustrating the construction of the lower part of the valve.

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

This invention is an improvement on the invention shown in the application filed by me on the 1st day of February, 1906, Serial No. 299,012.

The present or herein-described machine has a generator 1, which is surrounded with a tank 2, which forms a jacket for the generator 1 and in which is to be placed a non-freezing fluid, such as crude petroleum. The petroleum may be supplied to the tank 2 through the hopper 4 and pipe 5. The gas-

bell 6 is mounted in the generator 1. The water which is placed in the generator 1 serves to form a seal for the gas-bell. The gas will be collected in the jacket or tank 2 above the non-freezing fluid. The tank 2 serves also as a means for cooling the gas. The carbid-hopper 7 is carried by the gas-bell 6. A water-brake 8, funnel-shaped, is attached to the upper interior part of the gas-bell to prevent the water from being thrown up within the carbid-hopper. This water-brake is preferably made of porcelain or like material, so that the carbid will not cling to the water-brake. A brass casting 9 is attached to the upper part of the gas-bell, and a brass casting 10 is attached to the carbid-hopper 7. The casting 9 is screwed into the casting 10, and throat or passage is formed through the casting 9. The feeding of the carbid is controlled by a valve 11, which is actuated by a plunger-rod 12. A casing 13 is mounted in the carbid-hopper to protect the valve 11 and permit freedom of movement of said valve. The plunger-rod 12 is not actuated except when the gas-bell falls. Means are provided for the shifting of the carbid in the hopper 7, so that it will be readily fed through the neck or discharge from the hopper. The casing 13 has cutouts in the sides thereof for the passage of carbid. Sheds or shifters 15 are attached to the casing 13, and thus direct the carbid to the sides of the casing, so that the carbid will pass through the openings 14. The valve 11 carries breakers 16, which cut through the carbid and keep the carbid from blocking the passage through the casing 13. The breakers keep the carbid agitated. Slots 17 are formed in the sides of the casing 13 for the breakers 16 to move upward and downward. When the gas-bell rises, the valve 11 will cut off the flow of carbid by coming in contact with the casting 9, and thus closing the cutouts 14. A pipe 18 is attached to the plunger-rod and telescopes on a pipe 19, which serves as a safety-valve for the machine. If the gas-bell should rise high enough to draw the bottom of the pipe 18 above the water-line, gas would escape through the pipe 19 to the atmosphere, and thus prevent an explosion by an excessive accumulation of gas. If air should accumulate in the gas-bell, it may be drawn out to some extent through a pipe 20, which is provided with a cut-off valve 21. The gas is lighter than air so that the air can be drawn out without the loss of much gas. A rod 22

is provided for agitating the spent carbid on the bottom of the generator 1. The rod 22 carries a plurality of stirrers 23. The rod may be connected to the bottom of the generator 1 by a swivel 24. A water seal is provided for the rod 22, which consists of the pipe 25, which is attached to the gas-bell 6. The pipe 25 extends far enough below the water-line to prevent the escape of gas when the gas-bell rises. The rod 22 can be agitated only when the gas-bell is down. The spent carbid may be drawn out through the faucet 26.

A trip for the valve is provided for the valve 11. This trip 27 may be attached to the pipe 19. When the pipe 18 comes far enough down, it will strike the trip 27, and thus raise the valve 11 so that carbid will be fed to the generator. Gas will be generated and the gas-bell will immediately rise, so that the valve 11 will cut off the flow of carbid. A charge of carbid will be obtained every time the bell comes low enough for the pipe 18 to strike the trip 27. The pipe 19 may be braced by the support 28, which braces from one side, and on the other side by the pipe 29, which is itself braced by the bar 30. Gas escapes from the gas-bell by means of the pipe 31, which is bent toward the center of the gas-bell at the top, so that the water-brake 8 will not strike the top of the pipe. Pipe 31 connects with pipe 29, and a pipe 32 connects with the pipe 29 and extends upward and then downward below the surface of the antifreezing fluid in the tank 2. The gas will escape upward through this fluid and accumulate in the upper part of the tank 2. The gas for use is taken from the tank 2 through a pipe 33, which is provided with a cut-off valve 34. The pipe 32 connects with a purifier 35, which contains sponges. The purifier 35 is connected to a purifier 36, which contains cotton wool. These purifiers dry and strain and purify the gas.

Means are provided for holding the gas-bell up when it is desirable that no gas be generated. Locks 37 are pivoted to the top of the tank 2. These locks may be swung upward and made to catch under the rim of the gas-bell.

Various changes may be made in the construction of the machine herein described without departing from my invention.

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

1. A gas-machine having a generator, a gas-bell mounted in said generator; a carbid-hopper having communication with said gas-

bell and carried by said gas-bell, a valve capable of closing said communication, a rod for actuating said valve, a blow-off pipe extending above the water-line in said generator and out of said generator and a pipe telescoping on the last-named pipe and attached to said actuating-rod, and a tripping device to arrest the downward motion of said last-named pipe.

2. A gas-generator comprising a generating-chamber containing water, a carbid-receptacle mounted on said chamber, a gas-bell mounted in said chamber, and means for feeding carbid to said generating-chamber from said carbid-receptacle consisting of a plunger actuated within said chamber by the movement of said gas-bell, a guide for said plunger having recesses in two sides thereof for the passage of carbid and capable of being closed by said plunger, and blades carried by said plunger and moving in said recesses for breaking carbid that may be caked about said passage.

3. A gas-generator comprising a generating-chamber containing water, a carbid-receptacle mounted above said chamber and in communication therewith, means for collecting the gas from said chamber for use, and means for feeding carbid from said carbid-receptacle to said chamber consisting of a plunger, means for actuating said plunger, a guide for said plunger within said carbid-receptacle and having recesses in two sides thereof for the passage of carbid, said plunger serving to close said recesses to cut off the flow of carbid, blades carried by said plunger and moving in said recesses for breaking carbid about the lower part of said carbid-receptacle, and shifters for directing carbid to the sides of said guide to be fed through said recesses.

4. In a gas-machine provided with a generator, a gas-bell for receiving gas from said generator, and a carbid-receptacle; a carbid-feeder comprising a plunger, a guide for said plunger attached to the upper and lower parts of said carbid-receptacle and provided with recesses in the lower part thereof for the passage of carbid, blades carried by said plunger, said guide having slots for the movement of said blades, means for actuating said plunger, and a shifter for directing the carbid to the recesses in the sides of said guide.

In testimony whereof I set my hand, in the presence of two witnesses, this 21st day of February, 1906.

JACOB W. WOODSON.

Witnesses:

A. L. JACKSON,
J. W. STITT.