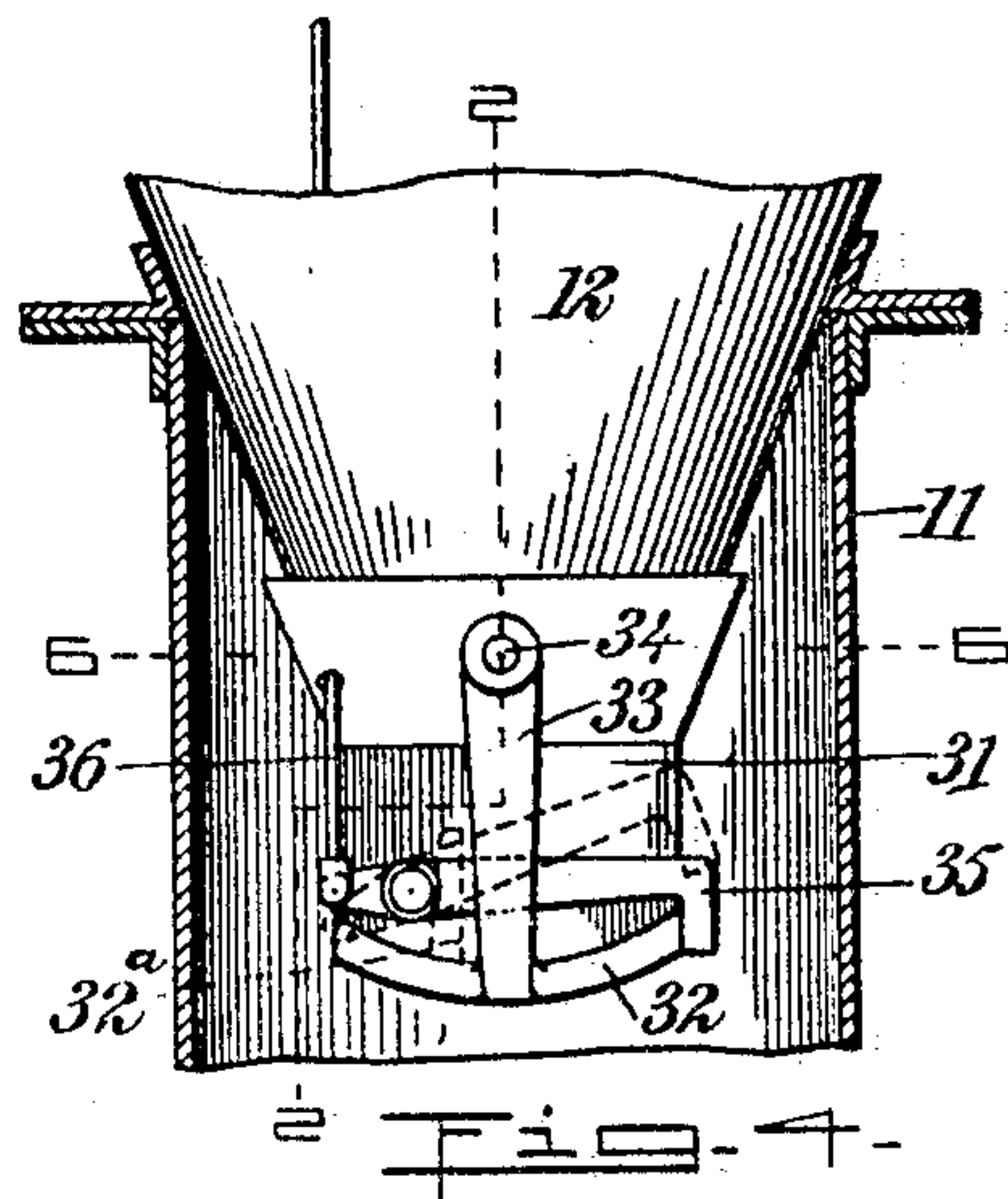
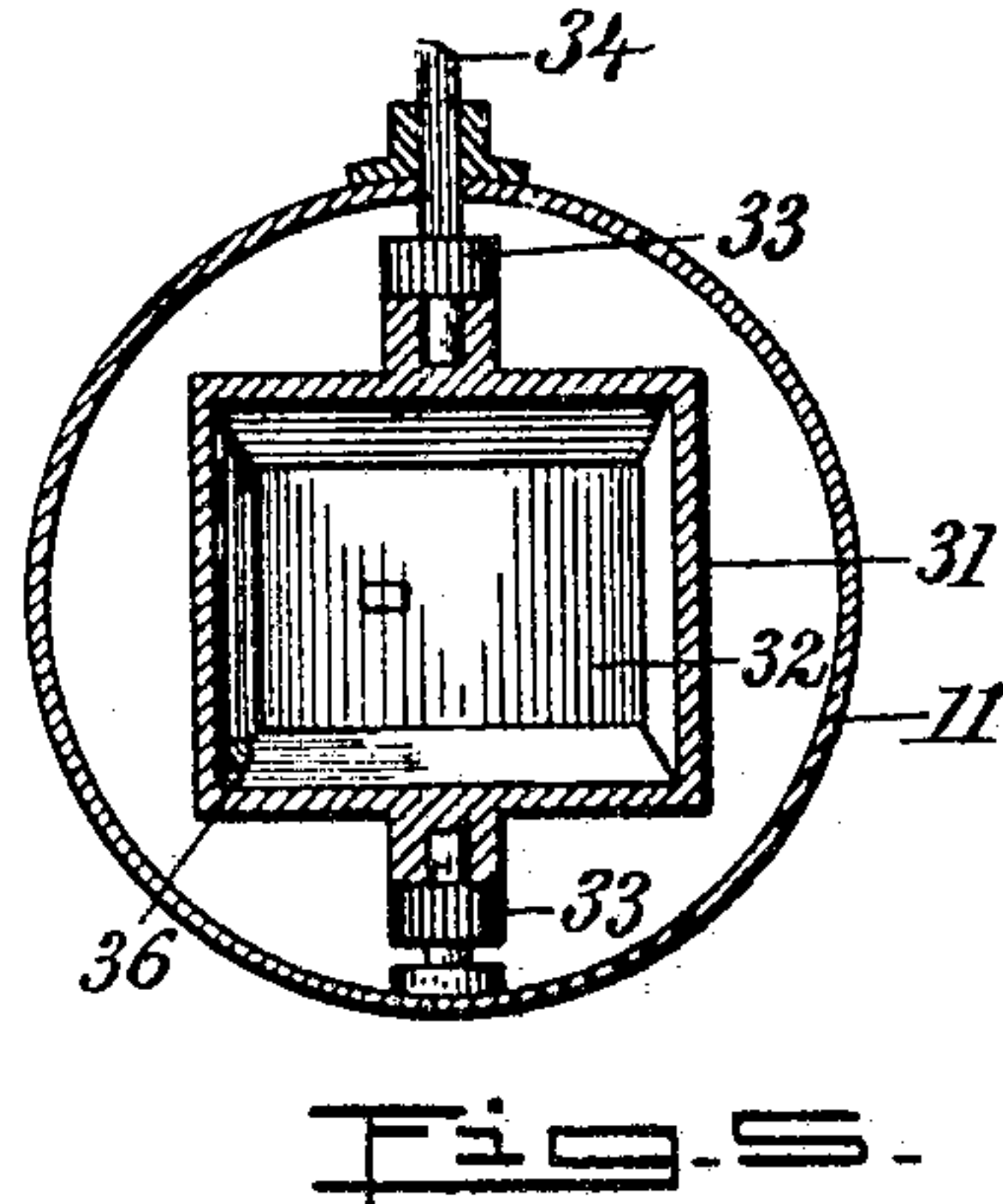
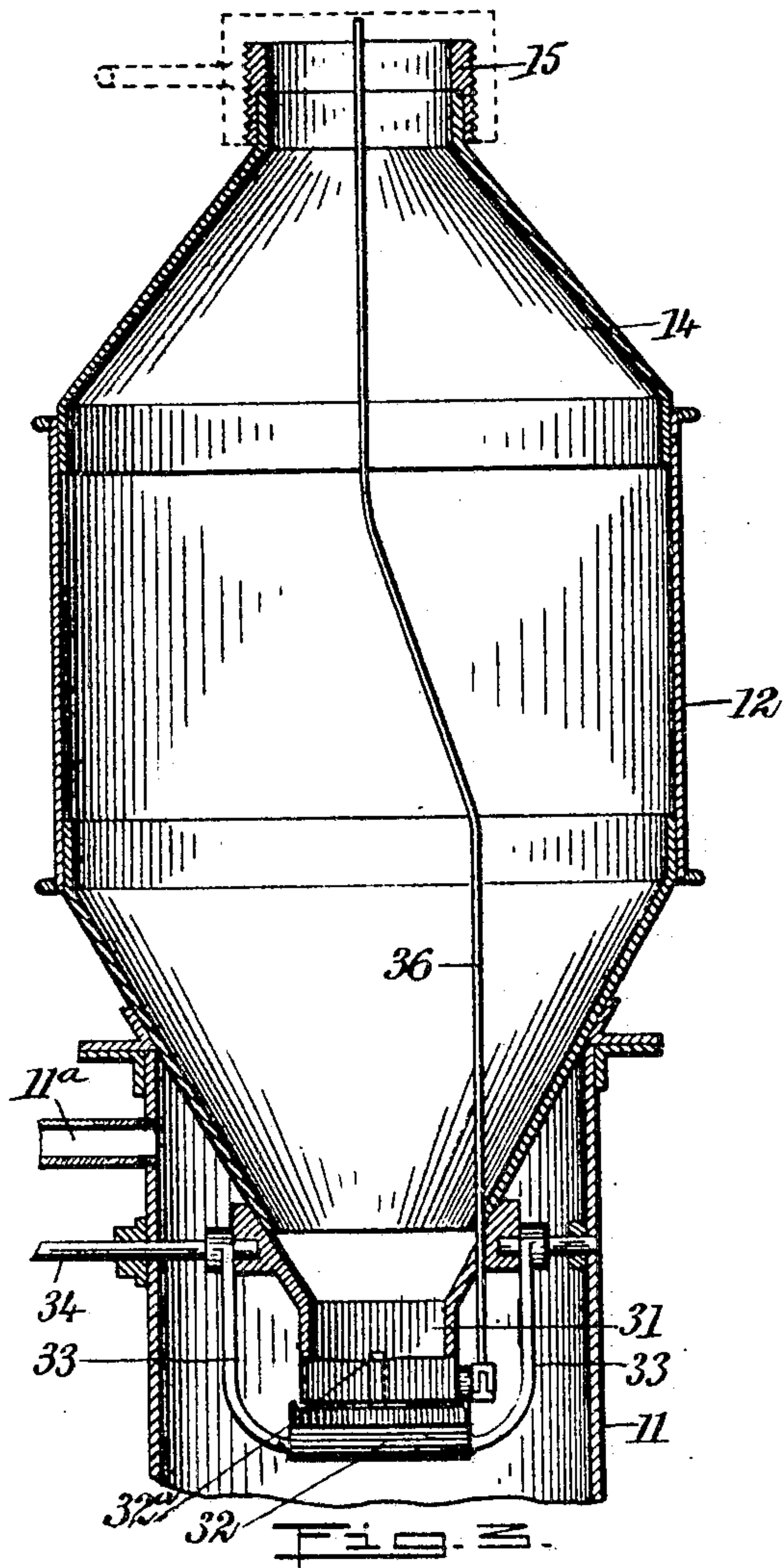


No. 798,821.

PATENTED SEPT. 5, 1905.

E. M. MCGEE.
ACETYLENE GAS GENERATOR.
APPLICATION FILED SEPT. 9, 1904.

2 SHEETS—SHEET 2.



WITNESSES:
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UNITED STATES PATENT OFFICE.

EDWIN MILLER McGEE, OF YANKTON, SOUTH DAKOTA, ASSIGNOR OF SIXTY-TWO ONE-HUNDREDTHS TO JOSEPH J. WAGNER AND CHARLES CASHMAN, OF YANKTON, SOUTH DAKOTA.

ACETYLENE-GAS GENERATOR.

No. 798,821.

Specification of Letters Patent.

Patented Sept. 5, 1905.

Application filed September 9, 1904. Serial No. 223,871.

To all whom it may concern:

Be it known that I, EDWIN MILLER McGEE, a citizen of the United States, and a resident of Yankton, in the county of Yankton and State of South Dakota, have invented a new and Improved Acetylene-Generator, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in acetylene-gas generators providing for a reliable automatic carbid-supply and insuring automatically closing the various valves in communication when the carbid-chamber is open to replenish the charge.

Various other features of major and minor importance are involved and all will be fully set forth hereinafter.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the complete apparatus. Fig. 2 is an end elevation of the same with parts broken away. Fig. 3 is an enlarged section showing the carbid chamber and the valve. Fig. 4 is a side elevation of the carbid-valve and the adjacent parts, and Fig. 5 is a detail section on the line 6 6 of Fig. 4.

10 indicates the water-chamber, having a neck 11, on the upper end of which is mounted the carbid-chamber 12. Said chamber is provided with a closure 14 to permit filling the same and with a screw-cap 15, surmounting the closure.

16 indicates the gas-holder, which communicates with the neck 11 by a gas-conveying pipe 11".

17 indicates a vent-pipe from the chamber 10 to the atmosphere by way of the pipe 17", with which latter pipe the pipe 17 communicates in any desired manner. This pipe 17 is commanded by a valve 18.

19 indicates the pipe for filling the chamber 10 with water. This pipe is provided with a valve 20.

The valves 18 and 20 are connected by a stem 21, provided with an arm or handle 22 to facilitate the operation of the valves and by means of which the valves 18 and 20 may be simultaneously opened or closed.

23 indicates a funnel or receiver, so as to facilitate pouring of the water into the pipe 19.

The arm or handle 22 is embraced by a loop 24 on a rod 25, so that upon the operation of the handle the rod is moved up or down. Said rod is provided at its lower end with an offset 25", engaging the handle of a valve 26, which is intended to permit withdrawing the water and the residuum from the chamber 10. By means of the rod 25 and the connections as shown the handle 22 is moved to operate the valves 18 and 20, and the offset 25" serves when the valves 18 and 20 are closed to hold the valve 26 against opening movement. When, however, the valves 18 and 20 are open and the rod 25 raised, the valve 26 may be opened manually. The rod 25 extends upward and is provided with an inwardly-directed horizontal bend 27, passing over the top of the chamber 10, and from this point the rod again extends vertically through a suitable guide 28 to a point level with the carbid-chamber 12, where the upper extremity is bent inward and downward, as indicated at 29, so as to engage the closure 14 of the carbid-chamber.

30 indicates a handle connected to the cap 15 and adapted to facilitate screwing and unscrewing the closure.

As best shown in Figs. 3, 4, and 5, the carbid-chamber 12 has a discharge-spout 31, commanded by a swinging valve 32. This valve is supported by swinging arms 33, suitably mounted in the neck 11 and one of which is connected to a rocking operating-shaft 34. 32" indicates an upward projection on the valve 32, which serves the double purpose of a stop to limit the valve movement and an agitator for the carbid. 35 indicates an intermediately-fulcrumed latch for holding the valve 32 in closed position. This latch has one arm longer than the other, and said longer arm drops into active position by force of gravity, as shown in Fig. 4. The short arm of the latch is connected with a rod 36, which extends up into the carbid-chamber, and when the cap 15 is in place the rod is pushed downward by the cap, thus lifting the long arm of the latch into inactive position and allowing the operation of the valve. When, however, the cap is removed, the latch automatically

drops into active position and further operation of the valve is prevented. The rocking operating-shaft 34 is mounted in the lower part of the carbid-chamber and in the neck 11 of the chamber 10, the shaft projecting beyond said neck and carrying two arms 37 and 38. Of the arms the arm 37 is engaged in a loop 39, formed on a feed-rod 40, and the arm 38 is designed to coact with a projecting arm or rod 41, carried by the rod 25. The feed-rod 40 is mounted to run in a guide 42, attached to the tank or holder 16, and is attached by a bracket 43 to the bell 44 of the gas-holder. When the bell 44 is in raised position, as shown by dotted lines in Fig. 2, the arms 37 and 38 will be thrown up, as the dotted lines illustrate, and the valve 32 will be moved into closed position, as shown in Fig. 4. Assuming, however, that the cap 15 is in place, the latch 35 will be kept raised in inactive position, and then as the gas is withdrawn from the holder and the bell 44 drops the downward movement of the feed-rod 40 and loop 39 will allow the arm 37 to drop into the position shown by full lines in Fig. 2, this arm then carrying with the arm 38 the shaft 34 and the connected valve, thus moving the valve to open position, as shown by full lines in Fig. 2. Carbid will then be fed from the chamber 12 into the tank or chamber 10 and gas will be generated in the usual manner. The gas passes out into the gas-holder through the pipe 11^a, again raising the bell and moving the valve into closed position. It is in this manner that the general operation of the gas manufacture is automatically carried on.

If it be desired to refill the carbid-chamber, the rod 25 should be lifted by the arm 22, thus allowing the closure 14 to be lifted manually from its position. This upward movement of the rod 25 and arm 22 throws the valves 18 and 20 to open the vent-pipe 17 from the chamber 10 to the atmosphere and to open the water-inlet pipe 19. Simultaneously the offset 25^a will disengage the valve 26 to permit the opening of the valve and the withdrawal of the water and residuum of previous operations from the chamber 10. Then the valve 26 should be closed and the tank 10 and carbid-chamber 12 refilled. After this the closure 15 may be placed in position, thus allowing the rod 25 to move downward and thereupon returning the arm 22 and valves 18 and 20 to their normal positions. It will be observed that this downward movement of the rod 25 does not necessarily open the valve 32, the opening of this valve being controlled by the feed-rod 40. The upward movement of the rod 25, however, necessarily lifts the arm 38 and through the same closes the carbid-valve.

Various changes in the form, proportions, and minor details of my invention may be resorted to without departing from the spirit

and scope thereof. I consider myself entitled to all such variations as may lie within the scope of my claims.

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

1. In an acetylene-generator, the combination of a carbid-chamber having a closure, a carbid-valve, a rocking shaft on which the valve is mounted, means for automatically operating the valve through the medium of the rocking shaft, an arm on the rocking shaft, a movable rod having a part engaging the arm, said rod being in engagement with the closure of the carbid-chamber for the purpose specified, a latch for the valve, and a member in connection with the latch, said member being also engaged by the closure of the carbid-chamber.

2. An acetylene-generator having a water-chamber, a carbid-chamber having a closure, means forming a vent from the water-chamber, a valve controlling said vent, a valve-controlled water-inlet to the water-chamber, a valve-controlled outlet from the water-chamber, a swinging arm having connection with the vent and inlet valves, and a rod engaging the carbid-chamber closure, said rod having connection with said arm and being normally engaged with the outlet-valve for the purpose specified.

3. An acetylene-generator having a water-chamber, a carbid-chamber having a closure, means forming a vent from the water-chamber, a valve controlling said vent, a valve-controlled water-inlet to the water-chamber, a valve-controlled outlet from the water-chamber, a rock-shaft having connection with the vent and inlet valves, an arm attached to said rock-shaft, and a rod engaging the carbid-chamber closure, said rod having a loop therein receiving the arm, and the rod having a part normally engaged with the outlet-valve for the purpose specified.

4. An acetylene-generator having a carbid-chamber, a valve commanding the outlet therefrom, a latch mounted adjacent to said valve by a pivot lying intermediate the ends of the latch, one end of the latch coacting with the valve, a rod in connection with the other end of the latch, and a closure for the carbid-chamber adapted normally to engage the rod whereby to hold the latch inactive during the time that the closure is in position.

5. In an acetylene-generator, the combination of a carbid-chamber, a valve commanding the outlet therefrom, a latch coacting with the valve, a rod in connection with the valve and extending upward through the carbid-chamber, and a closure for the carbid-chamber adapted to engage the rod when the closure is in place to hold the valve inactive.

6. In an acetylene-generator, the combination of a carbid-chamber, a valve commanding the outlet therefrom, a latch coacting with

the valve, a closure for the carbid-chamber, and a part connected to the latch and adapted to be engaged by said closure when the closure is in position whereby to hold the latch inactive.

5 7. In an acetylene-generator, the combination with the water-chamber and carbid-chamber, of a valve controlling the carbid discharge, a rock-shaft connected with the valve, 10 a swinging arm attached to the rock-shaft, a rod having a pin bearing against said arm, and a closure for the carbid-chamber normally engaged by the rod, whereby to move the closure the rod must be moved to close 15 the valve.

8. In an acetylene-generator, the combination with the water-chamber and carbid-chamber, of a closure for the carbid-chamber, a valve commanding the carbid discharge, an operating device in connection with the valve, a gas-holder, means operated by the gas-holder for actuating said operating device, a valve controlling a vent from the water-chamber, a valve controlling a water-inlet to the water-chamber, 20 a valve controlling an outlet from the water-chamber, and a rod normally engaged with the carbid-closure and having connection with the

operating device for the carbid valve, said rod coacting with the vent inlet and outlet valves of the water-chamber for the purpose specified. 30

9. In an acetylene-generator, the combination with the water-chamber and carbid-chamber, of a closure for the carbid-chamber, a valve commanding the carbid discharge, an operating device in connection with the valve, 35 a valve controlling a vent from the water-chamber, a valve controlling a water-inlet to the water-chamber, a valve controlling an outlet from the water-chamber, a rod normally engaged with the carbid-closure and 40 having connection with the operating device for the carbid-valve, said rod coacting with the vent inlet and outlet valves of the water-chamber for the purpose specified, a latch coacting with the carbid-valve, and a rod in 45 connection with the latch and normally engaged by the carbid-chamber closure.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWIN MILLER MCGEE.

Witnesses:

THOMAS EDWARDS,
K. E. SMITH.