

(No Model.)

O. REASONER.  
GAS SEPARATOR OR PURIFIER.

No. 495,059.

Patented Apr. 11, 1893.

Fig. 1.

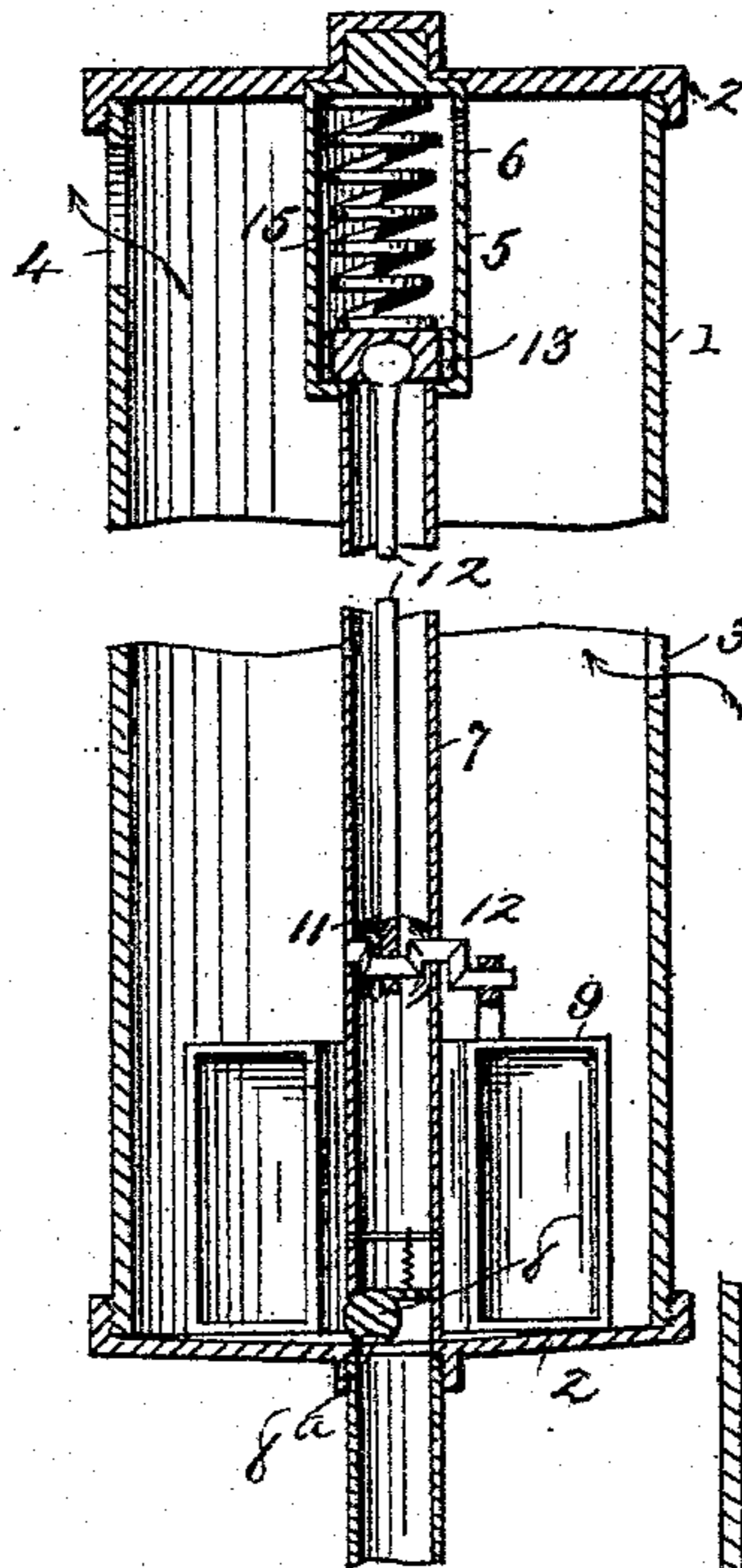


Fig. 2.

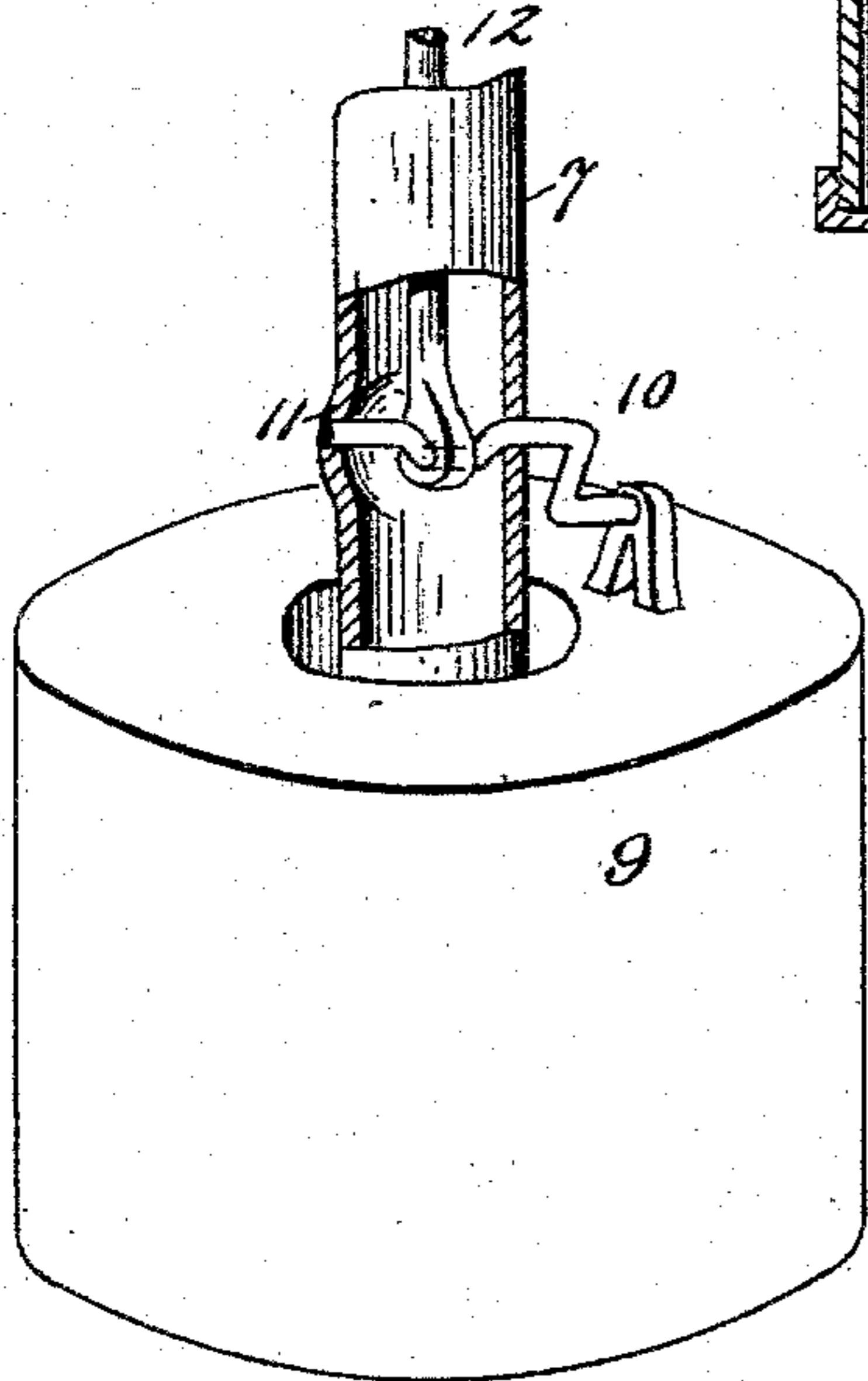


Fig. 3.

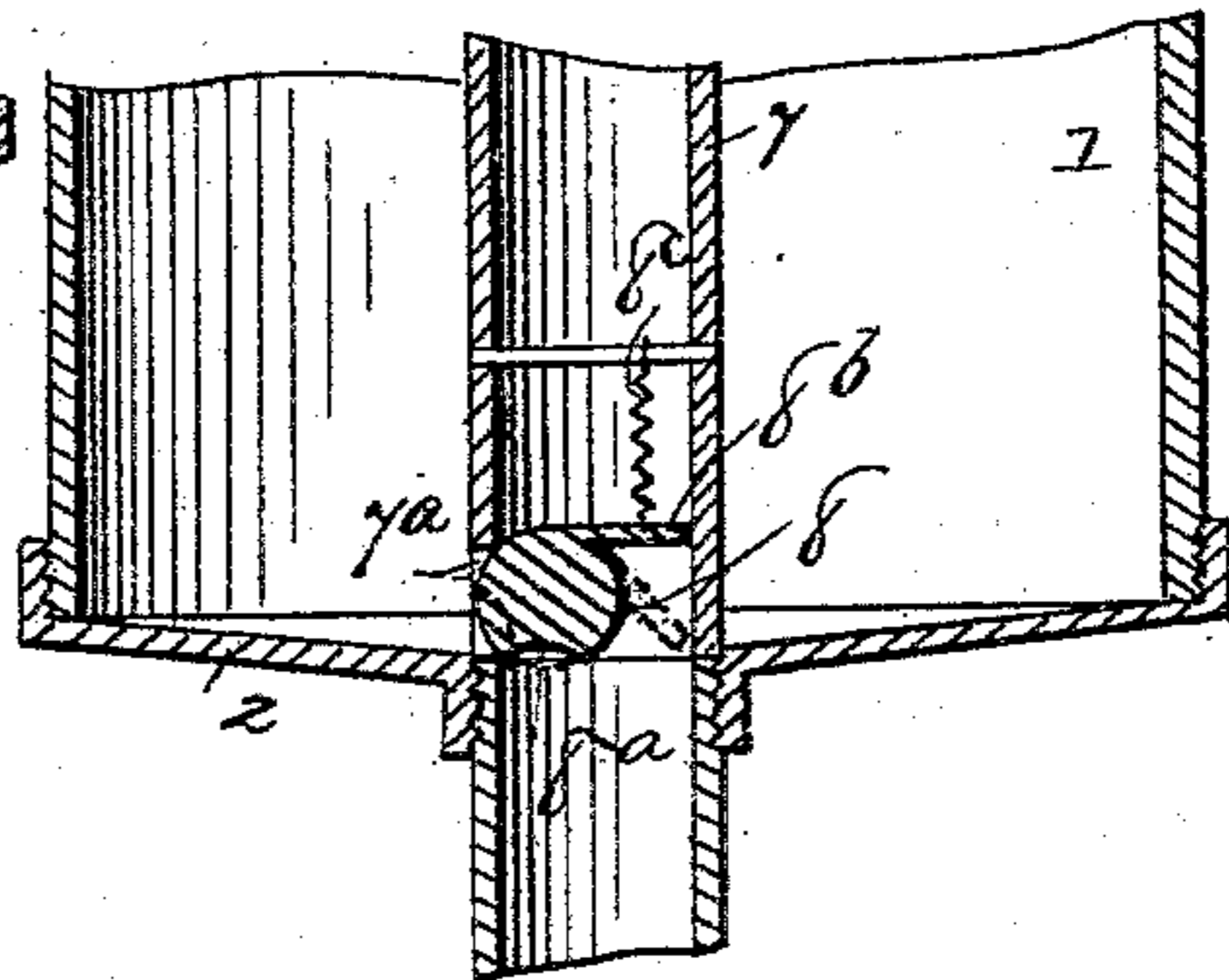
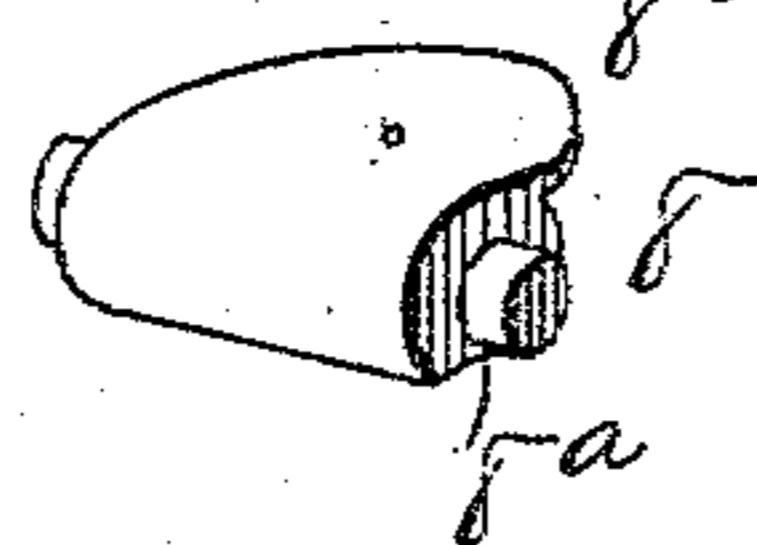


Fig. 4.



WITNESSES

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# UNITED STATES PATENT OFFICE.

OLIVER REASONER, OF UPLAND, INDIANA.

## GAS SEPARATOR OR PURIFIER.

SPECIFICATION forming part of Letters Patent No. 495,059, dated April 11, 1893.

Application filed August 5, 1892. Serial No. 442,254. (No model.)

*To all whom it may concern:*

Be it known that I, OLIVER REASONER, a citizen of the United States, residing at Upland, in the county of Grant and State of Indiana, have invented certain new and useful Improvements in Gas Separators or Purifiers; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention consists in a new and improved gas separator or purifier, which automatically frees the gas passing through it from oil and water, delivering it in a dry state; and the invention will be hereinafter fully described and claimed.

Referring to the accompanying drawings, Figure 1 is a central sectional view of my invention. Figs. 2 and 3 illustrate in detail, on an enlarged scale, the interior mechanism or parts, which will be hereinafter described. Fig. 4 illustrates in detail the valve 8, hereinafter described.

The same numerals of reference indicate corresponding parts in all the figures.

Referring to the several parts by their designating numerals; 1 indicates the outer case of my device, this outer case being preferably made of a piece of common gas-pipe, about eight inches in diameter and four feet long, threaded at each end for the reception of the caps, 2, 2. At the center of this cylinder or outer case an inlet, 3, is formed, through which the gas enters from the main, through a suitable connecting-pipe; and an outlet, 4, is formed in the side of the cylinder near its upper end, through which the gas passes out.

In the upper end of the outer case 1 is secured, centrally a small vertical cylinder, 5, having a small aperture, 6, in its side near its upper end; and in the lower end of this cylinder is secured the open upper end of a pipe, 7, which runs down through the center of the case 1 through the lower end of the same, with a valve, 8, at its lower end. The lower part of this pipe is surrounded by the float or hollow cylinder 9, which is free to move up and down. The upper end of the float is connect-

ed by an arm or lever 10 with a small crank-shaft, 11, mounted transversely in an enlargement of the pipe 7; and on this crank-shaft is pivotally mounted a small rod, 12, which runs through the pipe and has a valve or packing-head, 13, on its upper end, within the lower end of the cylinder 5. A coiled spring, 15, is arranged within the cylinder 5, which normally presses the packing-head 13 down upon the upper end of the pipe 7, closing the same.

An opening 7<sup>a</sup> is formed in one side of the lower part of the pipe 7, which allows the water to pass from the lower end of the cylinder 1, where it has accumulated, into the pipe 7 through a valve 8; this valve normally closes said opening. The valve 8, which is shown in detail in Fig. 4, is pivoted at its ends in the pipe 7 so that its round side normally closes the opening 7<sup>a</sup>. In the under side of the valve is formed the recess or port 8<sup>a</sup>, while a flat projection, 8<sup>b</sup>, on its upper side normally extends across the interior of the pipe 7, as shown.

The operation of my gas separator or purifier is as follows: The gas from the main enters through the inlet 3 of the outer casing 1, and the water, which always accumulates in gas, will settle to the lower end of the outer case, and as it accumulates there will gradually raise the float 9; and when the float has thus been raised to a certain height it will, through the arm or lever 10, turn the crank 11, which will raise the rod 12, and thus automatically raise the packing-head 13 above the upper end of the pipe 7. The gas that has entered the small cylinder 5 will then rush down through the pipe 7, and pressing upon the leaf or projection 8<sup>b</sup> of the valve 8 will turn the said valve, as shown in dotted lines in Fig. 3, until its port 8<sup>a</sup> opens communication between the lower end of the casing and the pipe 7, thus letting the accumulated water flow out of the casing. When the water has thus been discharged, the float 9 will descend into its original position, the spring 15 will press the packing-head 13 down on the upper end of the pipe 7, preventing the entrance of gas into the same, and the valve 8, relieved from the pressure of the gas on its projection 8<sup>b</sup>, will be turned back into its normal position by a small spring, 8<sup>c</sup>, arranged as shown, and fastened at its upper end to a

transverse pin running through the pipe 7. The device is then ready for the water to again accumulate.

From the foregoing description, taken in connection with the accompanying drawings, the construction, operation, and advantages of my invention will be readily understood.

It will be seen that by my invention the gas is delivered dry and free from oil or water. The separators or purifiers can be made of any desired size, to suit the volume of gas passing through them.

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

1. A gas separator or purifier comprising an outer case having the inlet and outlet openings, a small cylinder secured in the upper end of the same and having a small side-opening near its upper end, a pipe leading from the lower end of said cylinder through the lower end of the outer casing and having the opening 7<sup>a</sup>, a spring-actuated packing-head normally closing the upper end of said pipe, a float arranged in the lower part of the outer casing, connecting mechanism between the float and said packing-head whereby the float in rising will raise the packing-head, and a

spring-actuated valve controlling the pipe-opening 7<sup>a</sup> and adapted to be opened by the gas rushing down through the said pipe when said packing-head is raised; substantially as set forth.

2. The gas separator or purifier consisting of the outer case having the inlet and outlet openings, the small cylinder 5 secured in the upper end of the same and having the small side-opening near its upper end, the pipe 7, secured at its upper end in the cylinder 5, having the opening 7<sup>a</sup> near its lower end, and the crank-shaft 11 mounted transversely in it, the spring-actuated piston or packing-head arranged within the cylinder 5, the float arranged in the lower end of the outer casing, the lifting-rod sliding in the pipe 7 and mounted on the transverse crank-shaft 11, the valve 8, having the retracting-spring 8<sup>c</sup>, and a connection between the float and the crank-shaft; substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

OLIVER REASONER.

Witnesses:

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