

(No Model.)

L. M. DAVIS.  
GAS MIXER FOR INHALERS.

No. 312,435.

Patented Feb. 17, 1885.

Fig. 2.

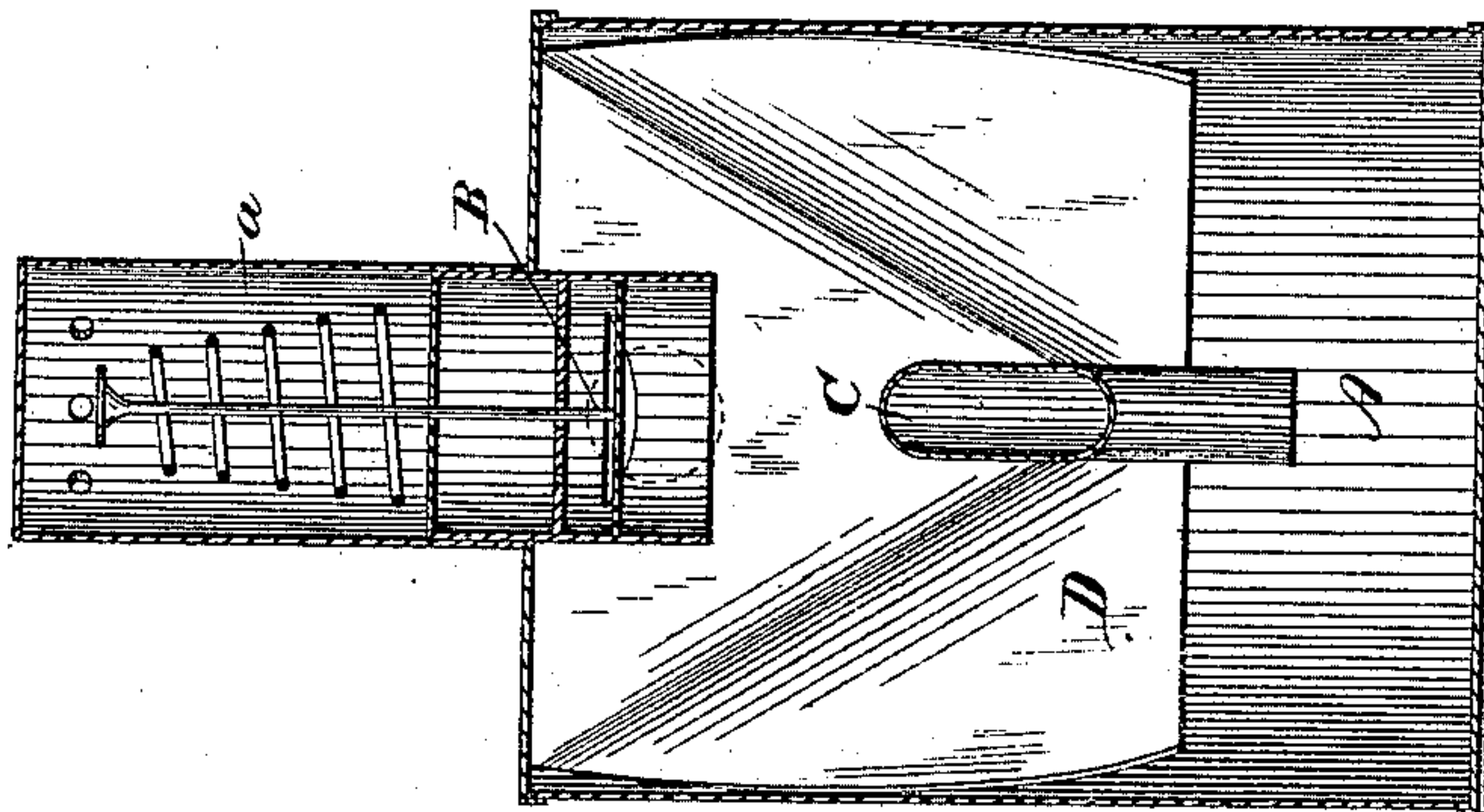
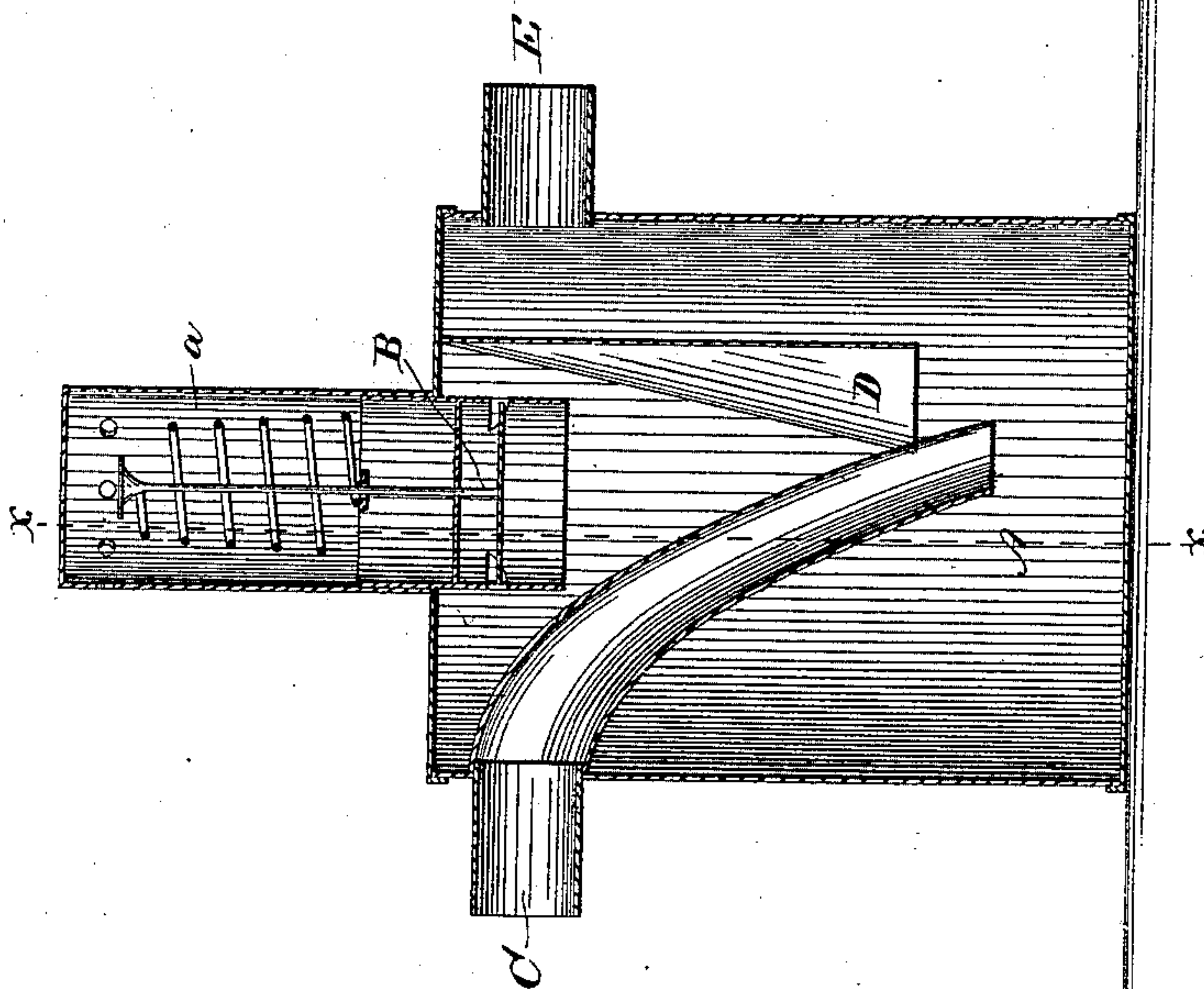


Fig. 1.



WITNESSES

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## GAS-MIXER FOR INHALERS.

SPECIFICATION forming part of Letters Patent No. 312,435, dated February 17, 1885.

Application filed October 27, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, LUTHER M. DAVIS, a citizen of the United States, residing at Walla Walla, in the county of Walla Walla, Washington Territory, have invented certain new and useful Improvements in Apparatus for Mixing Gas or Air with Chloroform or Ether; and I do hereby 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.

My invention relates to certain improvements in apparatus for the mixture of nitrous oxide, other gases, or air with chloroform, ether, or other similar substance.

It consists of an air-tight can or receiver provided with a valve for the introduction of chloroform, ether, or other substance, a supply-pipe for the introduction of gas or air, a diaphragm extending from the top nearly to the bottom of the receiver, by means of which the mixture of the gas or air and the chloroform or ether is effected, and an exhaust-pipe, located on the opposite side of the diaphragm from the supply-pipe, through which the mixture is conducted to the gas-bag or to the patient inhaling the same.

It is simple in construction, in practice is found to be very effective in its operation, and can be manufactured very cheaply.

The particular arrangement and construction of the same I will now proceed to point out and describe, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical section taken through the center of the receiver, and Fig. 2 is a vertical section taken on line *x x* of Fig. 1.

Referring to said drawings, A is a hollow air-tight can or receiver, preferably cylindrical in form, as shown.

B is a spring-valve on the top of the can, which in its normal position is open. Said valve is used for the introduction of chloroform, ether, or other similar substance, and is closed by the pressure of the gas when admitted to the receiver. It is also provided with a removable perforated spring-cap, *a*, through which air is admitted when the gas is shut off and the valve open.

C is a supply-pipe, through which nitrous oxide or other gas is introduced. Said pipe, after it enters the receiver, may be curved downward, and thus direct the gas toward the chloroform or ether in the bottom of the can.

D is a diaphragm fastened to the top of the can at one side of the valve B, and extends down nearly to the bottom of said can. It is placed at such an angle that the gas or air striking against the same is deflected or forced down upon or through the substance in the receiver. Said diaphragm may be a perfectly plain surface or concave, as shown in the drawings.

E is the exhaust-pipe, through which the gas or air escapes after it has been mixed with the chloroform or ether. Said pipe is located on the opposite side of the diaphragm from the supply-pipe, and connects with a pipe leading to the gas bag or a patient inhaling the gas.

The operation of my apparatus is as follows: Chloroform, ether, or other similar substance is poured in through the valve B until it comes nearly up to or covers the bottom of the diaphragm. Gas is then admitted through the supply-pipe C, and its pressure closes the valve B and makes the can air-tight. As the gas leaves the supply-pipe it strikes against the diaphragm, and is deflected or thrown down upon or through the chloroform or ether in the bottom of the receiver, thus causing a thorough saturation and mixture of the same with said chloroform or ether. The vitalized mixture then passes out through the exhaust-pipe. When the gas is shut off, the spring-valve opens and air is admitted through the perforated cap *a*.

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

1. In an apparatus for mixing gas or air with chloroform, ether, or other similar substance, an air-tight receiver provided with a deflecting-diaphragm extending from the top of the receiver nearly to its bottom, and having supply and exhaust pipes located on opposite sides of said receiver and separated by the diaphragm, substantially as shown and described.

2. The receiver A, provided with the deflecting-diaphragm C, the valve B, the supply-pipe D, and exhaust-pipe E, separated by the diaphragm C, substantially as and for the purpose shown and described.

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

Witnesses: LUTHER M. DAVIS.

E. K. HANNA,

W. G. LANGFORD.