

(No Model.)

E. N. DICKERSON.

VALVE LOCKING MECHANISM FOR GAS GENERATORS.

No. 560,784.

Patented May 26, 1896.

Fig. 1

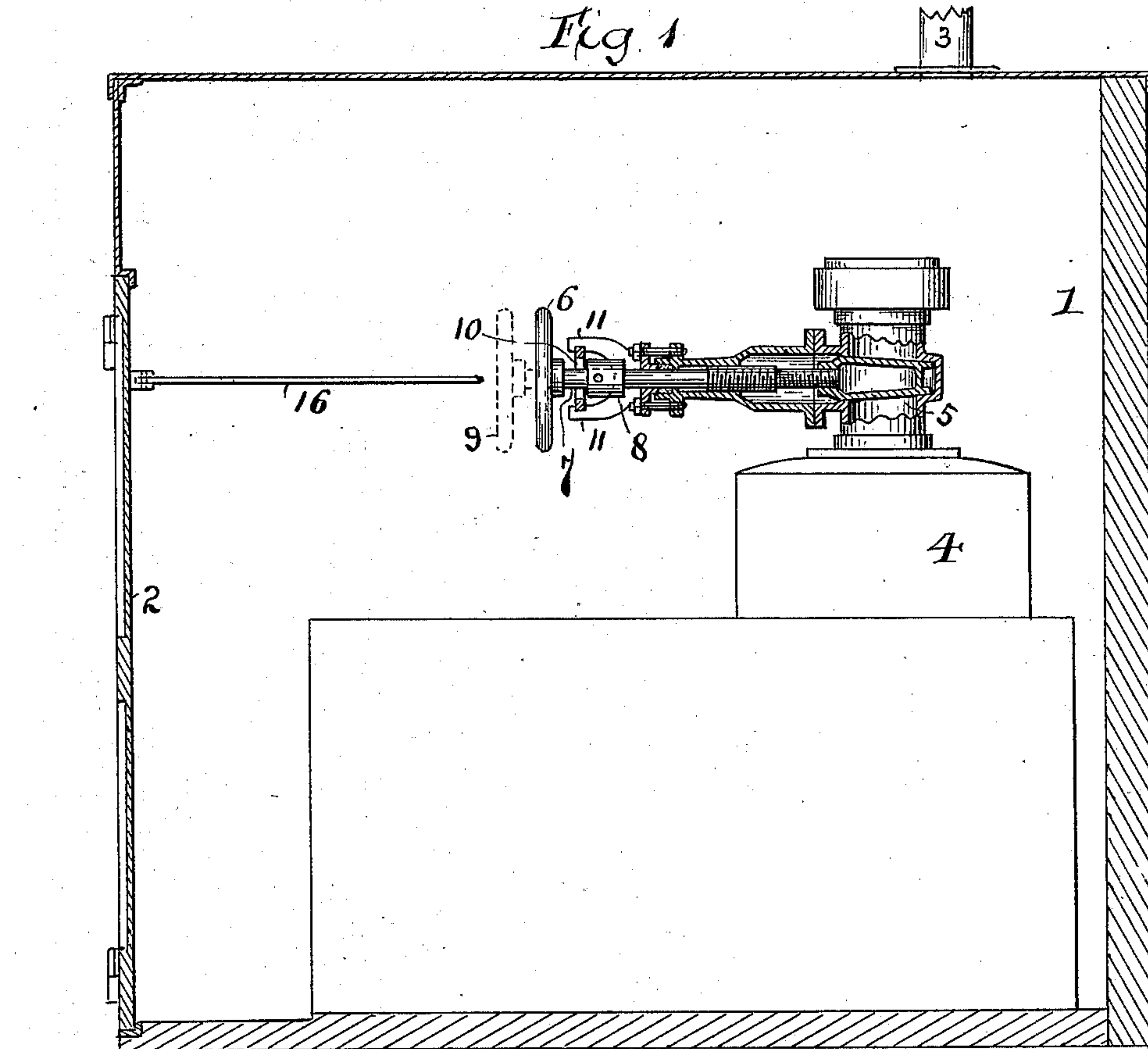


Fig. 2

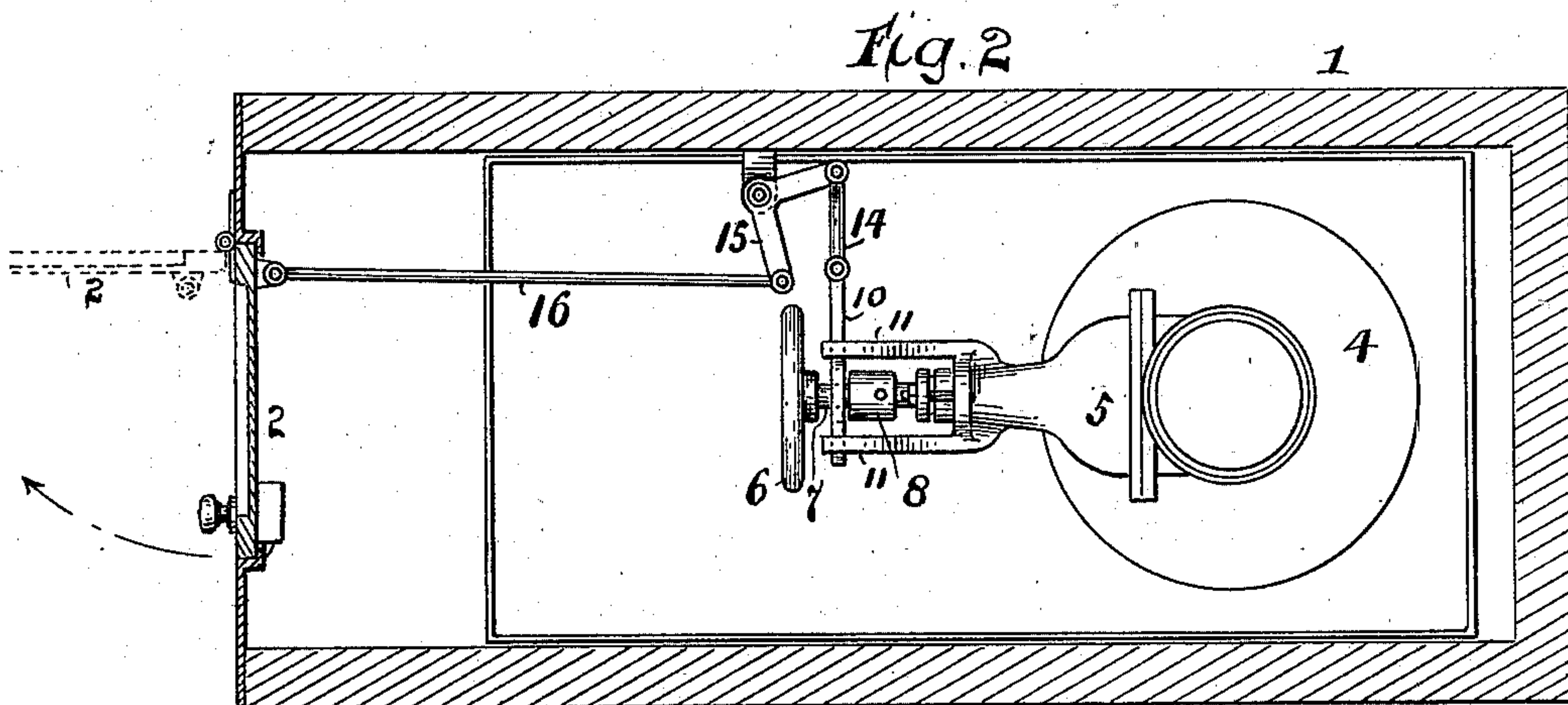


Fig. 3

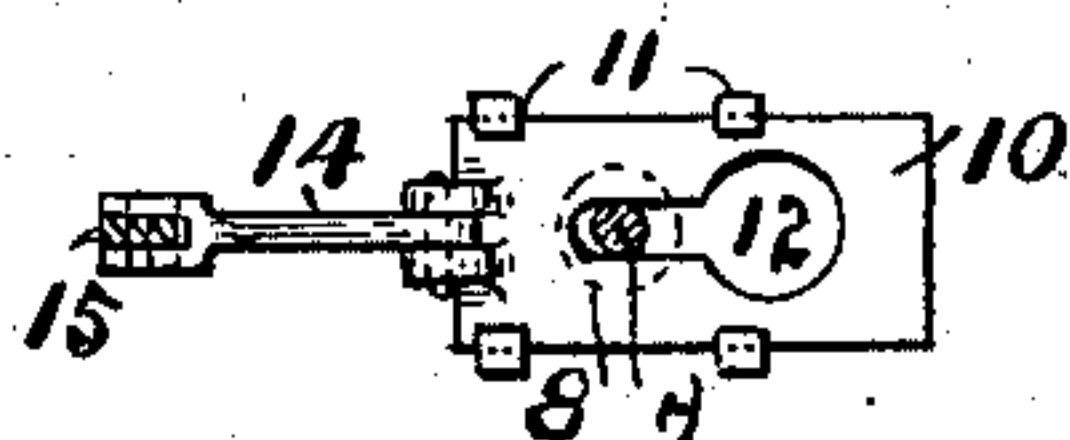
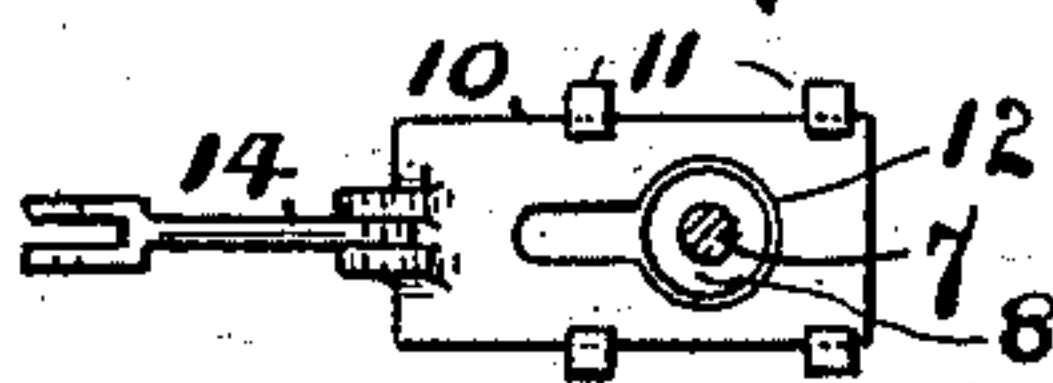


Fig. 4



Witnesses  
Geo. Wadman  
H. Content.

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# UNITED STATES PATENT OFFICE.

EDWARD N. DICKERSON, OF NEW YORK, N. Y.

## VALVE-LOCKING MECHANISM FOR GAS-GENERATORS.

SPECIFICATION forming part of Letters Patent No. 560,784, dated May 26, 1896.

Application filed March 13, 1896. Serial No. 583,014. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD N. DICKERSON, of No. 253 Broadway, in the city, county, and State of New York, have invented a new and useful Improvement in Apparatus Useful in Connection with Gas-Generating Devices, of which the following is a full, true, and exact description, reference being had to the accompanying drawings.

My invention relates to an improved apparatus for insuring the safety of gas-generating contrivances which are themselves placed in closed structures, and which gas-generating contrivances operate by reason of the introduction of a gas-generating material into the apparatus.

My apparatus is especially useful in combination with mechanism for generating acetylene gas from calcium carbide. In these generators it is generally necessary to introduce the calcium carbide through an opening or valve into the generating vessel. When such valve is open, there is a liability of escape of gas from the generating apparatus, which, if the generator be placed within a house, is liable to catch fire and explode. In order to avoid this difficulty, I propose to confine the gas-generator within a practically gas-tight structure, which may preferably be ventilated, and is provided with a door, which is so combined with the valve that said door cannot be opened until the valve is closed, and the valve cannot be opened until the door is closed, the essential feature of my improvement being the application of such interacting movement.

My invention will be readily understood from the accompanying drawings, in which—

Figure 1 represents a vertical elevation, partly in section, of my device, some of the apparatus connecting the door with the valve being removed; Fig. 2, a cross-section through the upper part of Fig. 1 above the valve mechanism; Fig. 3, an elevation of the door-lock, showing the position of such lock when the door is open; and Fig. 4, the position of the same mechanism when the door is closed.

1 represents a suitable inclosing structure, which should be practically gas-tight, and which is provided with door 2, and by preference with ventilator 3.

4 represents a gas-generating apparatus of any suitable kind, into which the gas-producing material—as, for instance, calcium carbide—is to be introduced.

5 represents the valve through which such material is to be introduced. This valve is operated by the hand-wheel 6, operating valve-stem 7. This valve-stem 7 is provided with a collar 8, of larger diameter than the valve-stem. In opening the valve the stem and collar move out, so that the hand-wheel comes to the position shown at 9, Fig. 1. Surrounding the valve-stem 7 is the sliding frame 10, which may be supported in suitable lugs or supports 11. This sliding frame or plate 10 has an opening 12, which at one part is wide enough to admit the passage only of the stem 7, while at another part it will allow the passage of the collar 8, such arrangements being clearly shown in Figs. 3 and 4. The plate 10, which is the locking-plate of the valve, may be operated from the door in any suitable way—as, for instance, by the connection 14 to bell-crank 15, operated by connecting-rod 16 from the door 2. When the door 2 is open, as shown in Fig. 2 in dotted lines, the plate 10 is thrown into the position shown in Fig. 3. This prevents the opening of the valve, as will be plainly seen. It is also obvious that the door 2 cannot be opened until the valve is closed, as otherwise the plate 10 would bring up against the collar 8, which, when it is in its outward position, still projects into the opening in the plate 10. In this way an additional safety is imposed upon the apparatus for generating gas.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination in a gas-generating apparatus, of a chamber surrounding said apparatus provided with a door, a valve opening into said apparatus, and a rod connecting the door and the valve, whereby the open-

ing of the door prevents the opening of the valve, and the opening of the valve prevents the opening of the door, substantially as described.

- 5 2. The combination in a gas-generating apparatus, of the generator 4, provided with valve 5, and chamber 1, having door 2, the valve-lock 10, and connections from the door to the valve-lock for locking the valve on the

opening of the door, substantially as described.

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

E. N. DICKERSON.

Witnesses:

ANTHONY GREF,  
H. CONTANT.