

No. 688,951.

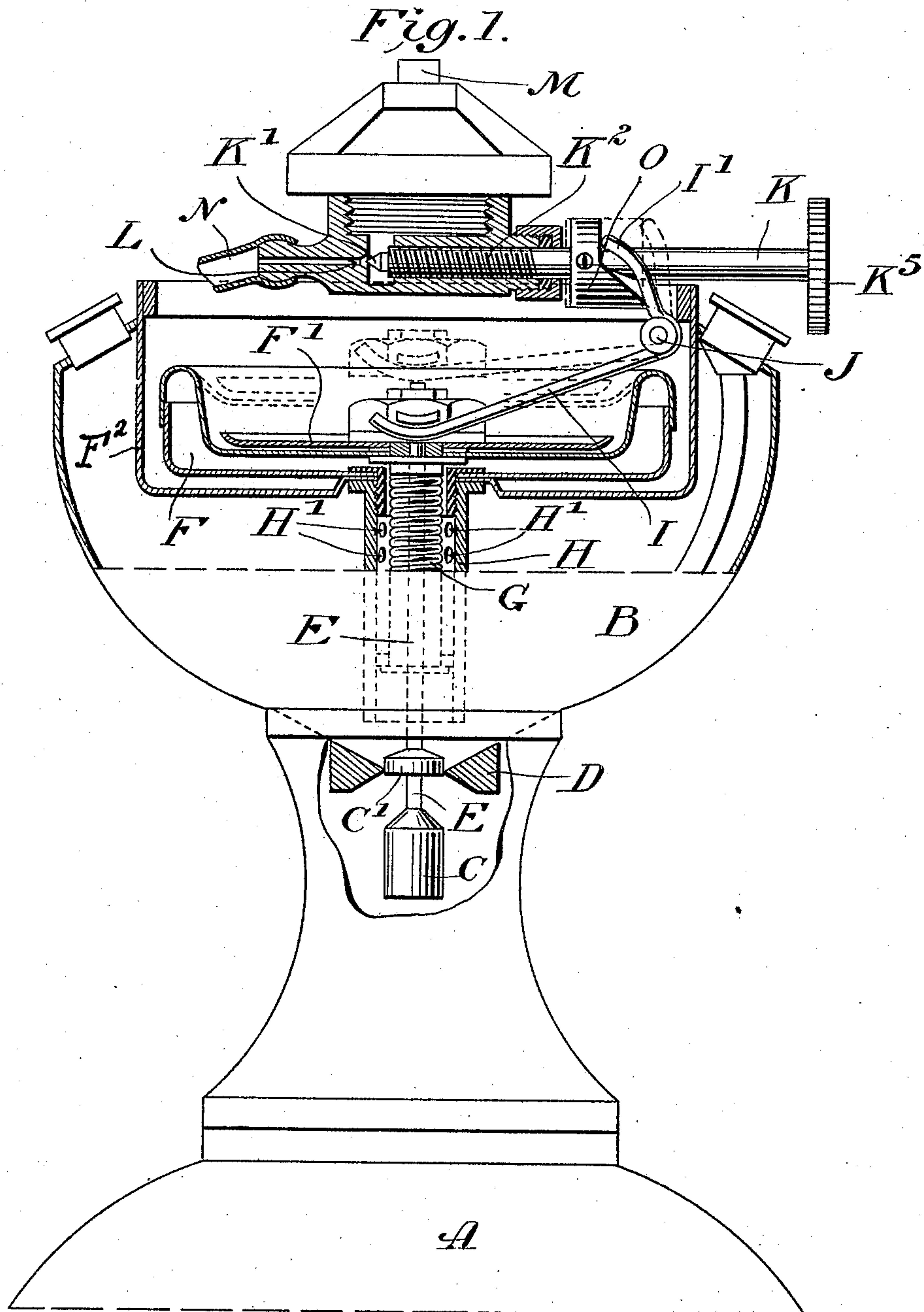
Patented Dec. 17, 1901.

W. C. HOMAN.
ACETYLENE GAS GENERATOR.

(Application filed Feb. 4, 1901.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

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Fig. 2.

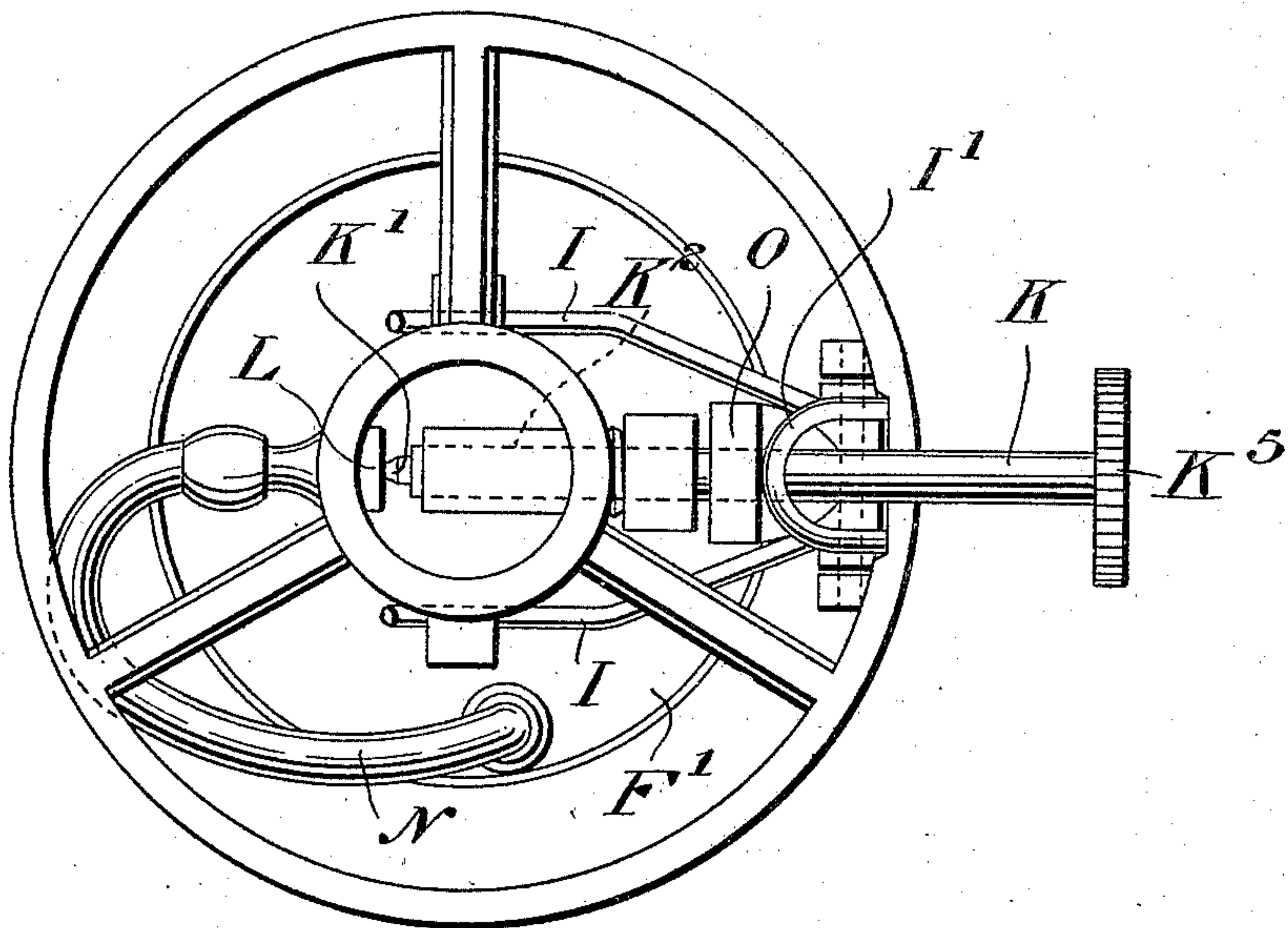


Fig. 4.

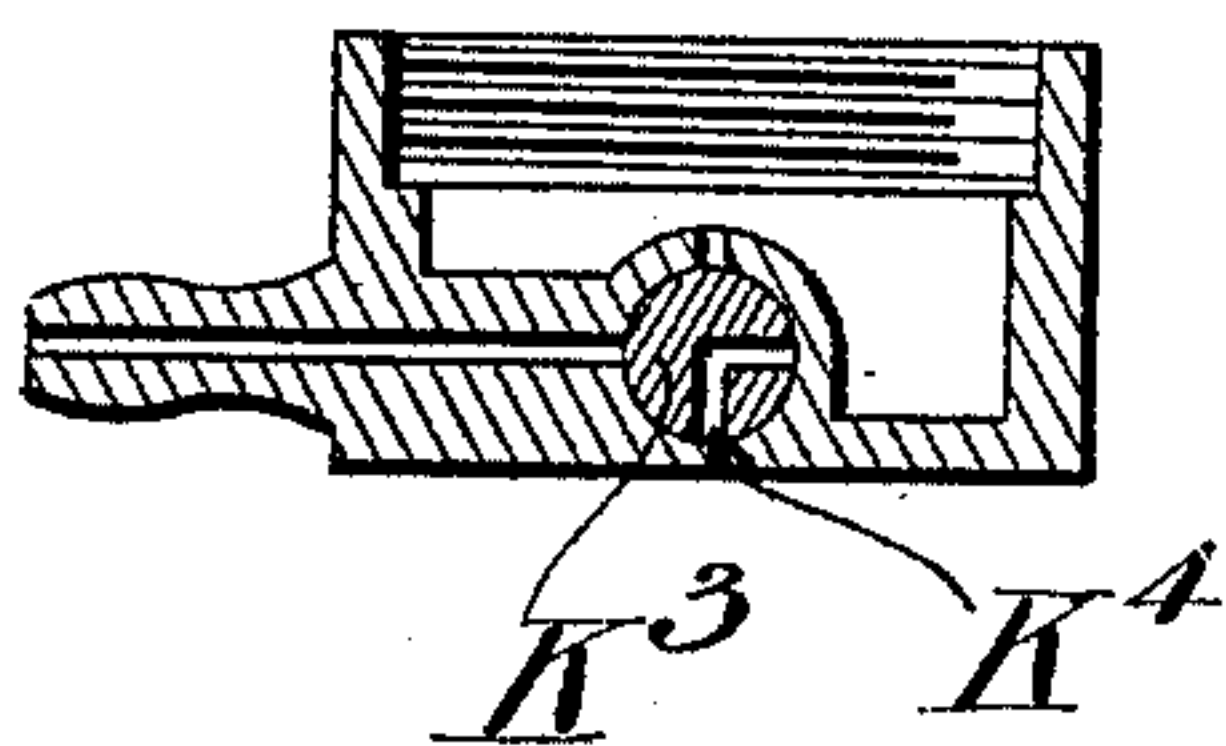
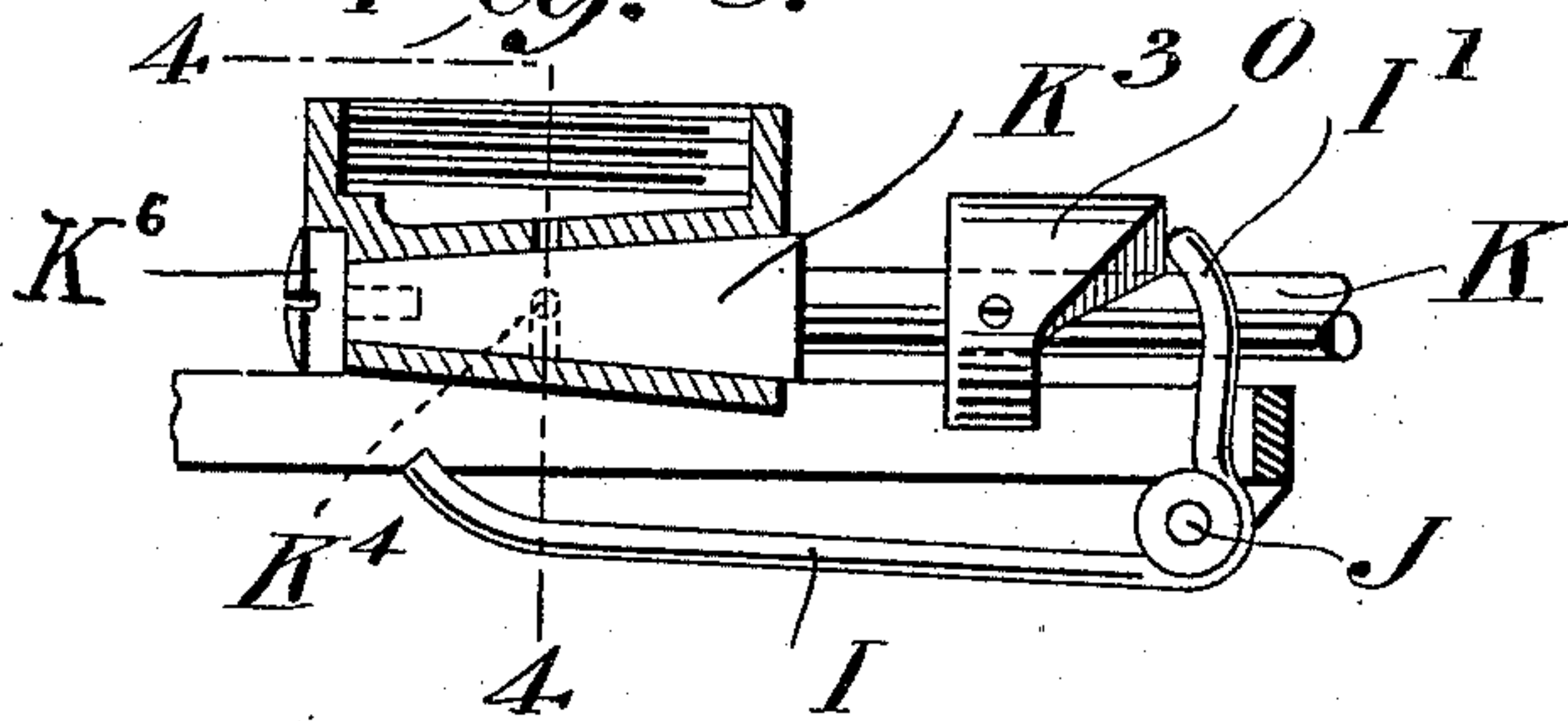


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM C. HOMAN, OF MERIDEN, CONNECTICUT, ASSIGNOR TO EDWARD MILLER & COMPANY, A CORPORATION OF CONNECTICUT.

ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 688,951, dated December 17, 1901.

Application filed February 4, 1901. Serial No. 45,814. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM C. HOMAN, a citizen of the United States, residing at Meriden, Connecticut, have invented certain new and useful Improvements in Acetylene-Generators, of which the following is a full, clear, and exact description.

My invention relates to certain new and useful improvements in acetylene-generators, particularly useful in lamps in which the gas is automatically generated and fed to a burner. Various generators of this character have been devised; but in most of them the provision for checking after generation has not been effective.

The object of my invention is to provide a means simple and effective whereby through one operation the flame may be extinguished, the flow of gas positively checked, and the intermingling of the gas-generating elements prevented.

The particular features of my invention are embodied in the construction shown in the accompanying drawings, in which the mingling of the gas-generating elements is brought about, so as to gradually produce the required amount of gas and to make the flow uniform. This is accomplished by passing the gas from the generating-chamber through a collapsible chamber which by its action automatically controls the mingling of the gas-generating elements. The valve for setting the mechanism of the lamp in action is operated by a simple movement of a single rod. The particular advantages of my invention are derived from the construction of this rod and its attached parts of the valves and of the lever for distending the collapsible chamber and their particular relations to each other.

In the drawings, Figure 1 is an elevation, mostly in section, of a portion of a generator provided with improvements which constitute my invention. Fig. 2 is a plan view of one form of my controlling apparatus and the parts associated therewith. Fig. 3 is one adaptation of my improvements in the valve-operating mechanism. Fig. 4 is a view in cross-section of the valve shown in Fig. 3 upon the line 4 4.

The lamp shown in the accompanying draw-

ings corresponds to the lamp shown in a previous application filed by Charles W. Beck and myself on December 13, 1900, Serial No. 39,589; but as the novel features herein are confined to the means by which gas may be shut off and after-generation checked the lamp itself need not be described in minute detail.

Some of the features shown in my present application are similar to some of those set forth in my application, Serial No. 20,237, of June 14, 1900.

Briefly, the lamp is constructed and operates as follows:

A is a water-receptacle.

B is a carbid-receptacle located above the receptacle A and having a passage communicating therewith.

C C' are valves which comprise part of the feeding mechanism described later. D is a valve-seat in said passage coacting with the valve C or valve C'.

E is a valve-stem for the valves C C'. This valve-stem is connected with the disk F', a stiffening-plate for the top of a collapsible gas-chamber F.

G is a spring by which the chamber F is normally collapsed, the spring being connected at one end to the disk F', while at the other end the said spring may be attached to a tube H. The gas-chamber F is located outside of the gas-space within the carbid-chamber B, being, for example, separated therefrom by a partition F², so that while the interior of the gas-chamber F is subjected to the gas-pressure the exterior of the chamber is subjected to the ordinary atmospheric pressure.

I is a bell-crank lever fulcrumed at J. The lever I engages with the disk F' of the collapsible gas-chamber, so that when the lever is turned the gas-chamber may be distended.

I' is the short arm of the lever, which, preferably, is arched in form, so as to project over the valve-stem K, which carries a valve K', by which the gas-passage to the burner M may be controlled. This gas-passage to the burner M leads from the collapsible gas-chamber F through the flexible tube N past the valve K' and up to said burner. K² is a screw-thread upon said valve-stem K, where-

by the valve K', which in Fig. 1 is shown to be of the needle type, may be operated.

L is the valve-seat, against which the valve K' acts.

5 O is a cam preferably adjustably mounted upon the valve-stem K. The face of this cam is so constructed as to give an approximately horizontal movement to the lever I'. Consequently by turning the valve-stem K 10 the cam-face acts against the short arched arm I' of the bell-crank lever, forcing it from the position shown in solid lines in Fig. 1 to the position shown in dotted lines in Fig. 1. This action is powerful, positive, and quick, 15 and it serves to elevate the disk F', thereby distending the gas-chamber F and at the same time bringing the valve C into engagement with the valve-seat D and also operating the valve C. The movement of the 20 valve-stem K closes the gas-passage to the burner. Consequently at that instant the flame is extinguished, and inasmuch as no more carbid can be fed to the liquid no fresh gas will be generated. When it is desired to 25 again use the lamp, the valve-stem K is rotated in an opposite direction, whereupon the gas-passage to the burner is opened, the cam-face is retracted from in front of the short arm I' of the lever, the spring G partially col- 30 lapses the gas-chamber F, the carbid-valve is opened, and the disk assumes an intermediate position between that shown in solid lines and dotted lines in Fig. 1, from which position it rises and falls, depending upon 35 the pressure of the gas in the carbid-chamber B. This rising and falling of the disk opens and closes the valve C sufficiently to provide the carbid in the amount required to produce the amount of gas consumed or 40 needed.

This invention is applicable to generators as well as to lamps, although in the drawings I have shown it in connection with a lamp.

K⁵ is a handle by which the valve-stem K 45 may be conveniently turned.

In Figs. 3 and 4 I have shown a modification in which instead of employing a valve K' of the needle type I have employed another form of valve very similar to those em- 50 ployed in ordinary gas-burners. In Figs. 3 and 4 this valve is indicated by the reference-letter K³. K⁴ is the gas-passage through said valve. K⁶ is a screw by which the valve may be adjusted.

55 It is not intended to claim herein, broadly, the employment of a cam for operating the

controlling-lever I, since a cam is shown in the former application referred to. The special form of cam, however, shown herein possesses many advantages over other cams, in 60 that its action is quick, positive, and reliable, and because it is capable of being easily adjusted, if desired. This type of cam coacting with a bell-crank lever serves to securely lock the parts in the inoperative position, 65 wherein they will be securely held, so that the use of the lamp may be discontinued and the same set to one side with perfect safety until it shall be desired to again use it.

What I claim is— 70

1. In an acetylene-generator, separate holders for the gas-generating elements, feeding mechanism for the contents of one of said holders, automatic controlling means there- 75 for and independent manual controlling means, comprising a horizontally-acting cam and a bell-crank lever coöperatively connected to the automatic controlling means.

2. In an acetylene-generator, separate holders for the gas-generating elements, feeding 80 mechanism for the contents of one of said holders, automatic controlling means therefor, independent manual controlling means, comprising a rotatable shaft carrying a horizontally-acting cam, and a bell-crank lever 85 operated by said cam, said lever being in co-operative engagement with said automatic controlling means.

3. In an acetylene-generator, separate holders for the gas-generating elements, feeding 90 mechanism for the contents of one of said holders, automatic controlling means therefor and independent manual controlling means, said lever being in coöperative engagement with said automatic controlling 95 means, comprising a rotatable valve-stem carrying a horizontally-acting cam, and a bell-crank lever coacting with said cam.

4. In an acetylene-generator, separate holders for the gas-generating elements, a gas- 100 outlet leading therefrom and controlling means for simultaneously closing the gas-passage and the communication between said holders, said means comprising a horizon- 105 tally-acting cam and a lever coacting therewith.

Signed at Meriden, Connecticut, this 1st day of February, 1901.

WILLIAM C. HOMAN.

Witnesses:

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FRANK S. PARKER.