

No. 848,074.

PATENTED MAR. 26, 1907.

E. WACHTER.  
ACETYLENE GENERATING LAMP.

APPLICATION FILED MAR. 29, 1905.

Fig 1.

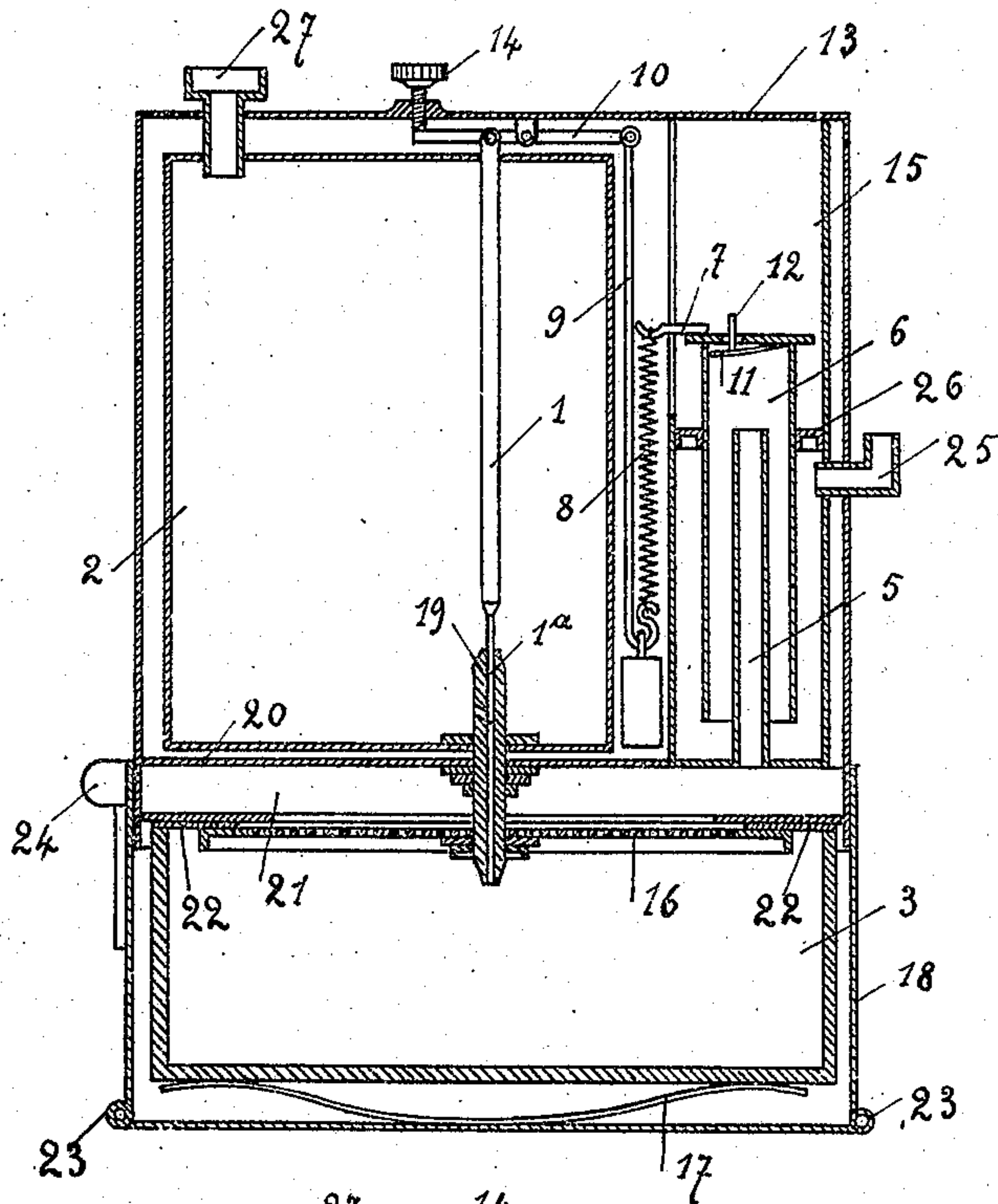
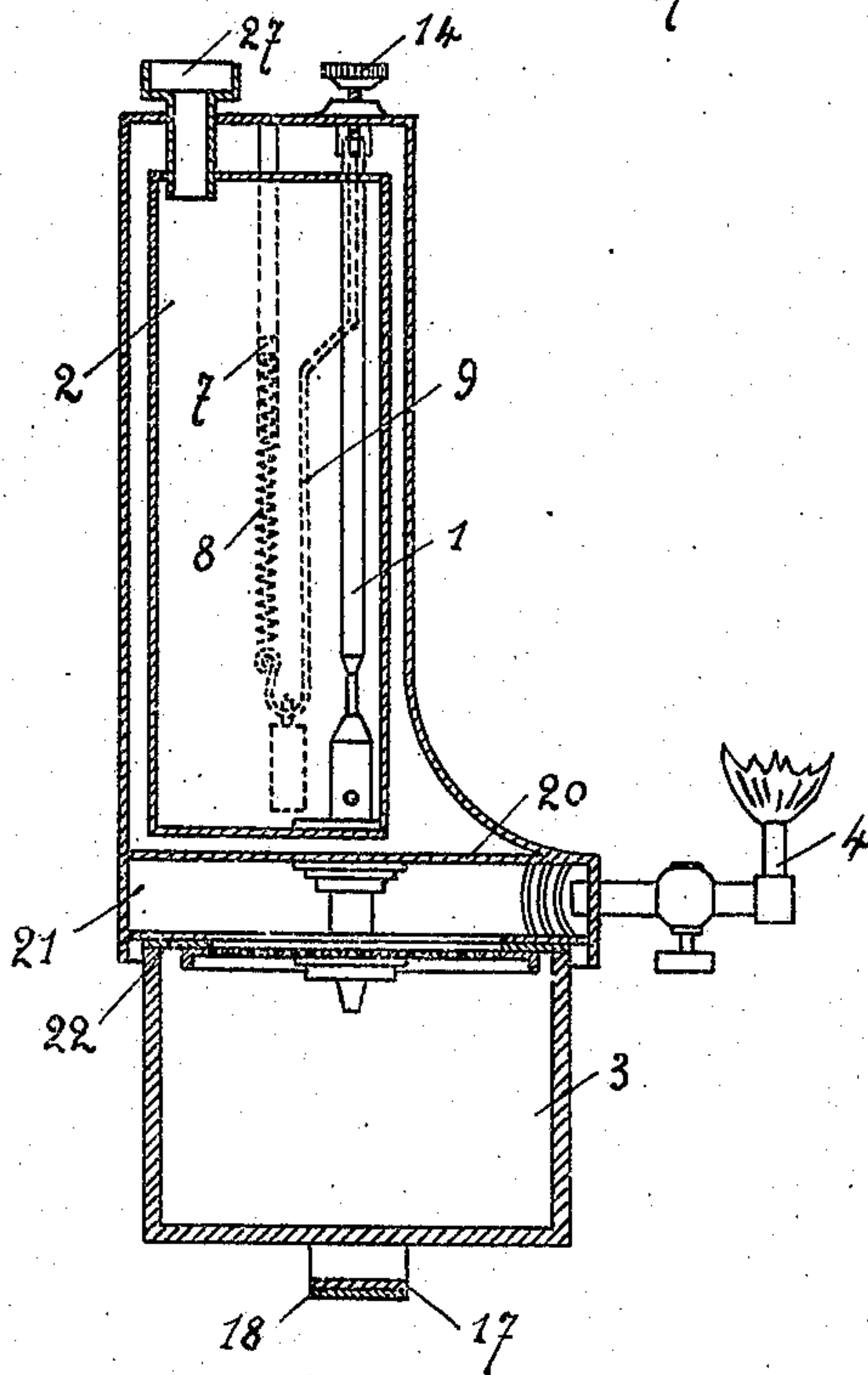


Fig 2.



Witnesses  
Béguin  
H. Jammebon.

Inventor  
E. Wachter



# UNITED STATES PATENT OFFICE.

ERNST WACHTER, OF BUCHS, SWITZERLAND.

## ACETYLENE-GENERATING LAMP.

No. 848,074.

Specification of Letters Patent.

Patented March 26, 1907.

Application filed March 29, 1905. Serial No. 252,758.

*To all whom it may concern:*

Be it known that I, ERNST WACHTER, a citizen of the Swiss Republic, and a resident of Buchs, St. Gallen, Switzerland, have invented certain new and useful Improvements in Acetylene-Generating Lamps, of which the following is a specification.

The subject of this invention is an acetylene-lamp which regulates the generation of gas automatically.

The accompanying drawing, wherein similar numerals refer to similar parts throughout the several views, shows in Figure 1 a longitudinal section of the lamp; Fig. 2, a cross-section of the same.

The lamp consists in the main of a casing 13, on the lower part of which is provided a box 3 for the carbid, which box is held by a frame 18, the parts of which are united by hinge-joints and communicates through a tube 19 with a water-reservoir 2. The bottom 20 of the casing 13 is placed a little higher up into the inside of the same for the purpose of obtaining a collecting-space 21, with which communicates a burner 4.

The carbid-receptacle 3 is, by a frame 18 with hinge-joints, pressed against a packing 22—for instance, of india-rubber—whereby there is effected a gas-tight connection with the collecting-space 21, which is separated by a sieve-bottom 16 from the carbid-receptacle. In the bottom 20 is arranged an ascension-pipe 5, over which there is placed a cylinder 6 with a valve 11. This cylinder 6, which is placed inside of a second cylinder 15, filled with water up to the inlet-tube 25 and passes through a guide-socket 26, is connected through a hook 7, spring 8, levers 9 and 10 with a rod 1, at the lower end of which is provided a valve 1<sup>a</sup>, which enters into the tube 19. The tube 19 is provided with holes, which can be closed or opened by said valve 1<sup>a</sup>.

The water-reservoir 2, provided with an inlet-tube 27, is behind the burner 4, so that it can be heated by the flame for the purpose of preventing the water from freezing. The carbid-receptacle 3 can be easily exchanged by another receptacle filled with carbid.

This lamp works as follows: By a valve 1<sup>a</sup> the flow of the water in the reservoir 2 into a box 3 filled with carbid is regulated. On the valve 1<sup>a</sup> being raised the water flows from the reservoir 2 through the holes in the wall of the tube 19 and through this tube into the carbid-receptacle 3, where a generation of

acetylene takes place. The gas generated in the box 3 enters through a purifying-sieve into a collecting-space 21, from which it passes to the burner 4 after being purified by a mixture of felt and salt and can here be ignited. If more gas than required is generated and the flame burns uniformly, the excess of pressure acts on the cylinder 6, which communicates through an ascension-tube 5 with the collecting-space 21, raises the cylinder 6, which is connected by means of the hook 7, spring 8, and levers 9 and 10 with the rod 1, and consequently, also, with the valve 1<sup>a</sup>, which latter can reduce or entirely stop the flow of water from the reservoir 2 into the box 3. If a very intense generation of gas should take place and the piston 6 be in its highest position, it strikes with a pin 12, fixed to a valve 11, against a casing 13 and opens the valve 11, through which the gas can now stream out, so that an explosion is thus prevented. In order to stop the generation of gas, the lamp is provided with a screw 14, which presses, by means of a lever 10, on the valve 1<sup>a</sup> and can entirely stop the water-supply to the box 3. If the automatically-regulated device should fail to act, an explosion can all the same be prevented, as the box 3 is arranged on springs 17, which yield to an overpressure of gas, and thus produce an opening between the casing 13 and the box 3, through which the superfluous gas can stream out. If the carbid in the receptacle 3 is consumed, the receptacle can be taken out after moving the hook 24 and turning down the frame 18 and be replaced by a spare receptacle filled with carbid and which was kept hermetically closed. The frame 18 is then turned up again and secured by the hook 24. This changing of the carbid-receptacle can be effected very rapidly, so that the lighting will be interrupted for only a short time.

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

An improved acetylene-lamp, comprising in combination with a casing 13 with double bottom a frame 18, hingedly connected to the lower end of said casing 13 a carbid-box 3, springs 17 supporting said box and arranged to press the same against the lower bottom of the said casing a packing 22 between the top edge of the carbid-box 3 and the lower bottom of said casing a hook 24 on said frame 18, a water-receptacle 2 with means for introducing water, rigidly connected with said



casing 13 a tube 19 extending from the water-receptacle 2 into the said carbid-box 3, a perforated bottom 16 fixed to said tube 19 covering the carbid-box 3, a valve 1<sup>a</sup> adapted to  
5 regulate the outflow of water through said tube 19, a cylinder 6 vertically guided in said casing 13, means 10, 9, 8, and 7 for connecting said valve 1<sup>a</sup> with said cylinder 6 in such  
10 a manner that upon the ascending of the cylinder 6 the valve 1<sup>a</sup> closes the water-outflow through tube 19, a valve 11 arranged on said cylinder 6 a tube 5 extending from above the said carbid-box 3 into said cylinder 6 a water seal for said cylinder, means 14 for shut-

ting off the water-supply to the carbid by 15 hand, a burner 4 fixed to the said casing 13 between the two bottoms of the same and means for purifying the gas substantially as described and shown and for the purpose set forth. 20

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

ERNST WACHTER.

Witnesses:

OSCAR GEIER,  
A. LIEBERKNECHT.