

No. 677,400.

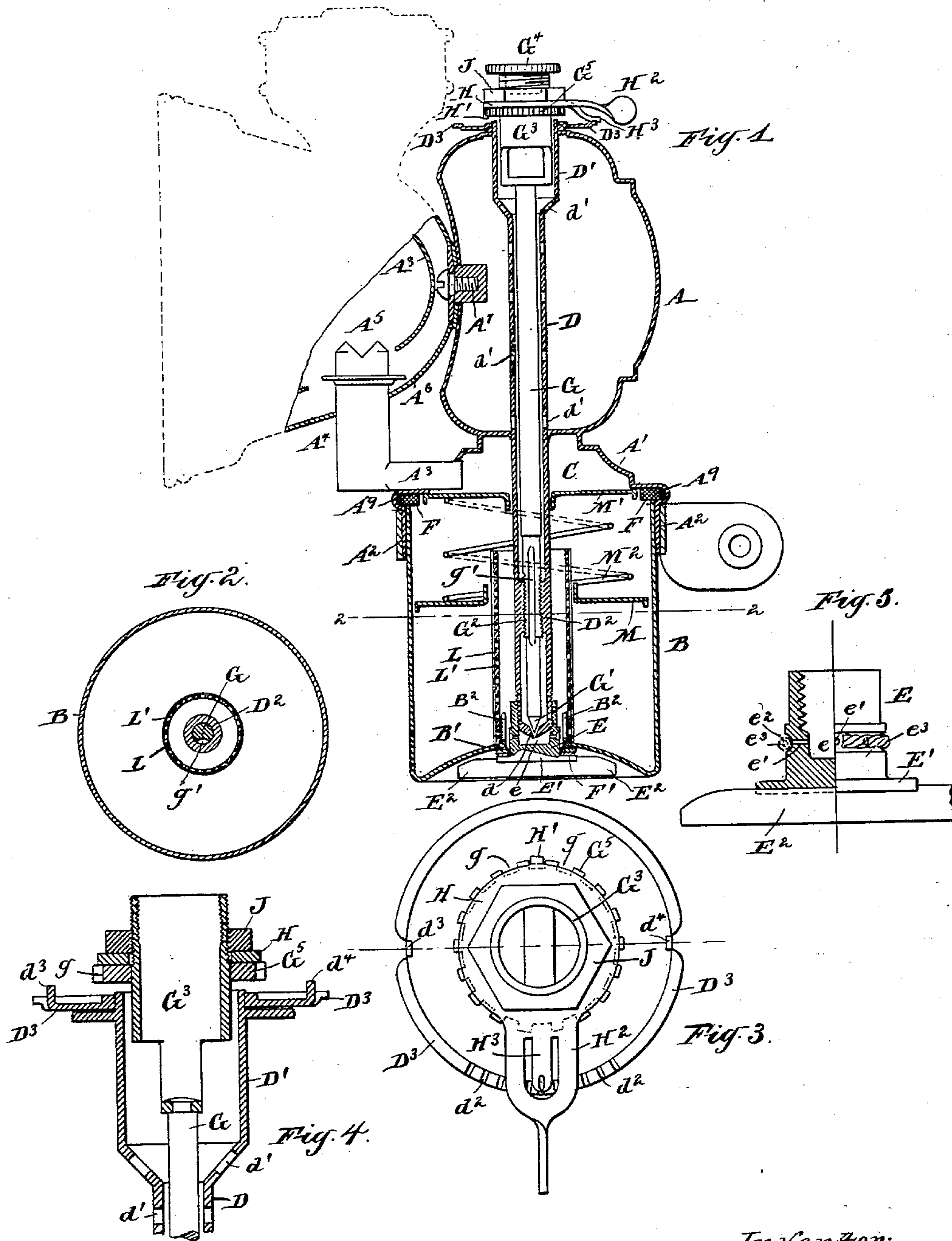
Patented July 2, 1901.

W. P. CRARY.

ACETYLENE GAS GENERATING LAMP.

(Application filed Dec. 18, 1899. Renewed Dec. 31, 1900.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

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ACETYLENE-GAS-GENERATING LAMP.

SPECIFICATION forming part of Letters Patent No. 677,400, dated July 2, 1901.

Application filed December 18, 1899. Renewed December 31, 1900. Serial No. 41,730. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM P. CRARY, a citizen of the United States, residing in the city of New York, borough of Manhattan, in the county and State of New York, have invented a certain new and useful Improvement in Acetylene-Lamps, of which the following is a specification.

The invention relates more particularly to bicycle and driving lamps; and its object is to simplify the construction and operation and increase the efficiency of the lamp.

The water-tube extends downward from the water-chamber and serves with a tubular nut at the lower end in holding the carbid-cup in close contact with its cover to form the gas-chamber. The nut also serves in distributing the water-supply from the tube.

The invention also consists in an improved mechanism for controlling the water-supply, and in certain details of construction and arrangement of parts to be hereinafter described.

The accompanying drawings form a part of this specification and show the invention as I have carried it out.

Figure 1 is a vertical central section through a bicycle-lamp, certain portions being shown in elevation and some of the parts merely indicated by dotted lines. Fig. 2 is a transverse section taken on the line 2 2 in Fig. 1. The remaining figures are on a larger scale. Fig. 3 is a plan view showing the controlling devices, and Fig. 4 is a corresponding vertical section. Fig. 5 is an elevation, partly in vertical section, showing the retaining-nut.

Similar letters of reference indicate the same parts in all the figures.

A is the water-chamber, spheroidal in shape, having a conical extension A' below the bottom, terminating in a ring or skirt A², receiving the open upper end of the carbid-cup B and forming with the latter a gas-chamber C, communicating through a lateral pipe A³ with an upright tube A⁴, carrying at its upper end a burner A⁵, inclosed within a hood A⁶, joined to the water-chamber on the horizontal axial line by the screw A⁷. The hood is equipped with a reflector A⁸ and other necessary appurtenances, as will be understood.

The water-tube is marked D. It is enlarged at the upper end at D' and projects a little above the upper surface of the water-chamber, to which it is joined. The main portion is of small diameter and extends through the bottom of the water-chamber to a point near the bottom of the carbid-cup B, where it terminates in a valve-seat *d*, and is screw-threaded exteriorly to receive a tubular thumb-nut E, extending through the bottom of the cup and holding the latter in position. A bead A⁹ on the extension A' forms an annular interior groove in which is received a rubber gasket F, held in position to receive the upper edge of the cup and insure a tight joint when the thumb-nut is screwed up. To guard against leakage below, I form a seat B' around the central aperture in the bottom of the cup and apply a washer F' between it and the head E' of the nut. The body of the nut is hollow and forms a recess *e* below the valve-seat *d*, from which extend a series of small openings *e'*, allowing the water passing the valve to escape to the interior of the cup. To prevent the entrance of spent carbid or other obstructions, I prefer to cover the holes *e'* with a loosely-tied string *e*³, lying in the groove *e*², as shown.

G is the valve-rod, inclosed in the tube D, terminating below in a conical plug G', matching to the valve-seat *d* and moved vertically to control the flow of water by the screw-threaded portion G², matching the interiorly-screw-threaded portion D² of the tube. The upper end of the rod is attached to a hollow cylindrical head G³, received in the enlarged upper end D' of the water-tube, and extends above the latter. Its open end is closed by a screw-cap G⁴, and the lower portion is cut away at each side to allow water received in the head to flow to the interior of the tube and fill the water-chamber through the perforations *d'*. The head carries a notched flange G⁵, upon which is a ring H, having a spur H', adapted to engage in one of the notches *g* and held in engagement by a nut J. The ring has an arm H² extending laterally therefrom by which the head and its valve-rod may be turned and is equipped with a spring H³, projecting downwardly and resting upon a flange D³, carried on the project-

ing end D' of the water-tube and having a series of notches d^2 , in which the spring may lightly engage to hold the arm H² in the desired position. Stops d^3 d^4 on the flange limit the motion in both directions from the closed to the fully-open condition of the valve.

B² B² are upwardly-projecting spurs formed around the aperture in the bottom of the carbid-cup and serve to support a tube L, of perforated sheet metal, inclosing the valve and nut and having an outer covering of fabric L', serving to protect the water-orifices from the surrounding carbid.

M is an annular disk or follower having a head M', abutting against the interior of the extension A', and is forced downward by the spring M² to perform the usual function of holding the carbid in place. Water from the chamber A flows through the holes d' in the water-tube and passes unobstructedly as far as the screw G², where it flows along the score or groove g' , provided for the purpose, to the valve-seat d , whence if the valve be open it escapes to the interior of the tubular nut E and through the small openings e' , protected by the string e^3 , to the interior of the foraminated tube L, and is thus slowly given to the surrounding carbid.

To adjust the valve, the nut J is slackened and the ring H and its spur H' disengaged from its notch d^2 and shifted to another notch in the direction to allow a greater or less amount of water to pass the valve and the nut is again tightened.

The bottom of the carbid-cup is concave, as shown, and the wings E² of the nut E are narrow, so that they may lie above the plane of the bottom to allow the lamp to stand upright when not in use upon the bicycle.

Modifications may be made in the forms and proportions, and parts of the invention may be used without the whole.

Although I have described the invention as carried out in a bicycle-lamp, it will be understood that it may be embodied in other forms.

I claim—

1. In an acetylene-lamp, a water-chamber, a carbid-cup fitting thereto, a water-supply tube extending downwardly from said chamber into said cup, and means for separably attaching the latter to said tube, all combined substantially as herein specified.

2. In an acetylene-lamp, a water-chamber, a carbid-cup fitting thereto, a water-supply tube extending downwardly from said chamber into said cup and screw-threaded at the lower end, and a nut operated from below said cup and extending through the bottom thereof, adapted separably to attach the cup

to said chamber, all combined substantially as herein specified.

3. In an acetylene-lamp, a water-chamber, a carbid-cup fitting thereto, a water-supply tube extending from said chamber downwardly into said cup, a valve located in said tube, a tubular nut operated from below said cup and extending through the bottom of the latter, adapted separably to attach the cup to said chamber and also serve in distributing the water passing said valve, all combined substantially as herein specified.

4. In an acetylene-lamp, the water-chamber A, having the extension A', the carbid-cup B adapted to fit against said extension, and having an aperture in its bottom, a water-supply tube D extending from said chamber into said cup, and screw-threaded at its lower end, and the tubular nut E having the distributing-openings e' , adapted to engage said tube through said apertures and force the cup into close contact with said extension, all combined substantially as herein specified.

5. The water-chamber A and extension A' therein, the gasket F carried thereby, the carbid-cup, B, having an aperture in the bottom, a water-supply tube D, screw-threaded at the lower end, extending downwardly from said chamber into said cup, and having a valve-seat d , the tubular nut E having the groove e^2 and distributing-openings e' therein, adapted to engage said tube through said apertures and protecting means as the string e^3 lying in said groove, all combined and arranged to serve substantially as, and for the purposes herein specified.

6. In an acetylene-lamp, a carbid-cup serving as a gas-chamber, a water-chamber, a water-supply tube extending therefrom into said cup, a valve-seat at the lower end of said tube and a valve-rod and plug inclosed therein, in combination with the flange G⁵ having the notches g on the upper end of said rod, the ring H and its spur H' adapted to engage one of said notches, the arm H² and spring H³ on said ring, the relatively-fixed flange D³ having notches d^2 and stops d^3 d^4 adapted to engage said spring, and the nut J for holding said ring in place, all substantially as herein specified.

In testimony that I claim the invention above set forth I affix my signature in presence of two witnesses.

WILLIAM P. CRARY.

Witnesses:

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HARRY E. CARRINGTON.