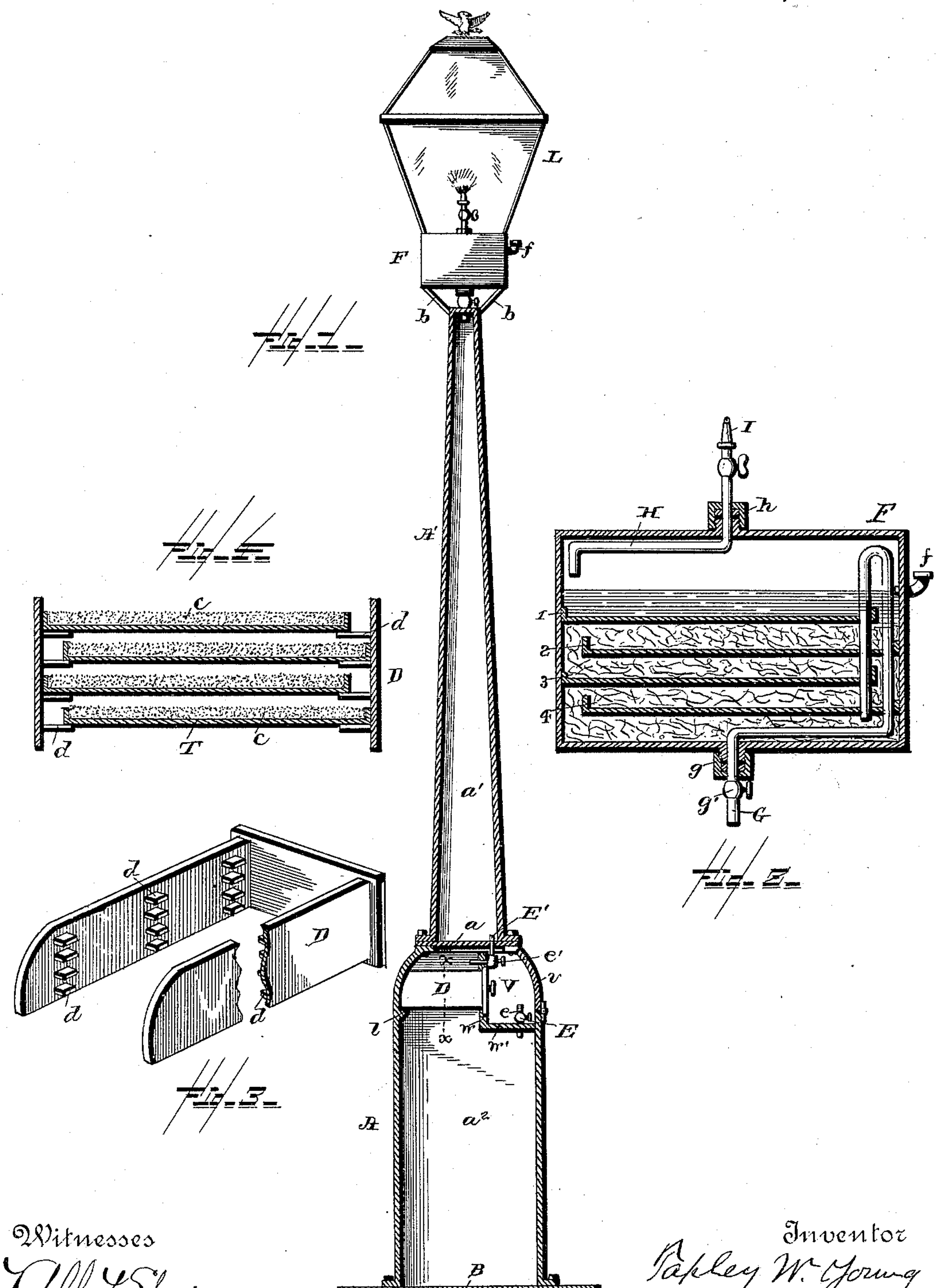
(No Model.)

T. W. YOUNG.

CARBURETING STREET LAMP.

No. 423,367. Patented Mar. 11, 1890.



Witnesses

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TAPLEY W. YOUNG, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR OF ONE-HALF TO CHARLES A. McEUEN, OF SAME PLACE.

CARBURETING STREET-LAMP.

SPECIFICATION forming part of Letters Patent No. 423,367, dated March 11, 1890.

Application filed June 1, 1889. Serial No. 312,843. (No model.)

To all whom it may concern:

Be it known that I, TAPLEY W. YOUNG, a citizen of the United States of America, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Carbureting Street-Lamps, of which the following is a specification, reference being had therein to the accompanying drawings.

In towns and villages not supplied with gas-plants it is customary at present, for want of a better means, to use oil-lamps mounted upon posts in lighting the streets. As to the superiority of illuminating-gas for this purpose nothing need be herein stated.

The object of my invention is to provide a cheap street-lamp in which vapor is the illuminant, the vapor being produced by carbureting air stored in the lamp-post.

The invention will first be described in connection with the accompanying drawings, and then pointed out in the claims.

Figure 1 is a side elevation of my carbureting street-lamp, the post being shown in section. Fig. 2 is a sectional elevation of the carburetor enlarged. Fig. 3 is an enlarged perspective view of the drier-drawer with the trays removed. Fig. 4 is a transverse section, enlarged, of the drier-drawer, taken on the line x x of Fig. 1, looking to the rear.

My carbureting street-lamp comprises as essential elements a post having a compressed-air reservoir and an expansion-chamber, a carburetor, and a lamp, all constructed and arranged in the manner substantially as hereinafter set forth.

Referring to the accompanying drawings, it will be seen that the lamp-post is made in two parts or sections A A′, both of which are hollow, the lower part A being larger in cross-section than the upper part A′. Section A is closed at its upper end by a plate a and at its lower end by a base-plate B, which is considerably greater in diameter than the post, in order to serve as an anchor for the latter when set in the ground. a^2 represents the compressed-air reservoir inside this section A.

A vestibule V, closed by a hinged door v, secured in any suitable manner, is formed in the upper part of section A of the post by means of walls w w', for purposes which will be explained farther on.

It is well known that when the atmosphere is heavy, as in wet or foggy weather, it has less affinity for carbon vapor than when dry and light, and therefore in order to produce an approximately uniform quality of carbureted air in all kinds of weather by the carburation of air the latter, when moist, should be dried before it is brought into contact with carbureting vapor, and for this purpose I cause it to first pass over a material having an affinity for water—such, for instance, as unslaked lime.

That a relatively large surface of the lime may be exposed to the air in a small space, I employ a drawer D, open at the bottom and at one end, as seen in Fig. 3, to the inner sides of which are attached cleats d, on which I place trays T, containing the desiccating material c. These trays, which are not of the full dimensions of the interior of the drawer, are so placed upon the cleats as to leave an open passage between each tray and the side of the drawer, these passages alternating from side to side, as seen in Fig. 4, so that the ascending air will pass up through the lower passage and over the whole surface of the lower tray, thence up through the next passage and over the second tray, and so on. This drawer is placed in the upper portion of section A of the post, its rear end being supported by a ledge l and its front end resting in an opening in the rear wall w of the vestibule, this end being so fitted and packed in the said opening as to prevent the escape of air, and held in place by a turn-button or suitable device. (Not shown.)

A short pipe or tube E, screw-threaded on its upper portion and provided with a valve e, is inserted through the lower wall w' of the vestibule, and a bent pipe or tube E′, provided with a valve e', is inserted through the rear wall w of the vestibule and through the plate a into the expansion-chamber a' in section A′ of the post.

F represents the carburetor, which is of a very simple and common form, consisting of a copper box provided inside with a series of pans 1 2 3 4, secured at a suitable distance apart and so arranged as to leave openings

between the pans and the sides of the box, said openings alternating from side to side, as seen in Fig. 2. The spaces between the pans are filled with excelsior or other like absorbent for the oil. Through one side of the box, a short distance above the upper pan, is inserted a funnel-pipe *f*, through which to pour oil into the carburetor, the outer end of this pipe being bent upwardly and provided with a screw-cap. This upward bend of the funnel-pipe enables the operator to gage the proper quantity of oil. The air-inlet pipe G enters the carburetor through a stuffing-box *g* and passes up one side to near the top and then bends downward, its end reaching below the lower pan. Outside the carburetor this pipe is provided with a valve *g'*. The vapor-exit pipe H, on the outer end of which is the burner I, passes into the carburetor from the upper side through a stuffing-box *h*, its lower inner end resting a short distance above the oil-line. The carburetor is supported upon brackets *b* at the top of the post.

L represents the lamp, which is of common construction, secured in any suitable manner on top of the carburetor.

To put my carbureting street-lamp in operation, the door of the vestibule is opened and an air-pump is attached to pipe E, valve *e* being opened and valve *e'* closed. Air is then forced into the air-reservoir until a sufficient density is attained, when the pump is detached, valve *e* closed, and valve *e'* opened. Both of these valves being within the vestibule, the operator is enabled to conveniently regulate the flow of air into and out of the reservoir. The air will then pass over the desiccating material in the manner above stated and out through the tube E' and into the upper section A' of the post, where it will expand and lose the pressure with which it left the reservoir. It will then enter the air-inlet pipe G of the carburetor, whose lower end is passed through the upper closed end of the post, as seen in the drawings, and emerge from said pipe near the bottom of the carburetor. Then it will pass across the carburetor below the lower pan, thence up through the opening between the pan and the side of the box, thence over the top of the pan and up through the next opening, and so on, in this manner becoming thoroughly carbureted. It is then conveyed through the vapor-outlet pipe to the burner. In the event of such an accumulation of air in the expansion-chamber that the air would pass into the carburetor under too great pressure valve *g'* can be turned so as to check the flow of the air.

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

1. A lamp-post comprising a reservoir for compressed air, a pipe for the introduction of air into said reservoir, an expansion-chamber, and a connection between the reservoir and said chamber, in combination with a carburetor arranged to receive air from the expansion-chamber, and a burner connected with the carburetor, substantially as shown and described.

2. A lamp-post comprising a reservoir for compressed air, a pipe for the introduction of air into said reservoir, an expansion-chamber, and connection between the reservoir and said chamber, in combination with a carburetor mounted on top of the post and in communication with the expansion-chamber, and a lamp mounted on the carburetor and in communication therewith, all arranged substantially as shown and described.

3. A lamp-post comprising a reservoir for compressed air, a pipe for introducing air, an expansion-chamber, a connection between the reservoir and expansion-chamber, a receptacle containing a desiccating material within the reservoir, a carburetor mounted on top of the post and connected with the expansion-chamber, and a lamp mounted on the carburetor connected therewith, all combined substantially as described.

4. A lamp-post made in two sections, as described, the lower one of which serves as a reservoir for condensed air and is provided with a vestibule, a pipe leading from the vestibule to the reservoir, another pipe communicating with the reservoir and the interior of the upper section, both pipes being provided with valves within the vestibule, a carburetor mounted on top of the upper section of the post and connected with the upper chamber thereof, and a lamp whose burner is above and in communication with the carburetor, all combined substantially as described, and for the purposes set forth.

5. A carbureting street-lamp comprising a post made in two sections, the lower one of which serves as a reservoir for condensed air and is provided with a vestibule, the interior of the upper section serving as an expansion-chamber, a receptacle containing a desiccating material within the lower section, a pipe leading from the vestibule to the reservoir, another pipe communicating with the reservoir and the expansion-chamber, both pipes being provided with valves within the vestibule, a carburetor mounted on top of the post and in communication with the expansion-chamber, and a lamp whose burner is above and in communication with the carburetor, all combined as described.

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

TAPLEY W. YOUNG.

Witnesses:

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