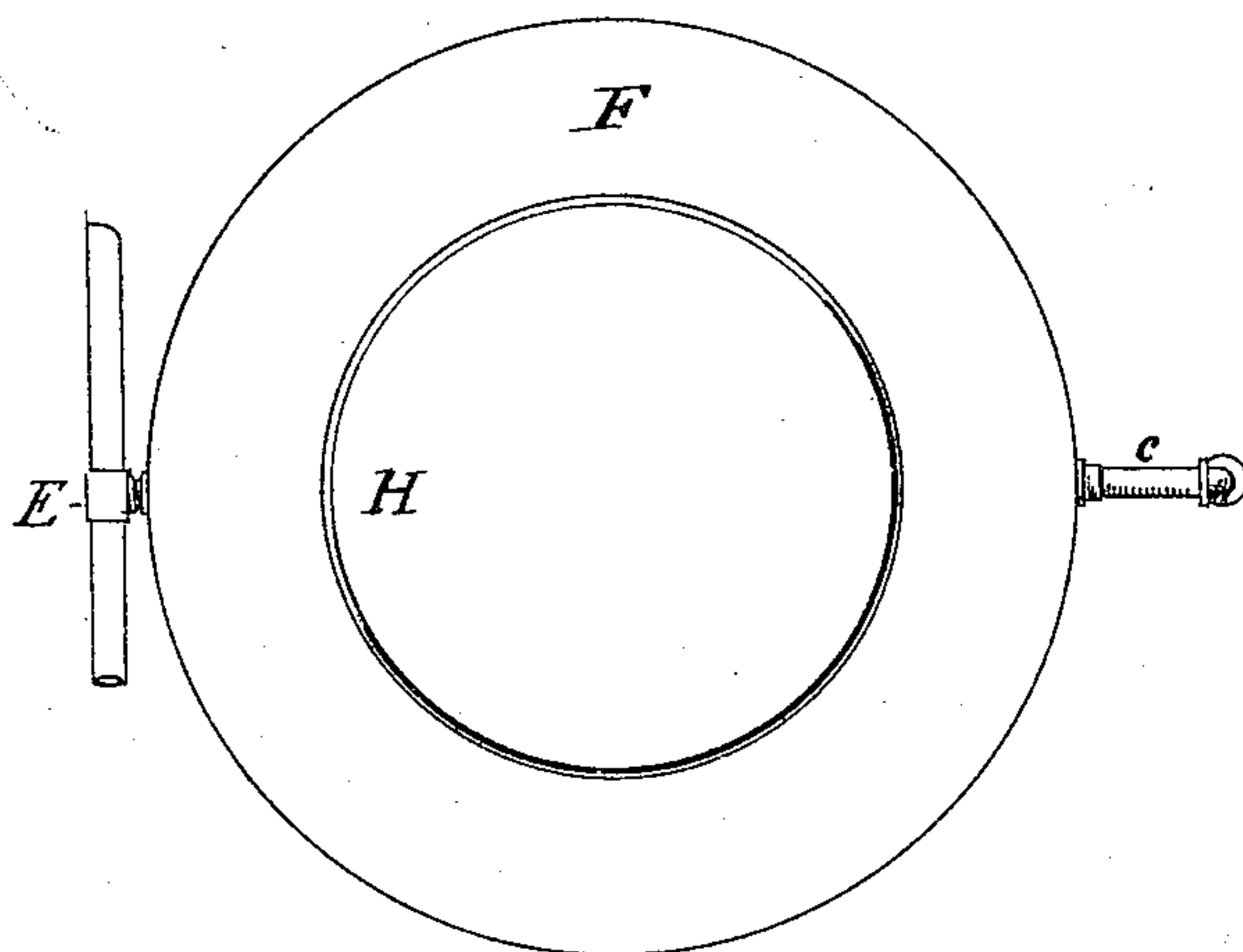
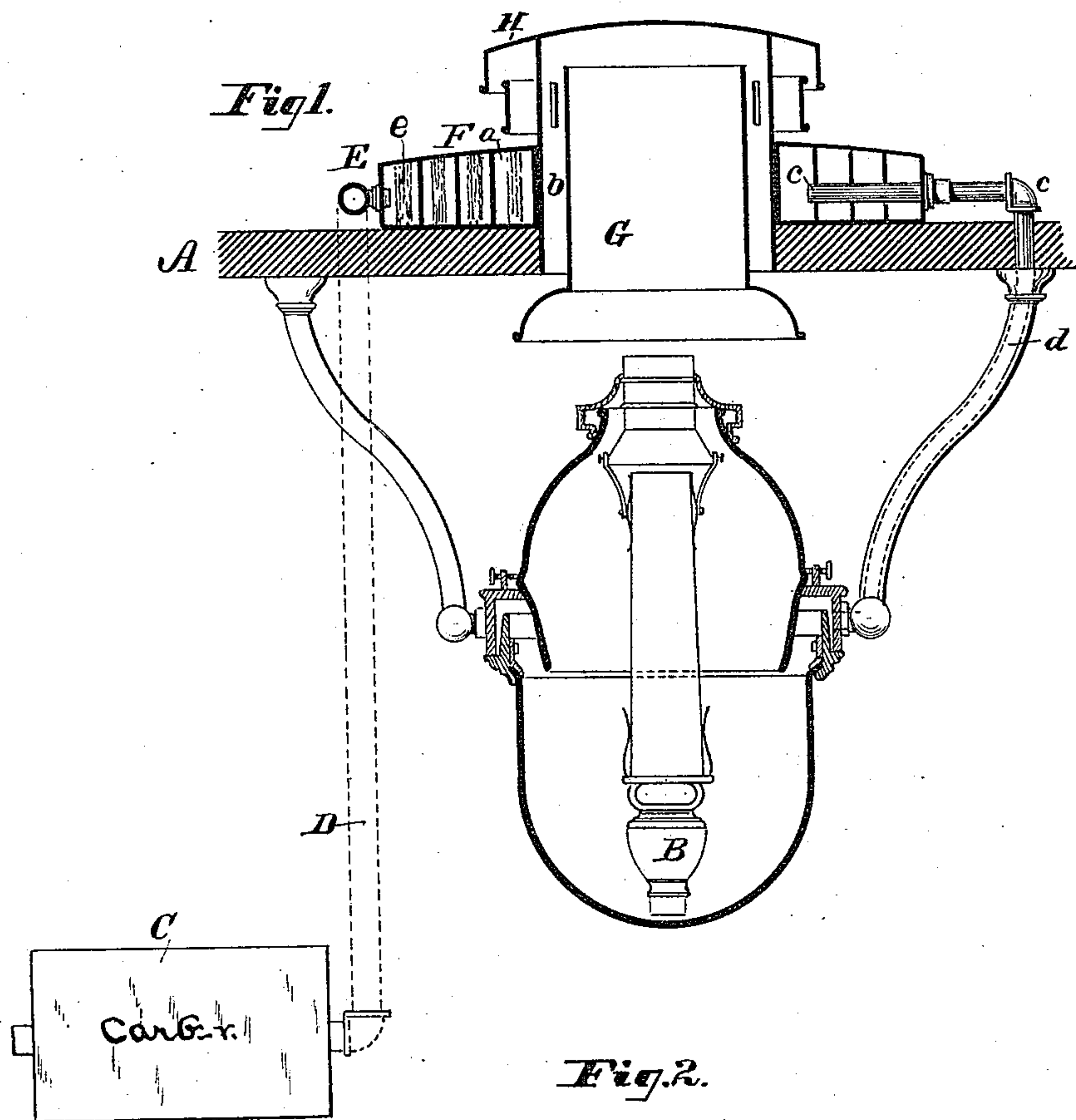


(No Model.)

E. J. FROST.  
CARBURETOR AND ATTACHMENT FOR LAMPS CONNECTED THEREWITH.  
No. 451,036. Patented Apr. 28, 1891.



WITNESSES:

*J. W. West*  
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# UNITED STATES PATENT OFFICE.

EDWARD J. FROST, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE  
RAILWAY LIGHTING AND HEATING COMPANY, OF SAME PLACE.

CARBURETOR AND ATTACHMENT FOR LAMPS CONNECTED THEREWITH.

SPECIFICATION forming part of Letters Patent No. 451,036, dated April 28, 1891.

Application filed March 18, 1886. Serial No. 195,733. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD J. FROST, of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Carburetors and Attachments for Lamps Connected Therewith, whereof the following is a specification, reference being had to the accompanying drawings.

Figure 1 represents a central vertical section through the lamp and adjacent portions of the apparatus with which the carburetor is connected, and Fig. 2 is a top or plan view of the attachment.

My invention is especially adapted for use in connection with a system of lighting railway-cars, &c., wherein the compressed air from the air-brake apparatus is passed through a carburetor and after being charged therein is conducted to the burners; but the improvements are not restricted to use in this connection, since they will be found advantageous under other circumstances.

A difficulty is frequently experienced in the use of these devices owing to the fact that the vapor which has been taken up by the air-current deposits itself in liquid form in the pipes, and on being blown into the flame causes it to jump or sputter, or produces an irregular and smoky combustion.

The object of my invention is to avoid this difficulty; and it consists in combining with the carburetor and the lamp an intermediate receptacle or chamber provided with absorbent material and warmed externally, preferably by the heat of the lamp itself. Said chamber should be arranged close to the lamp in the line of travel of the gas, in order that the accumulation may be reduced to a minimum by presenting the least possible extent of pipe between the chamber and the lamp.

In the accompanying drawings, A represents a section through a car-roof, and B a lamp suspended therefrom, having a chimney G extending upward through the roof and provided with a suitable shield or hood H.

The carburetor C may be arranged in any convenient position on the car, and may be of any desired form. It is supplied with an air-current from the air-brake system or other source, and the illuminating-vapor on issuing from it passes through the pipe D to the

roof of the car, where it communicates at E with a closed chamber or receptacle F. This chamber is preferably cylindrical, and arranged so that the chimney G of the lamp shall pass through its center, there being also preferably an air-space *b* between the chimney and the wall of the chamber.

I prefer to construct the interior of the chamber F with a continuous spiral partition *a*, and to dispose in the spiral passage thus formed strands of cotton-wicking *e*, in the manner which is described for the construction of a carburetor in my Letters Patent No. 278,529, dated May 29, 1883; but I do not limit myself to this method of arrangement.

From the innermost portion of the spiral passage-way in the chamber F a pipe *c* leads outward, and passing through the car-roof communicates with the lamp B through one of the supports *d*, or in any convenient manner. I prefer to take the vapor through the pipe *c* from the innermost part of the chamber F, because it is the warmest; but I do not limit myself to this mode of arrangement.

The operation of the apparatus is as follows: The vapor issuing from the carburetor C enters the chamber F and travels by a somewhat protracted course to the outlet. In its passage it deposits upon the strands of wicking *e* or other absorbent material within the chamber such particles of the suspended liquid as would be injurious to the action of the lamp, in the manner before referred to. The absorption, however, is limited and cannot become sufficient to destroy the illuminating character of the vapor, since, the chamber E being heated, the volatile liquid will not to any very great extent remain suspended in the wicking, but will be vaporized and issue with the stream of illuminating-vapor, enriching the latter, but not overcharging it, nor being deposited in the intermediate pipes in liquid form. The interposed chamber F thus fills a double part, in that it not only filters out, as it were, the free liquid which has been carried along by the current, but also acts as a store-house to equalize the charge of volatilized liquid in the vapor, thus preserving the uniformity of the latter.

I am of course aware that it is not new to heat a generating-chamber by means of the



flame of a lamp supplied therefrom, and I do not claim the same herein, as my present invention relates only to the treatment of the vapor after it is charged or carbureted; nor  
5 do I claim, broadly, in this application the combination, with the carburetor, of a separate air-heating chamber. As heretofore used, such devices have been applied to the air-supply pipe of the carburetor to heat the  
10 air before charging; nor do I claim, broadly, the use of a filtering device in conjunction with a carburetor, or the use of porous material as the filling of the carbureting-chamber.  
15 The peculiarity of my invention lies in the fact that by interposing in the line of travel of the charged vapor a chamber which is not only capable of filtering out but of restoring the hydrocarbon to the passing current in a  
20 position where said chamber is properly heated during the action of the lamp which it supplies I avoid the difficulties before re-

ferred to and which are incident to the use of prior devices, and thus maintain at a practically uniform degree of saturation the  
25 charged current which is supplied to the lamp.

Having thus described my invention, I claim—

The combination, with a carburetor, a lamp  
30 supplied therefrom, and a conduit connecting the same, of a heating-chamber independent of the carburetor proper and arranged in the line of said conduit and above the lamp, and  
35 a filling of absorbent material disposed within said chamber, substantially as set forth, whereby the vapor, after issuing from the carburetor in a charged condition, is filtered or restored in its passage through said chamber.

EDWARD J. FROST.

Witnesses:

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F. W. WEST.