

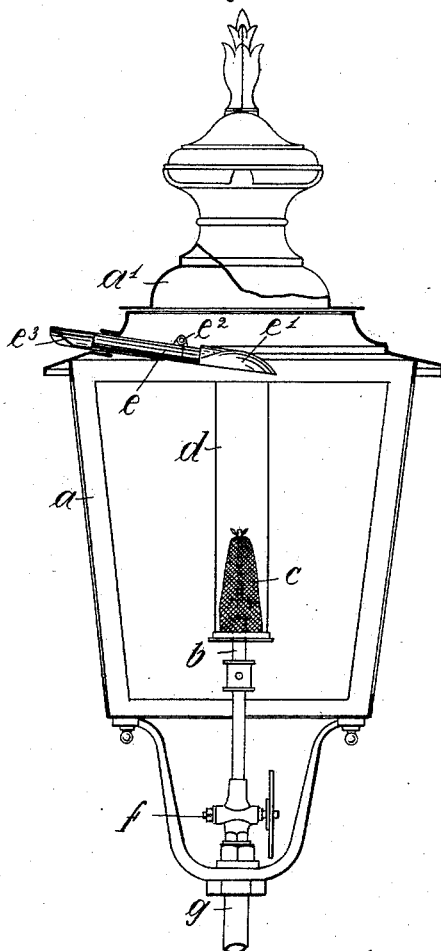
(No Model.)

C. W. MUCHALL.  
GAS LIGHTING DEVICE.

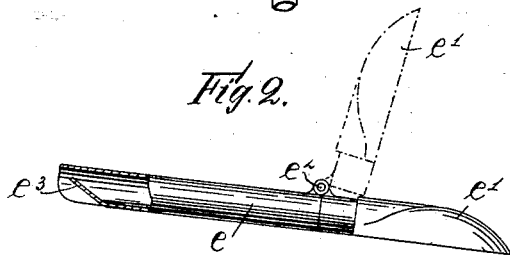
No. 524,449.

Patented Aug. 14, 1894.

*Fig. 1.*



*Fig. 2.*



Witnesses.  
Emil Kreyser  
Carl Popsbach

Inventor:  
Carl Wilhelm Muchall  
by  
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# UNITED STATES PATENT OFFICE.

CARL WILHELM MUCHALL, OF WIESBADEN, ASSIGNOR TO THE DEUTSCHE GASGLÜHLICHT-ACTIENGESSELLSCHAFT, OF BERLIN, GERMANY.

## GAS-LIGHTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 524,449, dated August 14, 1894.

Application filed January 6, 1894. Serial No. 496,011. (No model.) Patented in England December 15, 1893, No. 24,192.

*To all whom it may concern:*

Be it known that I, CARL WILHELM MUCHALL, a subject of the King of Prussia, German Emperor, and a resident of Wiesbaden, in the Province of Hesse-Nassau, Kingdom of Prussia, German Empire, have invented certain new and useful Improvements in Devices for Lighting Gas-Lanterns, (for which I have a patent in Great Britain, No. 24,192, dated December 15, 1893,) of which the following is an exact specification.

This invention refers to devices, by means of which lanterns or street-lamps may be lighted without necessitating the opening of the casing inclosing or surrounding the burner proper, and my improvements in such devices relate to the arrangement of a horizontal or but very slightly inclined tube in the top of the casing of the lantern or street-lamp, and in providing the inner end of said tube with an enlargement formed best by an inverted spoon or funnel and being situated in the space above the burner or shortly above a chimney proper or a chimney-like part adapted to receive as well as conduct the fresh gas issuing from the burner, before the latter has been lighted.

Before entering into the details of the construction, I beg to state, that I am well aware of the existence of devices in which the desired effect has been sought by a tube, which, however, was arranged vertically or very nearly so, and which, further, did not possess any enlargement or an equivalent part, by the aid of which the lighting-gas, or a mixture of this latter with air, could be connected and conducted into the ignition-tube, as well as prevented from entering the remaining inner space of the casing.

In order to make my invention more clear, I refer to the accompanying drawings, in which similar letters denote similar parts throughout the different views, and in which—

Figure 1 is a vertical section through the lamp of a street-lantern, provided with my improved lighting-device, and Fig. 2 is an enlarged view of the ignition-tube proper.

The burner shown in this lamp is intended for the so-called gas-glow-light, in which a hollow cylinder consisting of special mineral-substances is brought to intense glowing by a very hot and non-luminous flame, as is pro-

duced, for instance, by a burning mixture of gas and air. The ignition-tube may be used, however, also for other constructions of burners, and I have preferred to show the same in connection with a gas-glow-lamp, as the ignition tube is most suitable just for lamps of this kind.

The construction proper is as follows: The casing *a* inclosing the burner *b* with its glowing-body *c* and with the chimney *d* surrounding the latter is provided in its top *a'* with the tube *e*, the position of which is but a very slightly inclined one, or which, in other words, extends in the direction to the top of the chimney *d*. The inner end of tube *e* carries the spoon-like enlargement *e'*, which may be adapted to be displaced telescopically on tube *e*, or which may be movably secured to the latter by means of a hinge *e''*, so that in either case the chimney may be freed from part *e'* for being enabled to be taken off the burner, if the lamp shall be cleaned, or a fresh glowing-body shall be set in. The same effect may be attained, however, by arranging tube *e* displaceable in the lantern-top *a'* and by providing it with two shoulders or other projections for the purpose of limiting its movements in either direction. If, now, cock *f* of the gas-conduit *g* is opened, the gas entering the cylinder mixes with air within the latter; this mixture, when leaving the top of the chimney, is caught by the inverted spoon-like end or enlargement *e'*, and is led then by tube *e* to the outer orifice of the latter. This orifice is narrowed by a tongue *e'''* for the purpose of causing a slight compression of the mixture within tube *e*, and of preventing wind and rain from entering the latter.

The lighting proper is effected by bringing the flame of a common lighting-rod quite near to the outer orifice of tube *e*, so that the mixture of gas and air, which is easily inflammable and flows upward within the tube *e* with but slight velocity, is ignited; this ignition then proceeds inward and is transferred to the mixture within chimney *d*, so that finally also the burner is lighted.

I here think it necessary to expressly point out the great importance of the tube *e* with regard to its slight inclination; by making the inclination but very slight, I prevent the mixture from escaping too quickly out of the tube

and I, further, hinder the latter itself from exerting too strong a draft on the burner-flame, so that the latter is lighted with perfect security, and is kept burning with continual steadiness; results, never attained heretofore by other constructions resting on the above principle.

I wish it to be understood, that I do not confine myself to the spoon-like configuration of the part  $e'$ , but that I may use also other configurations, provided the latter be also adapted to catch up the gases rising from the burner; such configuration is represented, for instance, by an inverted funnel or hopper, the diameter of which is somewhat like that of the chimney.

Having thus fully described the nature of this invention, what I desire to secure by Letters Patent of the United States is—

1. A gas-lantern with chimney, having a horizontal or slightly inclined tube  $e$  held by the top of the casing, and extending from the outside of the latter down to the space above the chimney, said tube having secured to its inner end an inverted casing  $e'$  by means of a hinge  $e^2$ , said casing being of spoon-like con-

figuration and having its opening a short distance above the chimney, for the purpose as described.

2. In a gas-lantern with a Bunsen-burner and with a glowing-body surrounded by a chimney, a horizontal or slightly inclined tube  $e$  held by the top  $a'$  of the casing and extending from the outside of the latter down to the space above the chimney  $d$ , said tube having secured to its inner end an inverted casing  $e'$  by means of a hinge  $e^2$ , and having at its outer end a tongue  $e^3$  narrowing the respective orifice, the said casing being of spoon-like configuration and having its opening a short distance above the chimney, for the purpose as described.

In testimony whereof I have signed this specification in the presence of the subscribing witnesses.

CARL WILHELM MUCHALL.

Witnesses:

PAUL SCHUEGLER,  
J. AURADI,  
FRANK H. MASON.