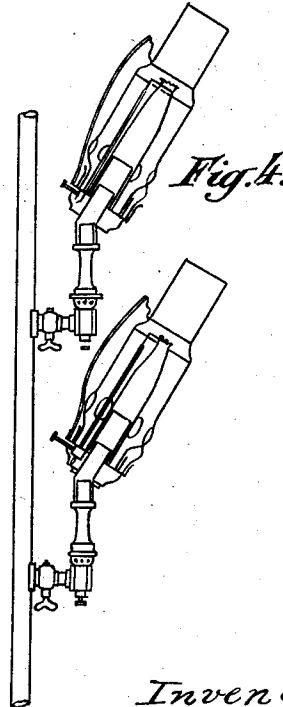
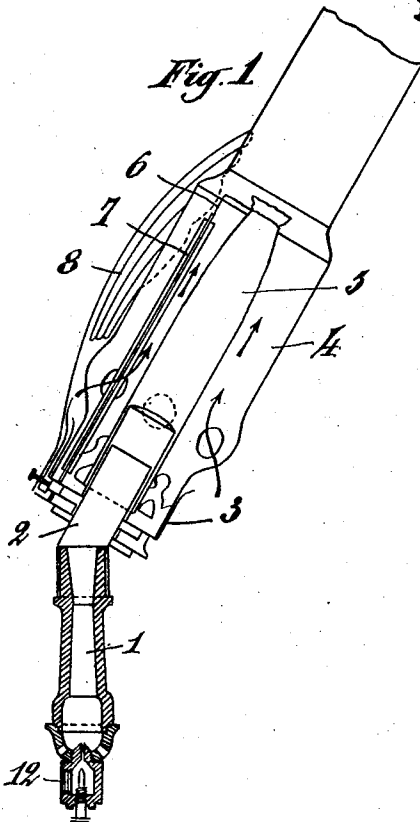
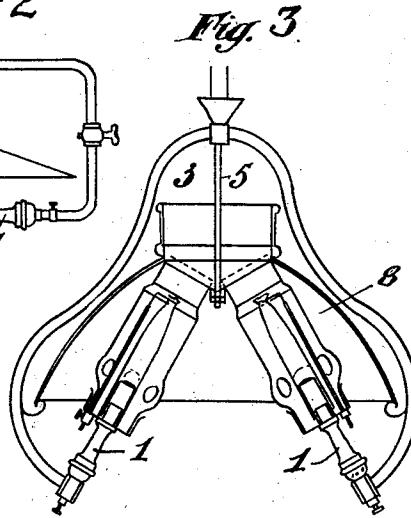
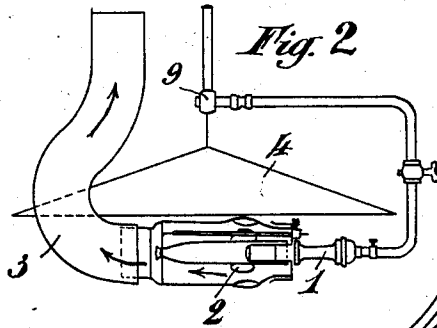


P. G. DE SCHODT.
GAS LIGHTING.
APPLICATION FILED MAY 23, 1910.

1,021,805.

Patented Apr. 2, 1912.

3 SHEETS—SHEET 1.



Witnesses
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Elizabeth Leckert.

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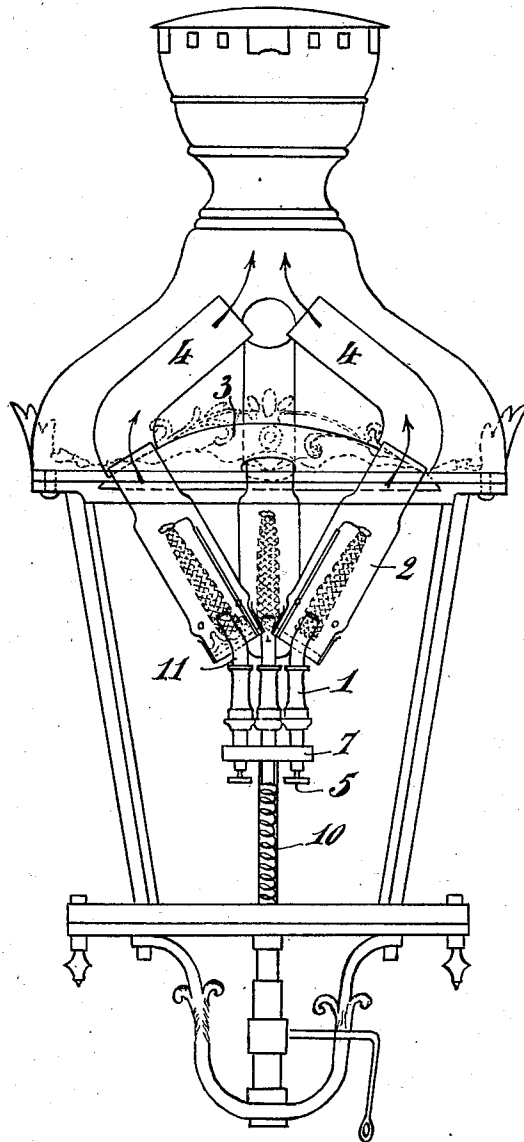
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3 SHEETS—SHEET 2.

Fig. 5.



Witnesses

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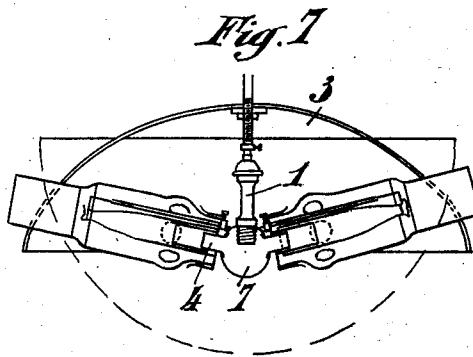
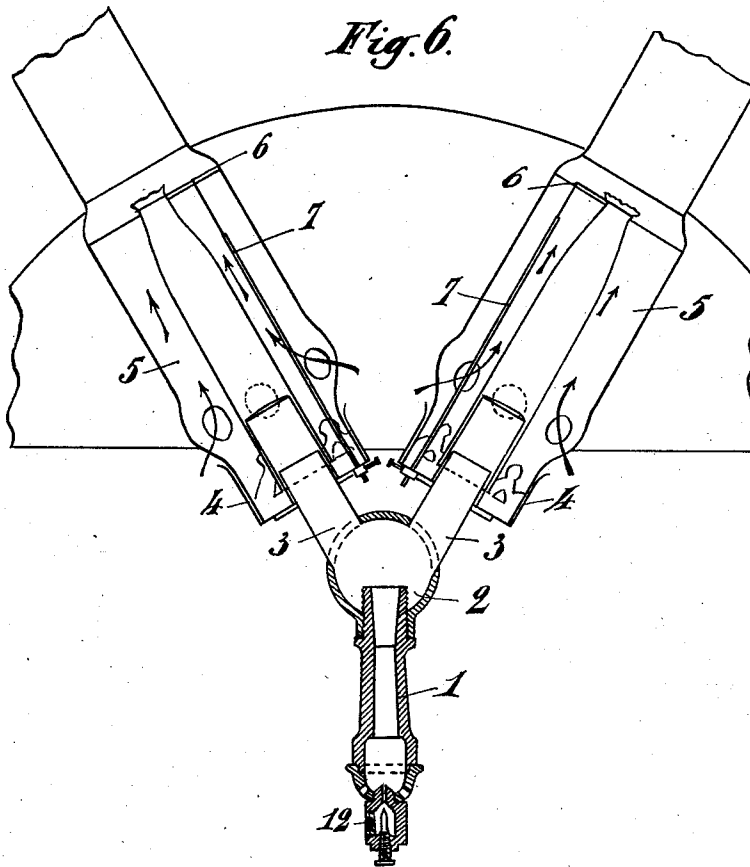
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UNITED STATES PATENT OFFICE.

PAUL GREYSON DE SCHODT, OF NAMUR, BELGIUM.

GAS-LIGHTING.

1,021,805.

Specification of Letters Patent.

Patented Apr. 2, 1912.

Application filed May 23, 1910. Serial No. 563,009.

To all whom it may concern:

Be it known that I, PAUL GREYSON DE SCHODT, a subject of the Kingdom of Belgium, engineer, residing in Namur, Belgium, have invented certain new and useful improvements in Gas-Lighting, and do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked therein, which form a part of this specification.

Incandescent gas lighting by means of mantles has heretofore been effected by means of burners burning vertically or by means of inverted burners.

If an upright burner be used almost the whole of the light is projected laterally and the maximum illumination takes place normally to the surface of the mantle. The result is that the floor is only illuminated by rays of small intensity or by reflected rays. If on the other hand an inverted mantle is used all the light is concentrated beneath the mantle.

The present invention has for its object a method of obtaining a maximum illumination by causing an inclined burner to burn obliquely beneath a reflector. The angle of obliquity of the mantles may vary from 0 to 90° in such a manner as to obtain the most intense illumination where it is required. It is in short the application of incandescent lighting to the methods long used for electric lighting.

The essence of the invention resides in the production of flames sufficiently unyielding to follow the form of the mantle even when inclined. This rigidity is obtained by creating around the mantle a current of air which maintains the flame in the axis of the mantle and enables it to rest upon the mantle without the necessity of having recourse to an inner support. It may also be obtained by imparting sufficient force to the flame by extra pressure or mixing of the gas and air under pressure, or dispensing with the metal gauze. In short it is a novel

application of incandescent burners enabling them to be used obliquely beneath a reflector which adds to the normal rays the reflected light emitted by the face of the mantle opposite to that affording direct illumination.

In order that the invention may be understood various arrangements constituting several of its applications are hereinafter described by way of example.

Referring to the drawings in which like parts are similarly designated—Figure 1 is an elevation, partly in section, of an incandescent gas lamp embodying my invention. Fig. 2 is an elevation of a similar lamp showing an extreme position (horizontal) of the mantle. Fig. 3 is an elevation showing a group of two inclined lamps and burners. Fig. 4 is an elevation similar to Fig. 1, showing a plurality of lamps one above the other. Fig. 5 shows a cluster of three inclined burners suitable for street or other lighting. Figs. 6 and 7 are elevations showing a modification.

First application—inclined burner with one mantle.

Fig. 2 represents a burner inclined at 90°, that is to say burning horizontally. A Bunsen burner 1 is surmounted by a gallery, a glass chimney and a sleeve suspended from an outer ring. The end of the glass chimney opens into a chimney 3. Above the mantle there is arranged a reflector 4 through which the chimney 3 passes. The burner is adjustable owing to the provision of the joint 9.

The operation is as follows:—The burner being kindled, owing to the draft created by the chimney 3 air is drawn through the holes 2 and the column of air maintains the flame approximately in the axis of the glass chimney if the flame is naked and absolutely so if the flame is inclosed in a rigid mantle. The illumination is horizontal from the whole of the lower face of the mantle and by reflection as regards its entire upper face. In order to change the mantle it is only necessary to turn the burner around the joint 9.

Fig. 3 represents the combination of two

burners inclined at about 30° to the vertical. It will be seen that these burners 1 open into a chimney 3 which creates a draft. This chimney is movable so as to facilitate
 5 the replacement of the mantles and is adapted to slide along the rod 5. Obviously these burners may be arranged in any position; they can be grouped in twos, threes, fours or fives and instead of a single chimney a separate chimney may be provided
 10 for each burner. The reflected rays are added to the direct rays by the reflector 8.

Second application—upright burner with inclined mantle. Instead of inclining the
 15 burner it may be more advantageous to incline the mantle only.

Fig. 1 shows diagrammatically an arrangement of this kind applicable to a shop lamp for example as represented in Fig. 4.
 20 In this embodiment of the invention a vertical Bunsen burner 1 of any kind with adjustable screw injector 12 is surmounted by an elbow or a bend 2, the angle of inclination of which varies according to circumstances. Upon this shoulder there is arranged the gallery 3 surmounted by a glass chimney with an elongated end 4. A mantle
 25 5 which has been rendered specially rigid by intense preliminary burning is placed upon the gallery and is supported by a rod 6 protected by a magnesia sheath 7. A reflector 8 is arranged above the mantle. The same phenomena as those explained above take place when the burner is alight. The
 35 luminous rays disperse in such a manner that the illumination is substantially the same at all points on the ground and the maximum intensity is not radiated vertically. The result is a great increase in the illumination which in some cases amounts
 40 to as much as 140% in comparison with upright burners of the same consumption. Obviously a number of these burners might be grouped in such a manner as to obtain
 45 exceedingly powerful sources of light.

Fig. 5 represents a grouping of several burners for public illumination. The burners 1 are supported by a box 7 which carries adjustable injectors 5 and a hollow rod
 50 entering a pipe where it is supported by a spring 10. Bends 11 impart the desired inclination to the mantles. The chimneys rest in openings formed in a reflector 3 normal at these points to the said chimneys.
 55 Passages 4 opening into the upper part of the lamp permit of kindling and insure a draft.

The operation is the same as for a single burner. The mantles are replaced by lowering the box 7 in such a manner as to free
 60 the end of the chimneys from the openings in the reflector.

Obviously a larger number of burners might be employed and combined in such a

manner and with such an inclination as
 65 would give the mean maximum illumination on the ground.

Third application—single burner with several inclined mantles.

The grouping of a number of parallel
 70 burners upon a box (Fig. 5) presents the advantage that adjusting injector screws can be used enabling one or more burners to be extinguished if desired, while leaving the other alight. If this is not necessary a
 75 single burner can be used as represented in Fig. 6.

The burner 1 is surmounted by a chamber 2 around which one or more tubes 3 are arranged. On these tubes galleries 4 carrying
 80 mantles and long necked glass chimneys 5 are arranged. The mixture leaving the Bunsen burner 1 spreads in the chamber 2 and supplies the various mantles.

The burner burns in the manner explained
 85 above and it is thus possible to obtain a luminous cluster of mantles which distribute the light all around the burner.

If it be desired to prevent any shadow from being thrown the arrangement represented in Fig. 7 might be adopted. In
 90 this the supply burner 1 is suspended beneath a reflector 3 and the chamber 2 distributes the gaseous mixture to a certain number of mantles which rest upon noz-
 95 zles 4.

If it be desired to adopt the system for indirect lighting it is only necessary to arrange an inverted reflector 5 throwing the
 100 direct or reflected rays on to the ceiling.

It should be mentioned that in all these arrangements the glass chimney is only necessary when the pressure is not sufficient to impart to the flame itself the necessary
 105 rigidity to cause the mantle to burn obliquely.

Obviously the system is not only applicable to coal gas but to acetylene, carburated air, gasolene or other volatilized hydrocarbons.

Claims.—

1. In incandescent lighting systems the combination of a mantle fitted upon a burner and arranged in a direction deviated from a vertical, a glass chimney arranged
 115 around said mantle, a chimney connected to said glass chimney for producing a draft and for allowing a current of air to pass through said glass chimney thus imparting a certain degree of rigidity to the flame
 120 and allowing it to take up a path substantially parallel to the axis of said mantle, and means for reflecting the light emitted by the face of the mantle opposite to that affording direct illumination.

2. In incandescent lighting systems the combination of a burner, a rigid mantle fitted in conjunction therewith and arranged

in a direction deviated from a vertical, a
long necked chimney arranged around said
mantle on said burner, and constituting
means for causing a current of air to pass
5 through said chimney around said mantle
and for enabling a flame to issue along a
path substantially parallel with the axis of
said mantle.

In testimony that I claim the foregoing
as my invention, I have signed my name in
presence of two subscribing witnesses.

PAUL GREYSON DE SCHODT.

Witnesses:

HENRI RACLOT,

GEORGES VANDER HAEGHEN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
