

J. GALILÉ.
 INCANDESCENT GAS AND LIKE BURNER.
 APPLICATION FILED NOV. 30, 1907.

1,018,969.

Patented Feb. 27, 1912.

3 SHEETS—SHEET 1.

Fig.1.

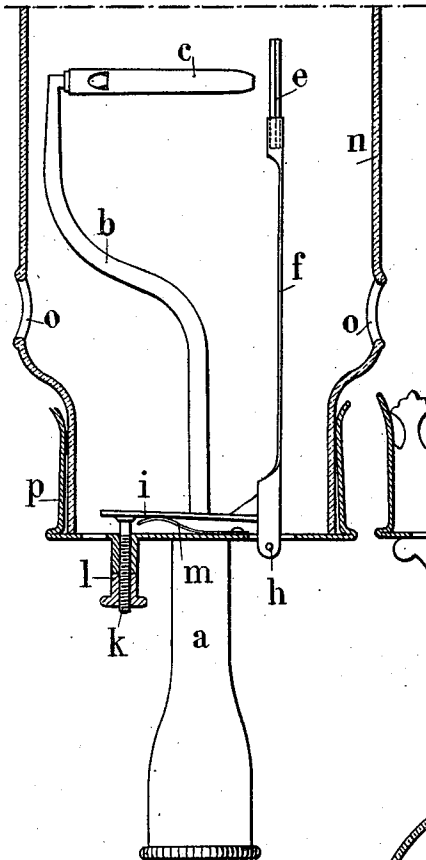


Fig.3.

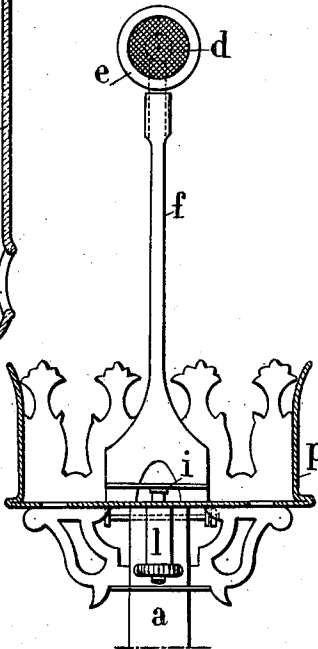


Fig.11.

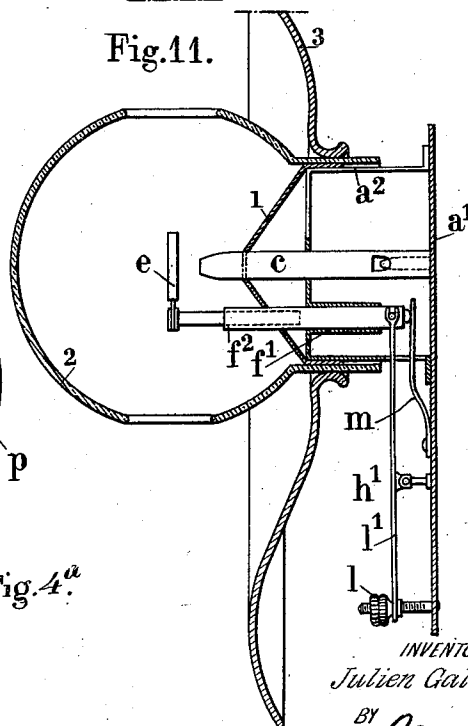


Fig.2.

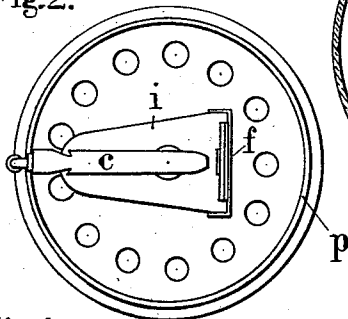


Fig.4.

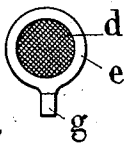


Fig.4^a.



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3 SHEETS—SHEET 2.

Fig. 5.

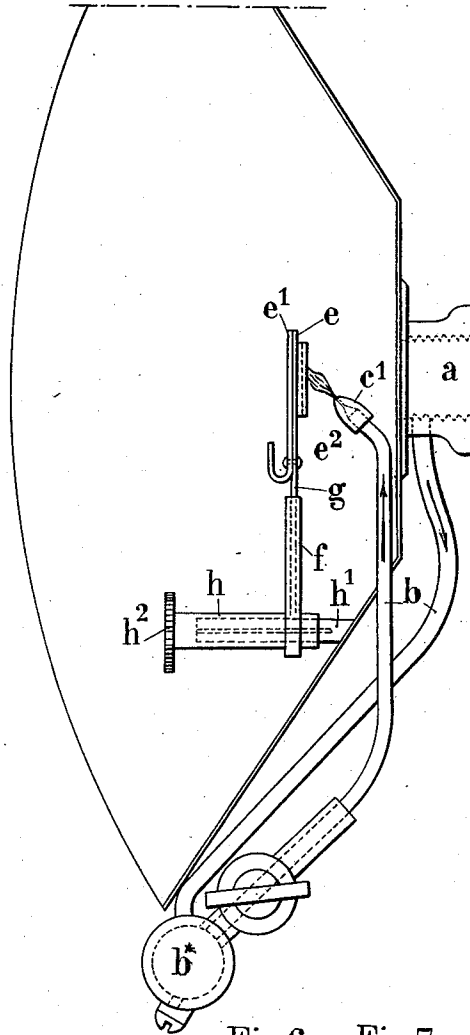
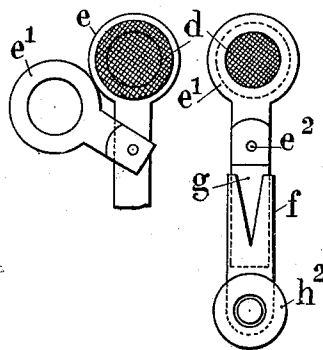


Fig. 6. Fig. 7.



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INCANDESCENT GAS AND LIKE BURNER.

1,018,969.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JULIEN GALILÉ, of 1st Rue de la Visitation, in the city of Nancy, Meurthe-et-Moselle, Republic of France, gentleman, have invented Improvements Relating to Incandescent Gas and Like Burners, of which the following is a full, clear, and exact description.

This invention has for object an incandescent gas burner whereby, with but a small gas consumption, to obtain illumination sufficient for the purpose of a night-light from the incandescence of a disk of gauze impregnated with rare oxids submitted to the action of the flame from an atmospheric burner.

In the drawings which illustrate a burner constructed according to the invention, Figure 1 is an elevation, Fig. 2 a top plan, and Fig. 3 a side view of the burner; while Fig. 4 and Fig. 4^a show front and side elevations respectively of the illuminating disk. Figs. 5 to 7 illustrate modified forms of the burner, Fig. 5 being a side elevation and Figs. 6 and 7 showing the support for the illuminating disk in the open and closed positions respectively. Fig. 8 is an elevation of a modified form of the burner combined with an ordinary incandescant burner, and Fig. 9 is a side view of the same. Fig. 10 shows in plan a detail of the mounting of the burner. Fig. 11 shows a bracket burner.

In Figs. 1 to 4, *a* represents the base of the burner, wherein the gas arrives from the service pipe and which is prolonged in the form of a tube *b* suitably re-curved and terminated by an atmospheric burner *c* of small consumption, emitting a short flame. Opposite the burner *c* is placed a disk of incandescent gauze *d* which may be of any configuration but is preferably circular as in the example shown in the drawing. The disk *d* is retained in a mount or frame *e* inserted and held in place in a support *f* by any suitable means.

In the drawing the tail *g* of the frame *e* is simply nipped between the two strips constituting the support *f*.

In order to regulate the position of the disk *d* relatively to the burner *c* the support *f* is movable about an axis *h* and is provided with a branch *i* under which is arranged a flat spring *m* which tends constantly to lift

this branch and to thus move the disk *d* apart from the burner *c*; the branch *i* carries a screw *k* upon which is mounted a nut *l*. In operating this nut, the interval between the disk *d* and the end of the burner *c*, can be regulated at will.

n is the chimney of the burner which may be of any construction or shape, but which is preferably formed with holes *o*. The chimney *n* is supported in the ordinary manner upon a gallery *p*.

With the arrangement described, it will be seen that the flame emitted by the atmospheric burner *c* plays upon the refractory disk *d*, which thus becomes incandescent and so provides illumination sufficient for a night-light with an insignificant consumption of gas.

In the modification shown in Figs. 5 to 7, the incandescent gauze disk *d* is held in a mount constituted by two annular members *e* *e*¹ whereof one is provided with a recess for the reception of the disk, and whereof one (for example *e*¹) is movable upon the other about an axis *e*² in such manner that, by simply displacing the portion *e*¹ from in front of the portion *e* (Fig. 6) the incandescent gauze disk *d* may at once be put in place or removed, the disk being secured in position when the annular member *e*¹ is replaced exactly over the member *e* (Fig. 7).

In order to permit of the position of the disk *d*, relatively to the flame, being regulated, the tail *g* of the member *e* may slide with a light frictional contact in the support *f* mounted upon a tube *h* which engages with a light frictional contact upon a split tube *h*¹ carried by the shade or reflector; said tube *h* being provided with a milled button *h*² enabling the disk-carrier to be easily shifted forth and back or from left to right upon the tube *h*¹.

The gas flows by way of a pipe *b* branched upon the connection *a* and terminating in a cap *c*¹ having a very small orifice adapted to emit a strong but thin jet of gas producing a very hot flame rich in oxygen. On the pipe *b* are provided a tap and a small reservoir *b*^{*} for collecting the water of condensation, said reservoir being provided with an emptying screw-plug. This arrangement may be utilized either as a wall lamp (Fig. 5) or as a ceiling lamp; in the

latter case the jet of gas is led in from below, the disk-carrier being placed a little farther down the apparatus.

In Figs. 8, 9 and 10, the burner described above with reference to Figs. 1 to 4, is shown in combination with an ordinary incandescent burner of the type known as the "Auer burner" wherein, as before, the gas enters the burner by way of the base *a* through a tap *v*; the said ordinary burner comprising an atmospheric injector *r*, mixing tube *s* and a mantle *t* carried by a stem *u*. The upper extremity of the stem *u* is prolonged to receive the disk *d* and its support *e*, placed as before in front of the burner *c* of the night-light. The position of the disk *d* relatively to the burner *c* may be regulated by means of nuts *l* screwing on the threaded rods *k* which support the ring *w* wherein the mantle support *u* is fixed.

The rods *k* are surrounded by springs *m* and, as will be seen on reference to Fig. 10, by turning the nut *l* in the one direction or the other the entire ring *w* is inclined about two pivotal supports *l*¹, *l*² constituted by the two other supporting rods of the ring. The position of the disk may be regulated in a lateral direction by turning the nuts upon the screws *l*¹, *l*².

The tube *b* which feeds the atmospheric burner *c* is here shown as placed outside the chimney *n*, which latter is formed with an aperture *w* for the passage of the burner *c*. The tube *b* is divided at its lower portion into two branches *b*¹, *b*² and is adapted to turn upon the base *a*.

Between the two branches *b*¹ is arranged a small axis *y* upon which is mounted a rod *y*¹ the lower end of which passes through a ring *z* provided with two trunnions *z*¹ which can freely rotate in two lugs *a*¹ with which the base *a* of the burner is provided; this end of the rod *y*¹ is screw-threaded and receives a nut *y*².

The rod *y*¹ passes through a returning spiral spring *y*³ bearing on the one hand against the ring *z* and on the other hand against a shoulder of this rod *y*¹.

In turning the nut *y*², a pull is exerted upon the rod *y*¹, the burner *c* is brought again backward and then it can be completely removed from the chimney *n*. In turning the nut *y*² in a reverse direction, the burner *c* is brought again forward through the medium of the returning spring *y*³.

Instead of a glass chimney provided with holes, a straight glass without holes, aerated through the socket could also be used. With this arrangement, if the tap *v* be opened to admit the gas to the burners *s* and *c*, the ordinary mantle *t* is illuminated at the same time as the night-light *e* but, if the tap *v* be turned so as to close the main burner *s*, the tube *b* of the night-light will remain open

the illuminating disk *d* will continue to furnish a sufficient light while permitting the re-ignition of the burner *s* at will.

This device is applicable in many cases, more particularly when it is desired to have a reduced light with an incandescent burner as is frequently the case for example in such places as staircases, corridors, hospital wards and the like.

Fig. 11 shows the invention used as a bracket burner. The burner *c* is mounted upon a plate *a*¹ and maintained in a normal position with reference to the latter by means of a support *a*² secured to this plate. Upon the support *a*² is also mounted a tube *f*¹ in which can slide a tube *f*² carrying at one of its ends, the support *e* of the disk of gauze impregnated with rare oxids; at its other end the tube *f*² is pivoted to a lever *i*¹ moving about an axis *h*¹ and adapted to be shifted by means of a nut or of a screw *l*. A returning spring *m* constantly tends to force back the tube *f*².

In operating the nut or the screw *l*, the distance between the disk-carrier *e* and the end of the burner can be regulated at will. The gas is thus supplied to the burner *c* by any convenient means. At the rear of the end of the burner *c* is mounted a small shade 1.

The present system of bracket burner further comprises a globe 2, of the Nernst type for instance provided with two holes and adapted to protect the flame and allow the draft. At the rear of this globe there can be mounted a shade 3.

The system of lighting is very economical, the light from the incandescent disk being much steadier than that from an ordinary mantle, the above described burner may be employed with advantage in certain special cases, for example in various physical or surgical apparatus wherein a steady light is required, such as opthalmoscopes, laryngoscopes, etc., also in workrooms where very accurate work (such as engraving) is to be done requiring an illuminant of small area. In this case the light from the incandescent disk may be directed or concentrated by a lens or any other suitable optical device.

It is to be understood that the constructional form, dimensions and method of mounting the various constituent parts of the above described burner may be varied without departing from the spirit of the invention, for example the arrangement of the atmospheric burner may be as desired; the disk *d* may be made of any material capable of being rendered incandescent by the gas flame; and the mounting of the disk *d* may be modified according to the various practical applications of the invention; further, the adjustment of the position of the disk *d* and of its support *f* relatively to the atmos-

pheric burner may be effected by any mechanical device other than the nuts and springs described above.

The invention may be employed with all kinds of combustibles, such as lighting gas, petrol vapor, petroleum spirit, acetylene, etc.

I claim:

1. An incandescent gas-light apparatus comprising a small atmospheric burner, a disk of gauze impregnated with rare oxids, a device for regulating the distance between this disk and the end of the atmospheric burner, an incandescent burner, and a device supplying independently the gas to the atmospheric burner and to the incandescent burner.

2. An incandescent gas light apparatus comprising an incandescent burner, a disk of gauze impregnated with rare oxids, arranged above the mantle of this burner, a disk-carrier, a small atmospheric burner in front of the disk, a device for adjusting the position of the disk-carrier with reference to the end of the atmospheric burner, a conduit branched on the body of the incandescent burner movable on the latter and carrying the atmospheric burner, and a device for controlling the shifting of this conduit to release the atmospheric burner from the chimney of the incandescent burner.

3. An incandescent gas light apparatus, comprising an incandescent burner, a disk of gauze impregnated with rare oxids and arranged in a vertical plane above the mantle of the incandescent burner, and a small atmospheric burner mounted horizontally and having its end arranged in front of the center of the said disk.

4. An incandescent gas night-light apparatus, comprising a base for connection with a gas supply, a disk of gauze impregnated with rare oxids, a disk carrier on which the disk is mounted in a vertical plane, a small atmospheric burner extending horizontally in front of said disk, means for adjusting the position of the disk carrier with reference to the end of said burner, a tube branched at its lower portion and connected with the base of the apparatus to turn thereon, the

said tube carrying the atmospheric burner at its upper end, means for controlling the admission of gas to the tube from said base, and means for controlling the movement of said tube.

5. An incandescent gas light apparatus, comprising a base for connection with a gas supply, a gallery for supporting the chimney, a small atmospheric burner extending horizontally and connected by a tube with said base, a disk of gauze impregnated with rare oxids, a support on which the disk is mounted in a vertical plane, the said support being mounted to move to carry the disk toward and from the end of the burner, and means for adjusting said support, the said means including a screw rod in engagement with the support and projecting at its lower end through the bottom of the gallery, a spring pressing on said support, and a nut screwing on the projecting end of said screw rod.

6. An incandescent gas light apparatus, comprising a base for connection with a gas supply, a gallery for supporting a chimney, a small atmospheric burner, a disk of gauze impregnated with rare oxids, the atmospheric burner having its end arranged in front of the disk, a support on which the disk is mounted in a vertical plane, the said support including an adjustable ring, and means for adjusting said ring to regulate the distance between the disk and the end of the burner, the said means including a screw rod in engagement with said ring and projecting at its lower end through the bottom of the gallery, a coiled spring on said screw rod and pressing on said ring, and a nut screwing on the projecting end of said screw rod.

The foregoing specification of my improvements relating to incandescent gas and like burners, signed by me this eighteenth day of November, 1907.

JULIEN GALILÉ.

Witnesses:

DEAN B. MASON,
MAURICE H. PIGNET.