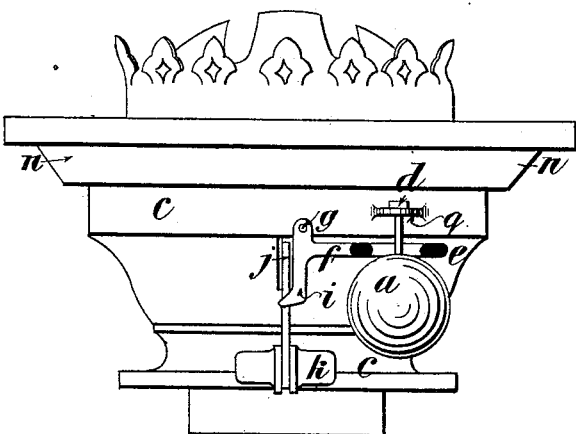
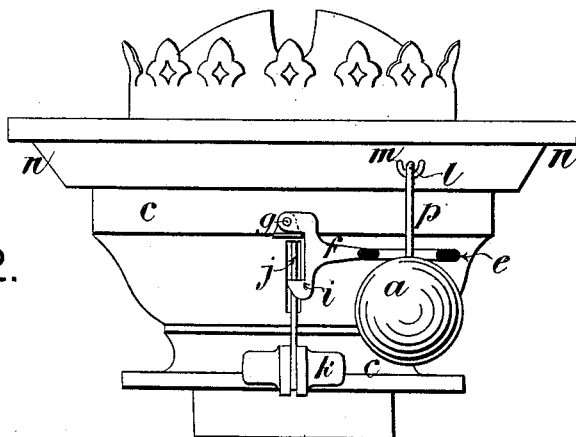
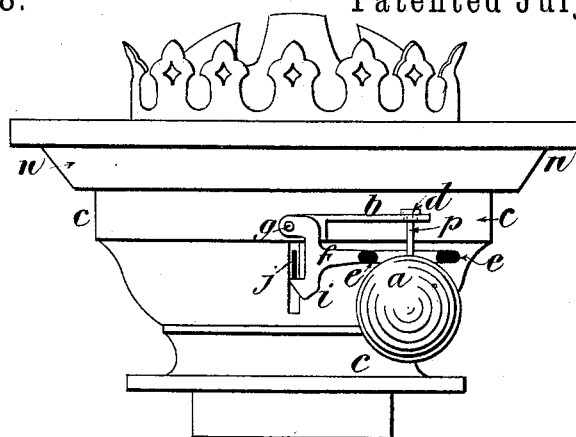


5 Sheets—Sheet 1.

No. 386,038.

Patented July 10, 1888.



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(No Model.)

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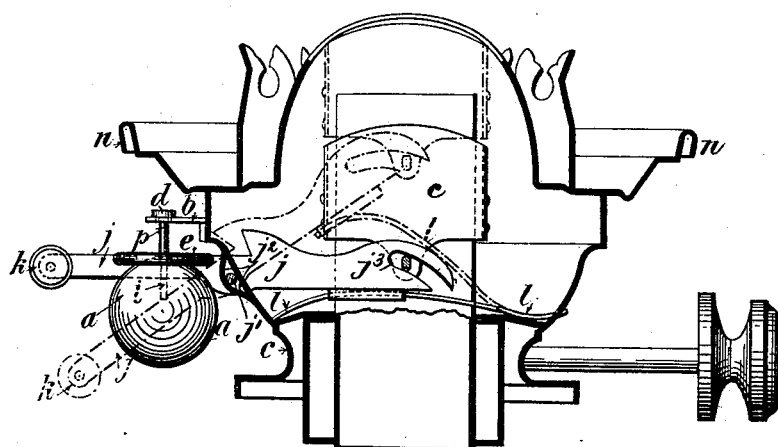
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FIG. 1A



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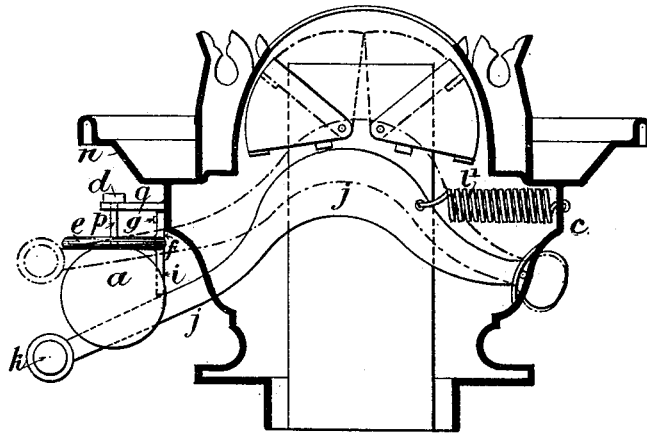
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FIG. 3A



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FIG. 4.

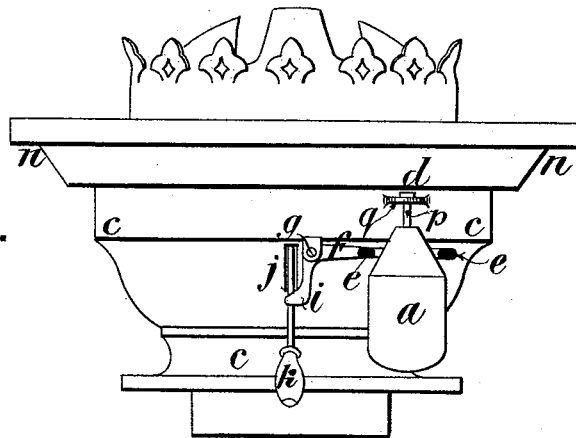
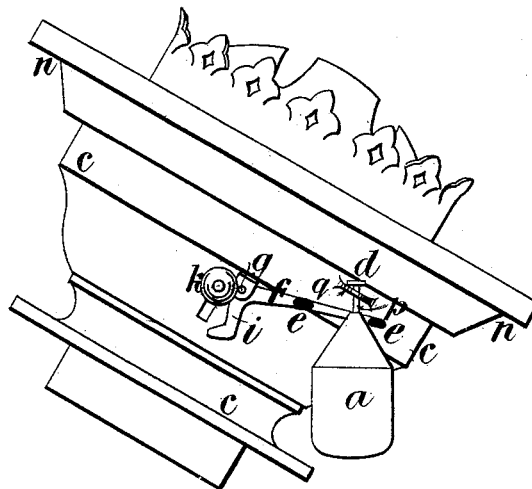


FIG. 5.



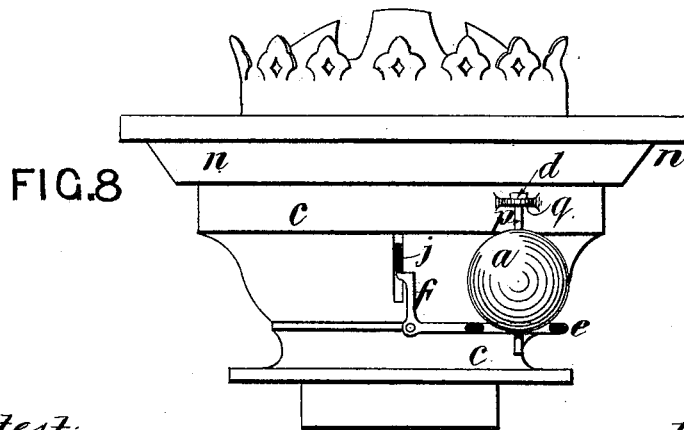
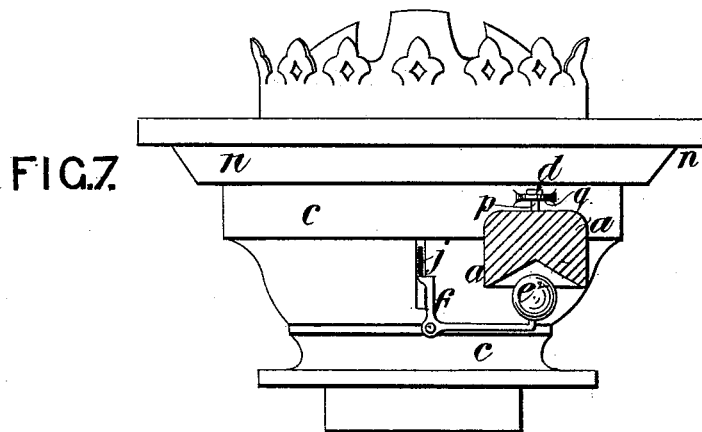
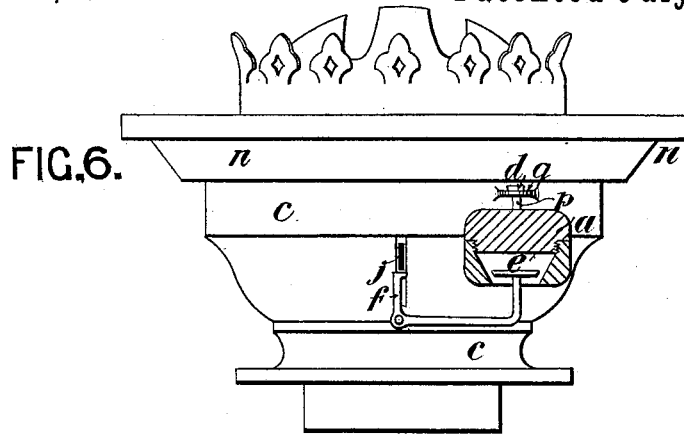
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UNITED STATES PATENT OFFICE.

WILLIAM SNELGROVE, OF NORTH DULWICH, COUNTY OF SURREY, ASSIGNOR
TO JAMES HINKS & SON, (LIMITED,) OF BIRMINGHAM, ENGLAND.

EXTINGUISHER MECHANISM FOR LAMPS.

SPECIFICATION forming part of Letters Patent No. 336,033, dated July 10, 1888.

Application filed April 13, 1887. Serial No. 234,650. (No model.) Patented in Eng'land March 5, 1887, No. 3,414; in Belgium April 5, 1887, No. 77,005, and in France April 7, 1887, No. 182,718.

To all whom it may concern:

Be it known that I, WILLIAM SNELGROVE, a subject of the Queen of Great Britain, residing at North Dulwich, Surrey, England, have invented new and useful Improvements in Extinguisher Mechanism for Lamps, (for which Letters Patent have been granted in Great Britain, No. 3,414, dated March 5, 1887, in France, No. 182,718, dated April 7, 1887, and in Belgium, No. 77,005, dated April 5, 1887,) of which the following is a specification.

Referring to the drawings, Figure 1 is a part sectional side view of the burner part of a lamp with the extinguisher-actuating mechanism in the position ready for action. Fig. 1^a is a vertical section at right angles to Fig. 1. Fig. 2 is a side view of a burner with similar mechanism, but having the pendent weight suspended slightly differently and with the parts in the position when the lamp has been extinguished. Fig. 3 shows a reverse arrangement of extinguisher lever and catch; Fig. 3^a, a vertical section at right angles thereto. Fig. 4 is a part sectional view showing a similar construction, but with a modified form of pendent weight; Fig. 5, a similar view of Fig. 4, but in the position when the lamp has been tilted. Figs. 6, 7, and 8 illustrate modified forms of pendent weight and parts connected therewith.

The invention relates to extinguishers or extinguishing devices for lamps which act automatically on the upsetting of a lamp, or on its being moved from a vertical to an inclined position, sufficiently to set the extinguishing mechanism automatically into operation.

The invention consists in structural features and combinations of parts, substantially as hereinafter fully described, and set forth in the claims.

From the outside of the lamp, and by preference under the gallery, I freely suspend a pendent weight formed with a sloping circular surface, which, when the lamp is tilted to a sensible extent, comes in contact with a ring encompassing this sloping surface. This ring forms part of a catch device or lever that normally holds the lever that operates the extinguishing devices down or out of operation. When the sloping part of the pendent weight

is brought in contact with the ring, the catch-lever is liberated, and therewith also the extinguisher lever, and a spring acting against this lever is then free to raise that end of the lever which is connected to the extinguisher or extinguishing devices proper, and the latter are then operated to extinguish the lamp.

The extinguisher or extinguishing devices proper form no part of my invention, and may have a rising sliding action or a fall-to action to close over the top of the wick.

The extinguisher may be made in pairs with tumbling motion toward each other. The pendent weight may be spherical or cylindrical, with one part conical, or of other suitable form, according to the taste, so as to match the lamp design, so long as it presents an inclined circular surface for contact with the encompassing ring; or I may obviously reverse the arrangement by forming the acting conical surface within the pendent weight. The pendent weight may be suspended from the outside of the lamp in any convenient manner, so long as it hangs perfectly free and can swing in any direction. The pendent weight and its connections being arranged outside the lamp, the extinguisher-lever can, whenever desired, be conveniently operated by hand by moving the pendent weight or the encompassing-ring, so as to liberate the catch that normally holds the extinguisher in its non-operative position.

a, Figs. 1 and 1^a, is a spherical pendent weight loosely suspended from a bar, *b*, by a head, *d*. The upper part of the pendent weight is surrounded by a ring, *e*, but with clearance all round between the two. The ring *e* forms an extension of a catch-lever, *f*, which turns on a fulcrum-pin, *g*, on the shell *c* of the lamp, and will be raised when by the tilting of the lamp beyond a given angle the pendent weight *a* comes in contact with some part of the inside of the ring *e*. The catch-tooth or claw-hook *i* on the catch-lever *f* will then be withdrawn from under the extinguisher-lever *j*, and a spring acting against the latter will raise its opposite end, to which the extinguisher or extinguishing devices is or are connected, and put out the lamp. The lever *j* is provided with the usual knob, *k*, or handle, as shown in Figs. 1^a and 3^a, for raising it

by hand for setting the extinguisher ready for lighting the lamp again.

In Fig. 2 the extinguisher-lever *j* is supposed to have been released by moving the pendent weight *a* by hand. The mode of suspending the weight *a* is here slightly modified as compared with Fig. 1, the rod *p* of the pendent weight being here provided with an eye, *l*, which is hooked into the staple *m* on the gallery-rim *n* of shell *c*, thus dispensing with the bar *b*, Fig. 1.

In Figs. 3 and 3^a the rod *p* of the pendent weight is hung from an eye, *q*. In these figures, as well as in Figs. 4 and 5, the arrangement of the extinguisher-lever *j* and catch-tooth *i* is reversed, the latter holding down the end of the lever, (instead of holding it up, as in Figs. 1 and 1^a), so that when the catch-tooth *i* is released from the extinguisher-lever *j* said lever is raised by the spring *l'*, and the extinguisher devices connected thereto extinguish the lamp.

Figs. 4 and 5 illustrate a similar action, but with a different form of pendent weight—viz., of a cylindrical form with an upper conical part. In Fig. 4 the ring *e* on the catch-lever *f* is about midway of this conical part; but in Fig. 5, which shows the lamp tilted, it is near the top of it.

Fig. 6 shows an arrangement in which the acting inclined surface of the pendent weight *a* is arranged within the latter, and a disk, *e'*, on the catch-lever *f* is acted upon by it when the lamp is tilted. In this figure and in Fig. 7 the catch-tooth *i* is arranged under the extinguisher-lever *j*; but it may obviously be arranged above it, as described with reference to Figs. 3 to 5.

In Fig. 7 the knob *e''* on the catch lever *f* is acted upon by the interior inclined surface of the pendent weight.

In Fig. 8 the lower part of the spherical pendent weight *a* acts upon the interior of the ring part *e* of the catch-lever *f*.

The pendent weight *a* should in all cases have clearance or freedom of action within certain limits, so that the lamp may be carried about and the pendent weight oscillate within those limits without effecting a release of the catch-tooth *i* from the extinguisher-lever *j*, but so that the said release takes place when the

lamp is tilted appreciably or beyond the said limits.

I am aware that many automatic extinguishers have been proposed for lamps in which a pendent weight has been arranged within the lamp and within the oil-chamber of the lamp, where it is in the way of the oil and of the wick, and has to be heavy, because it is impeded by the oil or otherwise within a special chamber or tube in the lamp, in all of which cases a specially-constructed lamp is necessary to suitsuch devices. I claim no such arrangements, my construction of automatic extinguisher being, on the contrary, of such a nature as to be readily applicable to existing lamps and at very small cost, and without detracting from the appearance of the lamp.

I do not claim any special construction of extinguisher or extinguisher-lever; but

What I claim is—

1. In an automatic lamp-extinguisher, the combination, with an extinguisher-lever and a spring for actuating it, of a pendent weight freely suspended from the outer side of the lamp and provided with a sloping surface, a two-armed catch-lever pivoted on the outer side of the lamp, one of the arms of said lever having a catch-tooth that normally holds the extinguisher-lever against the stress of its actuating-spring, the other arm of said lever having an abutment which, when the lamp is appreciably tilted, comes in forcible contact with the sloping part of the pendent weight to release the catch-tooth from the extinguisher-lever, and through the stress of its spring actuate the extinguisher to extinguish the lamp, substantially as set forth.

2. In an automatic lamp-extinguisher, the combination, with the shell *c*, the extinguisher-operating lever *j*, pivoted thereto, and the spring *l'*, of the pendent weight *a*, suspended from said shell, the double-armed catch-lever *f*, having a catch-tooth, *i*, on one arm and the ring *e* on the other arm, said parts being arranged for operation substantially as and for the purposes set forth.

WILLIAM SNELGROVE.

Witnesses:

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