(No Model.) 2 Sheets—Sheet 1.

C. A. PFLUGER.

ARC LIGHT HANGER.

No. 470,766. Patented Mar. 15, 1892.

Fig. 1.

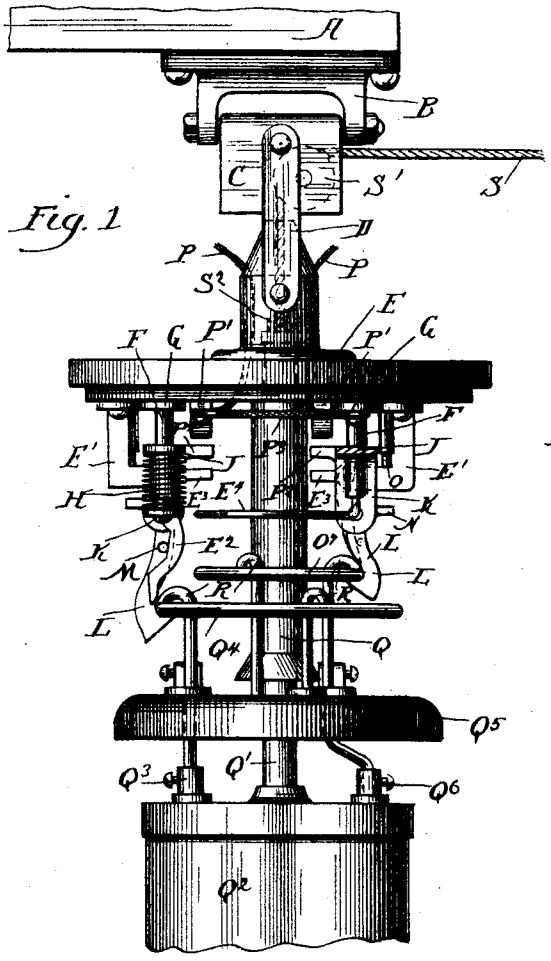


Fig. 3.

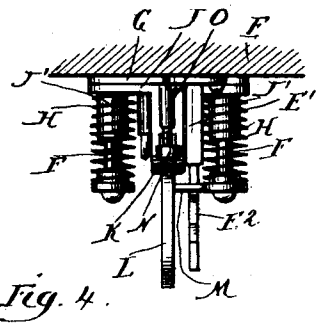


Fig. 4.

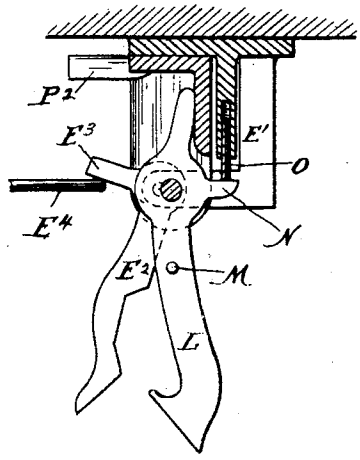
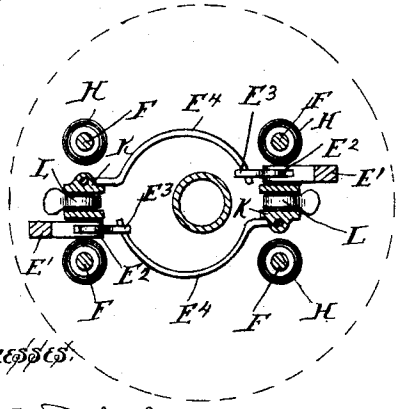


Fig. 2.



Witnesses:

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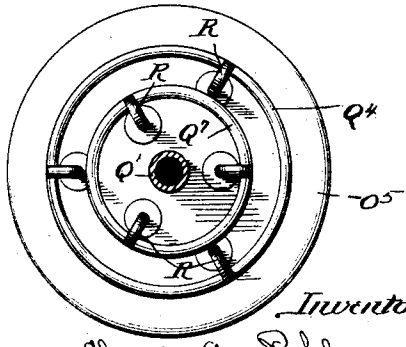
H. M. Day.

Fig. 5.



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(No Model.)

2 Sheets—Sheet 2.

C. A. PFLUGER.

ARC LIGHT HANGER.

No. 470,766. Patented Mar. 15, 1892.

Fig. 6.

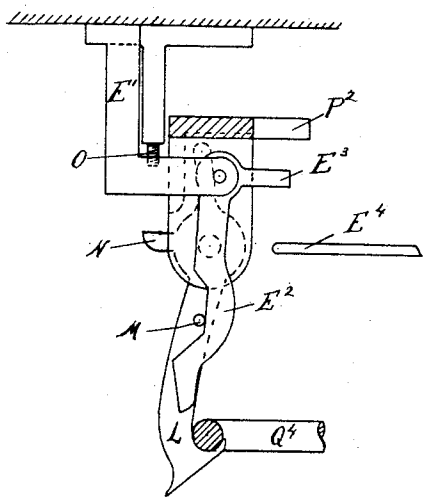


Fig. 7.

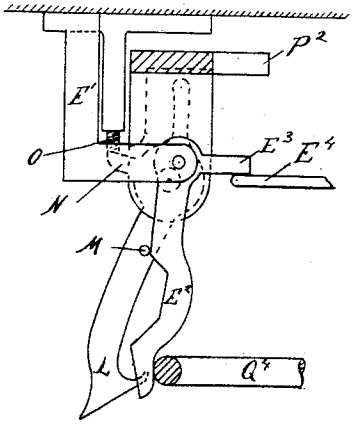


Fig. 8.

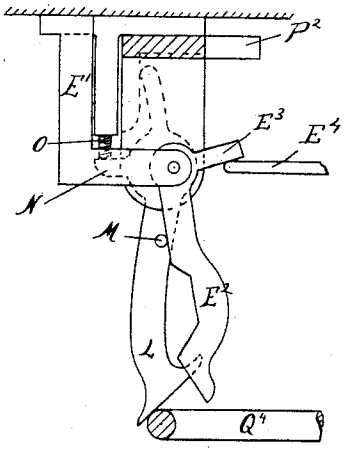
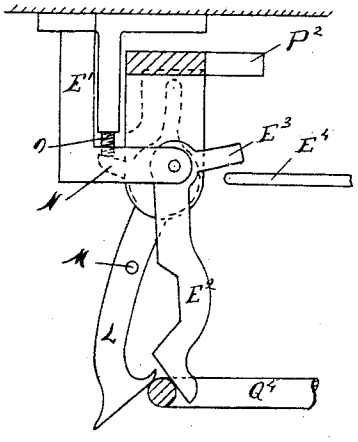


Fig. 9.



Witnesses

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Jean Elliott.

Inventor

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by Frank W. Parker,

Attorney.

UNITED STATES PATENT OFFICE.

CHARLES A. PFLUGER, OF CHICAGO, ILLINOIS, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE STANDARD ELECTRIC COMPANY, OF ILLINOIS.

ARC-LIGHT HANGER.

SPECIFICATION forming part of Letters Patent No. 470,766, dated March 15, 1892.

Application filed May 15, 1891. Serial No. 392,820. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. PFLUGER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Arc-Light Hangers, of which the following is a full, clear, and exact specification.

My invention relates to arc-light hangers, and has for its object to provide convenient and simple means, whereby the lamp may be suspended. It is illustrated in the accompanying drawings, wherein—

Figure 1 is a side view of the device. Fig. 2 is a detail view of the spring-bars. Fig. 3 is a detail of the circuit-closers. Fig. 4 is a detail view of the hanger and cam. Fig. 5 is a detail of the ring connectors or terminals. Figs. 6, 7, 8, and 9 are detail views of a hook and ring in the several positions, showing the parts in their several relations.

Like parts are indicated by the same letters in all the figures.

A is the beam, to which is secured the support B, carrying the block C, on which is pivoted the hanger D, to which is secured the upper support E of the lamp proper. On the bottom part of the support or plate E are secured the rigid arms E′ E′, to which are pivoted the cams E^2 E^2, provided at their upper ends each with the arm E^3, adapted to be engaged by the end of the spring or rod E^4. Dependent from the plate E are the four rods F F, connected in pairs by the plates G G. Each rod is encircled by a spiral spring H, and above these springs and sliding upon them is the transverse plate J, carrying the central hanger K, to which the hooks L L are pivoted. To each hanger is secured one of the springs or curved rods E^4, which extend across the plate E to the hook of the cam associated with the other hanger.

M M are pins upon the suspending-hooks adapted to engage the upper portion of the pivoted cams.

N is a lug on the back of the hook adapted to engage the adjustable pin O, which serves as a fulcrum for the hook when the lamp is being raised.

P P are the main conducting-wires which lead one to the circuit-closing connection P′, which is in the path of the part P^2 on the hook-hanger, and the other to a like part P′ in the path of a similar part upon the other hanger. From each of these contact-blocks leads a conductor P^3 to the plate G on the opposite side of the lamp. A sleeve Q depends from the plate E, and within which slides the rod Q′ of the lamp Q^2.

Q^3 is one terminal of the lamp, which is connected with the ring Q^4, supported above the top plate Q^5 of the lamp. Q^6 is the other terminal, in like manner connected with the ring Q^7. These rings are supported upon the top plate Q^5 in any desired manner—as, for example, by the overhanging pieces R R. The two rings are thus insulated, and one is connected with one terminal and the other with the other terminal of the lamp.

Referring to Fig. 3, the parts are more specifically shown. The plate J is shown provided with thimbles J′ J′, which slide upon the bars or rods F F. S is a rope which passes through the block C and over the pulley S′ and down through the sleeve and is secured at S^2 to the top of the rod Q′ of the lamp. These several parts could be greatly changed and altered without departing from the spirit of my invention.

The fundamental features of this invention are shown in a patent application now pending and heretofore made by me, and I claim here simply certain changes, elements, and additions not referred to in the former application.

The rod E^4 has another office, which is to aid in making the two terminals engage or disengage their respective hooks together. If the lamp be raised so as to engage the hooks and one ring engages one hook and the other ring for some reason fails to engage its corresponding hook and the lamp be then lowered, the arm E^4, associated with the hook not engaged, will extend across and engage the lug on the cam of the hook which is engaged and hold it in the position shown in Fig. 4. The operator now discovers that the lamp is engaged or suspended only on one side, and if the lamp be raised the ring which has engaged its supporting-hook will not be freed therefrom until the other ring has been

brought into engagement with its hook and has lowered the said hook and arm associated therewith so as to free the cam. When this occurs, the parts will be in the position shown in Fig. 1. So, also, if when the parts are in the position shown in Fig. 1 it is desired to raise and free the lamp and if the lamp be raised and one of the hooks be lifted upward by its spring, the other being for some reason clogged or prevented from raising, the upward motion of the one which does move upwardly will cause its arm to engage the cam of the opposite hook and force it into the position shown in Fig. 4, so that the side or terminal disengaged must re-engage its hook until both can be released together.

The use and operation of the device are as follows: The lamp in the position shown in Fig. 1 is suspended by means of the rings upon the hangers, so that the lamp is in circuit, the main circuit being opened by the circuit-closers, consisting of the spring-actuated plates and bars, and the lamp being placed in circuit by the engagement of its terminal rings with the hooks. When the lamp is raised from a lowered position, where it has been brought for the purpose of trimming or the like, no guide is necessary to center it or to direct it, since the lower or large ring G^4 may make contact with the hook L at any point about its circumference, as also may the ring Q^7 make contact with its opposed hook L. By thus making such terminal of the lamp a circle or ring we dispense with the necessity of any guiding device and insure the lamp being placed in circuit upon each occasion. When pressure is applied to the rope S, the lamp will be raised from the position shown in Fig. 1 and the rings be released from their hooks. Immediately the springs H H cause the hooks to rise, and each carries upwardly with it the rod or bar E^4. This bar in its rise engages the end E^3 of its associated cam E^2, and thus forces the cam into the position shown in Fig. 4, or a somewhat similar position, where it guards the rings from again re-engaging with the hooks L L as the lamp is lowered. The lamp in lowering, however, forces the cams E^2 outwardly, whereupon they engage with the pins M, thus forcing the hooks L also outwardly to obviate the possibility of the re-engagement of the hooks and terminal rings. The hook L will be restored to its position, for its lug N, engaging the pin O, will cause the hook as it is forced outwardly to move against and slightly compress its associate spiral spring, so that as soon as the ring in passing downwardly is forced from the cam the spring will force the hook and cam back into substantially the position shown in Fig. 4, where the hook and cam will remain until the lamp is again raised, so that its terminal rings will re-engage the hooks L. When the springs H H are expanded, the plates G and J are contacted so as to close circuit, and when they are lowered the main circuit is broken and the lamp placed in circuit. When the lamp is raised again to the position shown in Fig. 1 and then allowed to settle back on the hooks L L, the parts will be restored to their position, the cam being thrown back into the position shown by the arm E^4, which strikes it, and where it hangs by gravity.

Referring to Figs. 6, 7, 8, and 9, the operation of the device, so far as relates to the hook, cam, ring, and arm E^4, is more fully illustrated. In Fig. 6 the parts are shown in position to suspend the lamp, the ring engaging the hook. In Fig. 7 is shown the position where the ring has been released from its hook and is being guarded therefrom by the cam. Fig. 8 shows the parts in position where the ring is descended past the end of the cam and illustrates in what manner the hook is protected by the cam, so as to prevent the re-engagement of the ring and hook while the former is descending. Fig. 9 represents the parts in the act of re-engagement, the ascending ring being about to separate the hook and cam.

I claim—

1. In an arc-lamp hanger, the combination of suspending-hooks with two substantially ring-shaped lamp-terminals placed in horizontal planes and adapted one to engage each hook, and thus the lamp to be placed in circuit without any special guide.

2. In an arc-lamp hanger, the combination of suspending-hooks with associated cams, each hook vertically movable and provided with an arm which controls the opposite cam, so as positively to force it to the proper position upon the movement of the hook.

3. In an arc-lamp hanger, the combination of suspending-hooks with associated cams, each hook vertically movable and provided with an arm which controls the opposite cam, so as positively to force it to the proper position upon the movement of the hook in either direction, the cam being forced in one direction when the hooks move upwardly and in another when the hooks move down.

4. In an arc-light hanger, the combination of vertically-movable suspending-hooks, each provided with a fulcrum and a spring, whereby it is retained or restored to its normal position.

5. In an arc-light hanger, the combination of suspending-hooks with associated cams, each hook independently vertically movable and provided with an arm which controls the opposite cam, so as to separate the cam and hook, and thus form a guide to the hook when such hook is lowered while the other hook is raised.

Signed this 11th day of May, 1891, at Chicago, Illinois.

CHARLES A. PFLUGER.

In presence of—
H. M. DAY,
H. B. HALLOCK.