

(No Model.)

2 Sheets—Sheet 1.

F. SCHEFOLD & J. NORTNEY.
ELECTRIC LAMP SUPPORT.

No. 532,103.

Patented Jan. 8, 1895.

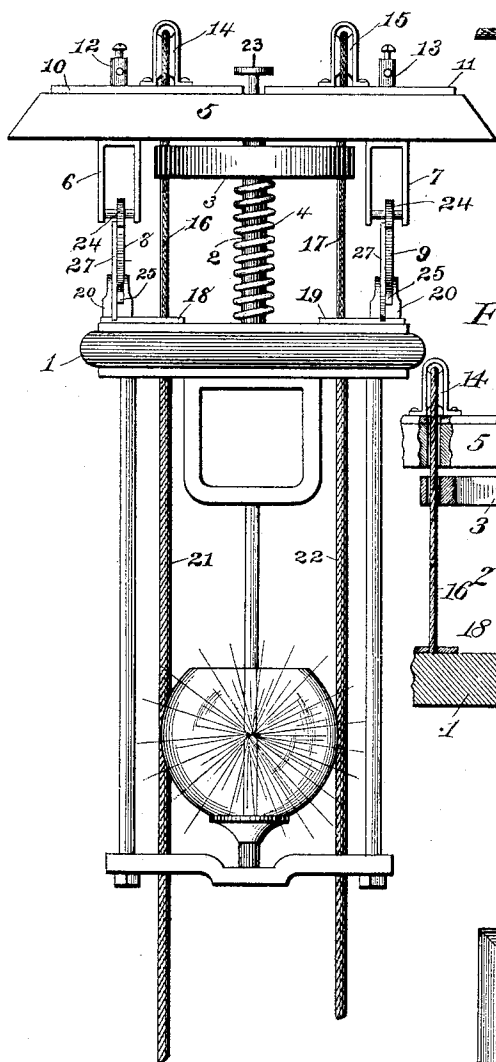


Fig. 1.

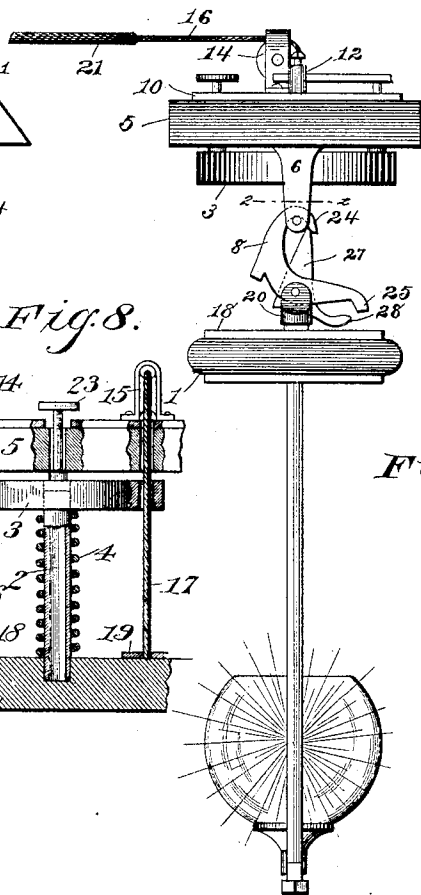


Fig. 2.

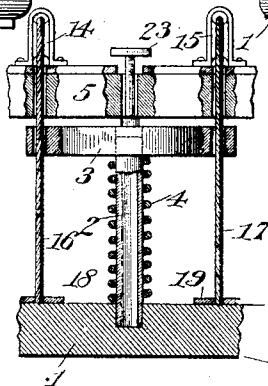


Fig. 8.

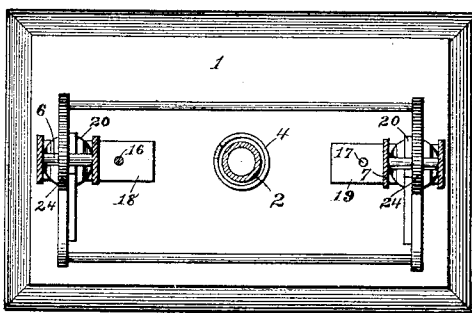


Fig. 7.

Witnesses

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2 Sheets—Sheet 2.

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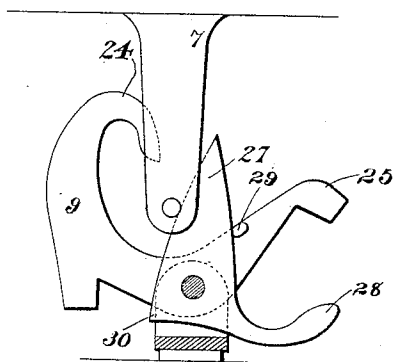


Fig. 3.

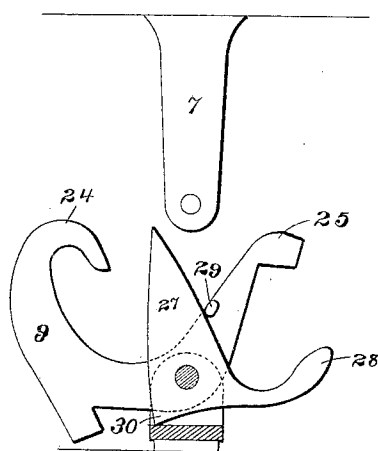


Fig. 4.

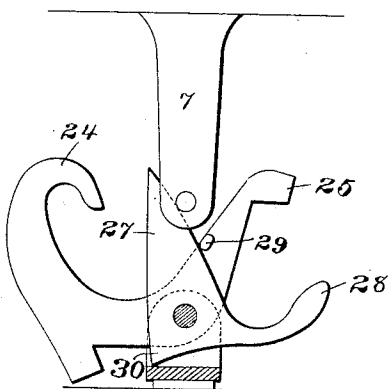


Fig. 5.

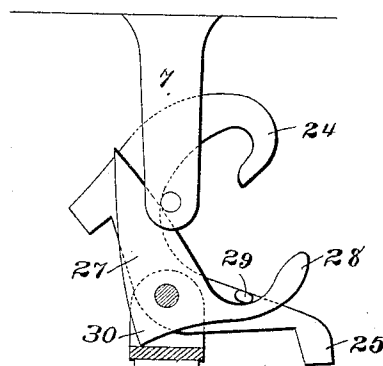


Fig. 6.

Witnesses

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UNITED STATES PATENT OFFICE.

FRANK SCHEFOLD AND JAMES NORTNEY, OF NEW ALBANY, INDIANA.

ELECTRIC-LAMP SUPPORT.

SPECIFICATION forming part of Letters Patent No. 532,103, dated January 8, 1895.

Application filed March 1, 1894. Serial No. 502,022. (No model.)

To all whom it may concern:

Be it known that we, FRANK SCHEFOLD and JAMES NORTNEY, of New Albany, county of Floyd, State of Indiana, have invented certain new and useful Improvements in Electric-Lamp Supports, of which the following is a specification, reference being had to the accompanying drawings.

The object of our invention is to produce an improved supporter for arc lamps by which the lamp may be lowered or hung up conveniently without interrupting the current.

Our invention also relates to certain improvements in automatic hooks designed especially for the suspension of arc lamps and adapted to contribute to the main operation of the support.

In the accompanying drawings: Figure 1 is a front elevation of our support complete, with lamp attached. Fig. 2 is a view taken at right angles thereto. Fig. 3 is a diagrammatical view of one of the hooks looking at it from the inside, and showing the operation of its hanger preparatory to lowering the lamp; the lamp being raised slightly and the hooks being tilted to allow the descent of the lamp. Fig. 4 shows the position of the hook when the hanger has been disengaged for lowering. Fig. 5 is a similar view showing the operation of the hanger upon the hook, when it is desired to again hang the lamp. Fig. 6 shows a further operation of the hanger to put the hook in position to catch the hanger as it ascends. Fig. 7 is a plan view of the lamp showing the hooks connected. Fig. 8 is a section of the support and the upper portion of the lamp.

Referring to the figures on the drawings: 1 indicates the top of a lamp. 2 indicates its stem and 3 a plate actuated, as by a spring 4, to hold it yieldingly elevated.

5 indicates a cross piece or bridge, upon the lower side of which depend two hangers 6 and 7, respectively.

8 and 9 indicate automatic hooks adapted to engage or disengage the hangers, respectively, as the bridge is raised or lowered.

10 and 11 indicate copper or other conductive plates secured to the top of the bridge upon which are seated binding posts 12 and 13 connected, respectively, with the hangers and, through them, adapted to pass current to the lamp when hung in place.

The binding posts are insulated from each other by the bridge, which is made of non-conductive material, as for example, wood, the plates upon which they are seated being separated from each other.

14 and 15 indicate metallic pulleys carried above and in contact with the plates 10 and 11.

16 and 17 indicate metallic wires preferably made of copper and connected at their lower ends to the top of the lamp, as by metallic plates 18 and 19 upon which the hook supports 20 sit. The ends of these wires are connected to ropes 21 and 22 by which the lamp is to be raised and lowered. By reason of the contact of the wires 16 and 17 with the metallic pulleys seated, like the binding posts, upon the plates 10 and 11, current passes through those wires, as well as through the binding posts, to the lamp. If, therefore, the hooks are disengaged from the hangers, current will continue to pass through the wires 16 and 17 into the lamp as long as those wires are in contact with the metallic pulleys.

The length of the wires is so determined that they shall remain in contact with the pulleys until a little after the spring has reached its limit of expansion. This it does when the lamp is being lowered. At such time the head 3, having been completely separated from the bottom of the bridge, the gravity contact pin, hitherto supported by the head, drops until its flat head 23, spanning the space between the plates 10 and 11, drops upon the adjacent ends of those plates and forms a contact therewith. The current is thereby short circuited through the bridge. The necessity for passing current through the lamp no longer existing, the lamp is allowed to descend by the ropes 21 and 22 traveling over the pulleys. By the time it reaches the hand of the operator, its connection with the current is completely severed and it may be safely handled.

The automatic hook that we prefer and which we claim as a part of this invention consists of a curved, or hooked, part 24, provided with a counter-weight 25, formed preferably by a continuation of the hook itself. The counter-weight and the weight of the hook is so adjusted that if the hooked part 24 passes the perpendicular line a little it will tilt to that side of the perpendicular line beyond which it has passed. For example: If,

by the descent of the hanger shown in Fig. 3, it is tilted backward from the vertical line it will, upon the ascent of the hanger, fall so as to open the way clearly for the release of the hanger, as shown in Fig. 4. If, on the other hand, as shown in Fig. 6 of the drawings, the hook is urged in the opposite direction for the purpose of re-engaging the hanger it will fall forward beyond the vertical line, so that when the hanger is raised the hook will be immediately above it and will catch it when the lamp is lowered to bring the parts together.

To render the action of the hook automatic under the impulse of the hanger, we employ suitable guide mechanism to throw the hanger to the one side or the other of the pivot point of the hook. For this purpose we prefer a flat, tapered piece of metal 27, pivoted by the side of the hook. Upon one side we provide a counter-balance 28, whose office, however, may be, if preferred, performed by a spring; while upon the inside of the counter-weight of the hook a lug 29 is employed. By these arrangements the guides or pointed parts 27 are kept in position to perform their office. For explanation: Suppose the lamp to be suspended, as clearly shown in Fig. 2 of the drawings, and it is desired to lower it, by pulling upon the ropes the hooks will be raised so that the hangers will strike the inside edges (we will call them) of the guides. Continuing to ascend, these sides will guide the hooks to the hangers so that they will come in contact with the rear side of their pivot points. Thereupon, the hooks will be tilted backward and the guides simultaneously thrown forward, as shown in Fig. 3 of the drawings, so that upon releasing the lamp the hooks are out of line with the hangers as the lamp descends. As the guides pass clear of the hangers, the hooks fall entirely back, carrying the guides with them, until, reaching the required position, their further movement is prevented by the heel 30 of the guide striking the bottom of its support. If it is now desired to resuspend the lamp, the lamp is raised by its ropes until the angle formed by the crossing of the front edges of the guides and the upper edges of the counter-weights comes opposite the hangers, when, striking against the hangers, the hooks are tilted forward, the guides being held, and the hooks left open to the path of the hangers. Upon releasing the lamp the hooks catch the hangers and suspend the lamp. Thereupon, the guides, urged by their respective counter-weights, assume the position first described and are again ready to assist in the operation of the hooks in lowering the lamp.

We do not confine ourselves to the details of construction herein shown and described, but reserve the right to modify and vary the same within the scope of our invention.

What we claim is—

1. In an arc lamp support, the combination

with the lamp and hooks, of a bridge and hangers, insulated plates thereon connected with the hangers, metallic pulleys carried on the plates, metallic wires connected to the hooks and adapted to raise and lower the lamp, a spring supported head upon the lamp, and a gravity contact plate actuated thereby, substantially in the manner and for the purpose specified.

2. The combination with an electric lamp provided with automatically actuated hooks constituting its electrical terminals, of hangers secured above the lamp and in the electrical circuit, switch mechanism between the hangers, and mechanism upon the lamp arranged to actuate the switch mechanism independent of the movement of the hooks when the lamp is raised, substantially as specified.

3. The combination with an electric lamp provided with automatically actuated hooks constituting its electrical terminals, of hangers secured above the lamp and in the electrical circuit, conductive plates connected with the hangers, respectively, a movable contact plate and a yielding head upon the lamp arranged to hold the contact plate out of contact with the conductive plates when the lamp is raised, substantially as specified.

4. The combination with a bridge provided with an aperture, conductive plates, contact plate and lamp sustaining mechanism, of a lamp provided with a stem adapted to be secured by the aperture in the bridge and a contact plate actuating movable head upon the stem, substantially as specified.

5. In a hook adapted to automatically support and release an electric lamp, the combination with a support, of a pivoted counter-weighted hook, and a guide adapted to direct the part that the hook is designed to engage to one side or the other of the pivot of the hook, substantially as set forth.

6. The combination with a support and pivoted counter-weighted hook, of a tapered guide, and a lug upon the hook adapted to actuate the guide, substantially in the manner specified.

7. The combination with a support, of a counter-weighted pivoted hook, a tapered counter-balanced pivoted guide, and a lug upon the hook adapted to actuate the guide, substantially in the manner specified.

8. The combination with a support and pivoted counter-weighted hook, of a counter-balanced pivoted, tapered guide, a heel upon the guide, and a lug upon the hook adapted to cooperate substantially in the manner specified.

In testimony of all which we have hereunto subscribed our names.

FRANK SCHEFOLD.
JAMES NORTNEY.

Witnesses:

FRED PERKINS,
JAMES O'HARA.