(No Model.) 2 Sheets—Sheet 1.

J. CHASE.

ELECTRIC LAMP SUPPORT.

No. 430,622. Patented June 24, 1890.

Fig. 1.

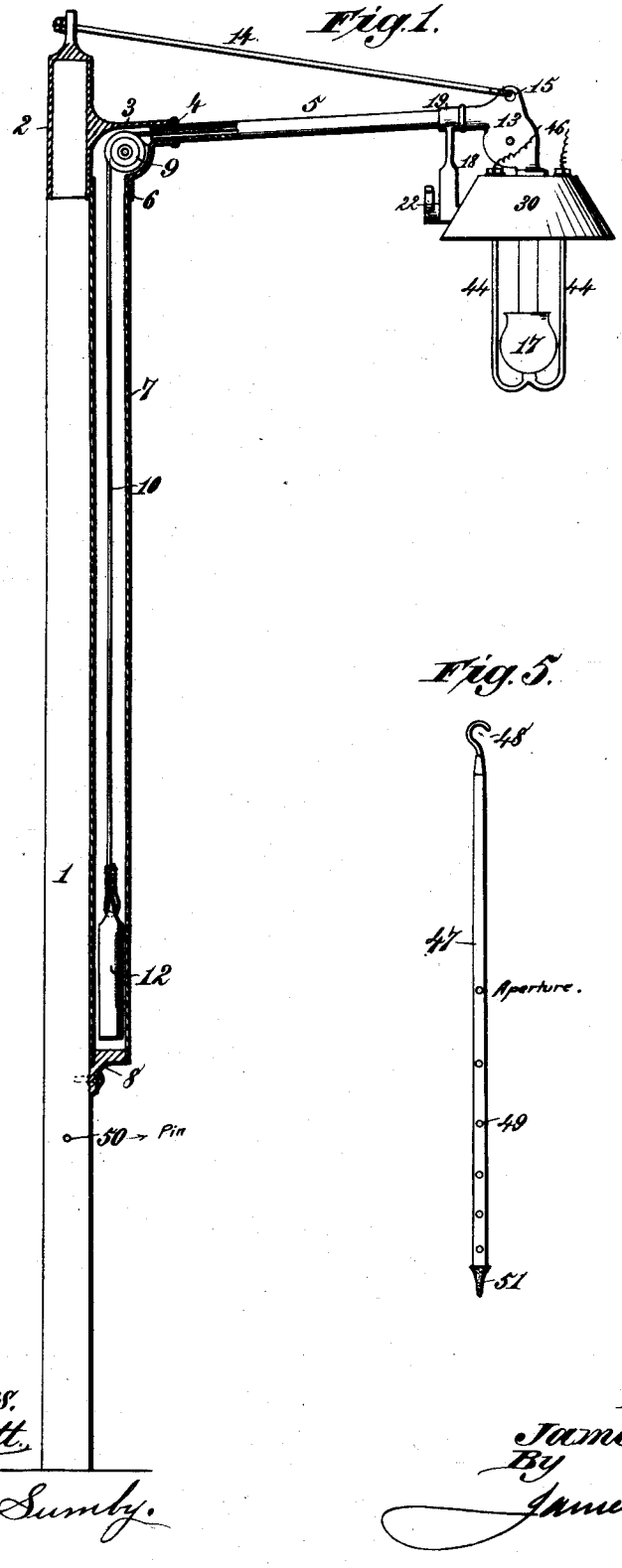


Fig. 5.

Witnesses.
Robt Pratt.
Dennis Sumby.

Inventor.
James Chase.
By James L. Norris.
Atty.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

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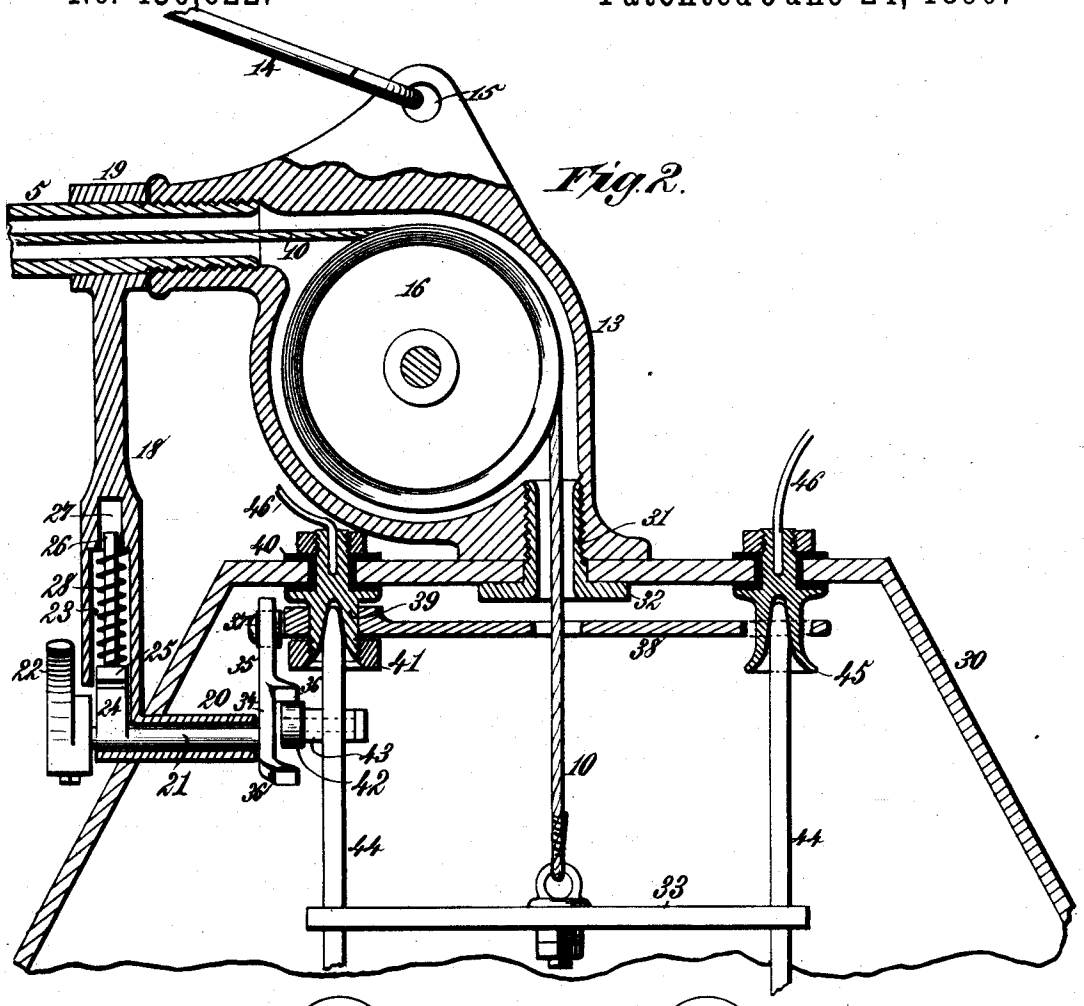


Fig. 2.

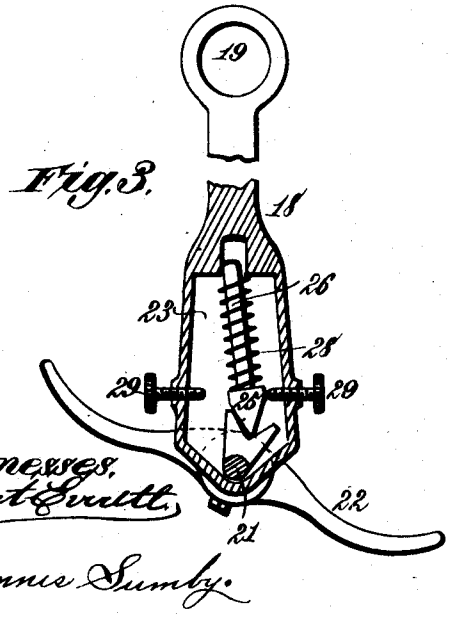


Fig. 3.

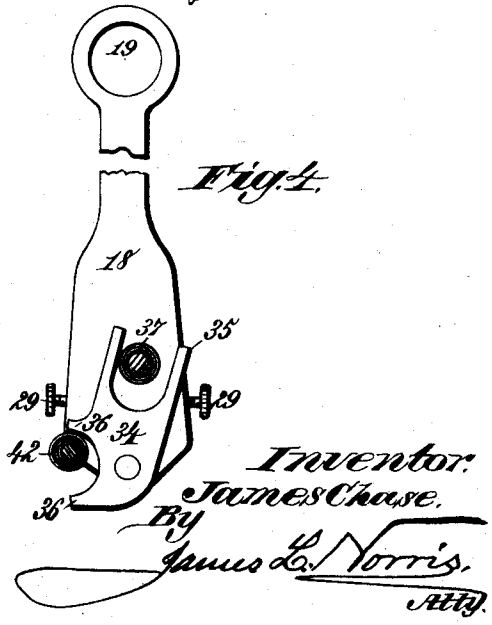


Fig. 4.

Witnesses.
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UNITED STATES PATENT OFFICE.

JAMES CHASE, OF ROCHESTER, NEW YORK.

ELECTRIC-LAMP SUPPORT.

SPECIFICATION forming part of Letters Patent No. 430,622, dated June 24, 1890.

Application filed September 21, 1889. Serial No. 324,604. (No model.)

To all whom it may concern:

Be it known that I, JAMES CHASE, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented new and useful Improvements in Electric-Lamp Supports, of which the following is a specification.

My present invention has relation to apparatus for suspending electric lights over roadways or pavements; and the purpose thereof is to provide a novel and simple construction and combination of parts whereby the lamp may be readily inspected and renewed or repaired by the line-man without climbing the pole or ascending a ladder and without danger from a line-wire should the current happen to be on.

It is also one purpose of my invention to provide a simple organization whereby the lamp shall be automatically switched out of and into circuit by the act of lowering and raising the same, by which the lamp is automatically raised and sustained at the proper point, and whereby the parts accomplishing this result are concealed from view and protected from the weather.

It is my further purpose to provide simple means whereby the lamp may be brought within reach, and, if desired, removed from the roadway or pavement and held temporarily in a suitable position for renovation of the carbons or other purposes in such manner as to leave both hands of the operator free.

The invention consists, to these ends, in the several novel features of construction and new combinations of parts hereinafter fully described, and then pointed out in the claims following this description.

In order to enable those skilled in the art to practice my said invention, I will describe the same in detail, reference being had to the accompanying drawings, in which—

Figure 1 is a sectional view of the complete apparatus. Fig. 2 is a detail section of the suspending end of the arm, showing part of the cab and the automatic switch. Fig. 3 is a detail view of the switch-operating lever. Fig. 4 is a view of the tripping-lever operating the switch-arm. Fig. 5 is a view showing the construction of the staff or pole.

In the said drawings, the reference-numeral 1 designates a post, which may be formed of wood or other suitable material and of the required size and height. Upon the top of this post is fitted a cap 2, upon which is formed a lateral housing 3, containing a seat 4, adapted to receive the end of a tubular horizontal or inclined arm 5 of any suitable length, and provided, also, with an opening or seat 6, which receives the end of a tube or shell 7, arranged perpendicularly beside the pole or post, or substantially so, and resting on a bracket-piece 8, fastened to the post. This bracket may form part of the foot of the tube, or it may be a separate device.

Within the housing 3 is arranged a pulley or sheave 9, over which passes a chain or cord or other cable 10, fastened at one end to a weight 12, lying in the vertical tube or shell 7, the other end of said chain being passed through the horizontal or inclined arm 5. Upon the end of this tubular arm is mounted a housing 13, which is partly supported by a strut or truss 14, secured at one end in the cap 2 and at the other end to an eye 15 on the housing. Within the latter is arranged a second pulley or sheave 16, over which the chain 10 is passed, its end being secured to a lamp 17 of any suitable pattern.

Mounted upon the arm 5 is a depending arm 18, having at one end a loop 19, which encircles the arm and lies near the housing 13, while upon the lower end is formed a prolonged bearing 20, in which is placed a shaft 21. Upon the outer end of this shaft, which projects outside the housing 13, is mounted a lever 22, by which the shaft may be rocked. Within the depending arm 18 is formed a chamber 23, within which lies a bracket 24, rigidly mounted on the shaft 21 and having a V-shaped notch therein. In this notch lies the wedge-shaped point 25 of a bar 26, the upper end of which lies in an aperture 27, formed in the upper portion of the arm 18. A spring 28 is coiled upon the bar 26, one end resting against the shoulder formed by the wedge-shaped end 25 and the other end abutting against the upper end of the chamber 23. The action of this spring tends to throw the lever 22 in one direction or the other as the wedge-shaped point 25 passes

the vertical plane of the axis of the shaft 21, and the extent of its throw in either direction is limited by set-screws 29, tapped through the opposite walls of the chamber 23.

The bearing 26 and shaft 21 passes through the cab 30, which is attached to the housing 13 by means of a hollow or tubular screw 31, having a broad head 32. The chain or cord 10, passing through the tubular arm 5 and over the pulley 16, is carried through this hollow screw and secured to the cross-head 33 of the lamp.

Upon the inner end of the shaft 21, which lies within the cab 30, is mounted a tripping arm or lever 34, having a forked upper end 35, and provided with a separate fork 36, lying nearly at a right angle with the fork 35. The fork 35 engages a friction-roll 37, mounted on the end of a contact arm or lever 38, journaled or pivoted on a drop-bearing 39, which is mounted on and depends from the cab 30, from which it is insulated by the rubber cushion 40. The lever or arm 38 is sustained upon its pivotal bearing by a nut 41.

The fork 36 is adapted to engage a roll 42, mounted on the end of a rigid arm or bar 43, projecting from one of the standards 44 of the lamp and rising and falling with the latter. The free end of the contact arm or lever 38 swings horizontally within the cab and makes contact with the electrical bearing 45, insulated from the cab 30 and connected with the line-wire 46. This bearing is cup-shaped, its lower depending end, which lies within the cab, being in the form of an inverted funnel or cup to receive the end of the lamp-standard as the lamp is raised. The other bearing 39 is similarly formed, save that it receives the nut 41, which is reamed or countersunk to form the funnel-shaped opening. The line-wire connects with this bearing 39 by a construction similar to that shown in connection with the other bearing 45.

When the parts are in their normal position, the lever 22 being rocked in the position shown in Fig. 3, the lever 34 is turned by the partial revolution of the shaft 21, throwing the contact arm or lever 38 away from the bearing 45, and thereby compelling the current to traverse the lamp. On the other hand, if, for any reason, the lamp is not used, it is only necessary to rock the lever 22 in the other direction and cause it to assume a position in which the wedge-shaped point 25 will be thrown upon the opposite side of the axis of the shaft 21. This vibrates the forked lever 34 and throws the contact arm or lever 38 against the bearing 45, thereby short-circuiting the current through the bearing 39, arm or lever 38, and bearing 45, whereby it may pass on to the next lamp without affecting the lamp 17.

In lowering the lamp the roll 42 impinges upon the lower arm of the fork 36, swinging the lever 34 and causing the fork 35 to act upon the end of the contact arm or lever 38, swinging it against the bearing 45 and short-circuiting the current. By the action of the spring 28 and plunger-bar 26 the contact-arm is not only retained in the position described, but it is pressed against the bearing 45 by the force of the spring 28 and an electrical contact is thereby insured.

When the lamp is raised by the weight 12, the roll 42 as it rises engages the upper arm of the fork 36, rocking the shaft 21 in the other direction, throwing the contact-lever 38 off the bearing 45, and swinging the spring-pressed plunger 26 to the other side of the shaft 21, whereby the contact-lever is retained in the position given it and the current is diverted through the terminals of the lamp.

To draw the lamp downward and, when necessary, to operate the two-armed lever 22, I provide a staff 47, of wood or other material, having a hook 48 at one end and provided with a series of openings 49 in the body of the staff, which engage a spike or pin 50, driven into the post. By using this staff the lamp may be drawn down, and if the operator requires both hands, or if he desires to remove the lamp from the roadway or pavement, he may insert the spike or pin 50 in one of the openings 49 while the hook 48 is engaged with the lamp.

By this invention the line-men are relieved of the necessity of carrying a long unwieldy ladder from post to post, and all danger from live-wires is entirely obviated. The work is also materially expedited and lightened, rendering it possible to perform the work upon the line with a less number of men and without danger.

The parts of the apparatus are all housed and protected from wet, whereby their durability and easy operation are greatly promoted, and the simplicity and low cost render the invention applicable not only to extended lines burning many lights, but to systems of limited extent, where an expensive plant is objectionable.

Upon the end of the staff 47, I mount a crocus 51 of suitable form, whereby the seats in the bearings 39 and 45 may be cleansed and polished at any time to secure perfect electrical contact. The rise and fall of the lamp will of itself tend to clear these parts of any dust, dirt, or oxidation, and under ordinary circumstances the contacts will need little care.

What I claim is—

1. In an electric lamp, the combination, with a lamp-post, of a suspended rising and falling lamp, an oscillatory contact or switch lever, and a rocking tripping arm or lever connected with the contact or switch lever and rocked by the descent of the lamp to cut the latter out of circuit, substantially as described.

2. In an electric lamp, the combination, with a lamp-post, of a weight-suspended lamp, an oscillatory contact or switch lever, and a rocking tripping arm or lever connected with the contact-lever and rocked in

one direction by the descent of the lamp and in the opposite direction by the ascent of the lamp to place the lamp out of and in circuit, substantially as described.

3. In an electric lamp, the combination, with a lamp-post having an extended arm, of a suspended rising and falling lamp, an oscillatory contact or switch lever, and a rock-shaft having at its outer end an operating-lever and at its inner end a tripping-arm rocking with the shaft and connected with the contact or switch lever, substantially as described.

4. The combination, with a post or similar elevated support, having terminals connected with the wires supplying an electric lamp, of a rising and falling lamp having standards detachably engaging said terminals, a switch lever or arm adapted to short-circuit the current and cut the lamp out, and an arm which can be operated before lowering the lamp to swing said switch-arm, substantially as described.

5. In an electric-lamp support, the combination, with a post, of a cap having a lateral housing containing a pulley, a tubular arm entering said casing, a housing or casing mounted on the extended end of said arm and having a pulley, a lamp suspended by a chain or cord passing over both pulleys and through the tubular arm, a weight attached to said chain and moving in a shell mounted on the post and entering the housing on the cap, a shaft journaled in a drop-bearing on the said arm and carrying a lever, and a contact lever or switch operated by said lever, substantially as described.

6. In an electric-lamp support, the combination, with an arm supporting the cab and having a cord or chain sustaining the lamp, of a rock-shaft mounted in a bearing depending from said arm and entering the cab, said shaft having a lever provided with a fork upon its end and side, a contact lever or switch pivoted on an insulated bearing and having a roll on its end engaging the fork on the end of the lever, and an arm mounted on one of the lamp-standards and having a roll engaging the other fork on said lever, substantially as described.

7. In an electrical-lamp support, the combination, with a rock-shaft mounted in a drop-bearing and provided with a notched bracket, of a plunger-bar having a wedge-shaped point resting in said bearing, a spring pressing said plunger against the bracket, a lever on the end of the rock-shaft having a forked end engaging the end of a pivoted contact lever or switch, an arm mounted on one of the standards of a vertically-movable lamp and engaging a separate fork on the said lever, and means for lowering and raising said lamp, substantially as described.

8. In an electrical-lamp support, the combination, with a vertically-movable lamp having a suitable standard, of a cab having insulated cupped or funnel-shaped bearings connecting with the line-wire, an arm or contact-lever of conducting material pivoted on one of said bearings and adapted to swing against the other to short-circuit the current, a lever engaging the end of said contact-lever, and an arm mounted on one of the standards of the lamp and engaging a fork on the lever, substantially as described.

9. In an electrical-lamp support, the combination, with a vertically-movable lamp, of a tubular arm containing the suspending cord or chain, a cab provided with two insulated cupped or funnel-shaped bearings receiving the lamp-standards and connected to the line-wire, a contact-lever pivoted on one of said bearings, an operating-lever mounted on a rock-shaft and having a fork engaging the end of the contact-lever, a spring-pressed plunger-bar bearing upon a notched bracket on said rock-shaft, and an arm on one of the lamp-standards engaging a separate fork on the operating-lever, substantially as described.

In testimony whereof I have affixed my signature in presence of two witnesses.

JAMES CHASE.

Witnesses:
WM. H. FARRAND,
WM. E. CRAIB.