(No Model.)

H. C. SAMPLE & F. RABL.

Electric Lamp Support.

No. 243,406. Patented June 28, 1881.

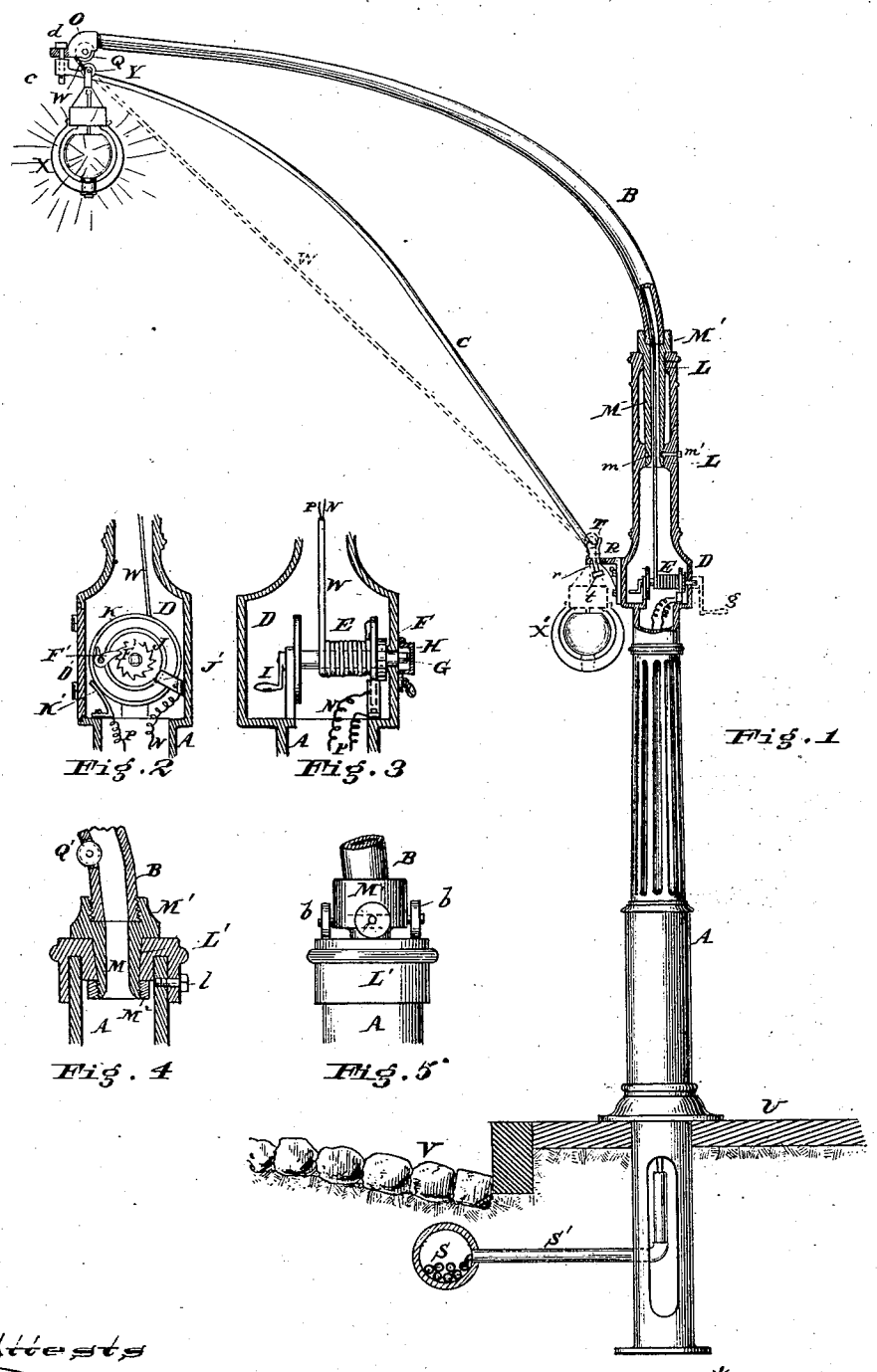


Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5.

Witnesses

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HENRY C. SAMPLE AND FRANZ RABL, OF PHILADELPHIA, PENNSYLVANIA.

ELECTRIC-LAMP SUPPORT.

SPECIFICATION forming part of Letters Patent No. 243,406, dated June 28, 1881.

Application filed April 11, 1881. (No model.)

To all whom it may concern:

Be it known that we, HENRY C. SAMPLE and FRANZ RABL, both of the city of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented an Improvement in Electric-Lamp Supports, of which the following is a specification.

Our invention has reference to supports or posts adapted to electric lighting of cities; and it consists of a single post or column provided with a curved support or arm pivoted to the column at the top and adapted to rotate thereon; further, in providing said column and arm with central apertures for carrying and guiding one or more insulated electrical conductors or cables; further, in a strut or guide-rod connecting the point of the arm with the column, and upon which the electric lamp is guided to and from its position for illuminating to its position for refitting with carbons and inspection, and vice versa; further, in providing the electric lamp with a grooved roller to guide said lamp down and up said guide-strut; further, in securing one end of the conducting-cable to the lamp and the other end to mechanism for raising and lowering the lamp; and, finally, in many details of construction, as more fully set forth in the following specification, and shown in the accompanying drawings, which form part thereof.

The general shape of this invention will resemble some of the numerous cranes; but, of course, it is to be understood that we do not claim the construction so as to cover such cranes, but the means employed to support the electric lamp over the roadway to get a maximum effect.

Heretofore it has been the practice to support the electric lamps on the pinnacle of a vertical rod or post, as in the case of gas-lamps, said posts being located on the sidewalks, as in the case of our street-lighting by coal-gas to-day. The objection to this is evident, for much of the illuminating-power of the lamp is lost by diffusion and obstructions, unequally lighting both sides of the street, and thereby requiring more lamps to the mile. If the lamps be supported at a distance of about fifteen feet above the sidewalk they will be above the awnings, thus leaving the street in their proximity in darkness.

To overcome these objections we support the lamp over the roadway and at some distance from the sidewalk, in which case the illumination is more equally thrown on both sides and up and down the street, lighting a far greater length of street and more perfectly with less lamps.

Our object is, further, to provide means whereby the lamp and its supporting-arm may be turned out of the way, should it ever become necessary, for the passage close to the curbing of some extremely high vehicle. We give a clearance of twenty feet or more, as required, which is deemed sufficient to be clear of all vehicles of the present day which may be found upon our streets.

In the drawings, Figure 1 is an elevation of our improved electric-lamp support with part in section. Fig. 2 is a side elevation of the mechanism to raise and lower the lamp, with the post broken away. Fig. 3 is a front elevation of same. Figs. 4 and 5 show modified forms for supporting the swinging arm on top of the column.

A is the column, which consists of a vertical post of cast-iron about sixteen feet high, made hollow, and having an open portion below the street-flange to secure it in the ground, as in the case of our ordinary gas-lamp posts. This post A is provided with an enlargement or box, D, at some distance from the sidewalk U, which contains a windlass, E, or other equivalent device, as explained hereinafter. The top of the column or post is bored out, as at L, for the reception of the spindle or pivot M of the hub M′. This spindle is kept from being retracted by means of a pin working in a groove, as shown at *m*, in which the pin is fast to the column.

The arm or support B is preferably made of tubing bent in the proper shape and screwed into the hub M′. This arm B extends over the roadway V a distance of about ten feet or more, and carries on the end a cap, O, which carries a guide or friction-roller, Q.

The strut or guide C is provided at the top with a vertical hole, *c*, through which a pin or bolt, *d*, is passed, securing it loosely to the cap O on the end of the arm B. The guide C is curved, so as to be carried out of the way of the passing vehicles, and is provided at the bot-

tom with a shoulder furnished with a hook, T, and a projecting pin, *t*, which passes through a hole, *r*, in the bracket R, bolted to the post, and which it fits loosely.

The lamp X may be of any of the usual designs, and is provided with a strap carrying a grooved guide-roller, Y, which runs upon guide C, to guide the lamp up or down.

The cable W contains two insulated wires or small compound cables made of a series of small wires. These wires or separate conductors are electrically connected with the two electrodes of the lamp, and are fastened to the strap carrying the roller Y. The cable then passes over the roller Q, through the arm B and the spindle M, down the column A, to the windlass E. One flange of the windlass E is provided with two insulated rings, J and K, which are electrically connected, respectively, with the positive and negative wires of the cable W. Upon these rings contact-springs J′ and K′ press, thereby connecting the wires P and N with the cable. These wires P and N are brought up from an underground main, S, through tube S′, into the column A. The windlass E is provided on the inside with a crank-handle, I, and a ratchet-wheel, F, and pawl F′, the spindle of said windlass projecting through and provided with a square head, G, whereby it may be turned by a crank, *g*, from the outside.

The cap H, adapted to be locked, may be used to prevent trifling with the lamp, and the chamber D is also provided with a door, D′, provided with a lock, the key of which also opens the cap H.

We do not confine ourselves to this precise construction, as it may be modified in many ways, the essential feature being to provide means for winding and unwinding the cable, and at the same time keeping it electrically connected with the main wires.

Instead of using a deep spindle, M, as shown in Fig. 1, a short spindle, M, may be used, as shown in Fig. 4, in which the spindle passes through a cap, L′, secured to the post by pin or bolt *l*, the spindle being secured in place by a nut, M^2. If desired, the long or short spindle may be used and the hub M′ provided with friction-wheels *b b*, to allow easy rotation, as shown in Fig. 5.

The arm B may be provided with a series of friction-rollers, Q′, located along its under side, upon which the cable may run, as shown in Fig. 4; but if the pipe be smooth this is not necessary.

The operation is as follows: The lamp X being in position for lighting the street, as it is desired to insert new carbons the door D′ or cap H is unlocked and the windlass rotated after turning back the pawl F′. This allows the lamp, which weighs about twenty pounds, to descend, being guided down the guide-strut C by roller Y, and dragging the cable W after it, until it reaches the position shown at X′. The roller Y is arrested by the hook T, which brings the lamp to rest and supports it away from the post A, as shown at X. After the lamp is in order the pawl F′ is thrown in contact with the ratchet-wheel and the windlass rotated in the opposite direction, winding up the cable W, which action draws the lamp up the guide C until it reaches the position shown at X. If it be desired for any purpose to clear the street, the arm B is swung around, carrying the guide with it, and as the centers of the arm B and the guide C are not in the same vertical line a sufficient amount of play is given by the extension or pin *t* to allow the increased length of the guide when turned at right angles. If desired, the centers can be arranged directly over each other, but that would be more expensive and would not be any more effective.

By setting the post A about two feet from the curbing the lamp, when down, can be clear of all vehicles, as shown in Fig. 1.

Having now described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In an electric-lamp support, a vertical column or post, in combination with a curved arm at the top, said arm projecting over the curbing and partly over the roadway, and an electric lamp adapted to be raised or lowered to or from the end of said arm and at all times insulated therefrom, substantially as and for the purpose specified.

2. In an electric-lamp support, a vertical column or post, in combination with a curved arm pivoted at the top, adapted to swing around, said arm projecting over the roadway, and an electric lamp adapted to be raised or lowered to or from the end of said arm and insulated therefrom, as and for the purpose specified.

3. In an electric-lamp support, a vertical post or column provided at the top with an arm projecting partly over the roadway, in combination with a guide-rod connecting the end of the arm with the body of the post, and an electric lamp adapted to be raised or lowered to or from the end of said arm and insulated therefrom, substantially as and for the purpose specified.

4. In a support for electric lamps, a vertical post or column provided at the top with an arm extending partly over the roadway, in combination with a guide-rod connecting the end of the arm with the body of the post, an electric lamp provided with means to guide it up and down said guide-rod, a conducting-cable one end of which is secured to the lamp and the other to a windlass or equivalent device, said cable passing through the arm and post, and being electrically connected to the main wires, substantially as and for the purpose specified.

5. In a support for electric lamps, the combination of the post A, provided with sockets L, spindle M, with its hub M′, arm B, secured to the hub, and electric lamp X, connected to

the end of said arm and insulated therefrom, as and for the purpose specified.

6. In a support for electric lamps, the combination of vertical post A, arm B, pivoted to said post at the top, supported upon rollers *b*, and electric lamp X, connected to the end of said arm and insulated therefrom, substantially as and for the purpose specified.

7. In a support for electric lamps, the combination of post A, hollow arm B, pivoted at the top of the post, cap O, carrying a roller, Q, guide-rod C, pivoted to the end of the arm, and provided at the bottom with shoulder provided with a hook, T, and pin *t*, bracket R, provided with hole *r*, secured to post A, and electric lamp X, provided with a grooved roller, Y, and means for raising and lowering the lamp, as and for the purpose specified.

8. In an electric-lamp support, the combination of post A, hollow arm B, provided with roller Q on the end, electric lamp X, electric cable W, and windlass E, or its equivalent, adapted to wind up or unwind said cable without breaking the electrical connection between the main wires and cable, as and for the purpose specified.

9. The hollow post A, in combination with the pivoted hollow arm B, provided with a roller, Q, at the end, and friction-rollers Q′ along its under surface, and electric cable W, consisting of insulated positive and negative conductors, as and for the purpose specified.

10. In a support for electric lamps, the post A, in combination with hollow arm B, windlass E, provided with a flange having insulated conducting-rings J and K, cable W, consisting of positive and negative wires, said wires being, respectively, connected to the rings J and K, contact-pieces J′ and K′, and main wires P N, substantially as and for the purpose specified.

In testimony of which invention we hereunto set our hands.

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