

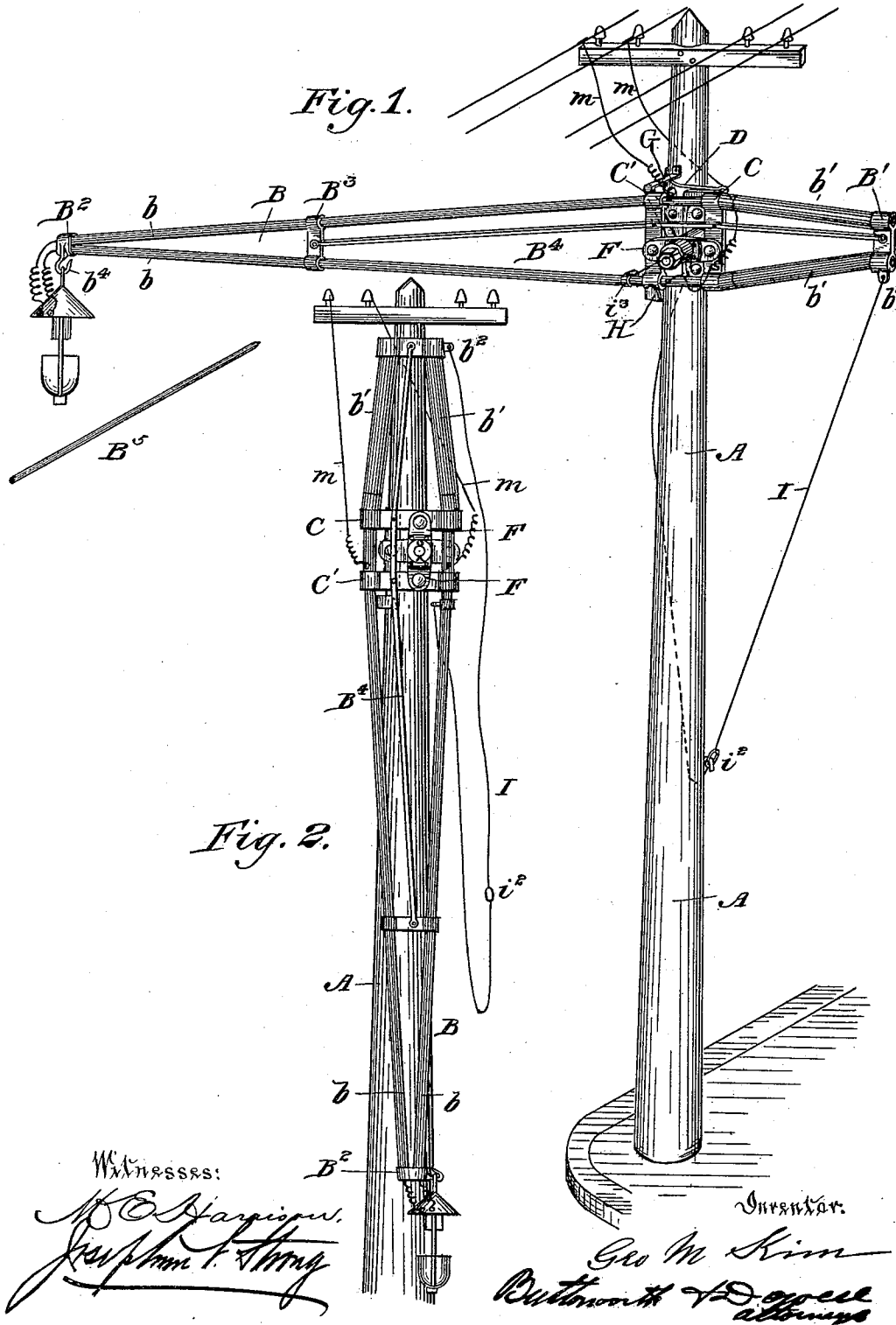
(No Model.)

2 Sheets—Sheet 1.

G. M. KIM.
ELECTRIC LIGHT SUPPORT.

No. 473,229.

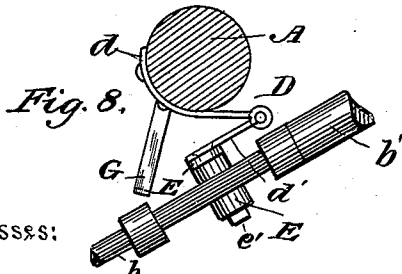
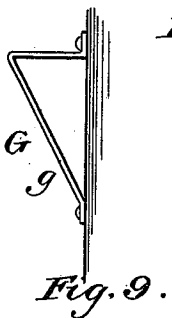
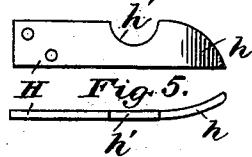
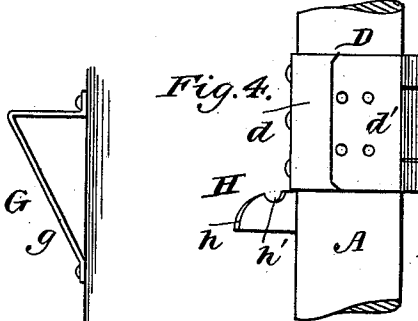
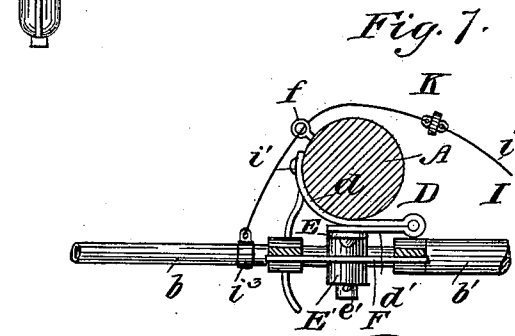
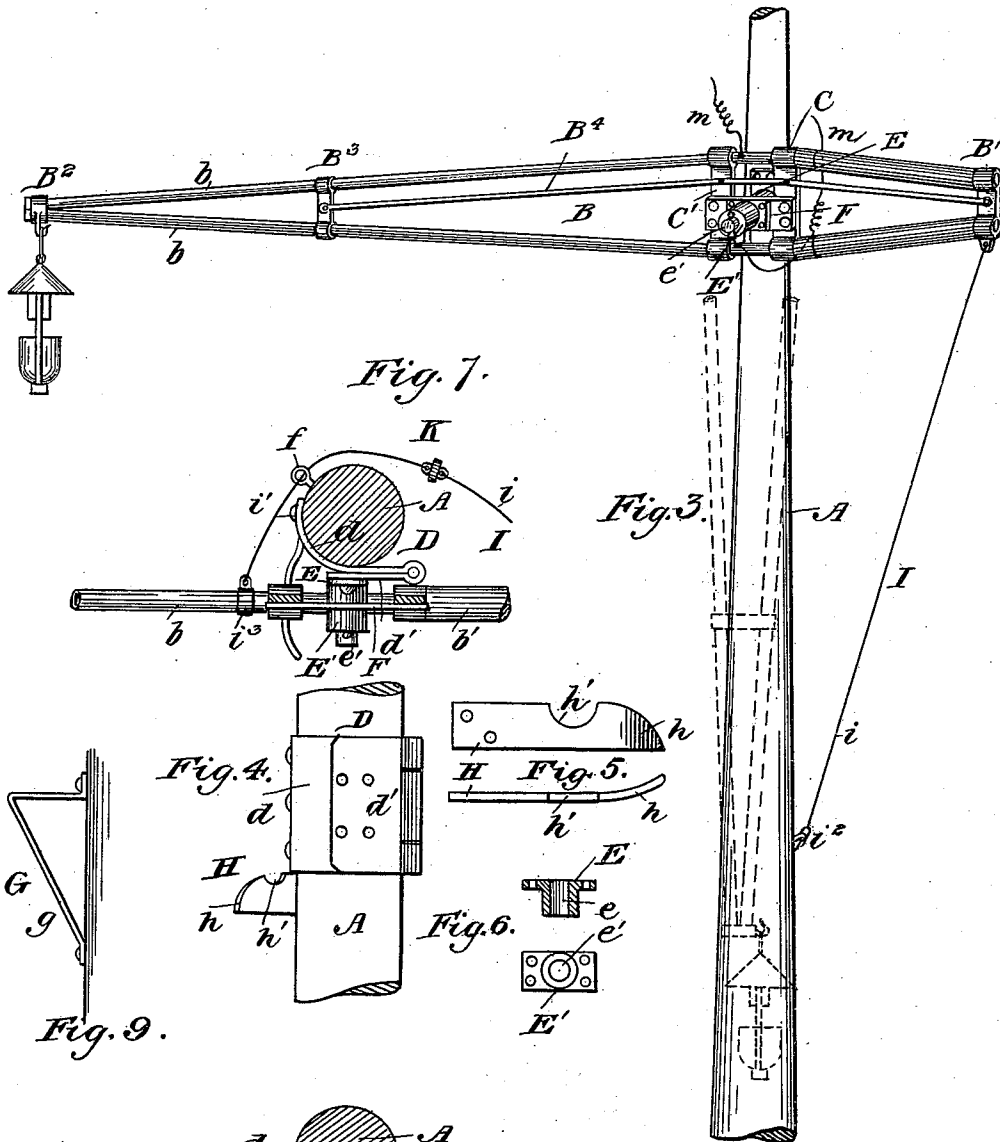
Patented Apr. 19, 1892.



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Witnesses:

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Inventor.

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UNITED STATES PATENT OFFICE.

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KEYSTONE MAST-ARM COMPANY, OF SAME PLACE.

ELECTRIC-LIGHT SUPPORT.

SPECIFICATION forming part of Letters Patent No. 473,229, dated April 19, 1892.

Application filed October 10, 1891. Serial No. 408,292. (No model.)

To all whom it may concern:

Be it known that I, GEORGE MARTIN KIM, a citizen of the United States, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Electric-Light Supports; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in devices for suspending electric lights from telegraph-poles or the like, of wood or iron; and the object of the invention is to provide a simple, strong, and efficient support for electric lamps and means whereby said support may be readily and easily adjusted and lowered for the purpose of setting the carbons or cleaning the lamps without interfering with the traffic on the street over which the lamps are suspended or with the overhead wires or electric conductors for conveying current to the usual trolley-wheels used in overhead systems of electric railways.

To this end my invention consists in certain combinations and improved features of construction, all as will be hereinafter described, and particularly pointed out in the claims at the end of this description.

In the accompanying drawings, which are to be taken as a part of this specification, Figure 1 is a perspective view illustrating my invention applied to an ordinary telegraph-pole, showing at B^a a portion of a trolley-wire or conductor such as is used in overhead systems of electric street-railways and illustrating the relative arrangement of said wire in respect to the lamp suspended from the cross-beam. Fig. 2 is a side elevation showing the cross-beam with the attached lamp lowered. Fig. 3 is a side elevation of a modification, illustrating in dotted lines the cross-beam and lamp lowered for convenience in setting the carbon and cleaning the globe. Fig. 4 is a detail showing part of the duplex hinge for securing the cross-beam to the telegraph-pole in the manner indicated in Figs. 1 and 2. Fig. 5 is a detail illustrating a front and an edge view of the combined catch and support for the cross-beam. Fig. 6 is a detail

of the castings which form the pivotal support on which the cross-beam rocks. Fig. 7 is a detail plan view of parts of the cross-beam and connections, showing the strap-hinge closed and also showing the stop on the rope for operating the cross-beam; and Fig. 8 is a similar view showing the strap-hinge open, but omitting some of the parts shown in Fig. 7. Fig. 9 is a detail view of the guide-bracket or "hinge-opener."

Like letters of reference are used to designate like parts in each of the several views.

A represents an ordinary telegraph-pole, to which my improvements may be applied.

B is the balanced cross-beam. This beam consists of a compound lever comprising two long members *b b*, preferably of gas-pipe or tubing, and two short members *b' b'*, of rolled iron or the like, and of a length and weight sufficient to counterbalance the weight of the tubular members *b b*, with the attached electric lamp, when the cross-beam rests upon its pivotal support upon the telegraph-pole in the position shown in Fig. 1. On the tubular members *b b*, at the junction of the parts *b b'*, may be secured a brace-plate C, and in front of such brace-plate is a second brace-plate C'. These plates or braces may be secured to the arms *b b* in any suitable manner, but preferably they are cast or provided with eyes therein, through which the ends of the pipe-sections *b b* are passed, and they may be fixed in position upon the pipes by set-screws or other suitable means. By this means the brace-plates may be fitted and adjustably secured upon the pipe-sections *b b*, and the latter may be connected to the solid sections *b' b'* by any suitable coupling or other means, the parts being so proportioned and adjusted that the short arm of the lever may act as a counterbalance to lamps of different weights suspended from the long arm thereof.

The outer ends of the bars or rods *b'* are fitted in the eyes of a casting B', which may be provided with a hook or eye *b²* for the attachment of an operating rope or wire I. The outer ends of the tubular members *b b* are secured in the socket of a casting B², which is cast integral with a hook *b⁴* for the purpose of suspending a lamp therefrom.

Intermediate the pivotal support of the

cross-beam and the outer ends of the pipe-sections $b\ b$ is secured an auxiliary brace B^3 , and the several braces $C\ C'\ B^3$ and casting B' may be connected by a longitudinal stringer or brace-rod B^4 , as shown.

D represents a duplex hinge comprising a strap-hinge, one member d of which is secured to the pole A, while the other member d' thereof carries the spindle or horizontal pivot on which the cross-beam rocks in a vertical plane.

E denotes a casting which is secured to the leaf-like portion d' of the strap-hinge and which is formed with a projecting cylindrical portion or abutment e , which terminates in a reduced cylindrical portion or spindle e' , upon which latter is fitted the sleeve or casting E' , which is secured to a cross piece or brace F, attached to cross-braces or brace-plates $C\ C'$. By this means the cross-beam B is pivoted upon the spindle e' , so that it may rock thereon in a vertical plane without coming in contact with the strap-hinge, being held at a suitable distance therefrom by the interposed abutment or cylindrical portion e of the casting E. The sleeve or casting E' , which is journaled on the spindle e' , may be secured upon the spindle by means of a suitable nut or pin in the usual manner of securing such devices.

G denotes a triangular bracket which is secured to the pole A in such position that when the long arm of the cross-beam is raised it will engage the inclined face or edge g of the bracket and, sliding thereon, will be moved laterally, so as to swing the cross-beam outwardly into the proper position to be lowered for the purpose of cleaning or repairing the lamp or setting the carbon therein, without hinderance or interference with adjacent wires, as indicated in Fig. 1. Beneath the bracket G is secured a combined catch and support H, which is provided with a curved or inclined edge h and a notch or recess h' , so that when the cross-beam is swung inward it may impinge upon the curved edge h until the beam drops into the notch h' , in which position the beam will be supported and prevented from tipping and will be secured against lateral movement.

I designates a pull-cord, which may consist of any suitable rope, cord, or wire, provided with a ring i^2 and with an adjustable stop K, arranged in such position thereon as to adapt the cross-beam to be secured and retained in the desired position upon the pole, the stop being adapted to limit the sidewise movement of the cross-beam. One end of this rope may be secured to the hook or eye b^2 on the short arm of the cross-beam and the other end to a hook or eye i^3 , sleeved upon one of the members of the long arm of the cross-beam, the rope passing through an eyebolt f , secured to the pole A. The stop K is secured upon the rope at such distance from the cross-beam as to permit the latter to swing outwardly a sufficient distance to be lowered without coming in contact with the trolley-wire B^5 , indicated in Fig. 1. I preferably construct the

rope I in two sections $i\ i'$, and connect the said sections to the stop-plate K by means of suitable hooks or eyes formed upon said plate, so that either section of the cord may be readily lengthened or shortened for the purpose of adjusting the stop-plate and securing the same in the desired position with reference to the hinged cross-beam.

The circuit-wires $m\ m$, connected to line in the usual manner for conveying current to the lamp, are passed into perforations formed in the tubular portions $b\ b$ of the cross-beam at or about the pivotal center thereof, as shown, and out at the ends thereof and through openings in the casting B^2 , and thence to the lamp, so as to prevent any danger to persons coming in contact with the wires or interference therewith when the cross-beam is tilted. The hollow pipe-sections also afford protection to the wires, and by reason of the connection through the wires being made at or about the pivotal center of the beam the wires will be kept sufficiently taut in all positions of the beam to prevent twisting or kinking of the wires when the beam is lowered or raised.

The beam shown in Fig. 3 is constructed the same as described with reference to Figs. 1 and 2; but instead of providing the hinged support for the beam, so as to permit both lateral and vertical movement thereof, the casting E is secured directly to the pole instead of being secured to the movable member of the strap-hinge, as previously described.

The operation of my invention will be readily understood from the foregoing description, taken in connection with the accompanying drawings. In the position shown in Fig. 1 when it is desired to lower the balanced cross-beam the section i of the rope is released from the hook at i^2 and thereupon, by drawing downward upon the rope, the long arm of the cross-beam will be raised and disengaged from the catch H by contact of the beam with the bracket G, and then by slacking the rope, so as to let the long arm of the cross-beam move downward, the lamp may be lowered to the desired position. To raise the lamp it is only necessary to draw upon the section i of the cord until the cross-beam is in a horizontal position, and then by drawing upon the section i' of the cord the long arm of the beam will be swung inward until it engages the catch H and drops into the notch h' of the catch, in which position it may be secured by fastening the cable at i^3 . Preferably the long arm of the lever is a little heavier than the short arm to cause the beam to descend when it is desired to lower the lamp. The sidewise movement of the cross-beam will be limited by the stop K, which engages the eyebolt upon the pole and prevents further lateral movement of the beam.

It will be understood, of course, that the construction and arrangement of parts here-

inbefore described may be varied in a number of ways, which will readily suggest themselves to a skilled mechanic, without departing from the principle of my invention, and hence I do not desire to be limited to the exact construction and arrangement described and shown.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The pivoted cross-beam having the tubular bars provided with perforations therein at or near the pivotal center thereof, in combination with the circuit-wires passing into said perforations and extending through said tubular bars, whereby contact with and twisting and kinking of the wires are prevented when the beam is lowered, substantially as described.

2. In combination with an ordinary telegraph-pole, the pivoted laterally-swinging cross-beam hinged to said pole at one side thereof, the combined catch and support for said beam projecting laterally from said pole below the hinged support thereof, substantially as described.

3. In combination with the pole, the pivoted horizontally-swinging cross-beam hinged to said pole intermediate the ends thereof, the guide-bracket secured to said pole beneath the hinged support of said beam and having the inclined face or edge adapted to engage and effect the sidewise movement of the beam when the latter is rocked upon its pivot, substantially as described.

4. In combination with the pole, the pivoted horizontally-swinging cross-beam, the catch projecting from said pole, and the guide-bracket arranged in proximity to said catch beneath the pivoted support of said beam, so as to engage the latter and effect the sidewise movement thereof when the beam is rocked upon its pivot, substantially as described.

5. In combination with the pole, the cross-beam, the duplex hinge having one of its members secured to said pole and the other member thereof pivotally connected to said cross-beam, the catch, and the guide-bracket, all constructed and adapted to operate substantially as described.

6. In combination with the pivoted laterally-swinging cross-beam, the operating-cord having one of its ends secured to said cross-beam, and the adjustable stop secured to said cord for limiting the sidewise movement of the cross-beam, substantially as described.

7. In combination with the pole, the pivoted laterally-swinging cross-beam, the catch

projecting from said pole, the guide-bracket arranged in proximity to said catch, the rope having one end secured to said beam, and the stop for limiting the sidewise movement of the cross-beam, substantially as described.

8. In combination with the pole, the cross-beam, the duplex hinge comprising a strap-hinge having its stationary member rigidly secured to the pole and a laterally-movable member which carries the spindle or horizontal pivot-bolt on which the cross-beam is journaled, and means for operating the cross-beam, substantially as described.

9. In combination with the pivoted cross-beam, the operating-rope, the catch, the guide-bracket, and the duplex hinge comprising a strap-hinge and a horizontal pivot-bolt or spindle secured to the movable member of said strap-hinge, substantially as described.

10. The cross-beam comprising a pair of rods, each composed of a long tubular section and a short solid section connected together end to end, the tubular members of the rods forming the long arm of the beam, the cross-braces at the junction of the tubular and solid sections, the auxiliary brace, and the brace-rod connecting the several braces with the casting at the end of the short arm of the beam, substantially as described.

11. The balanced cross-beam comprising the tubular rods forming the long arm of the beam, the solid bars or rods secured to said tubular rods and forming the short arm of said beam, the castings connecting the free ends of said tubular and solid rods, respectively, the auxiliary brace, the cross-braces arranged one at either side of the pivotal center of the cross-beam, and the longitudinal brace-rod, substantially as described.

12. In combination with the cross-beam having the tubular rod forming the long arm thereof, the casting at the end of said arm, having a socket in which is fitted the free end of the rod, and the hook formed integrally with said casting for suspending a lamp therefrom, substantially as described.

13. In combination with the pole, the pivoted laterally-swinging cross-beam, the combined catch and support projecting from the side of said pole, having the curved laterally-projecting end provided with a notch in the upper edge thereof forming a rest for the beam, substantially as described.

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

GEORGE MARTIN KIM.

Witnesses:

CHAS. C. DEER,
JOHN H. CRATTY.