(No Model.) 3 Sheets—Sheet 1.

J. S. ADAMS.

MAST ARM.

No. 354,759. Patented Dec. 21, 1886.

Fig. 1.

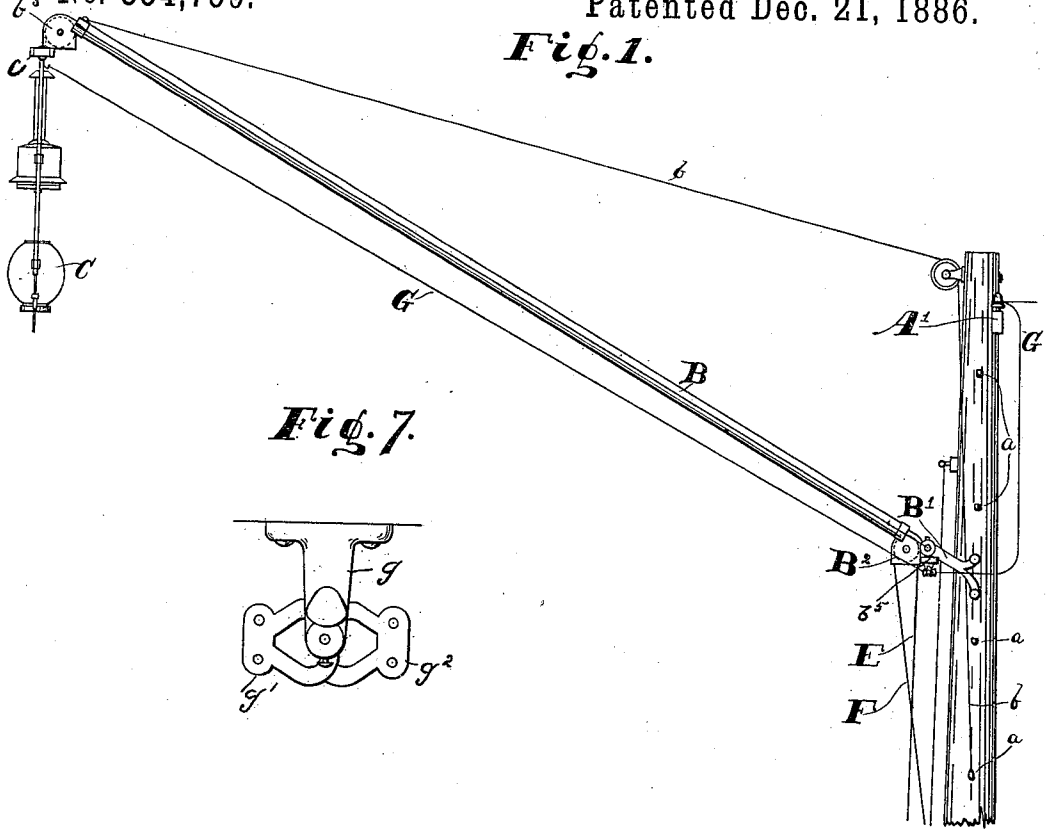
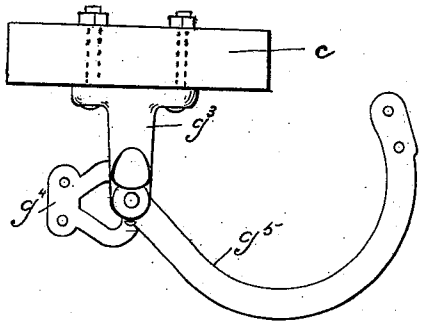
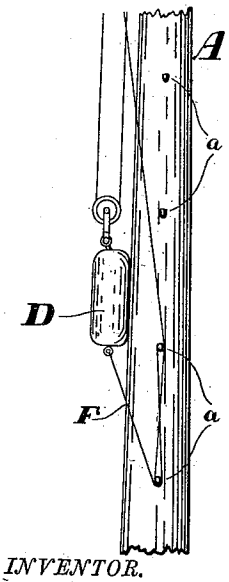


Fig. 7.

Fig. 8.





WITNESSES.

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Fig. 3.

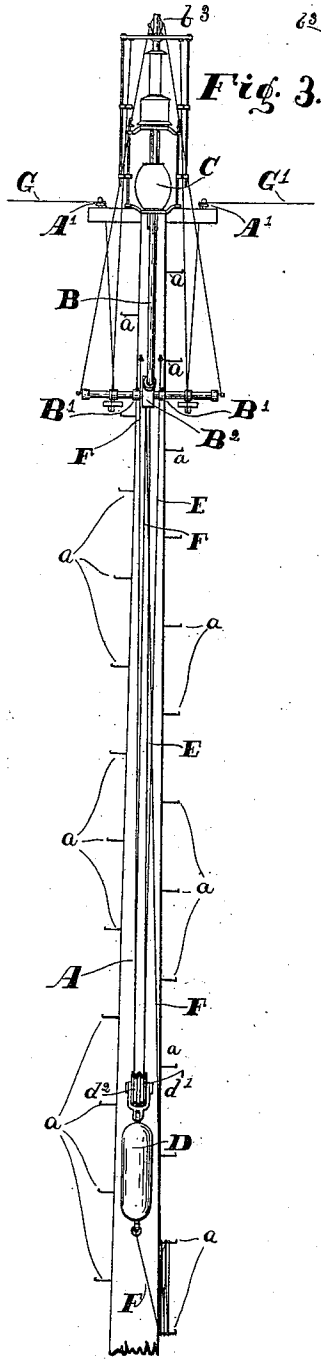
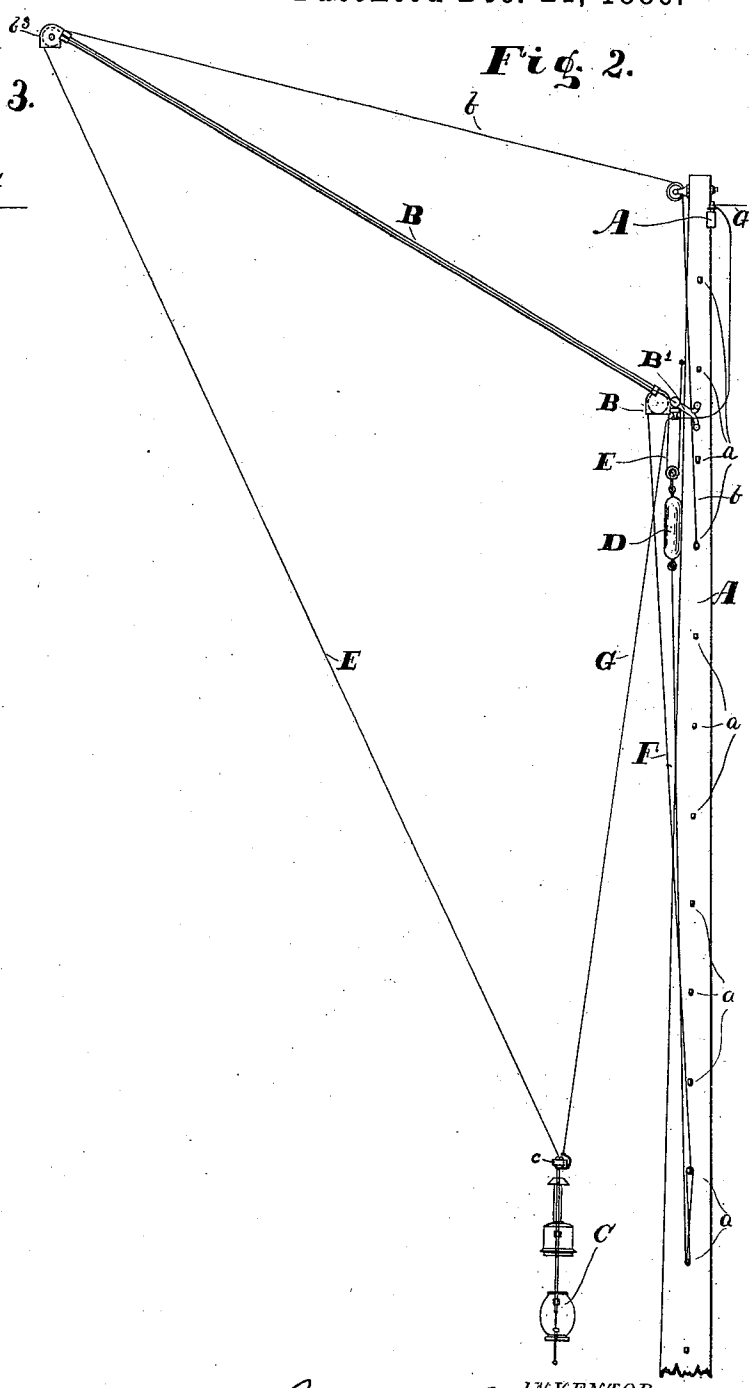


Fig. 2.



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Fig. 4.

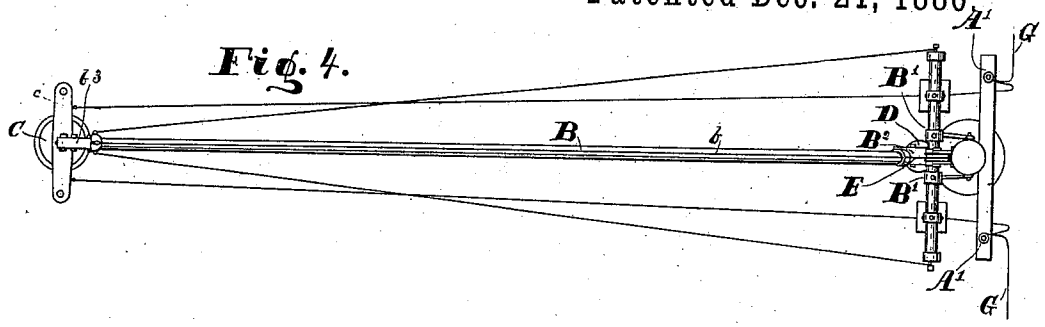


Fig. 5.

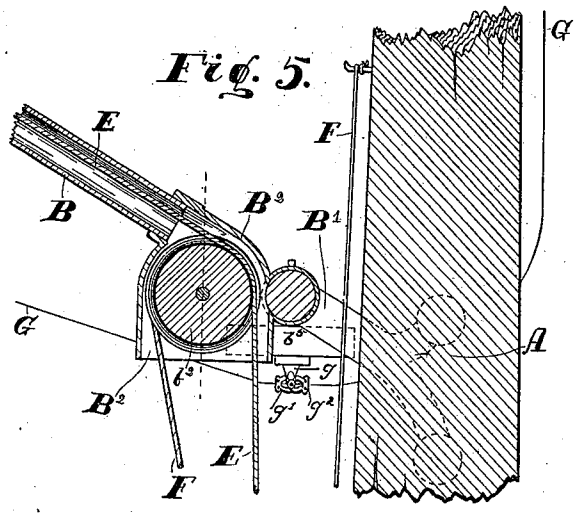
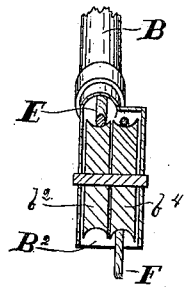


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN S. ADAMS, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO THE JENNEY ELECTRIC COMPANY, OF SAME PLACE.

MAST-ARM.

SPECIFICATION forming part of Letters Patent No. 354,759, dated December 21, 1886.

Application filed May 4, 1886. Serial No. 201,070. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. ADAMS, of the city of Indianapolis, county of Marion, and State of Indiana, have invented certain new and useful Improvements in Mast-Arms, of which the following is a specification.

My said invention relates to that class of supports for electric lamps by which such lamps are supported on an extended boom; and it consists in the means for elevating, lowering, and handling the lamp. Heretofore such supports have usually had a pivoted boom which is capable of being tilted up and down.

By the use of my invention the tilting boom is replaced by a fixed boom and the lamp is manipulated by means of certain connections and tackle, as will be hereinafter more particularly described.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a side elevation of a post provided with a boom and having an electric lamp suspended therefrom in accordance with my invention; Fig. 2, a view similar to Fig. 1, except that the lamp is swung down, as in position when being trimmed; Fig. 3, a front elevation; Fig. 4, a top or plan view; Fig. 5, a detail longitudinal section through the base of the boom; Fig. 6, a transverse section of the same; and Figs. 7 and 8, detail views of the two forms of hinged joints, respectively.

In said drawings the portions marked A represent the post or mast; B, the boom; C, the lamp; D, a weight; E, a rope connecting said lamp and said weight; F, a rope by which the weight is operated, and G G′ the incoming and outgoing line-wires of the electrical circuit.

The post or mast A may be of any usual or desired construction. It is provided with steps *a*, as is usual in such cases, and with a cross-bar, A′, or other supports for the insulators, to which the wires are attached.

The boom B is connected to and supported by the post A, being secured thereto at its lower end by brackets B′, and from its upper end at some intermediate point by a stay rope or wire, *b*. It is formed of a pipe or tube, (ordinary gas-pipe being usually used,) and has pulley-cases at the ends in which sheaves are mounted, over which the operating-ropes run. Secured thereto at some convenient point are bases for the joint-connections of the wires, as will be hereinafter described. Where this boom is to be of a greater length than can be formed from one section of pipe, it is common to provide extended arms in the center, to which brace-rods running from the ends may be secured; but this is a mere matter of mechanical detail, and, as it constitutes no part of my invention, will not be shown or further described herein. The boom is secured to the brackets by passing a cross-bar or pivot-shaft at its lower end through eyes in said brackets; and the desired elevation of the boom is obtained by manipulating the stay-rope *b*, which preferably passes from the point of attachment on said boom over a sheave at the top of the pole or mast to the point of attachment to said mast. The sheave-case B^2, at the lower end of the boom, is made to carry two sheaves, one of which is in line with a hole in the boom and the other to one side, for the purpose which will be presently more fully described.

The lamp C is or may be any electric lamp, and is supported by a rope running over the sheave on the outer end of the boom, through said boom, over one of the sheaves at its lower end, to and around a sheave attached to the weight.

The weight D is sufficient to overcome the weight of the lamp and hold it in place. It is provided with two sheaves, connected thereto as shown, and is operated as will be presently described.

The rope E is connected to the lamp-frame, and runs over the sheave b^3 at the other end of the boom, through the hole in said boom, over the sheave b^2 at the lower end of said boom, and over the sheave d' on the weight to a fixed point on the post A at or above the point of attachment of the boom to said mast. By this arrangement of this rope it will be seen that the lamp C, in being operated, moves twice as far as the weight. It will be noticed that the portion of the rope which runs over the outer sheave when the lamp is lowered, being incased in the hollow boom, is sufficiently protected from ice, snow, and other

matter which might render it inoperative at times, and is thus always in a pliant and operative condition.

The rope F starts from a fixed point near the fixed point to which the end of the rope E is attached, and passes over the sheave d^2 on the weight, up over the second sheave, b^4, at the foot of the boom, and then to an eye on the lower end of the weight. This rope has a considerable amount of slack, so that it may be belayed to pins on the side of the mast. As will be readily understood, by pulling on this rope F in one direction or the other, the weight will be raised or lowered and the lamp held down or pulled up. When in the desired position, by weaving the slack rope around the belaying-pins, it will be secured at that point.

The wires G and G′ run from insulators on the mast to hinged joints on the bases b^5, secured to the boom, and then to hinged joints secured to the lamp-frame. These hinged joints consist of a stirrup, g, and two pivoted portions, g' g^2, extending in the direction from a pivot-bolt in the lower end of said stirrup toward that from which the ends of the wires are respectively attached. There are two pairs of these hinged joints. One pair is located at or near the base of the boom, and the incoming and outgoing line-wires are connected to the pivoted portions g^2, nearest the mast, while the wires which extend along the boom are connected to the pivoted portions g' on the opposite side. Both pivoted portions in this pair are alike, as shown in Figs. 5 and 7, and are, in effect, pivoted binding-posts. The other pair is secured to the lamp-frame c, and consists of a stirrup or housing, g^3, similar to those used in the first pair, and one pivoted binding-post, g^4, of similar form. The portion g^5, which extends from the other side to the other pivoted binding-post, is curved, as shown in Fig. 8, and is thus enabled to swing up over the top of the lamp as said lamp swings down near the mast in the position shown in Fig. 2. By means of these several hinged joints the lamp is enabled to swing down and up when being carried to its various positions without breaking or interrupting the electrical current passing through said joints, and thus all danger of breaking the wire or breaking its contact at any point is obviated. The wires, also, which extend between the two pairs of hinged joints, serve the purpose of drawing the lamp in toward the base of the post as it swings downwardly, as will be clearly indicated by a comparison of Figs. 1 and 2.

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

1. The combination, in a lamp-support, of the hollow boom having sheaves at its ends, a post by which said boom is supported, the lamp, a weight, and a rope running from said lamp through said hollow boom to said weight, substantially as set forth.

2. The combination of a post or mast, a boom supported thereby, sheaves at the ends of said boom, a weight, and a rope running from said lamp over said sheaves to said weight, substantially as set forth.

3. The combination of a post or mast, a boom secured thereto, pivot-connections with brackets, a stay-rope connected to said boom and to the top of said post, a lamp suspended to the outer end of said post, and ropes for suspending said lamps.

4. The combination, in an electric-lamp support, of the mast, a boom secured to said mast, a lamp, ropes running from said lamp over sheaves on said boom, the electrical wires, two pairs of hinged joints, one being connected to said boom and the other to the lamp-frame, and means of operating the same, substantially as described.

5. The combination, in an electric-lamp support, of the mast, a hollow boom secured thereto, having sheaves at its upper and lower ends, a rope running from the lamp over each sheave to the outer end of said boom, through the hole in said boom, over one sheave at the lower end of said boom, under a sheave attached to the weight, and up to the fixed point on said mast, substantially as set forth.

6. The combination, in an electric-lamp support, of the mast, a boom secured thereto, a lamp suspended from the outer end of said boom, a rope running from said lamp over sheaves on said boom to a sheave on the weight, to a fixed point on said mast, and an operating-rope running from the fixed point on said mast over a sheave on said weight, thence over a second sheave at the base of the boom, and thence to said weight, whereby said weight and said lamp may be operated, substantially as set forth.

7. The combination, in an electric-lamp support, of the mast, a boom secured thereto, the lamp, a rope running from said lamp over sheaves on said boom to the lower end of the mast, and wires running to a pair of hinged joints at or near the base of the boom and to a pair of hinged joints on the lamp-frame, whereby as the lamp is lowered said wires will operate to draw said lamp inwardly toward said mast, substantially as set forth.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 26th day of March, A. D. 1886.

JOHN S. ADAMS. [L. S.]

In presence of—
E. W. BRADFORD,
CHARLES L. THURBER.