(No Model.)

A. WRIGHT.

MAST ARM FOR ELECTRIC LAMPS.

No. 582,512. Patented May 11, 1897.

Fig. 1.

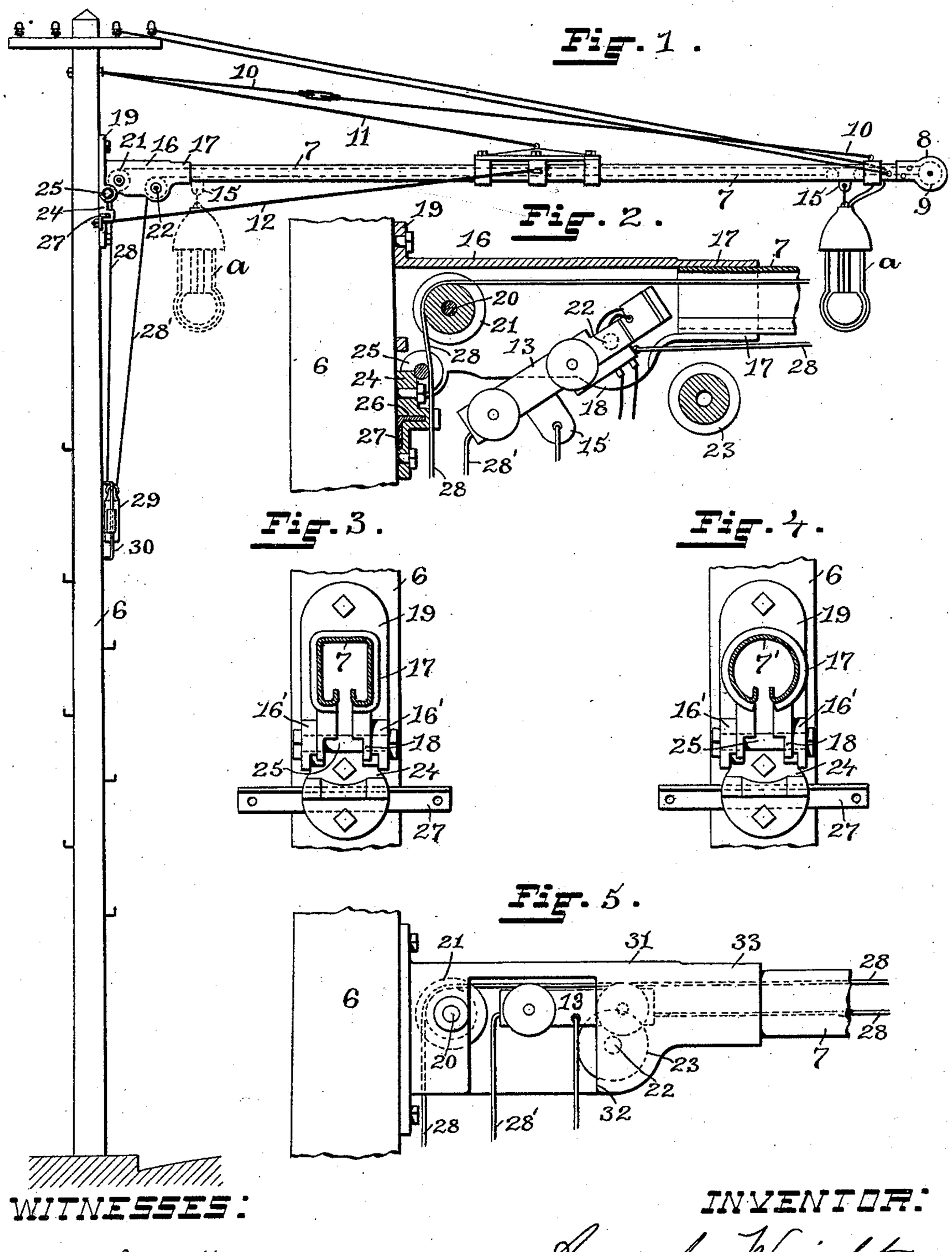

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

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MAST-ARM FOR ELECTRIC LAMPS.

SPECIFICATION forming part of Letters Patent No. 582,512, dated May 11, 1897.

Application filed September 24, 1895. Serial No. 563,508. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTUS WRIGHT, of the city of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Mast-Arms for Electric Lamps; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to improvements in supports for electric lamps in the nature of mast-arms.

The object of the invention is to facilitate the operation of the lamp-carriage or traveling lamp-support.

The object of the invention is also to construct the fitting or bracket for receiving the inner end of the mast-arm and securing the same to the mast.

The object of the invention is also to so construct a tubular mast-arm and its pole-bracket that the lamp-carriage or traveling lamp-support may be removed from the same at a point adjacent to the pole or mast.

The invention consists in a tubular mast-arm, a lamp-support traversable in the arm, and a support for the inner end of the arm constructed to allow the passage of the lamp-carriage.

The invention also consists in the pole-bracket and the hinge-plate whereby the pole-bracket is pivotally secured to the mast.

The invention still further consists in such other novel features of construction and combination of parts as may hereinafter be more fully described, and pointed out in the claims.

Figure 1 represents an elevation of a mast and a mast-arm provided with the improvements. Fig. 2 represents an enlarged sectional view of the inner end of the mast-arm, commonly called the "pole-bracket," showing the lamp-carriage being removed therefrom. Fig. 3 represents an end view of the pole-bracket having a throat adapted to receive a tubular portion of square cross-section. Fig. 4 represents a similar view showing the bracket-throat shaped to receive a tubular portion of circular cross-section. Fig. 5 represents a modified construction of the bracket, showing the side opening for the removal of the carriage.

Similar numbers of reference designate corresponding parts throughout.

Tubular mast-arms, which are used as covered tracks for lamp-carriages or lamp-supports traversable in the arms, have heretofore been furnished with brackets or similar devices for securing the inner ends of the slotted tubular portions of the masts. These brackets, commonly known as "pole-brackets," have been rigidly secured to the slotted tubular portion before its erection. They have comprised box-like structures for containing the cable-winding drums and throats or sleeves for receiving the inner end of the slotted tubular portion. The throats or sleeves entirely embraced the ends of the arms, so that a lamp-carriage movable in the mast-arm and having a depending tongue extending through the slot would be limited on its inward traverse by the bracket-throat.

The carriage-operating mechanism has heretofore consisted of a drum mounted in the pole-bracket and operated by a crank on the outside of the bracket. On the drum was wound a cable which passed over a pulley at the outer end of the arm and was attached to the lamp-carriage. In order to draw the carriage to the outer end of the arm, it was necessary for the trimmer to ascend the mast as far as the bracket and, standing in an awkward position, operate the crank.

As heretofore constructed it has been necessary, in mounting the mast-arm on the mast, to raise the arm in a horizontal position to the height at which it was desired to secure it to the mast. This has been a slow and tedious practice, requiring considerable tackle and supporting-horses.

In carrying my invention into practice my desire has been to so construct a mast-arm and its bracket that the carriage might be readily removed from the arm at a point conveniently in reach of the trimmer at the mast, this being necessary for the repair of the carriage or for the substitution of a new carriage. To facilitate the operation of the lamp-carriage, I dispense with the drum and provide a drawing-cable which is accessible

to the lamp-trimmer without climbing to the height before required and in a position for more ready use. I also provide the pole-bracket with a hinge-plate, which being first secured to the pole or mast the bracket end of the arm is hoisted up and secured to the plate by a pivot. The outer end of the arm may now be readily hoisted in position and secured by stays, the hinge-plate also serving as a securing device for the cross-brace.

In the drawings, 6 represents the mast, on which the arm is mounted. The arm consists of the tubular portion 7, slotted at its lower portion, as shown in cross-section in Figs. 3 and 4. At the outer end of the tubular portion is secured the head 8, in which the pulley 9 is rotatably mounted. At the inner end the tubular portion is secured in a bracket which is adapted to be fastened to the pole or mast 6. Suitable stays 10 11 and 12 12 are provided for supporting the outer portion of the mast-arm, and a carriage 13 or traveling lamp-support is movable in the mast-arm and has a depending tongue 15, working in the slot of the tubular portion, to which the lamp is attached.

The bracket comprises the box-like structure 16, having the slotted throat 17, the opening 18, and the base 19. In the box 16 is secured the shaft 20, on which the pulley-wheel 21 is rotatable. At the lower forward portion of the box is removably secured a shaft in perforations, as 22, on which the pulley 23 is rotatable. The lower portions of the sides of the box-like structure 16 are reinforced, as at 16′, and between these reinforced portions is pivoted the plate 24 by means of the removable bolt 25, passing through perforations in the portions 16′ and in the upper portion of the plate 24. This plate 24 is furnished with a transverse slot 26 of a cross-sectional shape to correspond with the cross-section of the cross-brace 27. Bolt-holes are also provided in the plate, through which bolts may be secured in the mast.

The lamp-carriage is operated by the cable 28, which passes over the pulley 21, thence outward through the tubular arm and over the pulley 9, and is fastened to the forward end of the carriage. The portion of this cable below the pulley-wheel 21 passes through a loop on the weight 29, thence over the removable pulley-wheel 23 to the rear end of the lamp-carriage, to which it is attached. For convenience of description the end of the cable passing over the pulley-wheel 23 is marked 28′, thus designating the outhaul portion from the inhaul. The weight 29 is vertically movable on a guide 30, secured to the mast 6, and is adapted to keep a slight tension on the cable.

In the modified form shown in Fig. 5 the bracket 31 is shown as furnished with the side opening 32, the carriage 13 is shortened sufficiently to pass through this opening, and the depending tongue 15 of Fig. 2 is dispensed with, thus adapting the carriage for passage through the throat 33 without slotting the throat.

When the mast-arm is to be mounted in place on a mast, as 6, the plate 24 is first secured to the mast at a point slightly below the proposed location of the arm. With this plate is also secured the cross-brace 27. The bracket end of the arm is now hoisted up until the upper portion of the plate 24 can be engaged between the reinforced portions 16′ 16′. The bolt 25 is now passed through the perforations in these portions, thus pivotally connecting the arm with the plate. The outer end of the arm is now hoisted to position and supported by stays, this being accomplished without the use of supporting-horses. A bolt is then passed through a perforation in the base 19 and is secured in the mast, and finally the stays, as 12, are secured to the arm and to the ends of the cross-brace 27 to prevent the lateral swinging of the arm. The cable 28, having been previously rigged through the mast-arm and through the loop of the weight, is in condition for operation as soon as this weight is mounted in its guide 30. It will be seen that this cable-rigging brings the cable into an accessible position, where it can be handled by the trimmer without the necessity of ascending the pole to a dangerous height or where by any accident he can be brought into contact with the electrical conductors, which are generally carried at the upper end of the mast. The ease with which the lamp-carriage can be operated by means of the cable is evident, a pull on the inhaul or outhaul portions being sufficient to draw the carriage inward or outward.

The lamp-carriages used in tubular arms are, from their small size and the exposure to dampness, constantly in need of inspection, often of repair, and sometimes it is necessary to substitute a new carriage for one which is beyond repair. Access to the carriages has heretofore been had through the outer end of the mast-arm, the fitting containing the outer pulley being removed, this generally requiring the disconnecting of the supporting-stays and the use of a horse to support the outer end of the mast-arm. The location of this end of the arm over a street with teams constantly passing renders this process exceedingly objectionable.

In my improved construction herein shown the removal of the lamp-carriage is accomplished at a point near the mast and can be done by a single person. The shaft of the pulley-wheel 23 being removed with the wheel, the carriage 13 may be drawn inward by means of the cable, the tongue 15 passing through the slot in the bracket-throat 17 and the carriage being taken out of the opening 18 in the lower portion the bracket. When repaired, the carriage may be replaced in the arm through the same opening.

The process in removing the carriage from the bracket in the modified form shown in Fig. 5 is similar except that the carriage is removed through the side opening.

Electrical connection from the main wires is made with the lamp in the manner shown and described in the patent to John I. Drake, No. 547,246, dated October 1, 1895.

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

1. In a mast-arm, the combination with the pole-bracket thereof, of a plate pivotally connected with the bracket and having a transverse slot, and a cross-brace adapted to be seated in said slot.

2. In a mast-arm, the bracket 16 having the slotted throat 17, the opening 18 and a base by which it may be secured to a mast, in combination with the fixed pulley-wheel 21 and the removable pulley-wheel 23.

3. The combination with the bracket 16 having the portions 16′ 16′, the opening 18 and the slotted throat 17, the pulley-wheel 21 rotatable on a fixed shaft in said bracket, the pulley-wheel 23 rotatable on a removable shaft in the bracket, and a tubular slotted arm secured in the throat 17, of the plate 24 having the transverse slot and pivotally secured between the portions 16′ 16′ of the bracket by the bolt 25, and the cross-brace 27 seated in the slot of said plate, as described.

In witness whereof I have hereunto set my hand.

AUGUSTUS WRIGHT.

Witnesses:
JOSEPH A. MILLER, Jr.,
M. F. BLIGH.