

(No Model.)

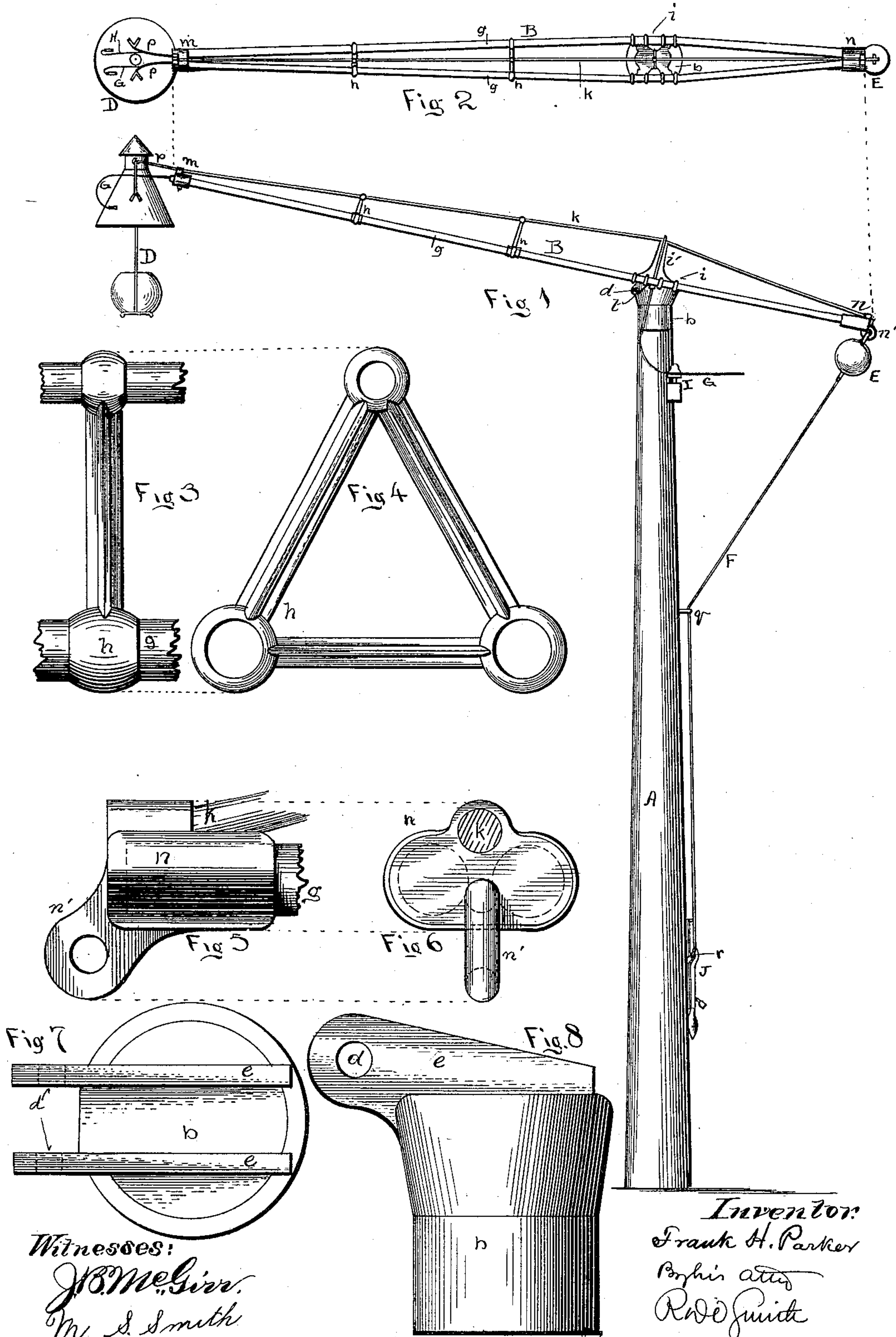
2 Sheets—Sheet 1.

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MAST ARM FOR ELECTRIC LIGHTS.

No. 366,603.

Patented July 12, 1887.



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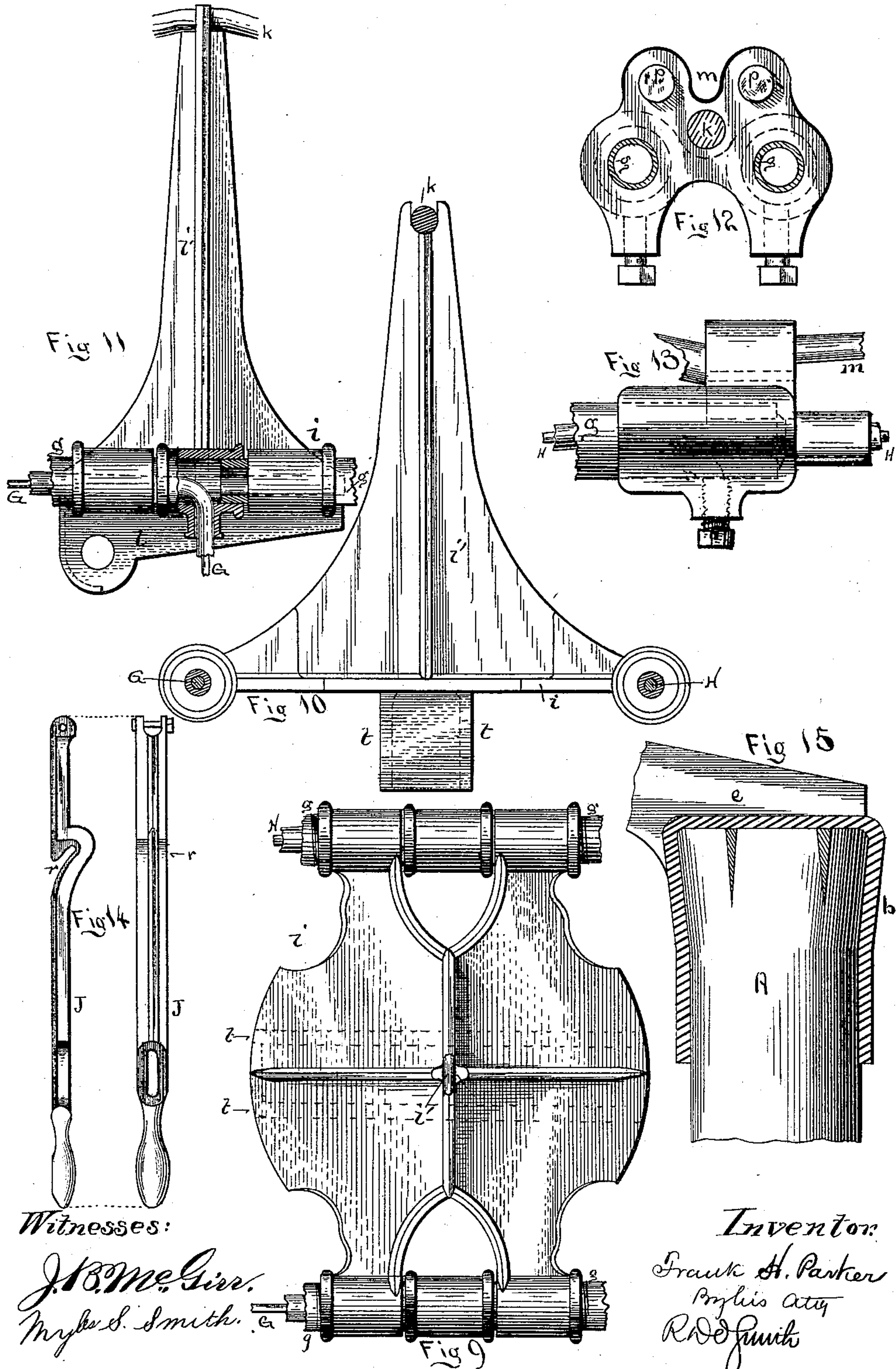
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UNITED STATES PATENT OFFICE.

FRANK H. PARKER, OF BURLINGTON, VERMONT.

MAST-ARM FOR ELECTRIC LIGHTS.

SPECIFICATION forming part of Letters Patent No. 366,603, dated July 12, 1887.

Application filed May 6, 1887. Serial No. 237,337. (No model.)

To all whom it may concern:

Be it known that I, FRANK H. PARKER, of Burlington, Chittenden county, in the State of Vermont, have invented new and useful Improvements in Mast-Arms for Electric-Light Supports; and I do hereby declare that the following is a full and accurate description of the same, reference being had to the accompanying drawings, wherein—

10 Figure 1 is a side elevation of my mast-arm and top of the mast. Fig. 2 is a plan of the mast-arm. Figs. 3 to 15, inclusive, are details.

The use of electric lights to illuminate suburban streets and roadways where there are 15 no high buildings from which to run supporting-wires has now become very extensive, and in many places mast-supports are necessary. Such supporters consist of a wooden or metallic pole or mast and a transverse arm 20 hinged to its top and having suspended from one end the arc lamp. The other end is provided with a counter-weight sometimes, and sometimes is managed solely by a cord and windlass attached to the mast. The mast-arm 25 stands out horizontally from the top of the mast, and is sometimes long enough to reach nearly or quite to the ground when lowered for the purpose of enabling the trimmer to prepare the lamp for its next night's work.

30 When a high light is required, it is attained by using a high mast, and then the mast-arm is sometimes insufficient to reach to the ground, and the trimmer is required to climb a ladder to reach the lamp. The electric wires or con- 35 ductors are placed outside the mast arm and attached to wooden cross-pieces for the purpose of support and insulation. These and other objectionable features are corrected by my improvement, which elevates the light high 40 above the top of the mast, because my mast-arm is strongly and lightly built in my improved trussed form, and may therefore be made much longer than heretofore without becoming unmanageable for one man.

45 That others may fully understand my invention, I will more particularly describe it.

A is my mast, preferably made of wood and of any height suitable or desirable for the locality. At its top said mast is provided with 50 a cast-metal cap, *b*, which is cast with one end closed and an internal diameter enlarging from its middle, or thereabout, to the closed end.

Before being driven onto the end of the mast, wedges are inserted therein around the edge, with their larger ends protruding. The cap 55 *b* is then driven on, causing the wedges to be driven in and the top of the mast expanded to fill the cap, as shown in Fig. 15, and render its removal impossible. The top of the cap *b* 60 is provided with two parallel ribs, *c*, which extend upward and slightly forward of the side of the cap, and they are transversely perforated, as at *d*, for the joint-bolt by which the mast-arm B is jointed to the mast. The in- 65 clination of the upper edges of the ribs *c* determines the inclination of the arm B when it is in position, because said arm is pulled down at its shorter end until it rests flat on said ribs.

The mast-arm B is a trussed structure triangular in cross-section, the side chords, *g*, being 70 made tubular to receive and protect the conductors, which are properly insulated. At suitable intervals the chords *g* are screwed into or passed through suitable couplings, *h*, of cast iron or steel, successively smaller in dimen- 75 sions as they approach the extremity of the arm. At a proper point a saddle, *i*, takes the place of the coupling *h*. Said saddle consists of two longitudinal parallel tubular couplings, with a T to admit the insulated conductor, and 80 with a connecting-plate having below two ribs, *t*, horizontally perforated for the joint-bolt *d*, and above with a strut, *i'*, having a notch in its top for the tension-rod or upper chord, *k*. The ribs *t* close between the ribs *c* and prevent 85 any lateral swing of the arm. At the extremities of the arm B the three chord members are secured in terminals *m n*. The terminal *m* is provided with sockets to receive two projecting rods, *p p*, from which the lamp D is sus- 90 pended. The terminal *n* is provided with a loop, *n'*, for the attachment of the counter-weight E and the tie-rope F.

The conductors G H, properly insulated, pass 95 into the tubular side chords, *g*, through a T or other suitable openings in the bottom of the saddle *i*, and leave said chords by similar openings in the bottom of the terminal *m*. These openings are placed in the bottom of the saddle and terminal, so that rain may not gain en- 100 trance to the interior of the tubular chords. The conductors are thereby fully protected and concealed and require no unsightly wooden cross-bars to support and keep them separated.

Outside the saddle *i* the conductors are attached to the post by ordinary insulators, I.

The tie-rope F is, for convenience, passed through a staple or pulley, *q*, driven into the post or mast A, and from thence led down to a fastening within reach of the attendant or trimmer standing on the ground.

It is obvious that security of the mast-arm depends upon the rigidity of its fastening, so that when subjected to the force of a strong wind it cannot move on its support on the mast, and to secure this rigidity it is most convenient to employ a lever which shall enable the attendant to pull down on the tie-rope with considerable force before fastening it. This force may be exerted with a lever applied in many known ways, but most conveniently by means of the locking-lever J, which is hinged to the post or mast at its upper end, and is provided with a notch, *r*, to receive the ring or loop at the end of the tie-rope at or near its hinged end, and at its free extremity means for locking it in place, so that when the arm B has been drawn down by said rope until its saddle *i* rests on top of the post-cap *b*, as described, the free end of the lever J is then raised up until the tie-rope ring or loop can be slipped over said free end and into the notch *r*. The lever J is then pulled down and fastened by a padlock or otherwise to the mast.

The "trimmer" carries a rope of sufficient length—say some seven or eight feet—provided at one end with a snap-hook. He releases the lever J and allows the lamp to descend to the ground. After being trimmed, he raises and secures it again in the way above described.

Having described my invention, I claim—

1. In combination, the lamp D and conductors G H, the trussed mast-arm B, and tubu-

lar side chords, *g g*, adapted to receive and protect said conductors, as set forth.

2. As a supporter for an electric light, the mast A, provided with a cap, *b*, having ribs to receive a joint-bolt, *d*, combined with the mast-arm B, provided with saddle *i*, tubular side chords, *g*, and tension-rod *k*, whereby the arm may be both stiff and light and the electric conductors concealed and protected, as set forth.

3. The cap *b*, provided with the parallel ribs *e*, having surfaces inclined upward, and provided with holes for the joint-bolt *d*, combined with the arm B, provided with the saddle *i* and ribs *t*, pierced for the joint-bolt *d*, whereby when said saddle is down, seated on said ribs, the mast-arm will be inclined upward to hold the lamp higher than the mast, as set forth.

4. The mast-arm B, provided with tubular side chords, *g*, and openings into the same on the under side for the entrance and exit of the conductors G H and the exclusion of rain, as set forth.

5. The cap *b*, provided with the ribs *e*, transversely pierced for the joint-bolt *d*, combined with the mast arm B, provided with the ribs *t*, adapted to close down between the ribs *e*, and transversely pierced to receive the joint-bolt *d*, whereby when said arm is in operative position the interlocking ribs *e e* and *t t* restrain the same from any lateral swing, as set forth.

6. The mast A, arm B, pivoted thereto, and the tie-rope F, combined with locking-lever J, provided with the notch *r*, as set forth.

FRANK H. PARKER.

Witnesses:

F. M. KENDALL,
H. E. PERCIVAL.