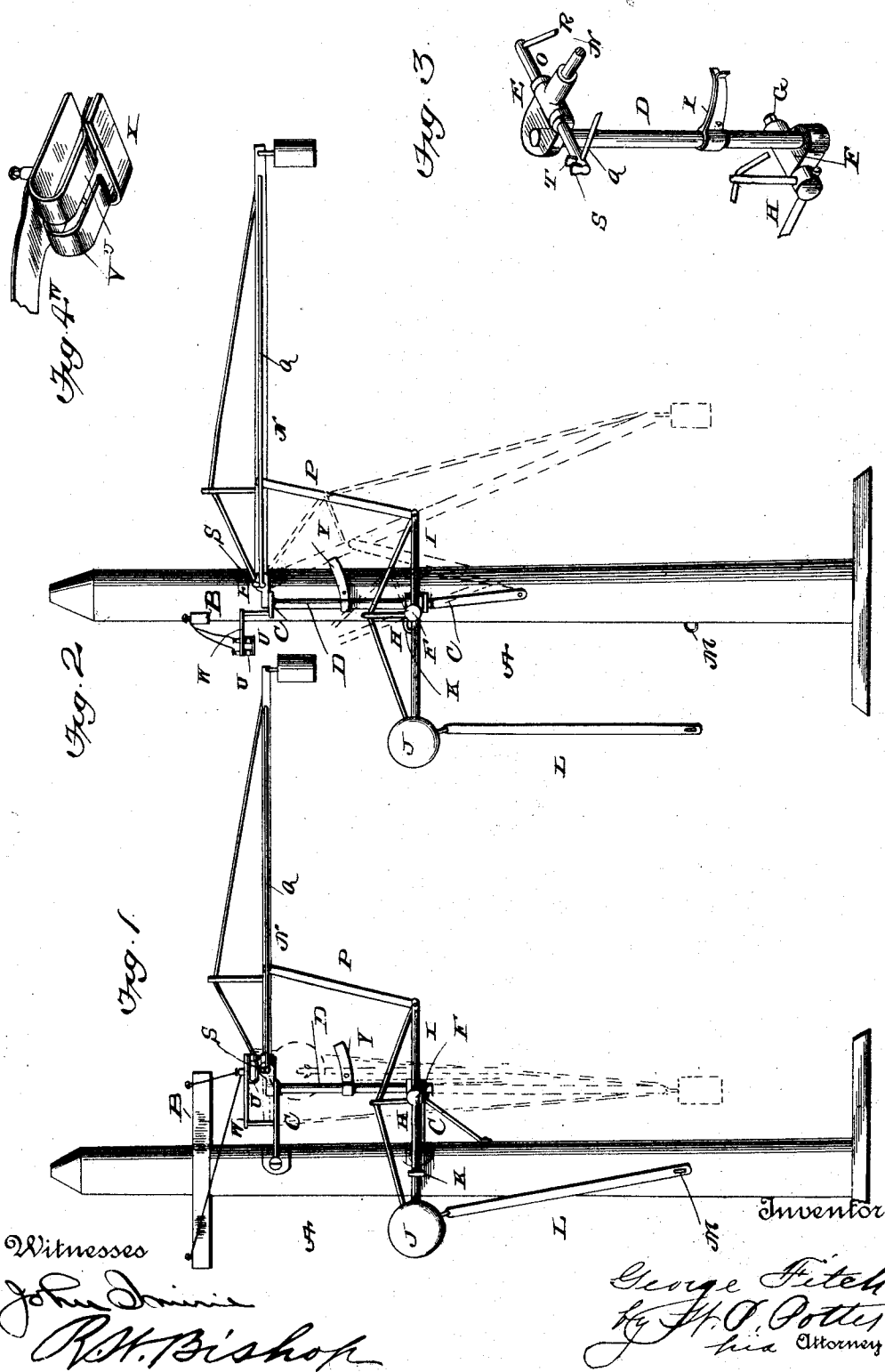


(No Model.)

G. FITCH.
ELECTRIC LIGHT.

No. 506,488.

Patented Oct. 10, 1893.



UNITED STATES PATENT OFFICE.

GEORGE FITCH, OF MILLVALE, PENNSYLVANIA.

ELECTRIC LIGHT.

SPECIFICATION forming part of Letters Patent No. 506,488, dated October 10, 1893.

Application filed April 18, 1893. Serial No. 470,840. (No model.)

To all whom it may concern:

Be it known that I, GEORGE FITCH, a citizen of the United States, residing at Millvale, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Mast-Arms for Electric Lights; 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 present invention relates to mast arms for electric lights of the type shown in Patent No. 445,549, granted to me on February 3, 1891.

The primary object of my invention is to provide a mast arm which can be swung to one side before being lowered, thus avoiding interference with teams passing along the roadway.

A further object of the invention is to construct such a device in a simple manner without impairing its efficiency. These objects I accomplish by the use of the device illustrated in the accompanying drawings and the invention consists in certain novel features of the same as will be hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of my improved device showing the lamp supported over the road in full lines and showing the position of the several parts when the lamp is lowered in dotted lines. Fig 2 is a view showing the lamp swung over the sidewalk in full lines, and lowered in dotted lines. Fig. 3 is a detail perspective view of the rotary vertical shaft and its connections, and Fig. 4 is a similar view of the short circuiting device.

The pole A is set in the ground in the usual manner and near the top of the same I secure the ordinary cross-tree B.

Below the cross-tree, I secure to the pole the laterally projecting brackets C in the ends of which I journal the vertical rotary shaft D, the upper end of which projects above the upper bracket and has a yoke E formed integral therewith or secured rigidly thereto. A horizontal barrel or sleeve F is secured to the lower end of this shaft and a pivot G is journaled therein. The said pivot G is provided with the double crank arms H I, the

rear one, H, of which is provided with a counterbalance J and is adapted to engage a hook or stop K on the pole and have its upward movement limited thereby. An operating rod or handle L is pivoted to this counterbalanced crank arm to facilitate its manipulation and the lower end of this operating rod or handle is adapted to engage a staple M on the pole and be locked thereto in order to prevent unwarranted handling of the same.

The mast arm N is secured to a rock shaft O, journaled in the arms of the yoke E, and it is connected with the crank arm I by a link P, as shown, so that the motion of said crank arm will be communicated directly to the mast arm.

The lamp is suspended at the outer end of the mast arm and the current is supplied thereto by the wires Q R which pass along opposite sides of the mast arm and are secured, one to the shaft O and the other to a contact point S secured on said shaft but insulated therefrom. The shaft O, of course, will be insulated from its bearings so as to prevent the current from passing into the supporting brackets and thence to the ground.

A second contact point T is secured on the shaft O but not insulated therefrom, and the circuit is completed through the lamp by these contact points S T impinging against the spring contacts U V which are secured to an arm W projecting from the upper bracket C and are connected directly with the line wire. It will be observed upon reference to Figs. 1 and 4 that these contacts U V are formed by U-shaped leaf springs arranged horizontally and the lower active branch of the contact U is longer than the corresponding portion of the contact V. The upper portion of the contact V, however, is extended and then bent downward and across, as shown at X. When the contact points S T bear against the contacts U V, the contact U is raised but as soon as the contacts S T are withdrawn the circuit through the lamp is cut off and the contact U drops upon the plate X forming a short circuit.

Y designates an adjustable arm that may be secured upon the vertical shaft in the path of the mast arm. If the mast arm be very long, it is liable, when lowered, to carry the lamp against the sidewalk and thereby break

or otherwise destroy the same. By providing the arm Y, however, the downward movement of the mast arm will be limited and the lamp consequently prevented from striking the sidewalk.

The operation of my improved device will be readily understood. Ordinarily, the mast arm projects out over the street or roadway, as clearly shown in Fig. 1. When it becomes necessary to change the carbons, however, or to clean or repair the lamp, the handle or operating rod L is released from the pole and a slight pull exerted thereon to release the arm H from the stop K after which the device is swung around in a horizontal plane until it assumes the position shown in full lines in Fig. 2. The operating rod is then pushed upward so as to cause the outer end of the mast arm to swing downward and bring the lamp within reach of the operator, as indicated in dotted lines. After the lamp has received the necessary attention, the reverse operation is performed and the device restored to its normal position. When the device is moving in a horizontal plane, the vertical rotary shaft acts as a pivot but when the lamp is being lowered or raised, the said shaft remains stationary and the rock shafts G and O act as pivots for the crank arms and mast arm respectively. It will thus be seen that the device can be swung over to a position above the sidewalk and then lowered, thus avoiding all interference with passing teams.

The current is automatically cut off from the lamp and admitted thereto by the mechanism described, but in order to prevent shocking of the operator in case the current should leak, the lower end of the operating rod will, in practice, be provided with an insulated covering. The arm Y may be turned to one side if the mast arm is short and it is secured to the rotary shaft by a set screw so that it may be adjusted to any desired point of the same according to the length of the mast arm. The device may be made to swing to the right or left as desired by arranging the counterbalanced crank arm and the operating rod on one or the other side of the pole.

Having thus described my invention, what

I claim, and desire to secure by Letters Patent, is—

1. The combination with a suitable support, of a vertical rotary shaft, a mast arm pivotally connected to the upper end of said shaft, a crank arm pivotally connected to the lower end of said shaft, a link connecting said crank arm and the mast arm, and mechanism for rotating said shaft and vibrating the crank arm.

2. The combination with a suitable support, of a vertical rotary shaft, a mast arm pivotally connected to the upper end of the same, crank arms pivotally connected to the lower end of the said shaft, the rear crank arm being counterbalanced, an operating rod pivoted to and depending from the said counterbalanced crank arm, and a link connecting the front crank arm with the mast arm.

3. The combination with a suitable support, of a vertical rotary shaft having a horizontal yoke at its upper end and a horizontal barrel or sleeve at its lower end, a mast arm pivoted in said yoke, a pivot pin mounted in said sleeve or barrel, a crank arm secured to said pivot pin, a link connecting said crank arm with the mast arm, and mechanism for vibrating said crank arm and rotating the shaft.

4. The combination with a vertical rotary shaft, and a vibratory mast arm carried thereby, of a stop or rest adjustably secured upon the vertical shaft in the path of the mast arm.

5. The combination with a suitable support, and a laterally movable mast arm, of a pair of contact plates on the support, one of said plates being provided with a short-circuiting arm adapted to be engaged by the other plate, and contact points carried by the mast arm and adapted to engage the contact plates and cut out the short-circuiting arm.

6. In an electric light support, the contacts U V consisting of horizontal U-shaped springs, the spring U being shorter than the spring W and provided with an extension X forming a short-circuiting arm.

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

GEORGE FITCH.

Witnesses:

WM. A. STONE,

T. A. WATSON.