(No Model.)

T. DILLON.

MAST ARM SWITCH FOR ELECTRIC LAMPS.

No. 471,730. Patented Mar. 29, 1892.

Fig. 2.

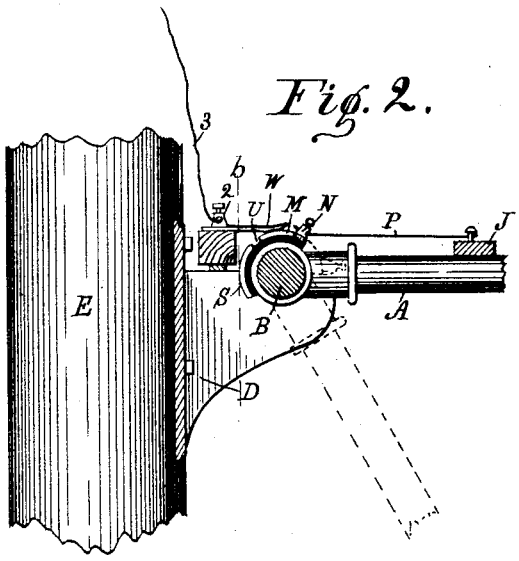
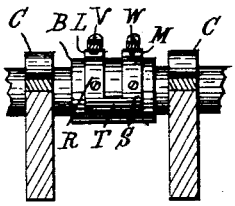


Fig. 3.



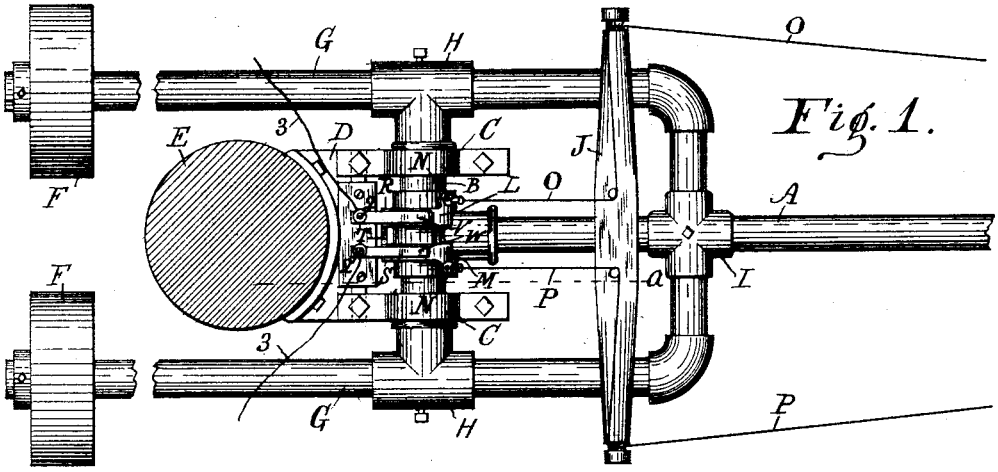


Fig. 1.

WITNESSES:

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THOMAS DILLON, OF INDIANAPOLIS, INDIANA, ASSIGNOR OF ONE-HALF TO JOHN CAVEN, OF SAME PLACE.

MAST-ARM SWITCH FOR ELECTRIC LAMPS.

SPECIFICATION forming part of Letters Patent No. 471,730, dated March 29, 1892.

Application filed November 4, 1891. Serial No. 410,829. (No model.)

To all whom it may concern:

Be it known that I, THOMAS DILLON, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Improvement in Mast-Arm Switches for Electric Lamps, of which the following is a specification.

My invention relates to an improved switch for electric lamps which are mounted on swinging mast-arms.

The object of my improvement is to cause the lamp to be automatically cut out from the electric line-circuit when the mast-arm is lowered for the purpose of trimming the lamp and to be again automatically put into circuit by the raising of the mast-arm.

The accompanying drawings illustrate my invention.

Figure 1 is a plan. Fig. 2 represents a vertical section at *a*, Fig. 1. Fig. 3 represents a section at *b*, Fig. 2, looking toward the right.

The mast-arm herein illustrated is that shown in Patent No. 454,166, granted to me June 16, 1891; and it consists, essentially, of a rod or tube A, having at one end a short shaft B, rigidly secured thereto at right angles with the axis of the rod and having the lamp (not shown herein) suspended from its opposite end. Shaft B is mounted in bearings C C, formed in a bracket D, which is adapted to be secured to the side of the mast E. Rod A and the lamp are counterbalanced by means of weights F F, mounted upon a pair of arms G G, which pass through sleeves H H, secured to the ends of shaft B, and are connected at one end to a sleeve I, mounted on the rod A, the whole arrangement being such that when the bracket is secured to the mast the arm is free to swing in a vertical plane and is sustained in a horizontal position by the counter-weights, shaft B being turned in its bearings when the free end of the arm is raised or lowered.

In the mast-arm illustrated in the Letters Patent above mentioned the wires forming the electric circuit pass from the mast to one end of an insulated bar J, which is secured to the arm near its pivotal shaft, and from thence direct to the lamp, from the lamp to the opposite end of said bar, and from thence to the mast again. As thus arranged the lamp is always in circuit and is not affected by the raising or lowering of the arm.

For the purpose of forming such a connection of the lamp with the line-circuit as will insure the automatic cutting out of the lamp when the free end of the arm is lowered without interfering with the line-circuit I construct a switch, which is operated by the movement of the arm in the following manner: I mount upon the upper side of shaft B, between the bearings of bracket D, a pair of metallic segments L and M, arranged side by side, insulated from the shaft and from each other, and having at one end binding-posts N N, to which the ends of conductors O and P, leading to and from the lamp, are respectively connected. An independent circuit embracing the lamp and adapted to follow all the movements of the arm is thus formed. Upon another portion of shaft B, I secure in line with the segments L and M a similar pair of metallic segments R and S, which are united at one end by a transverse bar T, preferably formed integral therewith. Segments R and S are insulated from the shaft and also from the segments L and M, there being a break or notch U between the two sets of segments. Upon the upper side of bracket D, but thoroughly insulated therefrom, I mount a pair of flat metallic springs V and W, each having a binding-post 2 secured to the end, while the opposite ends of the springs are arranged to rest upon the segments L and M or R and S, according to the position of the arm. The wire 3, forming the line-circuit, is cut at the mast, one of the ends being secured to the binding-post on spring V and the other end being secured to the binding-post on spring W. Said springs thus form terminals of the interrupted line-circuit.

In operation when the arm is extended horizontally, thus supporting the lamp in its normal position, springs V and W rest upon the segments L and M, and the lamp is thus embraced in the line-circuit. When the free end of the arm is lowered, causing the arm to assume the position shown in dotted lines, Fig. 2, segments L and M pass from under springs V and W at the same time segments R and S are brought into contact with the

spring-terminals and the line-circuit remains unbroken, passing through bar T, while the lamp is wholly disconnected from the line-circuit and may be handled with perfect safety. When the lamp is released and the arm is again raised to the horizontal position, the movement of the arm automatically brings the lamp again into the circuit.

I claim as my invention—

In a mast-arm switch for electric lamps, the combination of the bracket, the shaft mounted in said bracket so as to turn thereon, the arm rigidly secured to said shaft and carrying an electric lamp, two pairs of segments mounted upon said shaft so as to turn therewith, arranged in line in the plane of rotation, and electrically disconnected from each other, one pair of said segments being arranged to form terminals of an open circuit in which the lamp is included and the other pair of said segments being electrically connected with each other, so as to form a short circuit in which the lamp is not included, and the pair of metallic strips mounted in a fixed position on the bracket and forming the terminals of an electric line-circuit, all arranged to co-operate, substantially as set forth, whereby the lamp is included in the line-circuit when the mast-arm is raised and is excluded therefrom and the line-circuit is maintained when the mast-arm is lowered.

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