

(No Model.)

T. DILLON.  
MAST ARM ELECTRIC SWITCH.

No. 477,890.

Patented June 28, 1892.

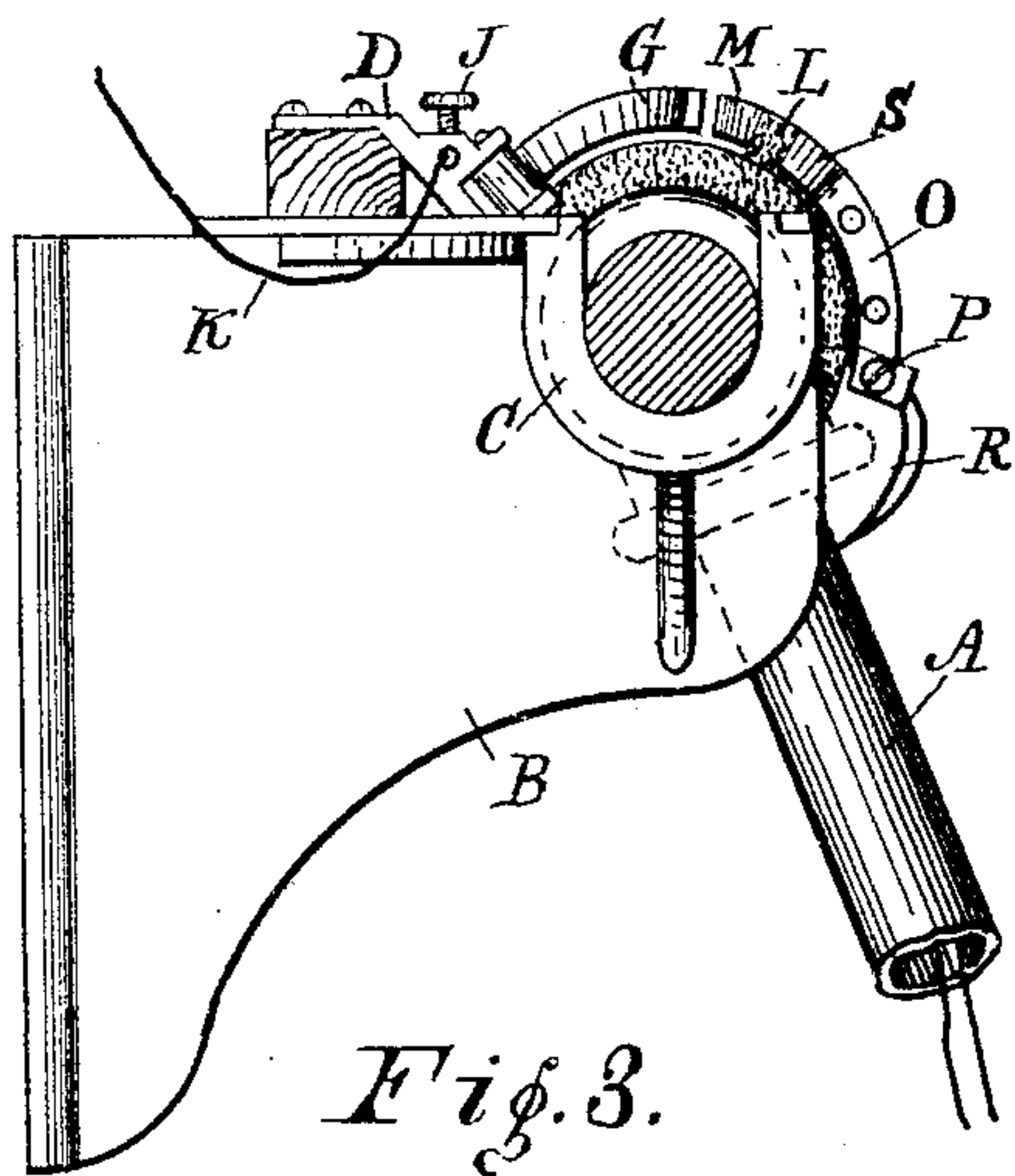


Fig. 3.

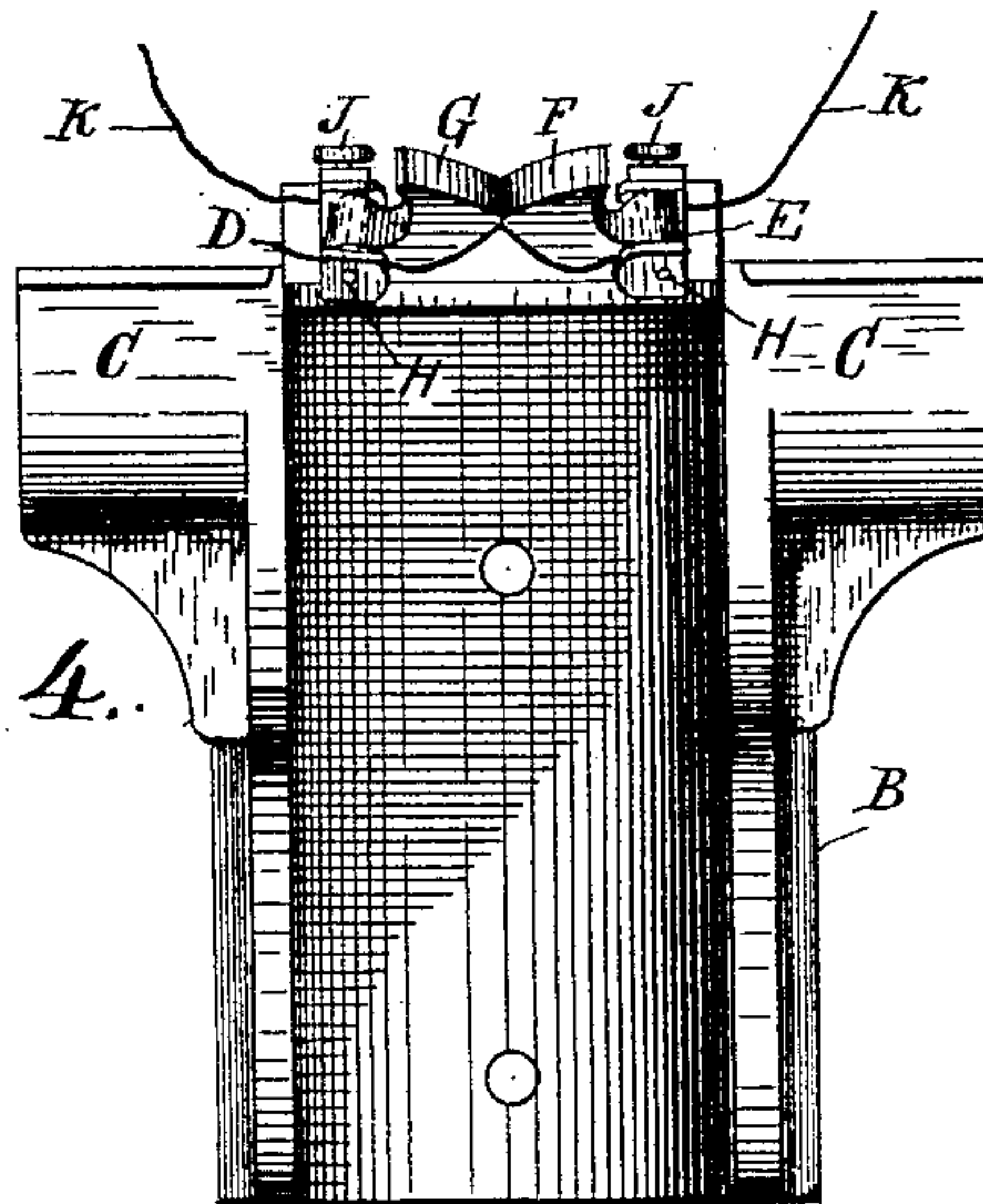


Fig. 4.

Fig. 1.

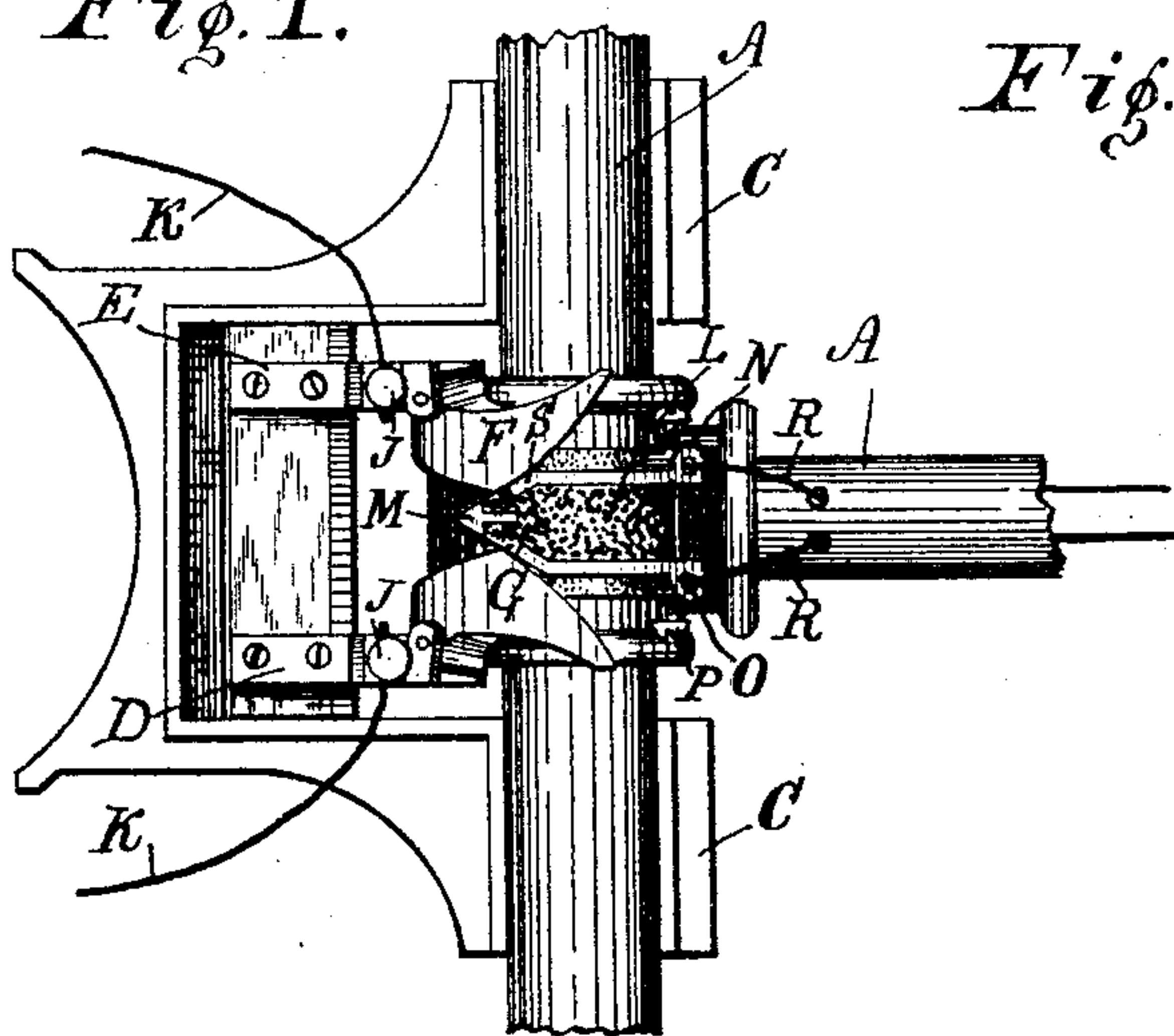
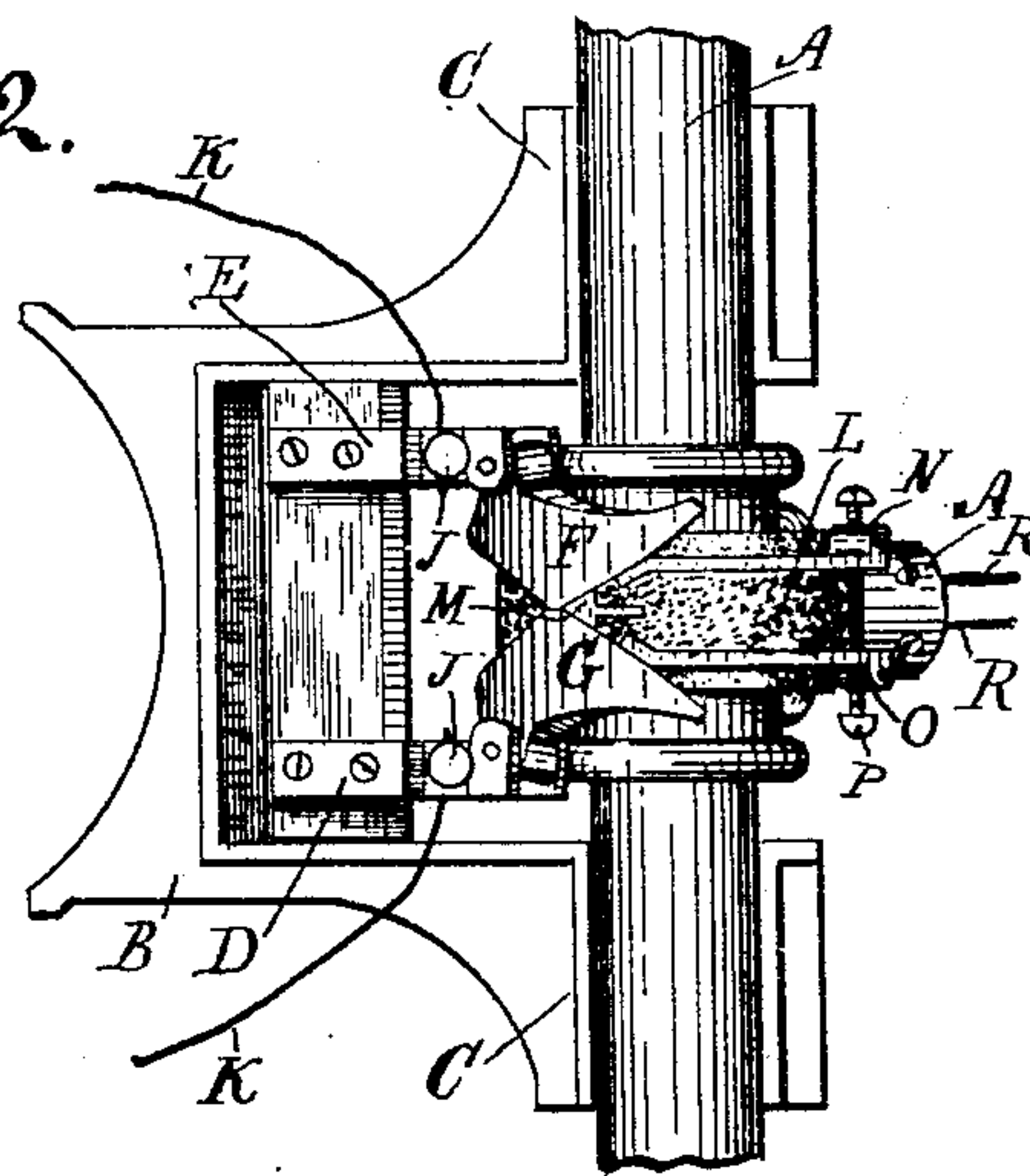


Fig. 2.



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## MAST-ARM ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 477,890, dated June 28, 1892.

Application filed March 31, 1892. Serial No. 427,170. (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 a Mast-Arm Electric Switch, of which the following is a specification.

My invention relates to an improved electric switch for that class of electric-light mast-arms in which an electric circuit, which is mounted upon the mast-arm so as to move therewith and which includes the electric lamp, is disconnected from the line-circuit by the lowering of the free end of the arm from which the lamp is suspended.

The objects of my improvement are, first, to insure the automatic closing of the line-circuit while the lamp-circuit is being withdrawn therefrom, thereby preventing the passage of sparks from the line-circuit to the lamp-circuit, and, second, to prevent the possible passage by induction of a current from the line-circuit to the lamp-circuit when the lamp is lowered, all as hereinafter fully set forth.

The accompanying drawings illustrate my invention.

Figure 1 represents a plan of a portion of the mast-arm, the bracket in which it is mounted, and the terminals of the line-circuit and the lamp-circuit, showing the position of the parts when the lamp is included in the line-circuit. Fig. 2 is a similar plan showing the position of the parts when the mast-arm is lowered and the lamp is passing out of the line-circuit. Fig. 3 represents a side elevation showing the position when the lamp is out of circuit. Fig. 4 represents a front elevation of the bracket and the line-circuit terminals, the mast-arm and its shaft having been removed.

In the drawings, A represents the mast-arm, from which the lamp (not shown) is suspended.

B is a bracket adapted to be secured to a pole carrying a line-circuit and having bearings C C, in which the mast-arm is mounted, so as to swing in a vertical plane thereon.

Mounted upon bracket B, but electrically insulated therefrom, are a pair of brackets D and E, to which are hinged, respectively, a pair of arms F and G, which are arranged to swing on their respective brackets in a sub-

stantially horizontal plane, the pivots H H, on which said arms are mounted, being slightly inclined toward each other, so that the arms are held normally in contact with each other by the force of gravitation.

Each of the brackets D and E is provided with a binding-screw J, by means of which the ends of the line-circuit K are attached to the respective brackets. By this construction the arms F and G form laterally-movable terminals for the line-circuit, which are held normally in contact by the force of gravitation.

Mounted upon the mast-arm so as to turn therewith is a block or segment of non-conducting material L, having secured to that end which is nearest the line-terminals a wedge-shaped metallic point M. Secured to opposite sides of block L are a pair of metallic plates N and O, each having a binding-screw P, by means of which the ends of the lamp-circuit wires R R are secured to the plates. The ends of plates N and O are bent toward each other, as at S, so as to form extensions of the lines which bound the wedge-shaped point M, but they are not connected therewith.

The arrangement of arms F and G and the plates N and O is such that when the mast-arm is raised so as to stand substantially in a horizontal position the said plates are thrust between the arms and are respectively in contact with the opposed edges thereof, as shown in Fig. 1.

The shape of the opposed edges of arms F and G is such that the free end of the mast-arm carrying the lamp is lowered and the plates N and O, forming the terminals of the lamp-circuit, are withdrawn from between the arms, which, being drawn toward each other by the force of gravitation, remain in contact with the inclined sides S of the plates and with wedge M until the edges of the arms come in contact with each other, as shown in Fig. 2, and the line-circuit is thus completed before the lamp-circuit is withdrawn from the line-terminals. By this means a continuous current is maintained and the passage of sparks from one set of terminals to the other while the lamp is being withdrawn from the circuit is prevented.

When the arm is fully lowered, the lamp



terminals and wedge M are entirely withdrawn from contact with arms F and G. In this position the ends of plates N and O are always farther removed from the arms than wedge M, and therefore any current which may leave arms F and G by induction or otherwise will find a shorter passage between the arms through the wedge M than through the lamp-circuit, and the wedge M being insulated from the lamp-circuit an accidental discharge from the line through the lamp-circuit when the lamp is lowered is thereby rendered impossible.

I claim as my invention—

1. In an electric switch for electric-light mast-arms, the combination of the bracket adapted to support the mast-arm, the mast-arm arranged to swing in a vertical plane on said bracket, the pair of pivoted arms forming terminals for the electric line-circuit mounted upon the bracket and arranged to be held normally in contact with each other, the electric lamp-circuit mounted on the mast-arm, and the pair of plates forming the terminals of said lamp-circuit and mounted on the mast-arm so as to turn therewith in a plane between the opposed edges of said pivoted arms, all arranged to co-operate substantially as set forth, whereby the lamp-circuit terminals are forced between the opposed edges of the arms forming the terminals of the line-circuit by the rotation of the mast-arm upon its axis when the arm is raised and are withdrawn therefrom when the arm is lowered, as set forth.

2. In an electric switch for electric-light mast-arms, the combination of the pair of pivoted arms forming the terminals of the line-circuit and arranged to swing toward each other by the force of gravitation, whereby they are held normally in contact with each other, the block of non-conducting material mounted upon the mast-arm concentric with the axis thereof, so as to rotate therewith in a vertical plane, which passes between the opposed edges of said pivoted arms, the metallic point mounted in said block, and the pair of metallic plates secured to the sides of said block and forming the terminals of a lamp-circuit mounted upon the arm and moving therewith, all arranged to co-operate substantially as and for the purpose set forth.

3. In an electric switch for electric-light mast-arms, the combination, with the pair of line-circuit terminals arranged adjacent to the axis of the mast-arm and the pair of lamp-circuit terminals arranged on the mast-arm so as to be projected between said line-circuit terminals by the upward movement of the mast-arm, of the metallic point arranged between said lamp-circuit and said line-circuit terminals, whereby the lamp-circuit is protected from induced currents, substantially as set forth.

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Witnesses:

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