

(No Model.)

J. J. MCGILL.
ELECTRICAL CONNECTOR FOR ARC LIGHTS.

No. 556,362.

Patented Mar. 17, 1896.

Fig. 1.

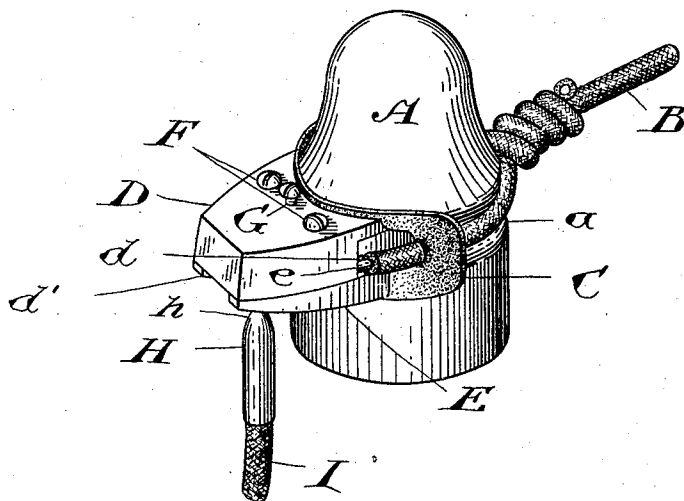


Fig. 2.

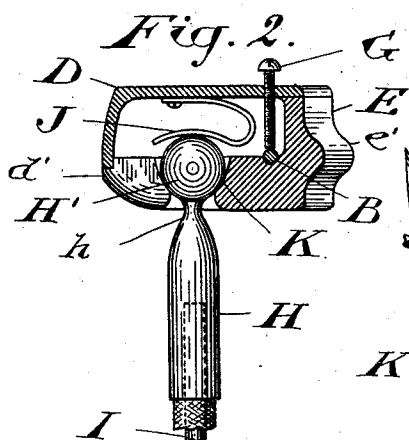


Fig. 4.

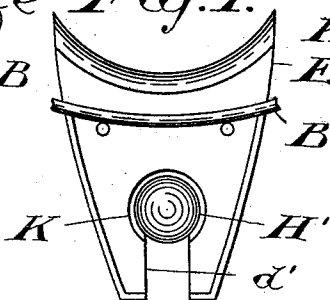
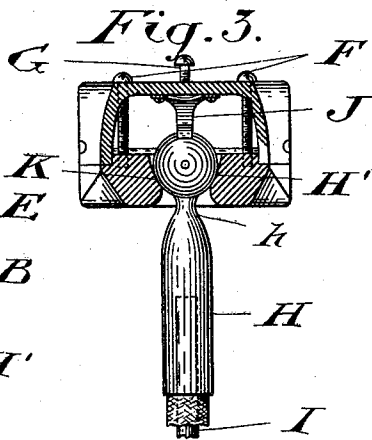


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN J. MCGILL, OF THOROLD, CANADA, ASSIGNOR OF ONE-HALF TO JAMES BATTLE, OF SAME PLACE.

ELECTRICAL CONNECTOR FOR ARC LIGHTS.

SPECIFICATION forming part of Letters Patent No. 556,362, dated March 17, 1896.

Application filed January 15, 1896. Serial No. 575,592. (No model.)

To all whom it may concern:

Be it known that I, JOHN JAMES MCGILL, electrician, residing at Thorold, in the county of Welland and Province of Ontario, Canada, have invented a certain new and Improved Electrical Connector for Arc Lights, of which the following is a specification.

The object of the invention is to provide a simple, cheap, and effective electrical connector for lamps with arc lights, and which will do away with all danger of breaking of the line at the points where breakages usually occur and the consequent extinguishment of the lights; and it consists, essentially, in forming a ball-and-socket metal connection between the ends of the loop-line wires leading to and from the lamp and the wires carried by the insulators leading to and from the line, substantially as hereinafter specified.

Figure 1 is a perspective view of the electrical connector in position on the insulator. Fig. 2 is a longitudinal section through the center of the connector. Fig. 3 is a transverse section through the same. Fig. 4 is a plan view of the lower jaw of the connector, showing the ball in place in its socket.

In the drawings like letters of reference indicate corresponding parts in the different figures.

In Fig. 1 A is a glass insulator grooved at a to receive the wire B leading from the line. This wire B is shown in the figure insulated.

C is an insulating-sheet, of rubber or gutta-percha, through which the insulated wire B passes.

D is the upper jaw of the connector, which is preferably made of brass. It is shaped, as shown, so as to fit against the insulator, and has a shoulder at d where it fits against the lower jaw, E, which has a projection e' thereon to fit the groove in the insulator.

e is a hole formed between the upper and lower jaws through which the wire B passes, as shown in Figs. 2, 3, and 4.

F are clamping-screws for clamping the upper jaw to the lower jaw, as indicated also in Figs. 3 and 4.

G is a contact-screw. (Shown also in Figs. 2 and 3.) This contact-screw bears down on the wire B so as to insure electrical connection.

H is a metal cap with hollow shank and neck

at h. This neck is designed to pass through the slot d' in the lower jaw, and on it, forming part of the cap, is the ball H', which rests in the socket K. (Shown in Figs. 2, 3, and 4.)

In Fig. 2 is shown more particularly the spring J, which is connected to the upper jaw, and the lower part of the spring bears against the ball H', so as to insure proper electrical connection, no matter how the ball H' may move in its socket.

I is a loop-line wire leading to the lamp. The wire passes up into the hollow shank and is soldered therein and is insulated as usual outside of the cap.

All the parts hereinbefore described are duplicated for the return current leading from the lamp to another insulator, such as described, and from these to the line.

By the foregoing construction I have provided a connector which will insure the lines from all breakages, as breaks often occur where the loop-line wires leading to and from the lamp are attached to the insulator, owing to the swaying of the lamps by the wind.

I do not wish to confine myself to any particular form of spring, as a spiral spring carried by standards, and a cross-piece with the button or disk at the lower end of the spring in contact with the ball of the cap would be an efficient substitute.

What I claim as my invention is—

1. In a device of the class specified, the combination with the insulator, of a ball-and-socket metal connection between the end of the loop-line wire leading to the lamp and the wire carried by the insulator leading from the line, substantially as described and specified.

2. In a device of the class specified, the combination with the insulator A; of the wire B; jaw E, connected with the wire B and having a socket K formed therein; ball H' connected with the wire I and seated in said socket K, substantially as described and specified.

3. In a device of the class specified, the combination with the insulator A, of the wire B; jaw E, slotted at d', connected with the wire B, and having a socket K formed therein; ball H' connected with the wire I and seated in said socket K, substantially as described and specified.

4. In a device of the class specified, the combination with the insulator A grooved at *a*; of the wire B; jaw E, slotted at *d'*, connected with the wire B and having a socket
5 K formed therein; ball II' connected with the wire I and seated in said socket K; and spring J adapted to bear on the ball II', substantially as described and specified.

5. In a device of the class specified, the
10 combination with the insulator A, of the wire B; upper jaw D and lower jaw E, slotted at *d'*, and suitably connected to the upper jaw; metal cap II with ball II' and hollow shank and neck *h*; socket K; contact-screw G;
15 spring J and loop-line wire I, substantially as described and specified.

6. In a device of the class specified, the combination with the grooved insulator A; of the wire B; upper jaw D, and lower jaw E,
20 slotted at *d'* fitting into each other at the shoulder *d*, and provided with the hole *e* for the wire B; insulating-sheet C; clamping-

screws F; contact-screw G; metal cap II, with hollow shank and neck *h* and ball II'; socket K; spring J suitably connected to the
25 upper jaw, and loop-line wire I, substantially as described and specified.

7. In a device of the class specified, the combination with the insulator A, grooved at *a*; of the wire B; upper jaw D, and lower
30 jaw E, slotted at *d* and having a projection *e'* formed thereon to fit the groove in the insulator; the wire B adapted to pass through the hole *e*; insulating-sheet C; clamping-screws F; contact-screw G; metal cap II, with
35 hollow shank and neck *h* and ball II'; socket K; spring J suitably connected to the upper jaw and loop-line wire I, substantially as described and specified.

Thorold, January 6, 1896.

JOHN J. MCGILL.

In presence of—

G. B. BURSON,

THOS. F. PATTISON.