C. D. P. GIBSON.

Insulated Connections for Gas-Lighting Apparatus.

No. 208,389. Patented Sept. 24, 1878.

Fig:1.

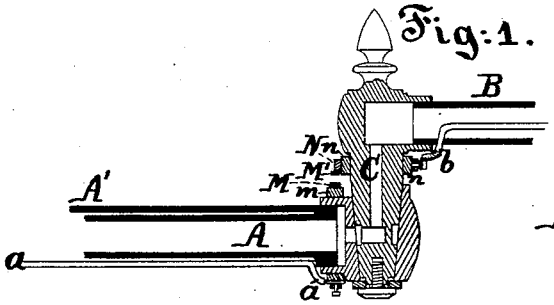

Fig:2.

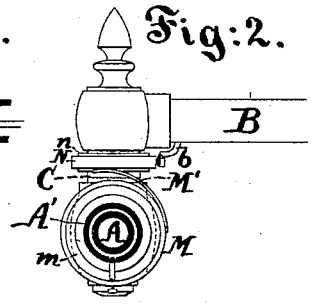

Fig:3.

Witnesses:

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IMPROVEMENT IN INSULATED CONNECTIONS FOR GAS-LIGHTING APPARATUS.

Specification forming part of Letters Patent No. **208,389,** dated September 24, 1878; application filed January 8, 1878.

To all whom it may concern:

Be it known that I, CHARLES D. P. GIBSON, of New York city, in the State of New York, have invented certain new and useful Improvements relating to Insulated Connections for Gas-Lighting, of which the following is a specification:

I have succeeded in devising a means of connecting hinged or turning brackets which maintains the connection in all positions, and allows the wires to be mainly or entirely concealed.

The following is a description of what I consider the best means of carrying out the invention.

The accompanying drawings form a part of this specification.

Figure 1 is a vertical section through the joint extended. It shows two modes of protecting the wire by the tube. The lower or first half shows the wire protected by an additional tube, or nearly complete tube, which incloses the first or main one. The upper or second part shows the wire inclosed within the main tube. Fig. 2 is an elevation, partly in section. It shows the joint turned at right angles. Fig. 3 shows another modification in the means of protecting the wire by the tube.

Similar letters of reference indicate corresponding parts in all the figures.

A and B are the two parts, respectively, of an elbow-bracket, by which I mean a bracket which is not only hinged at its point of junction with the stationary parts, (not represented,) but also formed in two parts, which are hinged relatively to each other. The same form of joint may serve for the junctions of a bracket with only a single hinge at the junction of the fixed parts, or at each of the junctions of brackets which have several joints therein.

C is a plug or perforated pivot, which is equipped in the ordinary manner, and performs its ordinary functions of maintaining a constant opening for the flow of gas.

On the part A is a ring of rubber, *m*, which serves as an insulator for a ring of metal, M. To this ring of metal, M, is connected a wire, *a*, which may be insulated by any suitable covering, and may extend along in any suitable manner under or near the tube A. The mode which I have adopted for thus extending it and embedding it in the tube will be explained farther on.

N is a corresponding ring of metal, insulated on the other part of the joint by a corresponding ring of rubber, *n*. To this metal ring N is an insulated wire, *b*, which may extend along in any convenient manner near or in connection with the tube B.

A metallic spring, M′, is riveted or otherwise secured to the ring M, and by its elastic force presses gently against the under edge of the ring N. This maintains the connection. The part B may be turned partially or entirely around as many times as may be desired without breaking the connection, because the under side of the ring N is plane and smooth, and the spring M′ bears up against it in whatever position the parts may stand, and the contact of these parts maintains the continuity of the electrical connection between the wires *a* and *b*. I esteem it important to protect or conceal the conducting-wires *a b* entirely or partially within their respective pipes A B.

There may be various modifications in the details.

The wire *b* is carried through the tube B and extended along its interior. With this mode of carrying out the invention, the wire should also come out again through a suitable hole near the other end of the tube B. Any leakage around the wire where it passes through the tube may be stopped by any suitable cement which will make a gas-tight joint.

The wire *a* is not let into the tube A, but is extended along close to the under side thereof. Another partial tube, A′, is applied around, nearly inclosing, the tube A. A longitudinal opening, of a width just equal to the wire *a* and insulating covering, is made by a saw or other suitable means along the under side of the outside tube, A′, and the wire *a* is pressed up into that slot or opening, and remains held there by friction. It may be also cemented by shellac or any other suitable means, to aid in keeping it in place.

Fig. 3 is a cross-section of a modification which I esteem preferable to either of the other plans. Here a single tube is employed, and the wire is outside; but the tube is peculiarly formed, with a considerable recess or indentation along its lower face, in which the wire lies,

and is held there by the tension of the wire, or by cementing or by any other suitable means.

By either of these plans the wire is kept out of sight, and the disagreeable appearance presented by the ordinary irregular coil or otherwise unartistically-arranged wires is avoided. Furthermore, the risk of injury to the wires is greatly lessened. The friction of the spring M′ against the ring N keeps the surfaces bright and the electrical communication perfect.

Among other practicable modifications there may be two insulating-rings, *m*, and two insulated metallic rings or hooks, M, with a like number of parts N *n* and corresponding number of springs M′ and connecting-wires *a b;* but I propose in all ordinary cases to employ, as usual, the metal of the tubes to conduct fluid in one direction. Any of the methods of manufacturing, producing, and utilizing the electrical current may be employed with my invention.

I believe it to be practicable with good workmanship to allow the rings M and N to rub directly together without the interposition of the spring M′; but a spring, as shown, is far preferable, because it allows for any variations in the distances of the parts due to imperfection originally, or to the gradual wear either of the rings or of the parts of the joint.

What I have termed metal rings M and N need not be complete circles. They may be only partial circles, like the letter C; but in such case it will be obvious that the electrical connection should be maintained only through a corresponding range of the circuit. There being a whole ring or a sufficient partial ring, N, the ring M may be largely or altogether dispensed with, and other means provided for connecting from the wire *a* to the spring M′; but I prefer two complete rings, as here shown, as being stronger and more universally useful.

I claim as my invention—

1. In combination with the pipes A and B, jointed so as to turn relatively to each other, the insulated rings or partial rings M N and their connecting-wires *a b*, adapted to maintain an electrical communication and to allow the parts to be turned, as herein specified.

2. In combination with the tubes A B, hinged together as specified, the insulated wires *a b* and spring M′, in electrical connection with the wire on the one part, rubbing against a surface, N, in electrical connection with the wire on the other part, maintaining an electrical connection in different positions of the pipes, as herein specified.

3. In combination with a jointed gas-tube, the electrical conductors embedded in the sections of the tube and universally connected, whereby the electrical connection is maintained in whatever position the jointed parts may be, as herein specified.

In testimony whereof I have hereunto set my name in presence of two subscribing witnesses.

C. D. P. GIBSON.

Witnesses:
G. W. REYNOLDS,
WILLIAM HEGEMAN.