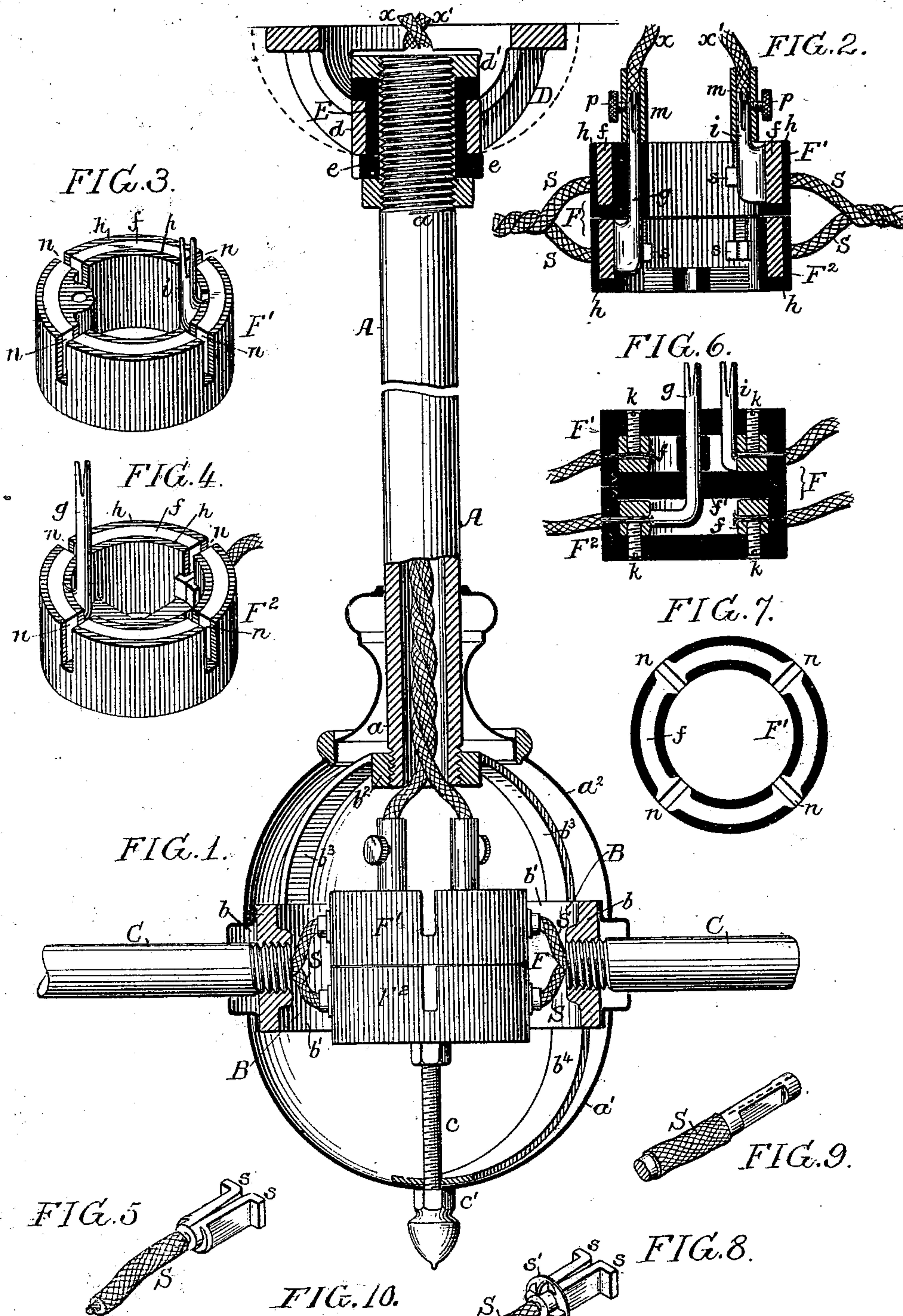


(No Model.)

E. E. CLIFT.
ELECTROLIER.

No. 514,305.

Patented Feb. 6, 1894.



Witnesses:
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UNITED STATES PATENT OFFICE.

EDMUND E. CLIFT, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO JOHN SHAW, TRUSTEE, AND JOHN F. POLE, OF SAME PLACE.

ELECTROLIER.

SPECIFICATION forming part of Letters Patent No. 514,305, dated February 6, 1894.

Application filed July 1, 1891. Renewed August 9, 1893. Serial No. 482,751. (No model.)

To all whom it may concern:

Be it known that I, EDMUND E. CLIFT, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Electroliers, of which the following is a specification.

The object of my invention is to so construct an electrolier that it can be readily and neatly wired, and that will be thoroughly insulated, as fully described hereinafter.

In the accompanying drawings:—Figure 1, is a vertical sectional view of my improved electrolier. Fig. 2, is a sectional view showing the device for connecting the main wires to the coupling rings. Figs. 3 and 4, are detached perspective views of the coupling rings shown in Fig. 2. Fig. 5, is a view showing the end of one of the branch wires ready to be attached to the coupling. Figs. 6 and 7, are views of modifications of the coupling ring. Figs. 8, 9 and 10, are views of modifications showing different methods of connecting the branch wires.

A is the body of the electrolier to which is attached a frame B, having sockets *b* for the reception of the branches C to which are secured the lamps.

The frame B is open as shown, and in the present instance is composed of the central ring *b'* in which are the sockets *b*, and a ring *b²* connected to the tube *a* of the body portion A; the two rings *b'*, *b²* are connected together by arms *b³* and depending from the central ring *b'* is a loop *b⁴* through which passes a screw rod *c* on which is a nut *c'* serving to hold the lower cap *a'* in place, as clearly shown in Fig. 1.

Fitting loosely around the tube *a* is an upper cap *a²* which can be readily raised clear of the frame B, and permitting ready access to the interior of the frame by simply removing the cap *a'* and raising the cap *a²*.

The electrolier is hung in any suitable manner, in the present instance from a spider D secured to the ceiling, the spider having a socket *d* in which is inserted a bushing E of non-conducting material, and passing through this bushing is the threaded stem of the tube *a* provided at its upper end with a nut *d'*.

Between a collar on the tube and the socket *d* is a non-conducting ring *e*, forming with

the bushing a complete non-conductor, preventing any contact between the electrolier and its hanger.

I mount in any suitable manner within the frame B, a manifold coupling F, clearly shown in Figs. 1, 2, 3 and 4. This coupling is made in two parts *F'*, *F²*, one coupling being connected to one of the main wires *x* and the other to the main wire *x'*, so that the two sections form the terminals of the two main line wires.

In the present instance the coupling is made of two rings *f* of good conducting material, each having a coating of non-conducting material *h*. The terminal wire *g* of the section *F²* is coupled to its ring *f* and is preferably insulated and passes up through the section *F'*. The terminal wire *i* of the section *F'* is coupled to its ring *f* in any suitable manner. Each terminal *g* and *i*, as shown in Fig. 2, is split, forming two arms between which is inserted the end of the main wire; a coupling sleeve *m* is then passed over the ends of the terminal and wire, and a set screw *p* compresses the arms tightly against the end of the wire and the sleeve may be made of non-conducting material, if necessary. Other forms of coupling may be used, however, without departing from my invention.

A series of radial grooves *n*, shown clearly in Figs. 3 and 4, are cut in the rings forming each section and are of a number corresponding to the number of branches in the electrolier. In the present instance I have shown an electrolier with four branches and there are therefore four radial slots *n* in each section of the manifold coupling.

On the end of each wire S are secured in any suitable manner, spring coupling arms *s*, preferably flattened so as to fit snugly in the grooves or slots *n* in each section of the coupling and having a comparatively large surface in contact with the rings *f* and having flaring ends which prevent the accidental pulling out of the arms. As shown in Fig. 5, these arms are secured to the wire by solder. In Figs. 8 and 10, I have shown the arms secured by a plate *s'*, which has cleats *s²* struck up from it, binding the arms tightly to the wire, but where the wire is of such thickness that it can be reduced, I may form it as shown

in Fig. 9, the reduced portion fitting into the slots n , and in some instances, the wire is split, as shown by dotted lines in Fig. 9, and spread out against the wall of each slot.

5 In Fig. 6, I have shown a modification of the manifold coupler, in the form of two cups of non-conducting material separated by a disk f' which is preferably screwed into both cups. In each cup is a conducting ring f and
10 each ring has a main coupling terminal, the same as that shown in Fig. 2 and in place of being slotted, has a series of holes which are drilled through the cup so as to receive the branch wires. Suitable set screws k are pro-
15 vided to secure the wires to the ring.

In Fig. 7, I have shown a ring having enlarged bearing surfaces at the slots so as to make a better contact with the branch wires.

Where a large number of branch wires are
20 used, the cups may be duplicated and mounted one below the other, and coupled in pairs or to independent wires.

It will be noticed that one advantage I gain in the use of this coupling is to dispense en-
25 tirely with the joint at the ceiling.

When a building is wired I leave enough wire extending through the ceiling to pass to the manifold coupling in the frame B, the wire passing through the tube a in the body
30 A, as shown, and can be readily coupled to the terminals i and g of each ring, making a neat joint. The coupling does away entirely with the common wire joints now generally made, and I am enabled to couple a large
35 number of branch wires to the main wire in a comparatively small space and the manifold coupling being covered with non-conducting material, insulates it from the frame B and in the event of short circuiting of any
40 of the branches the defective wire may be readily located by detaching the branch wires, one by one, from the coupling rings. In order to prevent the coupling moving out of place I extend the screw rod c up into the
45 base of the lower section F^2 and may either secure this section to the rod, or merely let it rest on a shoulder or nut on the end of the same.

I claim as my invention—

1. The combination in an electrolier, of a 50 manifold coupling comprising two or more perforated or slotted conducting rings mounted one above the other, with non-conducting material incasing said rings and separating them, terminals on each ring adapted to be con- 55 nected to the main wires, with branch wires adapted to the openings in the conducting rings, substantially as described.

2. The combination in an electrolier, of the open frame work B to which the branches of 60 the electrolier are secured, a manifold coupling mounted within said frame having terminals split at their ends, forming two arms, with the main wires having their ends adapted to pass between the two arms, and a sleeve 65 having a set screw for binding the two arms of the terminal to the wires, substantially as described.

3. The combination of a slotted conducting ring, connected to the main line wire, with a 70 branch wire having two spring arms secured thereto, and adapted to the slot in the conducting ring, substantially as described.

4. The combination of a slotted conducting ring, connected to the main line wire, with a 75 branch wire, spring arms, as s , secured thereto, and outwardly flaring ends on said spring arms, substantially as specified.

5. The combination of the coupling having a slot therein, a wire, spring arms adapted to 80 said wire, and a sleeve having a struck up piece securing the arms to the wire, substantially as described.

6. The combination of the ring of conducting material, nonconducting coatings on said 85 ring, radial slots extending through the ring and nonconducting coatings and branch wires extending into the slots, substantially as specified.

In testimony whereof I have signed my 90 name to this specification in the presence of two subscribing witnesses.

EDMUND E. CLIFT.

Witnesses:

HENRY HOWSON,
WILLIAM D. CONNER.