

K. SCHRÖTER.  
MOUNTING OF CONDUCTORS.  
APPLICATION FILED MAY 20, 1910.

980,843.

Patented Jan. 3, 1911.

Fig. 1.

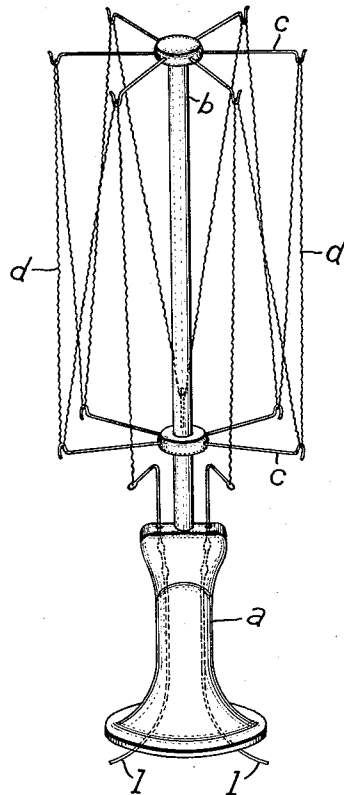
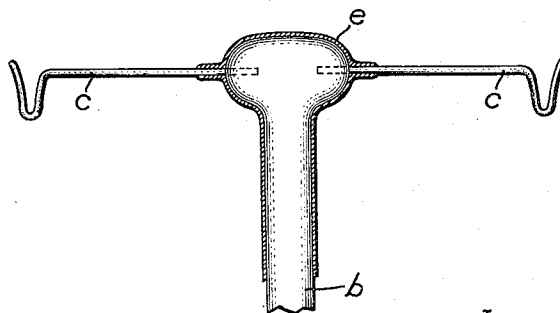


Fig. 2.



Witnesses:

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Inventor:

Karl Schröter,

by

*Albert H. Davis*

His Attorney.

# UNITED STATES PATENT OFFICE.

KARL SCHRÖTER, OF BERLIN, GERMANY, ASSIGNOR TO GENERAL ELECTRIC COMPANY,  
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## MOUNTING OF CONDUCTORS.

980,843.

Specification of Letters Patent.

Patented Jan. 3, 1911.

Application filed May 20, 1910. Serial No. 562,372.

*To all whom it may concern:*

Be it known that I, KARL SCHRÖTER, a subject of the Emperor of Germany, residing at Berlin, Germany, have invented certain new and useful Improvements in Mounting of Conductors, of which the following is a specification.

My invention relates to the mounting of conductors, and it comprises a process therefor which is cheap and easy to carry out, and possesses various advantages which will appear from the specification following.

It frequently happens that after being mounted in proximity to some structure (as, for example, its supporting system or holding devices) intended to be associated with it in an apparatus of which it is designed to form a part, a conductor is subjected to treatment liable to result in the formation of a deposit on the structure in question. Such a deposit may be formed, for instance, when material passes off from the conductor in consequence of the passage of current through it. It is sometimes desirable to insure the final absence of deposited material, and for this purpose treatment with chemical reagents which act upon this material but do not attack the conductor or the structure associated with it has been resorted to. Such treatment has the disadvantage that in consequence of the necessity of avoiding injury from the reagent used the range of materials that may be combined in the apparatus is not wholly unrestricted. In the process of the present invention, the use of such reagents is avoided; and the formation of deposits on the structure referred to is prevented by a protective coating thereon which is afterward removed.

My invention is applicable especially in connection with the manufacture of apparatus with filaments formed by the incorporation of material from which the finished filament is to be made with auxiliary material or binder such that the resulting composition can be readily formed into a filamentary body and otherwise shaped as desired by various well-known methods, the auxiliary material being eliminated after

completion of the shaping. Prior to the elimination of the auxiliary material, the filament may be placed on the supporting system intended to ultimately carry it. This procedure is, in particular, practiced with metallic auxiliary material in the manufacture of electric lamps.

I have hereinafter described a mode in which my invention may be carried out and applied in the manufacture of electric lamps; but I desire it to be understood that the mode described is illustrative and that the invention can be carried out and applied in other ways within the scope of the appended claims.

In the drawings accompanying this specification and forming part thereof, Figure 1 is a perspective view of an ordinary type of lamp mount—shown without the globe—in connection with which my invention may be used; and Fig. 2 is a fragmentary diagrammatic section of the same illustrating certain steps in the practice of my invention according to the mode described.

The filament system or mount shown in Fig. 1 comprises the usual glass stem or carrier *a* through which the current supply leads *l, l* are introduced into the lamp, a standard *b* of glass or other suitable material secured to said stem, and two sets of hooked arms or engaging elements *c* projecting from said standard by which the filament *d* is carried.

In order to bring them into the form of wire, filament materials which are mechanically difficult to work may, as above intimated, be incorporated with ductile metallic auxiliary material to form ductile compositions which can readily be worked up and shaped as desired. The auxiliary material may be driven out of the wires thus produced by passing an electric current through them. If this conversion of the crude filament into a finished filament is not effected till after it has been placed on its final supporting system, the metal expelled from the filament naturally forms deposits. When the filament system shown in the drawing is used, these deposits are formed especially

on the axial standard *b* and the engaging elements *c*. Instead of treatment with acids being resorted to for the removal of these deposits, a protective coating is, in accordance with my invention, applied to the parts exposed to them before the filament is mounted and removed after the auxiliary material has been expelled. For example, the supporting system may be coated with a thin collodion film by dipping it in a solution of collodion in ether and alcohol; or it may be brushed over with a solution of paraffin in benzin, or with one of rubber in any suitable liquid, such as carbon bisulfid. After the evaporation of the solvent, the supporting system remains covered with a coating *e* of collodion or the like (Fig. 2). If the wire or filament is now placed on the supporting system and the auxiliary material volatilized, fine particles of this material are deposited on the protective coating, and in the subsequent removal of this coating by the solution the deposit is also removed. As a solvent for collodion coatings, ether and alcohol is desirable; for paraffin coatings, benzin; for rubber coatings, carbon bisulfid. Inasmuch as in this process the solvent need be capable only of dissolving the protective coating and not the metallic deposit, neutral non-corrosive solvents are used instead of the corrosive fluids, such as acids, formerly necessary, and attack of the material of the supporting system or of the filament is in consequence impossible.

It is desirable either to avoid coating these parts of the supporting system which attain a high temperature during the heating of the filament to expel the auxiliary material or else to remove the coating from them before the filament is put in place. (In Fig. 2 the protective coating *e* which covers the glass stem *b* is shown as leaving the arms *c* exposed.) Such a course avoids any chemical alteration in the coating which might occur at the more highly heated parts of the supporting system by carbonization of the organic coating material. It is to be noted that the formation of deposits on the parts thus left uncovered may in a measure be prevented by their high temperature during the passage of current through the filament; whereas overheating of the coating material might render it difficult to dissolve, or result in its reacting with the part which it covers.

What I claim as new and desire to secure by Letters Patent of the United States, is,—

1. The process which consists in applying a protective coating to structure associated with a filament in the apparatus of which it forms a part, permanently mounting a filament in operative relation to such struc-

ture, passing current through said filament to expel material therefrom, and removing the coating.

2. The process which consists in applying a filament containing binder to a supporting system having a suitable protective coating, passing current through the filament to volatilize said binder, and removing said coating from the supporting system.

3. The process which consists in subjecting a conductor permanently mounted in its intended relation to structure associated with it in the apparatus of which it is designed to form a part to treatment liable to result in the formation of a deposit on such structure and then removing a coating from said structure.

4. The process which consists in applying to a filament supporting system a protective coating adapted to receive deposits of materials expelled from the filament during passage of current therethrough and to be removed with them.

5. The process which consists in passing current through a conductor permanently mounted in its intended relation to structure associated with it in the apparatus of which it forms a part to expel material therefrom while all parts of such structure except those which attain a high temperature during the operation are covered with a protective coating and removing said coating along with deposited material from the conductor.

6. The process which consists in applying a soluble protective coating to a lamp mount, placing a filamentary body containing ductile metal binder thereon, passing current through the filament to expel the binder, and dissolving the protective coating from the mount and thus removing material of the binder deposited thereon.

7. A supporting system for a filament having a protective coating adapted to receive deposits of material given off from the filament during the passage of current therethrough and to be removed by treatment which does not affect any part of the system.

8. A supporting system for a filament having a protective coating adapted to receive material deposited on the supporting system during passage of current through the filament and to be removed with suitable fluid along with such deposited material.

9. A filament mount comprising a filament containing material adapted to be eliminated by passage of current through the filament and a glass stem having an organic protective coating adapted to receive material deposited from the filament and to be removed with suitable fluid.

10. The process which consists in passing

current through a filament mounted on a supporting system having a protective coating to expel binding material from the filament and removing the coating with  
5 suitable fluid along with any material deposited on the supporting system.

11. The process which consists in passing current through a filament mounted on a supporting system having a soluble organic

protective coating and dissolving away the 10 coating to remove any deposit formed on the supporting system.

In witness whereof, I have hereunto set my hand this fourth day of May, 1910.

KARL SCHRÖTER.

Witnesses:

HENRY HASPER,  
WOLDEMAR HAUPT.