(No Model.)

C. McNELLIS.

CARBON ROD CONTACT FOR ARC LAMPS.

No. 477,219. Patented June 21, 1892.

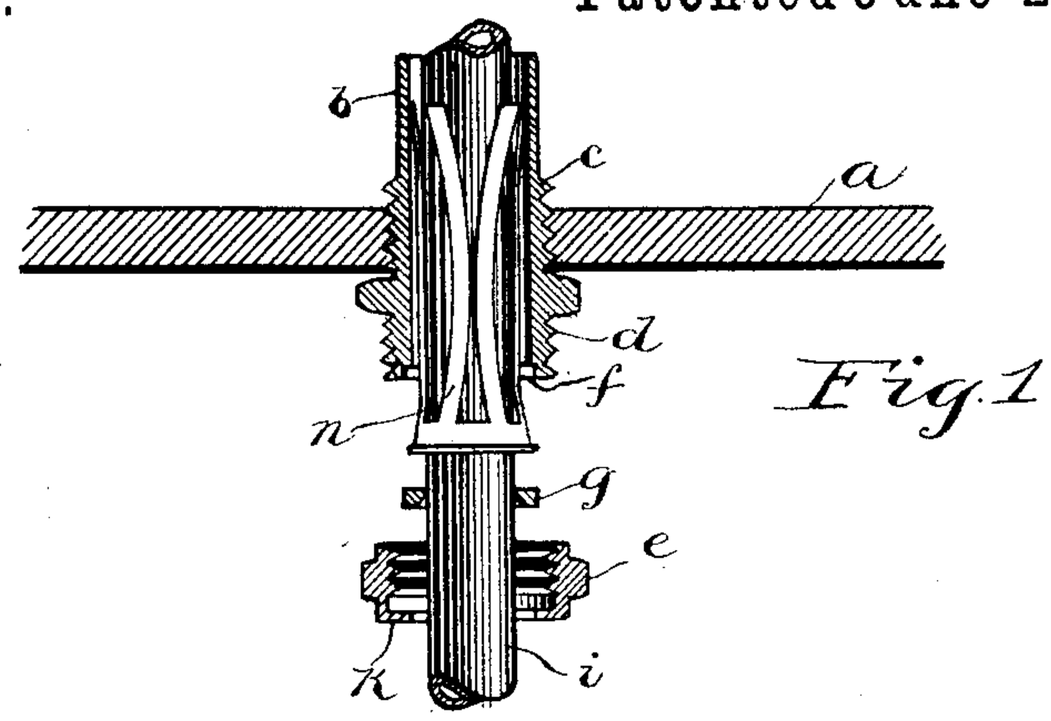

Fig. 1

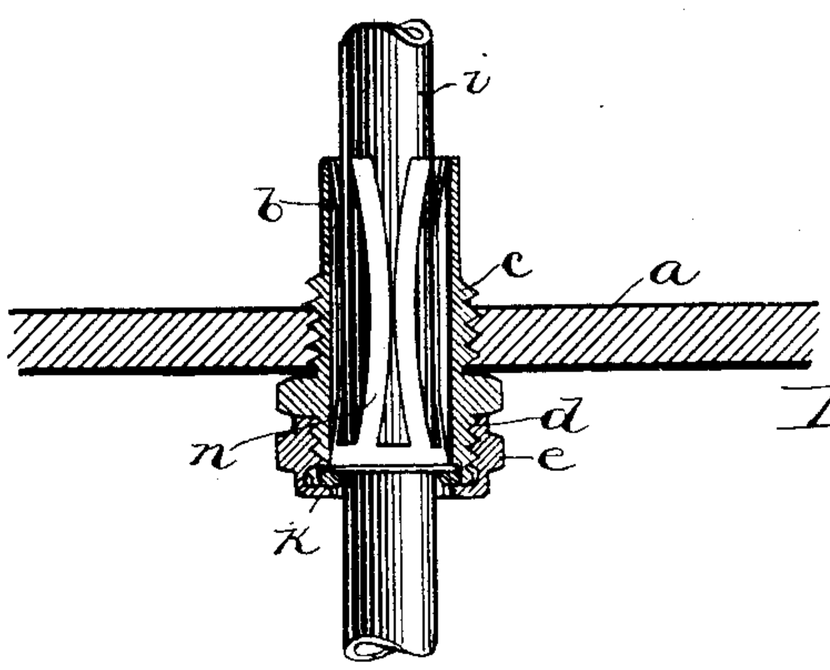

Fig. 2

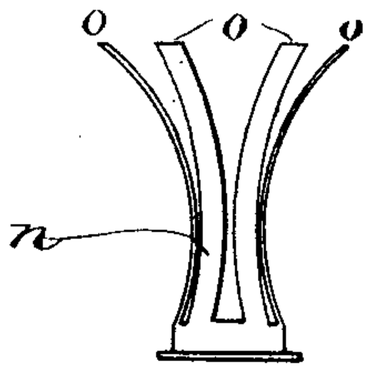

Fig 4

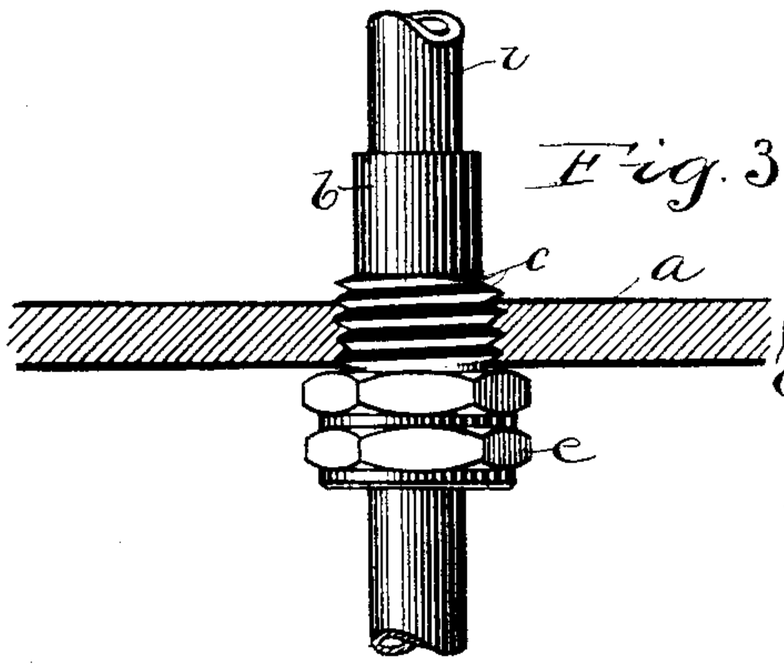

Fig. 3

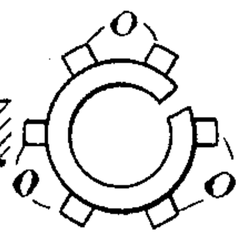

Fig. 5

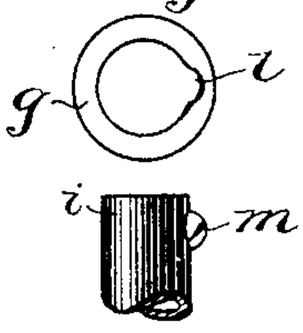

Fig. 6

Witnesses:
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attys

UNITED STATES PATENT OFFICE.

CHARLES McNELLIS, OF CHICAGO, ILLINOIS.

CARBON-ROD CONTACT FOR ARC LAMPS.

SPECIFICATION forming part of Letters Patent No. 477,219, dated June 21, 1892.

Application filed January 26, 1892. Serial No. 419,270. (No model.)

To all whom it may concern:

Be it known that I, CHARLES MCNELLIS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Carbon-Rod Contact Devices, (Case No. 1,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to electric lamps; and its object is to improve the method of making contact between the frame of the lamp and the carbon-rod.

A further object is to so construct the contact-brush and the socket which holds it in such manner that the contact-brush can be removed readily and a new one substituted in place thereof whenever desired.

A further object is to provide a close-fitting ring surrounding the carbon-rod, of such shape as to offer as little frictional resistance as possible to the movement of the carbon-rod, which ring may be removed and replaced upon occasion.

Heretofore the part of the lamp of which my invention is an improvement has been made in one piece, the contact-brush having been soldered to the interior of the tube through which the carbon-rod slides and the close-fitting ring having been soldered to the tube. The consequence of this construction has been considerable labor in the first making of the device, which is obviated by the construction which I have invented, while the necessity of discarding the entire piece, including tube, brush-contact, and ring, in case of the destruction of any part is obviated. In the device of my invention any one of these parts may be replaced without discarding the other parts, thus resulting in a saving in expense and also in a saving of time and labor in making the change.

A clear understanding of my invention will be obtained by reference to the accompanying drawings, in which—

Figure 1 shows the device of my invention, partly in section, with the parts thereof in a separated condition. Fig. 2 shows the device of my invention, partly in section, with the parts thereof together as they would be normally when in place in the lamp. Fig. 3 shows the device of my invention in elevation, as it would appear when in place in a lamp, with the base of the case surrounding the works of the lamp cut away. Fig. 4 shows the side elevation of a contact-brush. Fig. 5 shows an end view of a contact-brush. Fig. 6 shows the close-fitting ring and the end of the carbon-rod which passes through the same.

Similar letters of reference refer to similar parts of the device throughout the different views.

The base *a* of the case containing the works of the lamp receive in a hole threaded for this purpose the device of my invention. I preferably make my device of the same size and with the same description of thread that have been in use heretofore, so that my improved device may be substituted for the old ones without inconvenience. The tube *b* has cut upon it two threads. One *c* is adapted to fit the thread in the case of the lamp-works before described. The other *d* is adapted to receive the thread of the cap or nut *e*. In the end of the tube *b* the annular recess *f* is provided for the purpose of affording a seat for the ring *g* and for the upset end of the contact-brush *h*. The ring *g* has its interior surface rounded and smoothed, so as to fit the carbon-rod *i* closely, and thus prevent oscillation of the rod and also prevent the admission of dust and dirt into the works of the lamp. This ring fits into the seat *f* of the tube *b*, and the screw-cap *e* has a sufficiently large internal diameter to pass over the ring when it is screwed upon the thread *d*. Upon the lower side of the screw-cap *e* there is the inwardly-projecting annular lip *k*, leaving an opening larger than the inside diameter of the ring *g*, but smaller than the outside diameter of said ring, whereby the ring is held firmly in the seat *f*. The ring may be cut away at *l* sufficiently to allow the screw-head *m* on the side of the carbon-rod to pass through.

The contact-brush *n* I make, preferably, of thin phosphor-bronze sheet; but any other metal which has the requisite flexibility and resiliency may be used instead of phosphor-bronze. This contact-brush may be stamped from a sheet, after which it may be formed in the shape shown most clearly in Figs. 4 and 5. The curvature of the arms *o o o*, of which

I preferably have six, presses the ends against the interior of the tube and bears against the carbon-rod as it slides through said tube. The end of the contact-brush shown in Fig. 5 forms the segment of a circle, preferably somewhat larger normally than the interior of the tube, whereby when the contact-brush is inserted in the tube it will tend to spring apart, and thus press against the interior of the tube.

An obvious modification of my device would consist in making the ring *g* integral with the screw-cap *e;* but I preferably make it separate, as herein described.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a device for making contact with the carbon-rod of an electric lamp, the combination of the tube *b*, detachably secured to the floor of the lamp, the contact-brush *n*, the ring *g*, adapted to press the flange of said contact-brush against the end of said tube, and the screw-cap *e*, adapted to hold said ring and contact-brush detachably in place, substantially as described.

2. A device for making contact with the carbon-rod of an electric lamp, consisting of a contact-brush of comb-shaped metal curved so as to enter the tube through which the carbon-rod passes, said comb-shaped piece of metal having its teeth curved and having a flange adapted to rest upon the end of said tube, in combination with a cap adapted to be screwed upon the end of said tube and to press upon the flange of said contact-brush, whereby said contact-brush is detachably held in place in said tube, substantially as described.

In witness whereof I hereunto subscribe my name this 30th day of December, A. D. 1891.

CHARLES McNELLIS.

Witnesses:
GEORGE P. BARTON,
GEORGE L. CRAGG.