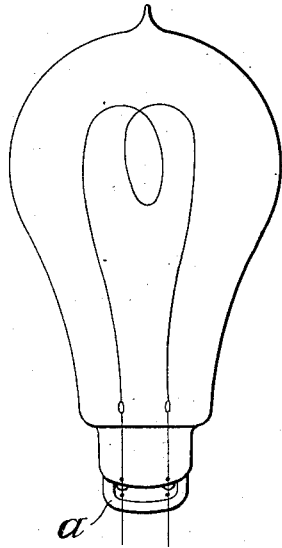


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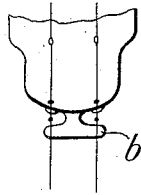
PATENTED MAY 8, 1906.

C. SCHÜBEL.  
ELECTRIC INCANDESCENT LAMP.  
APPLICATION FILED SEPT. 25, 1905.

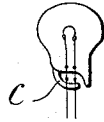
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Witnesses.*

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*by Henry Orth & Co. atty.*

# UNITED STATES PATENT OFFICE.

CARL SCHÜBEL, OF VIENNA, AUSTRIA-HUNGARY, ASSIGNOR TO THE FIRM OF ELECTRISCHE GLÜHLAMPEN-FABRIK "WATT," SCHARF & CO., OF VIENNA, AUSTRIA-HUNGARY.

## ELECTRIC INCANDESCENT LAMP.

No. 819,935.

Specification of Letters Patent.

Patented May 8, 1906.

Application filed September 25, 1905. Serial No. 280,047.

*To all whom it may concern:*

Be it known that I, CARL SCHÜBEL, a subject of the German Emperor, residing at Vienna, Austria-Hungary, have invented certain new and useful Improvements in Electric Incandescent Lamps, of which the following is a specification.

In electrical incandescent lamps the leading-in wires which are admitting the current to the carbon filament must be made of platinum in as far as they pass through the glass wall of the bulb. Endeavors have been made to reduce to a minimum the quantity of the platinum employed. For this purpose to short platinum wires have been soldered on either end wires made of other metals, and the platinum wire, together with the soldering-places, have been sealed in the glass of the bulb. This method is, however, connected with inconveniences. Since only platinum possesses the same coefficient of expansion as glass, whereas the soldering-places do not possess this coefficient of expansion, it is obvious that the repeated expansion and contraction of these soldering-places will produce fine cracks in the glass which sometimes will continue and extend also along the platinum wires, with the result that the outer air will penetrate into the interior of the lamp. If the soldering-places are arranged outside the place of sealing—that is to say, outside the glass bulb of the lamp—the leading-in wires will be very much liable to become bent.

According to the present invention the said inconvenience is entirely obviated in such a manner that the lower soldering-place which connects the leading-in wires to the platinum wire is situated freely outside the glass bulb and is maintained in place by means of a glass bridge which is rigidly connected with the glass bulb of the lamp. In this manner the soldering-place is situated outside the lamp-bulb, and at the same time the bending of the platinum wire at the sealing-place is absolutely impossible.

The accompanying drawings represent several forms of execution of the subject-matter of the invention.

Figures 1 and 2 represent the said improvement applied to ordinary incandescent lamps, whereas Fig. 3 represents the application of the invention to a so-called "miniature" lamp.

In the form of execution shown in Fig. 1 a glass bridge *a* is fused with both ends to the lamp-bulb outside the sealing-place in which the short pieces of platinum wire pass through the glass wall of the bulb, and through the said bridges *a* pass the copper wires, which are soldered to the platinum wires. In this manner a bending of the leading-in wires at the soldering-place is absolutely avoided.

The form of execution represented in Fig. 2 consists of a T-shaped bridge *b*, in which ends of both the copper leading-in wires are fused.

In the miniature lamp represented in Fig. 3 the foot *c*, which is formed during the manufacture of the bulb, is bent in a suitable manner, and is thus utilized for holding rigidly the leading-in wires.

I claim—

1. The combination with an incandescent electric lamp having a bulb and leading-in wires; of a bridge at the bottom of the lamp to support the outer wires forming a free space between the end of the lamp and bridge, the joint between the outer wires and leading-in wires being contained in said free space.

2. The combination with an incandescent electric lamp having the leading-in wires sealed therein; of a glass bridge forming part of the lamp-body to support the outer wires and forming a free space between the bridge and bottom of the lamp, the joint between the outer wires being contained in said free space.

3. The combination with an incandescent electric lamp having leading-in wires; of a T-shaped bridge at the bottom of the lamp to support the ends of the outside wires and forming a free space between said bridge and bottom of the lamp, the joint between the leading-in wires and outside wires being in said free space.

4. The combination with an incandescent

electric lamp having leading-in wires; of a  
glass T-shaped bridge forming part of the  
body of the lamp leaving a free space between  
said body and bridge, outside wires sealed in  
5 the bridge and the joint between the outside  
wires and leading-in wires contained in the  
free space.

In testimony whereof I have hereunto set  
my hand in presence of two subscribing wit-  
nesses.

CARL SCHÜBEL.

Witnesses:

GUSTAV PHILIPPITSCH,  
ALVESTO S. HOGUE.