

Dec. 26, 1944.

L. L. FRIEND, JR

2,365,812

LUMINESCENT LAMP MOUNTING

Filed Nov. 2, 1943

3 Sheets-Sheet 1

Fig. I.

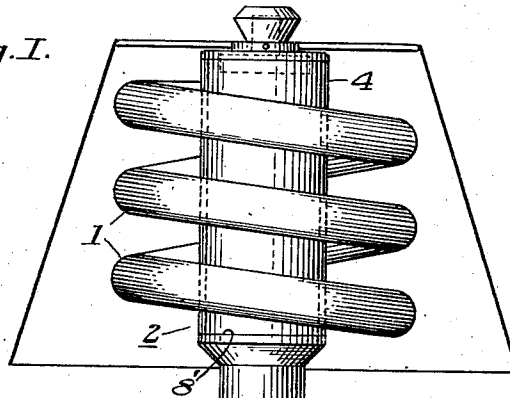


Fig. II.

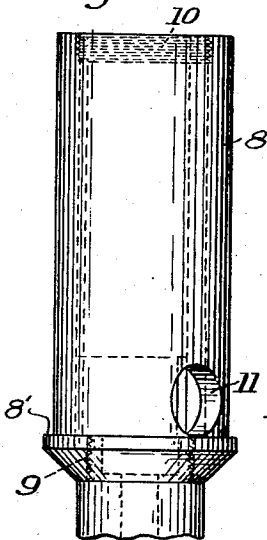


Fig. III.

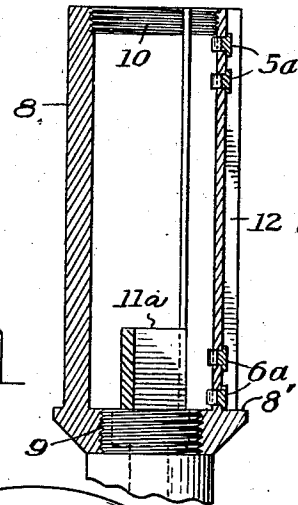


Fig. V.

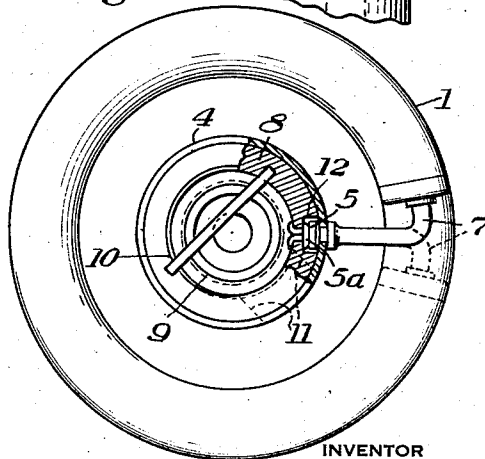
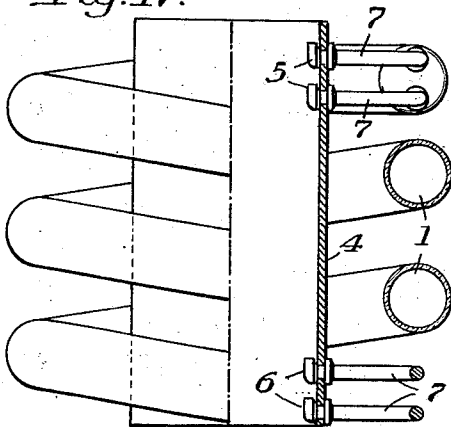


Fig. IV.



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3 Sheets-Sheet 2

Fig. VI.

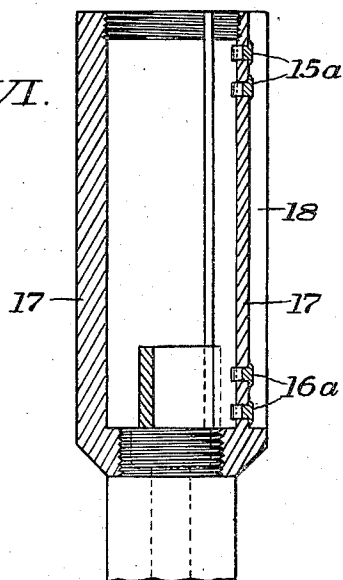


Fig. VII

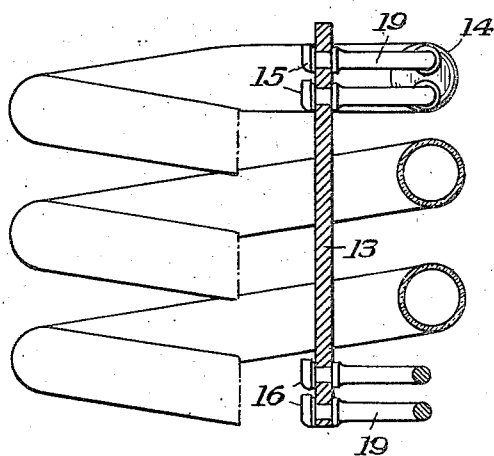
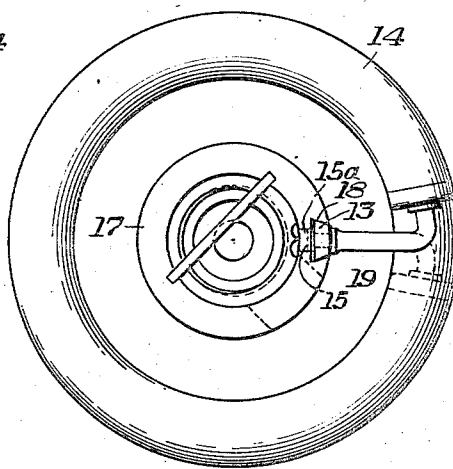


Fig. VIII



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3 Sheets-Sheet 3

Fig. IX.

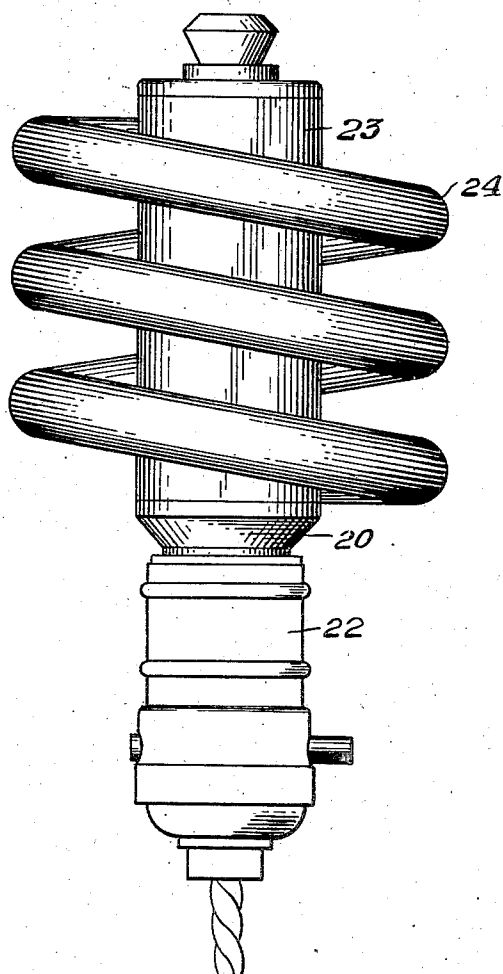
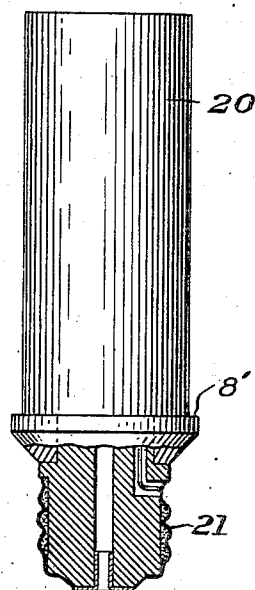


Fig. X.



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UNITED STATES PATENT OFFICE

2,365,812

LUMINESCENT LAMP MOUNTING

Lloyd L. Friend, Jr., Pittsburgh, Pa.

Application November 2, 1943, Serial No. 508,754

8 Claims. (Cl. 240—81)

This invention relates to the mounting of a tubular luminescent electrical lamp.

The object of the invention is to provide a mounting for a coiled luminescent lamp tube which is of such sort that it adapts luminescent lamp tubes satisfactorily to use in homes, offices, and analogous locations to render the advantages of a luminescent tube lamp available in lighting fixtures of the same sort and arrangement as have previously been used with electrical filament lamps.

A further object of the invention is to provide the organization of a luminescent tube lamp with a practical support which is so arranged that the assembly of the lamp and its support may rapidly and easily be made, and is made in such manner that the replacement of tubes is facilitated.

In achieving these objects, I include in my assembly a primary lamp support which is usable with bases of varying form and design, and which is cooperative with a unitary structure composed of a coiled luminescent lamp tube and carrying and contact means for the tube which are cooperative with the primary lamp support.

In the accompanying drawings:

Fig. I is an elevational view of a luminescent lamp coil mounted in accordance with my invention.

Fig. II is an elevational detail view of the lamp support forming an element of the assembly shown in Fig. I.

Fig. III is a view of the said lamp support taken in axial section.

Fig. IV is a view of a coil carrier mechanically and electrically cooperative with the lamp support of the assembly, the view being partly in elevation and partly in axial section.

Fig. V is a plan view of the assembly of lamp support, lamp coil, and coil support organized as in the showing of Fig. I.

Fig. VI is an axial sectional view, corresponding in arrangement to Fig. III, showing a lamp support of modified form.

Fig. VII is a view partly in elevation and partly in axial section of a lamp coil and coil support mechanically and electrically cooperative with the lamp support of Fig. VI.

Fig. VIII is a plan view of the assembly of the elements shown in Figs. VI and VII.

Fig. IX is an elevational view showing the adaptation of a luminescent lamp coil and its mounting to use with a screw socket.

Fig. X is an axial sectional view through a lamp

support modified for inclusion as an element of the assembly shown in Fig. IX.

Referring initially to Figs. I to V inclusive of the drawings, which show one specific embodiment of my invention, reference numeral 1 designates a continuous luminescent lamp coil mounted on a lamp supporting assembly 2 which is mechanically and electrically associated with the base 3 of a table lamp.

The luminescent lamp coil 1 is carried for mechanical and electrical engagement with the primary lamp support on a carrier sleeve 4 which may be made of hard rubber, Micarta, or of any desired fibrous, plastic, or vitreous electrically non-conductive material; and which may be provided with a light-reflecting surface, if so desired. The carrier sleeve 4 stands within the lamp coil, and through its wall there project two pairs of terminal contacts 5 and 6 leading into the two ends of the coil. As is desirable, these two pairs of contact members are arranged in line longitudinally of the carrier sleeve. Interiorly of the sleeve wall, the pairs of contact members 5 and 6 terminate in resilient portions 7 adapted to make electrical contact for the luminescent lamp tube with cooperative contact members associated with the lamp support. The lamp support is composed primarily of a sleeve 8. Desirably the sleeve of the support is, like the carrier sleeve, formed of a suitable electrically non-conductive material such as hard rubber, Micarta, or other desirable fibrous, plastic, or vitreous material. The support 8 is provided adjacent its lower portion with a radially extending flange 8¹ and this flange serves the dual function of supporting the carrier sleeve and insuring definite placement of the contacts 5 and 6 on the carrier with respect to contacts 5a and 6a on the support. Desirably as shown it is provided with means engaging it with a lamp base, such as the threaded opening 9, and with means for engaging it with shade holding elements and the like, such as the threaded opening 10. Reference numerals 11 and 11a designate respectively a socket and socket base formed in the lamp support for the reception of a starter unit of the sort commonly associated with tubular luminescent lamps for starting purposes. Such starter unit of itself, as well as the internal structure of the tubular luminescent lamp itself, form no part of my invention and the starter unit is not herein illustrated. It is also to be understood that a choke coil and other appropriate adjuncts to luminescent lamp circuits may be housed within the tubular lamp support 8.

A key slot 12 in the wall of sleeve 8 of the lamp support extends longitudinally of the sleeve, and has therein two pairs of contact members 5a and 6a. For operative installation, these contact members are connected with suitable electrically conductive elements (not shown) for electrical connection in or through a base with which the lamp support is associated. This key slot 12 receives the paired contacts 5 and 6 of carrier sleeve 4 when assembly is made between the lamp unit composed of carrier sleeve 4 and lamp coil 1 with the lamp support sleeve 8. It will be noted that lamp support sleeve 8 is of lesser external diameter than the interior diameter of carrier sleeve 4. In making assembly the carrier sleeve is brought over the lamp support, with the inwardly projected spring portions 7 of the contacts 5 and 6 in alignment with key slot 12 of the lamp support, and is moved longitudinally thereof until the spring portions 7 of the carrier sleeve contacts 5 and 6 yieldingly engage the lamp support contacts 5a and 6a.

It will be understood that this assembly is readily made for domestic and analogous uses of the lamp, and that the lamp readily may be removed for repairs or replacement merely by retracting the lamp carrier unit from the lamp support. The carrier structure is simple and inexpensive, and in manufacture readily may be associated with the lamp coil.

Figs. VI, VII, and VIII of the drawings show a simplification of the unit composed of the lamp coil and its carrier. In the modification illustrated in those figures of the drawings and referring to the structure of Figs. I to V inclusive, the carrier sleeve is resolved into a simple longitudinal bar or strip 13 of suitable insulating material. The coil 14 itself and the contact members 15 and 16 arranged as its terminals may be identical with the similar elements shown in the preceding figures of the drawings, the contact members being extended through the lamp support sleeve 17 standing within the coil. In the structure of Figs. I to V inclusive in which the carrier sleeve of the lamp unit closely may surround the lamp support, the coil is held against tilting movement by a relatively close fit between the carrier sleeve of the lamp support. Such embracing effect being omitted from the modification of Figs. VI to VIII inclusive, it is more important that a key engagement between the carrier element of the lamp unit and the lamp support be provided. Thus bar or strip 13 is shown tapered toward the coil and has a close fit in a similarly formed key slot 18 in the lamp support sleeve 17. This positive keying of the coil unit with the lamp support holds it firmly in assembly. Assembly is made in the manner above described for the organization shown in Figs. I to V inclusive, and similarly to lamp support sleeve 8 lamp support sleeve 17 is provided with pairs of contact members 15a and 16a cooperative with the resilient portions 19 of the paired contact members 15 and 16.

It is to be understood that in this modified organization the form of the carrier bar or strip and of the cooperative key slot in the lamp support sleeve is susceptible of a number of variations providing firm keyed mounting of the lamp coil on the lamp support.

It should be clear that the lamp support of my invention is adapted to contact-making assembly with a base of any suitable structure and for mounting in any desired position, as in the vertical arrangement of a table or floor lamp in sus-

pended relation to the base or in horizontally disposed assembly.

As illustrative of the fact that the lamp support is susceptible of adaptation with any of the useful known sorts of contact organizations, the modifications of Figs. IX and X shows the lamp support arranged to provide electrical connection of the screw socket and screw plug type with the base with which the lamp support is associated. In this modification, lamp support sleeve 20, which otherwise may be made in conformity with the lamp support sleeve 8 of Figs. I to V inclusive or the lamp support sleeve 17 of Figs. VI to VIII inclusive, is provided at one end with a threaded contact-making shell 21 adapted in conventional manner to make contact with a threaded socket 22 of the lamp base with which the support is associated. Carrier sleeve 23 and lamp coil 24 carried thereby are shown in Fig. IX in mounted assembly with lamp support 20 and socket 22.

Several modifications in the structure and arrangement going to make up the assembly of my luminescent lamp mounting have been above illustrated and described. It is to be understood that the organization is susceptible of various other modifications without going beyond the principles and bounds of my invention, and the scope of my invention is to be limited, therefore, only by the statement of the claims appended hereto.

I claim as my invention:

1. In a luminescent lamp device the combination of a tubular insulating lamp support adapted to stand longitudinally within the coil of a coiled luminescent lamp, electrical contact members on the exterior of said lamp support, and a lamp unit comprising a coiled luminescent lamp having the turns thereof spaced from the said lamp support and telescopically mounted thereon, an insulating carrier secured to the said luminescent lamp unit to extend longitudinally within the coil thereof and shaped to interfit with said lamp support when brought into mounted engagement therewith by relative longitudinal sliding movement, and electrical contact members for the said coiled lamp unit carried in exposed position by the said carrier and arranged for engagement with the contact members of the lamp support, when so engaged, to complete a circuit through the lamp.
2. The structure defined in claim 1 wherein said carrier comprises a sleeve, said sleeve having a diameter to closely embrace said tubular support.
3. The structure defined in claim 1 wherein contact members on said lamp coil extended through said carrier in position to make electrical contact with the contact members of said tubular lamp support, said tubular member providing a housing for the electrical adjuncts to the circuit of said lamp.
4. The structure defined in claim 1 wherein said carrier is in the shape of a bar and wherein the cylindrical support is provided with a dove tail channel, said bar being of a similar shape to interfit with said channel.
5. The structure defined in claim 1 wherein said lamp support has a flange extending outwardly therefrom to provide a stop for said carrier so that the contacts on said carrier engage the contacts on said lamp support.
6. A luminescent lamp unit comprising a coiled luminescent lamp, an insulating carrier sleeve secured to the lamp coil and extended longitudinally therewithin in spaced relation to the turns

thereof; the said carrier sleeve being of the shape of a cylinder and contact members on said coiled lamp and extended through the said insulating carrier sleeve for exposure interiorly thereof, said contacts being vertically alined.

7. A quickly detachable luminescent lamp unit comprising a coiled luminescent lamp, an insulating carrier structure extended longitudinally within the lamp coil in spaced relation to the turns thereof, and contact members in said coiled luminescent lamp extended radially inward of the lamp coil and through the insulating carrier structure securing the said insulating carrier structure to the luminescent lamp in the aforesaid relation to the coil thereof, the contact members interiorly of the carrier structure terminating in resilient portions.

8. A quickly detachable luminescent lamp unit comprising a coiled luminescent lamp, an insulating carrier structure extended longitudinally within the lamp coil in spaced relation to the turns thereof, and contact members in said coiled luminescent lamp extended radially inward of the lamp coil and through the insulating carrier structure securing the said insulating carrier structure to the luminescent lamp in the aforesaid relation to the coil thereof, the contact members interiorly of the carrier structure terminating in resilient portions, said carrier structure having a dove-tail cross sectional shape.

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