

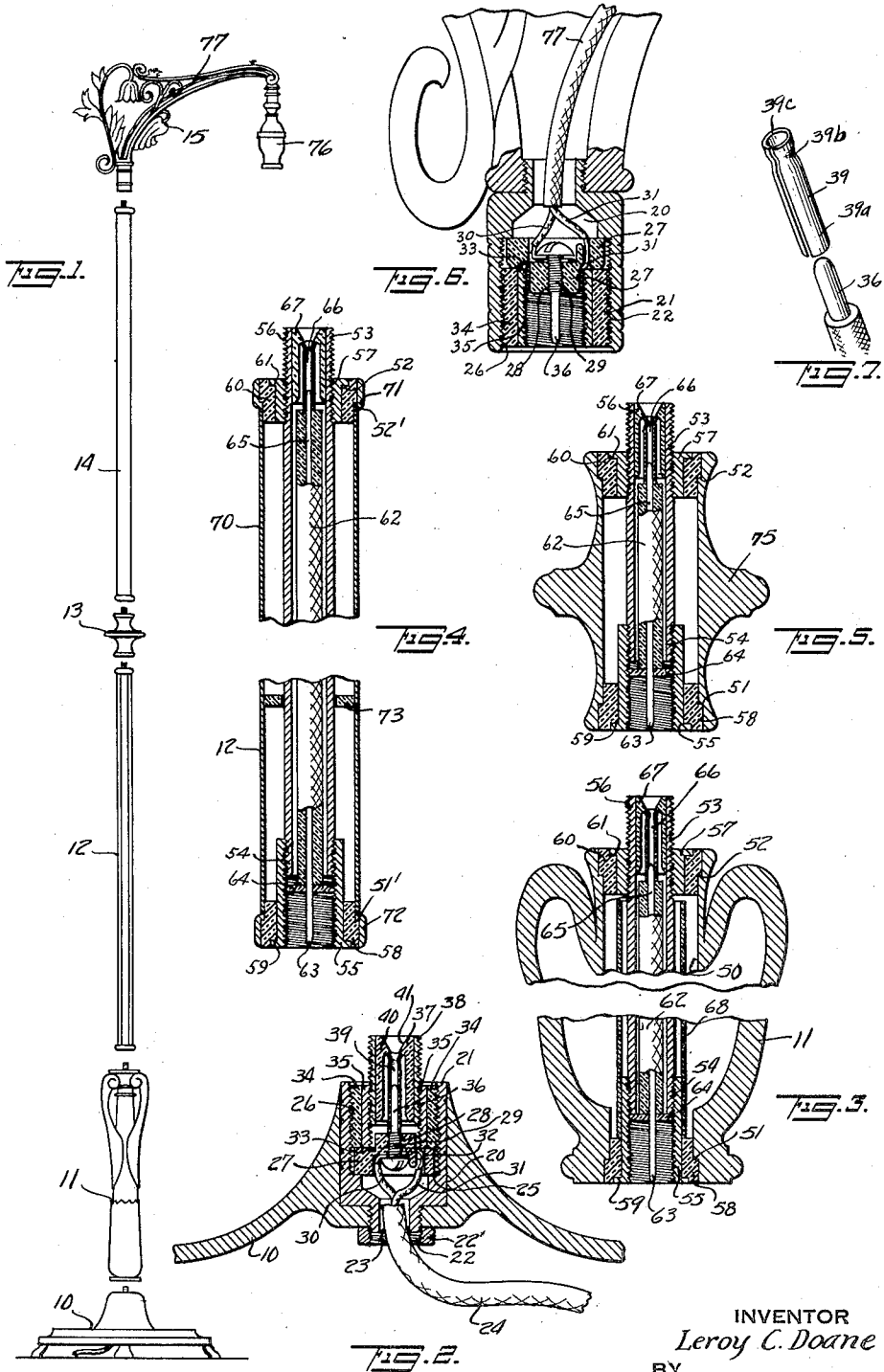
Oct. 16, 1934.

L. C. DOANE

1,977,378

LIGHTING APPLIANCE

Filed Dec. 31, 1929



INVENTOR
Leroy C. Doane
BY
Joel B. Liberman
ATTORNEY

UNITED STATES PATENT OFFICE

1,977,378

LIGHTING APPLIANCE

Leroy C. Doane, Meriden, Conn., assignor to
The Miller Company, Meriden, Conn., a corporation of Connecticut

Application December 31, 1929, Serial No. 417,692

13 Claims. (Cl. 173—328)

The present invention relates to lighting appliances and is more particularly directed to lighting appliances and other electrical apparatus made up of separable units and wherein it is desirable to simultaneously complete the electrical and mechanical connections between the various units.

As a specific example of an application of the invention, it will be discussed with respect to the manufacture of floor and table lamps and similar portable articles provided with supports in the form of bases. The various parts of these lamps are made up in the form of complete units, so designed as to be capable of interchangeable assembly. The bases are provided with means to secure a current supply cord to suitable terminals and these terminals are arranged concentric to one another. The intermediate parts are arranged for securement to the bases or to one another so that the electrical connections are made as the mechanical assembly continues. The unit which is to carry the outlet (such as a lamp socket) is arranged to be received by the free end of any of the other parts, and the conducting elements of all the various parts are completely insulated from one another and from the outside structure.

Each of these units is complete of itself, and it is therefore possible to ship, store and handle them as such, without being assembled with other units to make a complete lamp or other electrical appliance. It is therefore possible to obtain the many advantages not available as these arts were practiced heretofore.

In my copending application Serial No. 417,691, filed December 31, 1929, I have discussed these advantages with respect to ease of shipping and handling and the ability of providing the purchaser with an exceedingly wide choice of complete articles (such as lamps) from a stock consisting of a comparatively small number of parts of different design.

It is therefore an object of this construction to provide a system of interchangeable parts bearing means for their mechanical interconnection and the simultaneous completion of an electric circuit through the parts as they are secured together.

Other and further objects will appear as the description proceeds.

The accompanying drawing shows, for purposes of illustrating the present invention, one of the many embodiments in which it may take form, it being understood that the drawing is illustrative of the invention rather than limiting the same.

In the drawing:

Figure 1 is a view illustrating the component parts of a floor lamp;

Fig. 2 is a vertical sectional view through the base or support for the floor lamp;

Figs. 3, 4 and 5 are vertical sectional views through a column, a rod and a break respectively;

Fig. 6 is a vertical sectional view of a part of a socket carrier such as a bridge arm; and

Fig. 7 is a perspective view showing the tubular receptacle for an inner conductor.

The support or base for a floor lamp is indicated at 10, a column at 11, a rod at 12, a break at 13, another rod at 14, and a socket carrier in the form of a bridge arm at 15. These parts may be made up in various sizes and lengths and may be variously ornamented and designed to produce many forms of table and floor lamps, lighting fixtures, stands or supports for electrical apparatus, and other forms of electrical apparatus.

The lamp base 10 is provided with a central recess or opening 20 adapted to receive a cup-shaped body or housing 21. This housing is adapted to be secured in place in the base by threads indicated at 22 and may be held against unloosening by a lock nut 22' or it may be cemented in place. The lower end of the housing has an opening 23 to accommodate the current supply cord 24. The housing 21 has an internal shoulder or seat 25 and is internally threaded as indicated at 26.

A terminal block 27 is made of insulating material and is provided with a central tapped hole 28 for a screw 29. One of the conductors 30 of the duplex cord is bared and secured under the head of the screw 29. The other conductor 31 passes through a hole 32 in the terminal block 27 and its bared end rests in a groove 33 in the terminal block.

The terminal block is held in place in the housing by a two-part sleeve 34, 35. The part 34 of this sleeve is of insulating material and is provided with threads to fit the threads 26 in the housing. The inner part 35 is of conducting material and is fixedly secured to the outer insulating part. When this threaded bushing is threaded down in place, the metal ring 35 is brought against the bared end of the conductor 31. The upper end of the screw 29 is turned down as indicated at 36.

In order that the base may have an outwardly projecting threaded member, an adapter 37 is employed. This adapter consists of a threaded nipple 38 adapted to cooperate with the internal threads carried by the ring 35, and a contact clip 39 received on the reduced end 36 of the central screw. An insulating liner 40 is carried by the nipple 38 and this liner has a beveled or tapered opening 41, as indicated.

The spring contact clip 39 is indicated more in detail in Fig. 7. It may consist of a rolled strip or brass or bronze enlarged at its lower end 39a to receive the upper end of the pin 36. The

upper end of the clip is reduced slightly as indicated at 39b and is outwardly flared as indicated at 39c. The clip is slipped over the pin 36 and may be soldered to it if desired.

5 The standard 11 is indicated in detail in Fig. 3. It consists of an outer ornamental casting or the like having a central longitudinal hole indicated at 50. It has shoulders as indicated at 51 and 52. This tubular member is adapted to carry the two
10 conductors for a circuit. One of these conductors is as indicated at 53 in the form of a length of pipe threaded at both ends. The lower end 54 is threaded into a bushing or coupling 55, while the upper end 56 receives a threaded ring 57. An
15 insulating ring 58 is placed between the flange 59 of the coupling 55 and the shoulder 51 on the tubular member 11. A similar insulating ring 59 is placed between a flange 61 on the ring 57 and the shoulder 52 on the tubular member 11. The
20 parts so far described are assembled as indicated, a considerable portion of the threaded end 56 projecting upwardly and a considerable portion of the lower part of the coupling member 55 being open. These parts are machined accurately and
25 secured together as tightly as possible to make them more rigid and to reduce the possibilities of accidental loosening.

The inner conducting member is indicated at 62. It is in the form of a suitable length of heavy
30 gauge insulated copper wire. The lower end of the wire is bared as indicated at 63 and projects through an insulating washer 64 so as to be axially disposed inside the coupling member 55. The upper end of the wire is bared as indicated
35 at 65 and carries a contact clip 66 similar to the contact clip 39. The upper end of the tubular member 53 carries an insulating liner 67 similar to the liner 40. Where these columns are in the form of slush type castings, a paper or fibre insulating tube 68 is placed outside the conducting
40 parts.

The rod 12 shown in Fig. 4 differs from the column 11 principally in that the outer shell of the rod is in the form of a sheet metal tube 70.
45 Metal seating rings 71 and 72 are provided at the ends of the shell 70. These seating rings have shoulders 51' and 52' corresponding to shoulders 51 and 52 of the column. The outer parts of the rod are the same as those of the column and the same reference characters are
50 employed. Instead of a fibre sleeve, fibre disks 73 are used.

The break 13 shown in Fig. 5 is made up substantially the same as the column except that it
55 is much shorter. The outer part of the break may consist of a casting or turned member 75 and, as this member is short, the insulating sleeve may be omitted. The other parts are the same as before and the same reference characters are
60 applied.

The bridge arm 15 carries a lamp socket 76 and a current supply cord indicated at 77. This unit may be provided with a connector designated generally by the reference character 77 and shown
65 in detail in Fig. 6. It is the same as the one employed in the base of the lamp, except that the adapter 37 and contact clip 39 are not employed. The parts in Fig. 6 corresponding with those in
70 Fig. 2 are designated by the same reference characters.

The various units which have been described may be manufactured complete and lamps or other electrical appliances assembled out of these
75 parts, depending upon the design which is applied to the parts.

To assemble the floor lamp indicated in Fig. 1, it is merely necessary to thread the column onto the base, then thread the rod onto the column, the break onto the rod, and continue this threading-on process until all the parts are assembled.
80 This will structurally interconnect all the parts and will at the same time complete the electrical connections. One side of the line will include the bushing 35, the nipple 38 and the coupling members 55 and pipes 53 of each unit until the
85 uppermost unit is reached. Here the current will be conducted into the ring 35 of Fig. 6 and through one of the conductors of the cord 77 to the load. The other side of the line will include the pins 36 and alternate clips 39 and lengths of wire 62.
90

It will be apparent that the electrical connectors and rods or the like, above described, may be adapted for use in arts other than the lamp art. They may be employed generally wherever
95 it is desired to provide a concentric arrangement of conductors to permit the threading together of two conductor units. It is also obvious that the arrangement may be employed in many locations wherein it is desirable to simultaneously
100 make the electrical and mechanical connections between the various parts of an electrical device.

This arrangement also permits one to take advantage of the flexibility of design and the ease of handling and shipping which flow from the
105 possibility of shipping separate complete units which may be assembled in endless fashion to complete the article desired.

It is obvious that the invention may be embodied in many forms and constructions and I wish it to be understood that the particular form
110 shown is but one of the many forms. Various modifications and changes being possible, I do not limit myself in any way with respect thereto.

I claim:

1. The combination with a connector having an
115 internally threaded, insulatedly supported conducting ring forming one terminal and an axially disposed pin forming the other terminal, of an externally threaded metallic nipple threaded into the ring and carrying an insulating liner,
120 and a tubular receptacle carried on the pin and disposed within the liner, and a second connector having an internally threaded tubular conductor within which is insulatedly supported a
125 conducting pin axially disposed within the externally threaded conductor and adapted to enter the receptacle carried by the pin as the threaded conductor is threaded onto the nipple.

2. In an electrical appliance, a metallic support, a terminal housing carried by the support,
130 an insulator seated in an opening in the housing, a current supply cord having a conductor secured to a central pin carried by the insulator and extending in a direction opposite the cord and a second conductor extending through the insula-
135 tor, and an internally threaded ring secured inside the housing and held against the second conductor.

3. In an electrical appliance, a metallic support, a terminal housing carried by the support,
140 an insulator seated in an opening in the housing, a current supply cord having a conductor secured to a central pin carried by the insulator and extending in a direction opposite the cord and a second conductor extending through the insula-
145 tor, an internally threaded ring secured inside the housing and held against the second conductor, a sleeve carried by the end of the pin, and an insulatedly lined, externally-threaded bushing carried inside the threaded ring.
150

4. In an electrical appliance, a metallic support, an internally threaded terminal housing carried by the support, an insulator seated in an opening in the housing, a current supply cord having a conductor secured to a central pin carried by the insulator and extending in a direction opposite the cord and a second conductor extending through the insulator, and an externally threaded insulating ring threaded onto the housing and carrying an internally threaded conducting ring which bears against the second conductor.

5. A terminal assembly for electrical appliances comprising a housing having a large opening at one end, a reducing shoulder and a cord receiving opening in the opposite end, an insulating terminal block carried entirely within said housing and resting against the shoulder and having a central binding screw for one conductor of a duplex cord and an aperture to accommodate the other conductor whereby it may be passed through the block to bring the end thereof against the opposite face of the block, and an insulatedly supported internally threaded metallic ring secured in the housing and adapted to bear on the second conductor.

6. A terminal assembly for electrical appliances comprising a housing having a threaded recess, a reducing shoulder and a cord receiving opening in the opposite end, an insulating terminal block carried entirely within said housing and resting against the shoulder and having a central binding screw for one conductor of a duplex cord and an aperture to accommodate the other conductor whereby it may be passed through the block to bring the end thereof against the opposite face of the block, and an externally threaded insulating ring threaded into the housing and carrying an internally threaded conducting ring which bears against the second conductor.

7. A terminal assembly for electrical appliances comprising a housing having a large opening at one end, a shoulder and a cord receiving opening in the opposite end, an insulating terminal block resting against the shoulder and having a central binding screw for one conductor of a duplex cord, and an aperture to accommodate the other conductor whereby it may be passed through the block to bring the end thereof against the outer face of the block, an internally threaded metallic ring secured in the housing and adapted to bear on the second conductor, a sleeve carried externally by the end of the pin, and an insulatedly lined, externally threaded bushing carried inside the threaded ring.

8. In an electrical appliance, a metallic support having an internally threaded housing having a shoulder beyond the threads, a threaded metallic bushing insulatedly supported in the housing, an axially disposed conducting pin supported on an insulator bearing on the shoulder and projecting toward the open end of the housing, a conductor extending through the insulator and contacting with the bushing, a second conductor connected to the pin, and means for securing the parts together and for clamping the insulator against the shoulder.

9. In an electrical appliance, a metallic support having an internally threaded housing having a shoulder beyond the threads, a threaded metallic bushing insulatedly supported in the housing, an axially disposed conducting pin supported on an insulator bearing on the shoulder and projecting toward the open end of the hous-

ing, a conductor extending through the insulator and contacting with the bushing, a second conductor connected to the pin, means for securing the parts together and for clamping the insulator against the shoulder, the body having a passageway for wires beyond the shoulder, and wires connected to said conductors and extending through the passageway.

10. A base for self-wiring lamps or the like, comprising a body having a vertical hole, an insulating member carried within the hole and supporting an externally threaded tubular conducting member extending above the upper surface of the base, a tubular insulating liner inside the tubular conducting member, the conducting member and liner being open at the top, a second tubular conducting member within the liner and accessible through the opening in the top of the tubular conducting member, an insulating support for the second tubular conducting member and carried near the bottom of the hole in the body, and current supply wires connected with the conducting members and extending downwardly underneath the base.

11. A base for self-wiring lamps or the like, comprising a body having a vertical hole provided with an internal shoulder, an insulating member carried within the hole and supporting an externally threaded tubular conducting member extending above the upper surface of the base, a tubular insulating liner inside the tubular conducting member, the conducting member and liner being open at the top, a second tubular conducting member within the liner and accessible through the opening in the top of the tubular conducting member, an insulating support for the second tubular conducting member and carried near the bottom of the hole in the body, current supply wires connected with the conducting members and extending downwardly underneath the base, and means for securing the insulating member in the hole in a position to bear on the insulating support for the second conductor and clamp it against the shoulder.

12. An electrical connector comprising a housing having an opening therethrough, there being a reducing shoulder in the opening, an insulator in the opening with its rear engaging the shoulder, a forwardly extending, axially disposed pin supported by the insulator and connected to a rearwardly extending wire, an off center contact carried by the face of the insulator and connected to a second rearwardly extending wire, a tubular conductor whose edge engages with the off center contact, and means for clamping the tubular conductor against the contact and the insulator against the shoulder.

13. An electrical connector comprising a threaded housing having an opening therethrough, there being a reducing shoulder in the opening, an insulator in the opening with its rear engaging the shoulder, a forwardly extending, axially disposed pin supported by the insulator and connected to a rearwardly extending wire, an off center contact carried by the face of the insulator and connected to a second rearwardly extending wire, a tubular conductor whose edge engages with the off center contact, an insulating ring enclosing the sides of the tubular conductor, and threaded means cooperating with the insulating ring for clamping the tubular conductor against the contact and the insulator against the shoulder.

LEROY C. DOANE.