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WIRING DEVICE QUICK CONNECT TERMINALS

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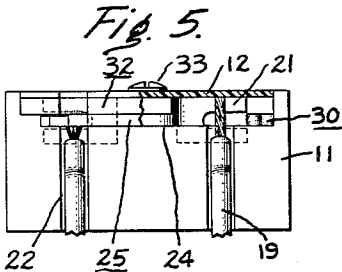
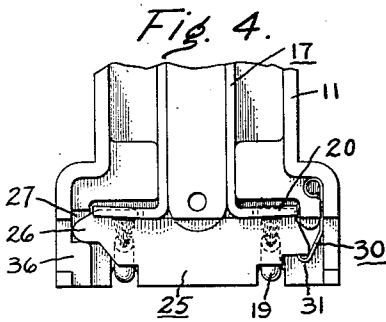
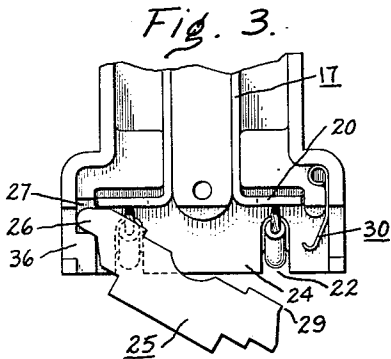


Fig. 2.

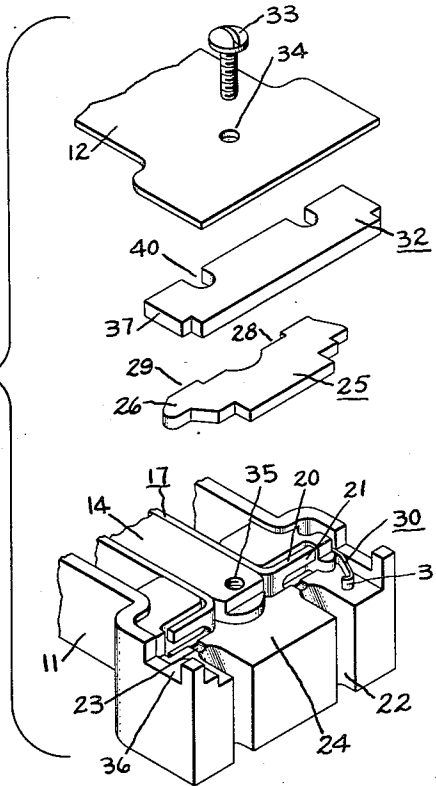
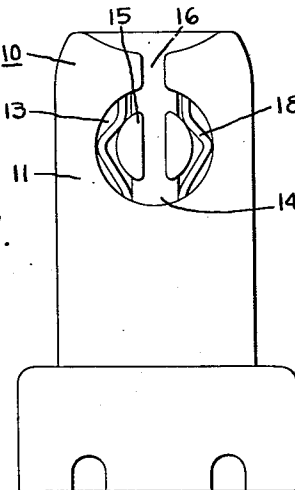


Fig. 1.



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3 Claims. (Cl. 339—53)

The present invention relates to wiring devices having quick connect terminals and particularly to lampholders for double-ended electric discharge lamps, commonly known as fluorescent lamps.

In the past it has been the common practice to provide binding screws for making electrical connections between the contacts of a wiring device and the lead wires. This invention involves an elimination of such binding screws and a substitution of quick connect terminals that are designed to reduce the time necessary in wiring such a device.

The present invention is particularly concerned with a pivoting locking bar which is used to clamp a pair of lead wires, one at a time, to the terminal ends of the contacts. A releasable latch means in the form of a spring member is also provided for engaging the free end of the locking bar and holding it in its clamping position.

The principal object of this invention is to provide a wiring device with quick connect terminals having a pivoting locking bar for clamping the lead wire to the terminal portion of the contact.

A further object of this invention is to provide a wiring device with quick connect terminals by using a pivoting locking bar for clamping the lead wires to the contact and by providing a releasable latching means for holding the bar in its clamping position.

My invention will be better understood from the following description taken in connection with the accompanying drawing and its scope will be pointed out in the appended claims.

Figure 1 is a front elevational view of a fluorescent lampholder embodying my invention.

Figure 2 is an exploded view of the lower portion of the lampholder of Figure 1 showing the details of the quick connect terminals of this invention.

Figure 3 is an elevational view of the back of the lampholder of Figure 1 with the cover and spacer member removed to show the action of the pivoting locking bar.

Figure 4 is a view similar to Figure 3 showing the locking bar in its clamping position and held in place by the latching member.

Figure 5 is a bottom plan view of the lampholder of Figure 4 with the right-hand portion being cut away to show how the lead wire overlies the terminal end of the contact before the locking bar is brought into action.

Referring in detail to the drawing, Figure 1 shows a standard bi-pin fluorescent lampholder 10 in which my invention has been incorporated although it should be appreciated that the quick connect terminals of this invention have general utility in the wiring device art. This lampholder comprises a recessed body member 11 with a back cover plate 12 to form a hollow housing of suitable insulating material. A detailed explanation of the construction of this lampholder may be found in the Bryant Patent No. 2,262,091 which is assigned to the same assignee as is the present invention. The front face of the body member 11 is provided at its upper end with a circular opening 13 that communicates with the interior

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of the holder. A vertical partition 14 formed centrally within the body member 11 has a split cylindrical embossment 15 centrally located within the circular opening 13. A vertical slot 16 at the top of the body member provides an opening through which a pair of vertically aligned contact members (not shown) on a lamp base may be inserted until the lower pin rests on the bottom edge of the circular opening 13. The present lampholder is provided with a pair of symmetrical contacts 17 for making electrical connection with the contact pins extending from the end of the lamp. These contacts are separated by a partition 14 and are provided at their upper ends with inwardly facing V-shaped notches 18 which are located adjacent the opposite sides of the embossment 15. Accordingly, after inserting the contact pins of the lamp through the slot 16 until the lower pin rests on the edge of the opening 13, a twisting force applied to the lamp will move the contact pins against the contacts 17 to spread them apart until the contact pins slip into the V-shaped notches 18, which is the normal lamp supporting position.

Looking at the open back of the lampholder of Figure 2 of the drawing, it will be seen that the contacts 17 have oppositely facing terminal ends 20 which lie in a single plane that is parallel to the bottom wall of the holder. These terminal ends are bifurcated as at 21 for a reason which will be explained hereinafter. The bottom wall of the housing is provided with a pair of parallel wire-receiving grooves 22 in alignment with the terminal ends 20 of the contacts. A lead wire-receiving opening 23 is formed in each groove 22 to be in alignment with the terminal ends 20. The lower branch 21 of each terminal end 20 is seated in a slight recess so that the lower edge of the slot formed by the bifurcation 21 is flush with a flat surface 24 that intersects the lead wire-receiving openings 23. A locking bar 25 of suitable insulating material is located on the surface 24 for pivotal movement into and out of engagement with the terminal ends 20 of the contacts. One end of the bar 25 is rounded as at 26 to fit into the notch 27 formed on an interior side wall of the housing so that the bar pivots within the notch 27 as the center to move in a plane perpendicular to the single plane of the terminal ends 20 of the contacts. The leading edge 28 of the bar has a pair of outward extensions 29 on opposite ends thereof which are adapted to fit into the slot formed by the bifurcation 21 of each terminal end 20 of the contacts. Accordingly, when the lead wire 19 is inserted through the opening 23 in the bottom wall of the housing, the bare end of the wire will overlie the terminal end 20 as best seen at the right-hand side of Figure 5. Then, when the locking bar is pivoted closed, the enlargement 29 will wedge the wire into the slot formed by the bifurcation 21 to make both a firm mechanical and electrical connection. The locking bar 25 must be positively held in this clamping position so that a releasable latching means such as the spring member 30 is fixed at one end in the housing with its opposite end 31 positioned to interfere with the free pivotal movement of the locking bar. This end 31 of the spring has a bent portion which is deflected to the side as the locking bar swings closed but which automatically snaps back to engage the swinging edge of the bar as it moves into the clamping position, as is best seen in Figure 4.

In the final assembly, a spacer 32 of suitable insulating material is placed over the locking bar 25 and is held in place by the cover plate 12. A screw fastener 33 extends through the opening 34 in the cover plate to be threaded in the hole 35 formed in the vertical partition 14 of the body member. A pair of opposite windows 36 are formed in the side walls of the housing to receive the projections 37 on the opposite ends of the spacer 32

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as will be readily understood by one skilled in this art. Hence, the space between the surface 24 of the housing and the spacer 32 is in effect a slotted opening in the bottom wall of the housing for receiving the pivoting locking bar 25. When the locking bar 25 is not in its clamping position in the holder and held in place by the latching member 30, the bar is free to be separated from the holder altogether. The spacer 32 is provided with a pair of notches 40 in alignment with the wire-receiving apertures 23 of the housing so that the lead wires will take the position as shown at the right-hand side of Figure 5 when they are inserted in the housing. It is contemplated that either this lampholder will be delivered from the factory with lead wires connected therein or the lead wires will be installed by the fluorescent lamps fixture manufacturer. In that event, the locking bar 25 would be shipped separately from the lampholder and would be installed by the fixture manufacturer when the lead wires are to be connected to the holder.

Accordingly, having described my invention of a novel quick connect terminal means for a fluorescent lampholder, it will be readily appreciated that this invention is both simple in design and reliable in operation and that it represents a marked advantage in wiring time over the conventional binding screws.

Modifications of this invention will occur to those skilled in this art and it is to be understood, therefore, that this invention is not limited to the particular embodiments disclosed but that it is intended to cover all modifications which are within the true spirit and scope of this invention.

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

1. An electrical wiring device comprising a recessed body member and a cover plate to form a hollow housing having a pair of contact members, the terminal end of each contact being arranged in a single plane parallel to and adjacent one wall of the body member, a pair of lead wire-receiving openings in said one wall to be in alignment with the terminal ends of the contacts, a slotted opening in said wall, and a pivoting locking bar arranged in the slotted opening to move in a plane perpendicular to the plane of the terminal ends of the contacts, the said bar having a rounded end fitted in a notch formed in the interior of the housing, the said terminal ends of the contacts being bifurcated and the leading edge of the said locking bar having a pair of extensions so that when a lead wire is inserted through the openings in the said wall of the housing, said extensions will engage the wires in the bifurcated ends of the contacts when the locking bar is pivoted to the clamping position, and a releasable latching member within the housing and engageable with

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the free end of the locking bar to hold the said bar in this clamping position.

2. A fluorescent lampholder comprising a recessed body member and a cover plate forming a hollow housing having a pair of contact members, the terminal end of each contact being bifurcated and arranged in a common plane parallel to and adjacent the bottom wall of the housing, a pair of lead wire-receiving openings in said bottom wall in alignment with the terminal ends of the contacts, a slotted opening in said bottom wall for receiving a pivoting locking bar which is adapted to move in a plane perpendicular to the plane of the terminal ends of the contacts, the said locking bar being pivoted from an interior wall surface of the housing and having a pair of extensions on the leading edge of the bar so that when a lead wire is inserted through the opening in the bottom wall of the housing, the locking bar may be closed over the wire so that the extensions of the bar will force the wire into the bifurcated ends of the contacts, and a releasable latching member within the housing and engageable with the free end of the locking bar to hold the said bar in this clamping position, a spacer member supported from the side walls of the housing to form one side of the said slotted opening that receives the pivoting locking bar, the said cover plate serving to hold the spacer fixed in the housing.

3. An electrical wiring device comprising a hollow housing having at least one contact member located therein, the terminal end of said contact being bifurcated and arranged near an opening in one wall of the housing for receiving a lead wire, a pivoting locking bar arranged to move in a perpendicular plane to the plane of the said terminal end, and a releasable latching spring for holding the said bar against the terminal end of the contact, the leading edge of said locking bar having an extension so that when a lead wire is inserted through the opening in the housing to overlie the bifurcated end of the contact the locking bar may be pivoted to clamp the wire into engagement with the said terminal while the said extension on the bar forces the wire between the branches of the bifurcated end of the contact, the said latching spring serving to hold the said bar in this clamping position.

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