Oct. 9, 1928. 1,687,167

R. M. MANN

CONNECTING PLUG

Filed March 18, 1926 2 Sheets-Sheet 1

Fig.1.

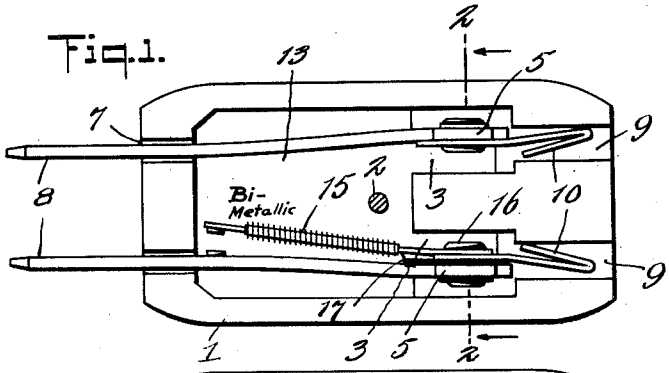


Fig.2.

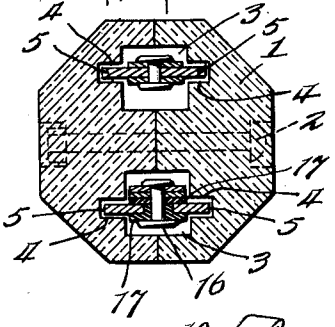


Fig.3.

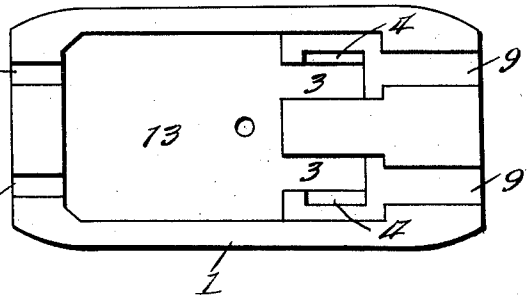


Fig.5.

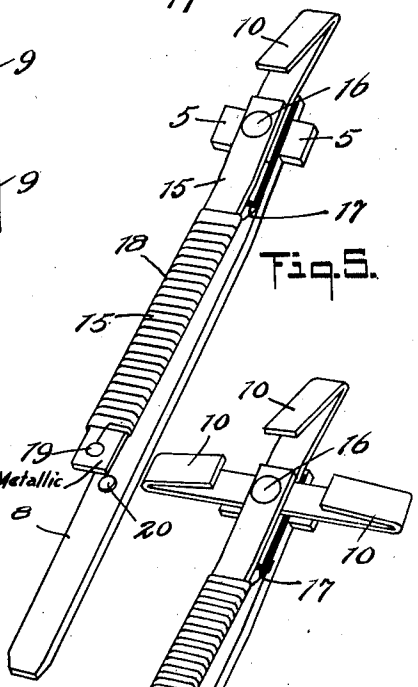


Fig.6.

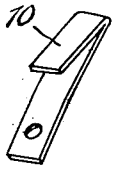


Fig.4.

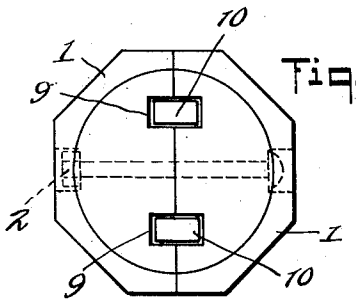
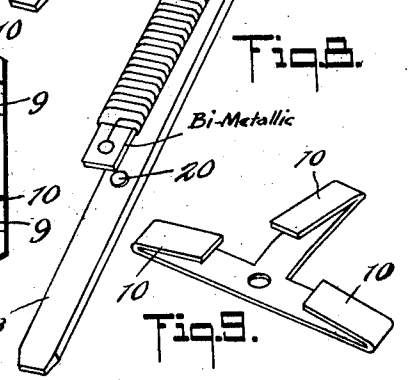


Fig.8.



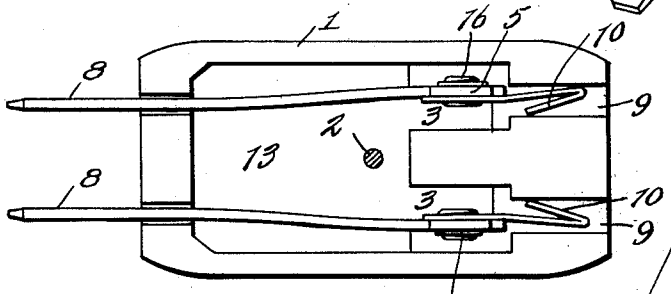


Fig.7.

Fig.9.

INVENTOR

Randolph M. Mann

BY

J. D. Worster

ATTORNEY

Oct. 9, 1928. 1,687,167

R. M. MANN

CONNECTING PLUG

Filed March 18, 1926 2 Sheets-Sheet 2

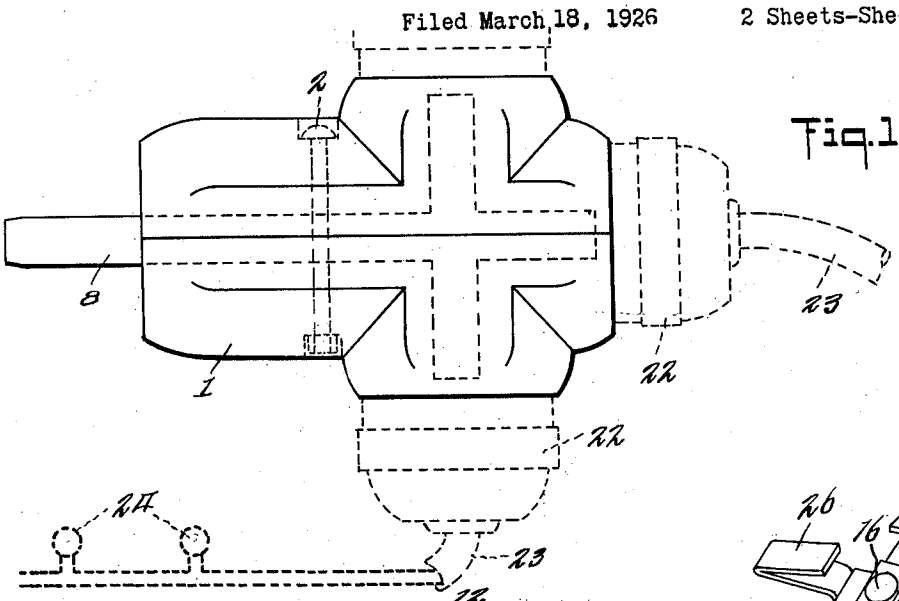


Fig.10.

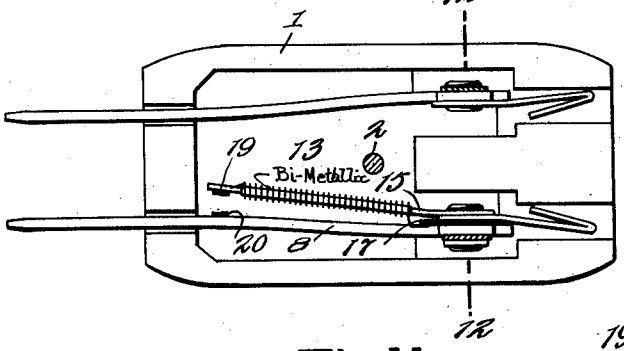


Fig.11.

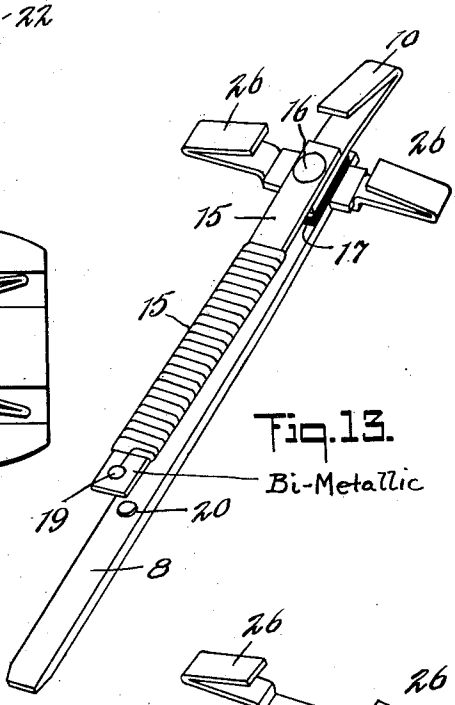


Fig.13.

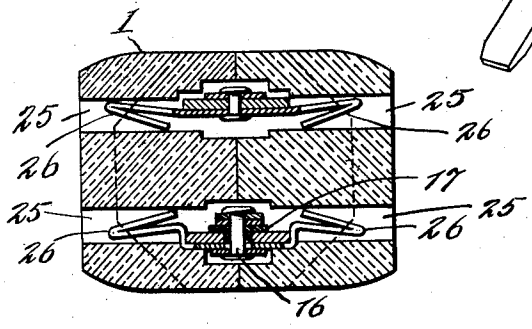


Fig.12.

Fig.14.

INVENTOR
Randolph M. Mann
BY
J. Morton
ATTORNEY

Patented Oct. 9, 1928. 1,687,167

UNITED STATES PATENT OFFICE.

RANDOLPH M. MANN, OF NYACK, NEW YORK.

CONNECTING PLUG.

Application filed March 18, 1926. Serial No. 95,538.

This invention relates to connecting plugs for electric lamp consumption circuits and has for its object to simplify and cheapen such devices. A particular field for which this invention is adapted is for Christmas tree decorative lighting outfits wherein it is desired to have blade contacts at one end for insertion into a standard socket plug, and at the other end one or more pairs of leading out wires for one or more strings of lights, the latter being connected in series or multiple on each string according to well known practice. Another object of the invention is to provide a thermostatic flashing switch in such device for flashing the set; and in case of several sets of lights supplied from one plug, to flash all or one or more of the sets, as may be desired. A further object is to provide a simple and compact construction of relatively few parts, which can be manufactured in quantity and supplied disassembled to manufacturers of tree lighting outfits who simply have to connect the supply wires and assemble. By the construction herein disclosed, a further advantage is obtained of providing a plug for one or more consumption circuits adapted to co-operate with standard plug blades, in case it is not desired to connect the consumption wires and lamp sockets to the plug before being sold.

The invention is illustrated in the accompanying drawings wherein—

Figure 1 is a section of a plug embodying the invention arranged for a single circuit;

Fig. 2 is a section on the line 2—2 of Fig. 1;

Fig. 3 is an interior elevation of one of the body halves;

Fig. 4 is an end view seen from the right of Fig. 1;

Fig. 5 is a perspective view of the flashing switch and blade member;

Fig. 6 is a detail of one of the contacts;

Fig. 7 is a view similar to Fig. 1 with the flashing switch omitted;

Fig. 8 is a view of a modified flashing switch for supplying three outside consumption circuits;

Fig. 9 is a detail of a three arm contact therefor;

Fig. 10 is a perspective view showing a single plug for supplying three circuits;

Fig. 11 is a section thereof;

Fig. 12 is a section on the line 12—12 of Fig. 11;

Fig. 13 is a perspective view of the flashing and blade member; and

Fig. 14 is a detail of one of the contacts.

The body comprises two halves 1, 1 of insulating material which are held together by a screw 2. Each body contains two enlarged slots 3 with smaller, deeper portions 4 to receive arms 5 on the contact members inserted in the slots, these deeper slots being to hold the contact members in place and prevent displacement in either way. At one end of the body are blade slots 7 through which the contact blades 8 pass and at the other end are larger slots 9 through which the blades of the plug pass and make contact with the doubled over spring contacts 10, thus providing for both sides of the circuit. As shown in Figs. 1, 3, 7, 11, the slots 3 merge into a larger chamber 13 receiving the flasher member.

In Figs. 1 to 5 one side of the circuit consists of a plain member 8 held by arms 5 in the slots 4 of the two halves, with the contact finger 10 in slot 9 at the other end; and the other side consists of similar contact finger 10 in slot 9 at one end with co-operating blade 8 at the other end with interposed thermostatic flasher member 15 in the chamber 13. The flasher member 15 is fastened to blade 8 by rivet 16 adjacent arms 5 with insulating disc and bushing 17 interposed. The member 15 is a bi-metallic bar having heating coil 18 thereon with one end connected to contact 19 and the other end to bar 8 under insulation 17, in the well known manner. Co-operating with contact 19 is contact 20 on bar 8. The connection is such that if contacts 19, 20 open, the heating coil 18 is in series between blade 8 and contact 10 so that the heat causes bi-metallic bar 15 to bend towards blade 8 and close contacts 19, 20 to short circuit heater 18, thereby lighting the lights. The heater cools and the bi-metallic bar opens the contacts.

In Fig. 7 both blade members are alike with the flashing switch omitted, thereby forming an ordinary connecting plug of high utility and simple construction, especially for quantity manufacturing inasmuch as the body and conducting parts are standardized and enable

the desired construction to be furnished without duplication of jigs, tools, molds, etc.

In the multiple form shown in Figs. 8–13 inclusive, the additional fingers 10 are added laterally on each side so as to bring the contacts in substantially parallel planes, the body being correspondingly modified to have two or more faces at one end as shown in Fig. 10 for attachment of two or more outside plugs 22 with lines 23 supplying lamps 24. In this form, the slots 25 in the body which receive the lateral arms are in substance continuations of the slots 4 in Figs. 1, 2 and 3, so that the lateral arms in the multiple type not only supply the additional circuits, but also position the conducting members against displacement. This form can be built without the flasher as well as Fig. 7, but it is preferred to embody the flasher therein inasmuch as it is possible by simple change in the connections of the lateral fingers 26 to flash all three circuits at once, or only one, or only two, depending on whether or not the fingers are directly connected to blade 8 or to bi-metallic bar 15 at rivet 16. If the fingers are all connected to bar 15 and the heating coil between contact 19 and to blade 8, that is, with insulation 17 under bi-metallic bar 15, all circuits flash on and off at the same time. If, for example, the lateral fingers 26 are connected to blade 8 by being under the insulation 17, and the end finger 10 with bi-metallic bar 15 by being over insulation 17, the end circuit flashes and the lateral circuits do not, thus leaving considerable choice for the user as to how many circuits to flash.

When sold with the light strings, the ends of the strings are slipped under fingers 10 and soldered, before assembly.

It will be seen that this invention provides a flasher and plug construction of simple, cheap, and standard parts and capable of being readily modified without expensive reconstruction. Various modifications and changes may be made without departing from the scope of the appended claims.

I claim:

1. A connecting plug comprising co-operating chambered body portions recessed to form pairs of end slots, securing means, a contact blade member inserted in each of said slots and projecting in parallel relation at one end to fit plug slots, and having spring contacts at the other end within the slots to receive plug blades, one of said blade members including a thermostatic switch within the chamber.

2. A connecting plug comprising like chambered body portions recessed to form pairs of end slots and having flattened faces to fit together, securing means, a contact blade member inserted and interlocked in said slots and projecting in parallel relation at one end to fit plug slots, and having spring contacts at the other end within said slots to receive plug blades, one of said blade members including a thermostatic switch within the chamber.

3. A connecting plug comprising like chambered body portions recessed to form pairs of end slots and having flattened faces to fit together, securing means, a contact blade member inserted and interlocked in said slots and projecting in parallel relation at one end to fit plug slots, and having plural spring contacts at the other end within plural sets of slots to receive the blades of a plurality of plugs, one of said blade members including a thermostatic switch within the chamber.

4. A thermostatic member for a plurality of circuits comprising a substantially straight blade, a thermostatic bar secured thereto to closely overlie and co-operate therewith, and a plurality of diverging plug finger contacts connected to the blade, said contacts lying substantially in the plane of the blade and the thermostatic bar.

5. A thermostatic member comprising a substantially straight blade having a spring finger at one end and a plug blade at the other, a thermostatic bi-metallic bar mounted on said blade to closely overlie said blade and having an end contact cooperating with the bar, insulation between the blade and the bar, and a heater on said bar and connected at one end thereto and at the other end to the blade.

6. A connector comprising a substantially straight blade adapted at one end to act as a plug blade, a spring finger at the other end to contact with plug blades, a bi-metallic thermostatic bar insulatingly connected at one end to the blade and adapted closely to overlie the same cooperating contacts on the bar and blade and a heater coil on the bar connected at one end to the bar and at the other end to the blade.

7. A connector comprising a chambered body portion having longitudinal and lateral slots, a substantially straight blade disposed in the longitudinal slot and projecting at one end therefrom to act as a plug blade, a spring finger at the other end of the blade and disposed in the slot to receive a plug blade, a bi-metallic thermostatic bar insulatingly connected at one end to the blade and adapted to closely overlie the same, cooperating contacts on the bar and the blade, a heater coil on the bar connected at one end to the bar and at the other end to the blade and arms extending from the blade into the lateral slots to prevent displacement of the blades in the body portion.

8. A connector comprising a substantially straight blade adapted at one end to act as a plug blade, a spring finger at the other end of the blade to receive a plug blade, a bi-metallic thermostatic bar insulatingly connected at one end to the blade and adapted to closely overlie the same, cooperating contacts on the bar and the blade, a heater coil on the

bar connected at one end to the bar and at the other end to the blade, a plurality of arms extending laterally from the blade, said spring finger connected to the bar and the arms conductively connected to the blade.

9. A connector comprising a substantially straight blade having a contact member at each end, a bi-metallic thermostatic bar closely overlying and insulatingly fastened at one end to said blade, cooperating contacts on the blade and bar, a heater coil on the bar having one end connected to the blade and the other end to the bar, said bar when heated adapted to cause engagement of the contacts to short-circuit the coil.

10. A connector comprising a substantially straight blade, a plurality of detachable spring fingers disposed at one end thereof, a thermostatic bar insulatingly supported on the blade and in conductive contact with certain of said fingers, the others of said fingers being in conductive contact with the blade.

Signed at New York in the county of New York, and State of New York, this 15th day of March, A. D. 1926.

RANDOLPH M. MANN.