United States Patent [19]

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[11] **3,928,737**

[45] **Dec. 23, 1975**

[54] **REMOTE CONTROL SWITCHING DEVICE**

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[52] **U.S. Cl.**..... **200/51 LM;** 200/51.05; 200/153 M; 307/114

[51] **Int. Cl.**[2]..... **H01R 13/70**

[58] **Field of Search** .... 307/114; 200/51 LM, 51.05, 200/51.06, 153 M, 51.1, 61.19

[56] **References Cited**

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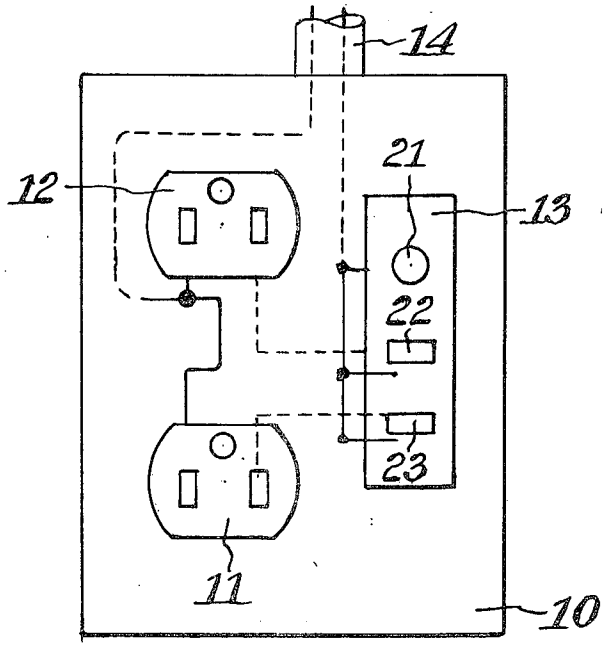
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Primary Examiner—David Smith, Jr.
Attorney, Agent, or Firm—Howard I. Podell

[57] **ABSTRACT**

A remote control switching device for the remote control of lighting or power circuits. The device includes a portable electric cord terminating in a plug at one end and a toggle switch assembly at the other end, together with a wall mountable assembly which may contain a conventional electrical outlet or toggle switch or both, together with a special socket to mate with the plug of the end of the portable cord. The contact members of the socket are formed in pairs of contacts each contact of which may be wired to form a series circuit with an electrical supply line connected to the conventional outlet or toggle switch lead of the wall mountable assembly, with each pair of said contacts being engaged together to complete said series circuit, except when a prong of the mating plug of the portable cord engages said pair of contacts. The plug prong is coated on one side with an insulator so that the series switching circuit is only completed, with the plug mated in the socket by the throwing of a toggle switch of the portable electric cord.

4 Claims, 7 Drawing Figures



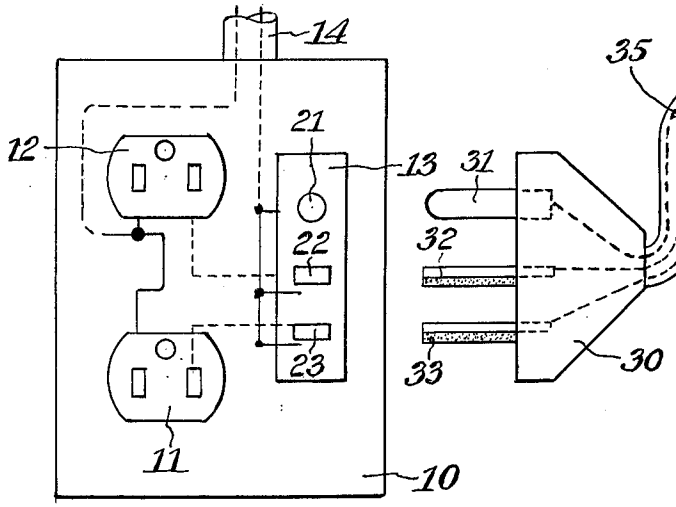


FIG. 1

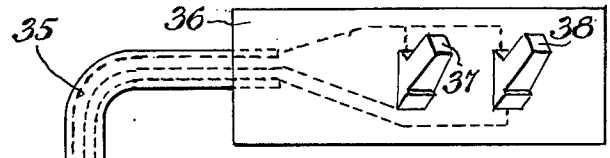


FIG. 2

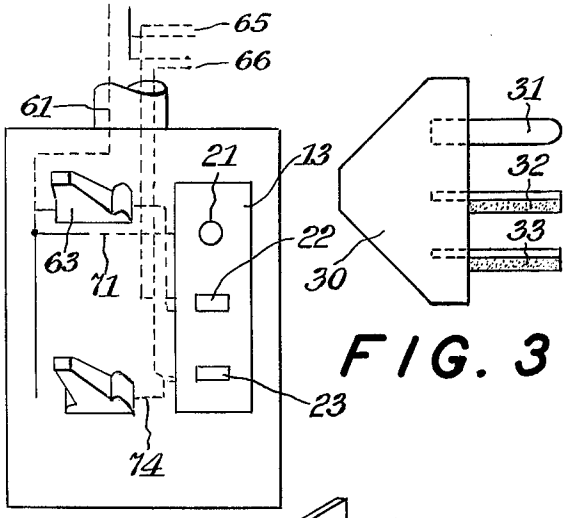


FIG. 3

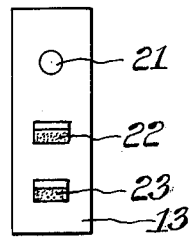


FIG. 4

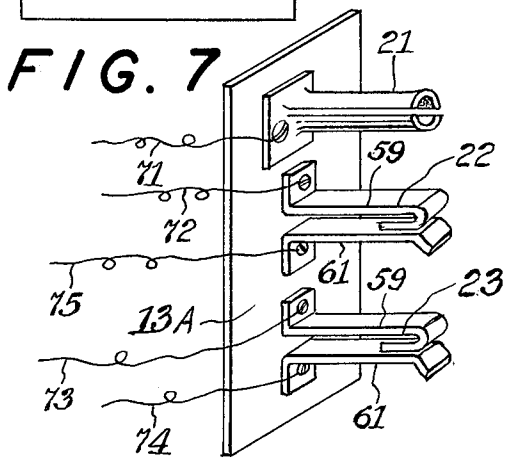


FIG. 5

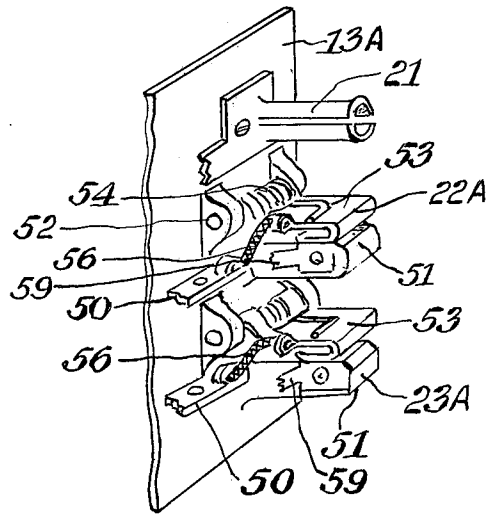


FIG. 6

FIG. 7

REMOTE CONTROL SWITCHING DEVICE

SUMMARY OF THE INVENTION

A remote control switching device set for connection of portable cable from an electrical outlet or fixed switch box to a remote switch on the portable cable for the actuation of lighting or power circuits connected to the outlet or fixed switch box.

The device includes a portable electric cord terminating in a plug at one end and a toggle switch assembly at the other end, together with a wall mountable assembly which may contain a conventional electrical outlet or toggle switch or both, together with a special socket to mate with the plug of the end of the portable cord. The contact members of the socket are formed in pairs of contacts each contact of which may be wired to form a series circuit with an electrical supply line connected to the conventional outlet or toggle switch lead of the wall mountable assembly, with each pair of said contacts being engaged together to complete said series circuit, except when a prong of the mating plug of the portable cord engages said pair of contacts. The plug prong is coated on one side with an insulator so that the series switching circuit is only completed, with the plug mated in the socket by the throwing of a toggle switch of the portable electric cord.

These units may be of great advantage in class-room, conference room, auditorium, or any place where room lights and projector equipment are to be controlled by remote switches.

BRIEF DESCRIPTION OF THE DRAWINGS:

The objects and features of the invention may be understood with reference to the following detailed description of an illustrative embodiment of the invention, taken together with the accompanying drawings in which:

FIG. **1** is a schematic diagram of a remote switch controlled electrical outlet socket;

FIG. **2** is plan view of a remote switch unit and connector plug;

FIG. **3** is a side view of a connector plug;

FIG. **4** is a plan view of a connector plug;

FIG. **5** is a perspective view of the contacts of a connector socket;

FIG. **6** is a perspective view of an alternate embodiment of a connector socket; and

FIG. **7** is a schematic diagram of a remote switch controlled electrical wall switch socket.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Turning now descriptively to the drawings, in which similar reference characters denote similar elements throughout the several views, FIG. **1** illustrates an electrical outlet box **10** with two conventional female outlet receptacles **11** and **12**, each of which is connected to a feemale contact of a female socket **13** and a wire of the external power supply cable **15.**

Female socket **13** incorporates three electrical contacts **21, 22** and **23** each of a distinctive shape so that engagement may only be made in the proper polarized manner by the distinctive mating contacts **31, 32** and **33** of male electrical plug **30.**

The contacts **31, 32** and **33** of plug **30** are connected by flexible cable **35,** as shown in FIG. **2** to a hand

switch box **36** at the end of cable **35** with switches **37** and **38** in box **36** such that when plug **30** is engaged in socket **13,** switch **37** controls the power supply from electrical line **14** to outlet **12,** and switch **38** controls the power supply of line **14** to outlet **11** of outlet box **10.** A slide projector cable may be plugged into outlet **11** and the plug of a light fixture supply cord may be plugged into outlet **12** so that operation of switches **37** and **38** will control the lights of the fixture and of the slide projector independently at a remote location from either the slide projector or light fixture.

As shown in FIGS. **2–4,** the plug **30** is fitted with three projecting contacts, one of which, **30,** is cylindrical in shape. The other two contacts **32** and **33** are flat members with one side covered by an insulator coating **39.** Mating socket **13** is fitted with female contact **31** in the form of a split metal cylindrical sleeve.

As shown in FIG. **5,** socket **13** is fitted with one tubular sleeve contact **21** of a size to mate with the grounding male contact **31** of plug **30** and two split spring contact assemblies **22** and **23** which each individually grip about flat male contacts **32** and **33** respectively when plug **30** is inserted into socket **13.**

With the plug **30** removed from socket **13,** contact assemblies **22** and **23** each act as a spring-biased switch to connect together the two metal members **59** and **61** of each contact assembly **22** and **23** so that the circuit leading from outlets **11** and **12** of box **10** or from the power line **64** of switch box **62** are completed. Introduction of the flat male contacts **32** and **33** into the socket **13** acts to separate the metal members **59** and **61** of each female socket contact assembly, with the insulated coating **39** of each male plug contact **32** and **33** serving to break the circuit through each contact assembly **22** and **23,** putting the switches **37** and **38** in series respectively with the power circuits leading respectively to either outlet box **10** or to the load circuits leading from switch box **62.**

As shown in FIGS. **1** and **5,** outlet box **10** is fitted with two female sockets **11** and **12** to which conventional electrical male portable line cord plugs may be attached. One female contact of each socket **11** and **12** is connected to a common line **15** with the other female contact of each socket connected respectively by wire **73** or **72** to contacts **59** of contact assemblies **23** and **22** respectively. Contacts **61** of contact assemblies **23** and **22** are joined in common by wires **74** and **75** to the other power line **14** leading into outlet box **10,** which is also connected by wire **71** to the contact sleeve **21.**

Alternately, as shown in FIGs. **5** and **7,** one pole of each switch **63** of switch box **62** is connected to the common power line **64,** with the pole of each switch **63** being joined by a wire **75** or **74** to a contact **61** of contact assembly **22** or **23** respectively. Contact **59** of each contact assembly **22** or **23** is individually connected to a line **66** or **65** leading respectively to an indiviaual electrical load. Contact sleeve **21** is joined by wire **71** in switch box **62** to the common power line **64.**

As shown in FIG. **6,** the contact assemblies **22A** and **23A** of the socket **13A** may each consist of two flat metal members **51** and **53** with a torsion spring **54** mounted against each contact member **53** to maintain contact member **53** in contact with member **51** when there is no plug **30** in the socket **13A.** A lug **50** for joining to an external wire is joined to a flexible wire **56** leading to each contact member **53,** and lugs **59** are fastened to each contact member **51** for joining to external wires.

Since obvious changes may be made in the specific embodiment of the invention described herein, such modifications being within the spirit and scope of the invention claimed, it is indicated that all matter contained herein is intended as illustrative and not as limiting in scope.

Having thus described the invention, what I claim as new and desire to secure by letters Patent of the United States is:

1. A female electrical socket and a mating attachable plug for individually joining some of the electrical conductors in the socket to the conductors of the electrical plug, in which contact making device of the female socket is an assembly of two contact members that are each attachable to individual conduct wires and spring-biased to contact each other except when a male contact of the plug is engaged in the contact assembly, said male contact then acting to separate the two contact members from contacting each other,

said male contact being in the form of a metal strip, a section of which is coated with an insulating material and shaped so that, when engaged, the male contact of the plug electrically contacts one of the two contact members of the contact making device of the socket and is insulated electrically from the other contact member of the assembly.

2. The combination as recited in claim **1** with the socket fixed to an electrical outlet box fitted with an electrical outlet receptacle, with a contact of said receptacle electrically connected to a contact member of a contact making device of the female socket.

3. The combination as recited in claim **2** with the male electrical plug connected by an electrical cord to an electrical switch for remote control of the electrical outlet receptacle.

4. The combination as recited in claim **1**, with the socket connected to an electrical box fitted with a switch, with each of the poles of the switch connected to one of the contact members of a said contacting making device.

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