

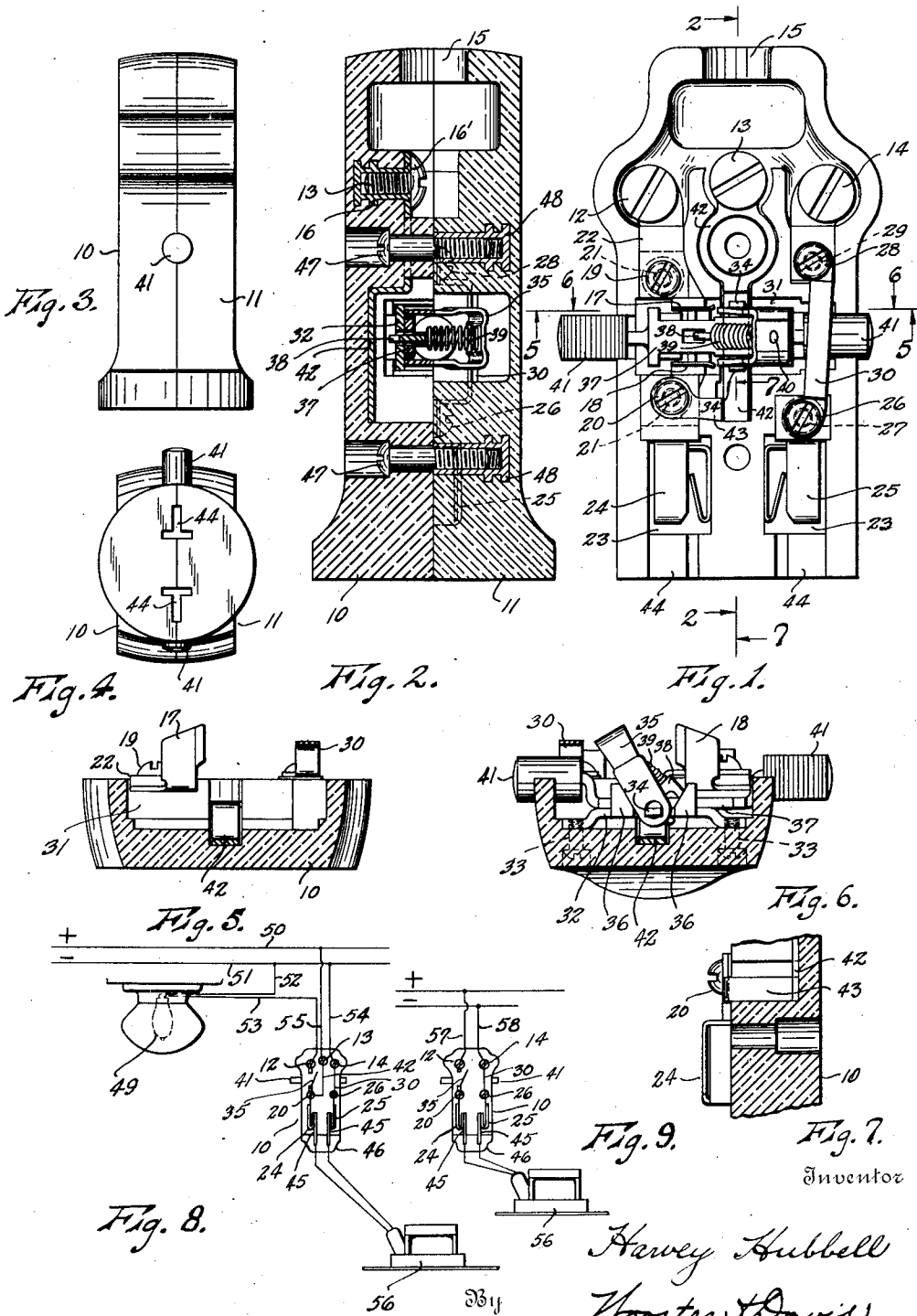
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SWITCH PLUG

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SWITCH PLUG.

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This invention relates to electric control devices, and has for an object to provide an improved device of this character which may be employed either as a two wire feed through cord switch for use with any of the portable electrical devices, such as electric heaters, vacuum cleaners, flat irons and the like, or may be used as a pendant switch, such as are used for controlling overhead lights, and at the same time employed to supply current to portable electric devices of the type mentioned.

With the foregoing and other objects in view, I have devised the construction illustrated in the accompanying drawing forming a part of this specification, similar reference characters being employed throughout the various figures to indicate corresponding elements. In this drawing,

Fig. 1 is a plan view of one of the body sections of the device with the various elements mounted thereon, and with the other section removed.

Fig. 2 is a longitudinal section through the complete device taken substantially on line 2—2 of Fig. 1.

Fig. 3 is a side elevation of the complete device.

Fig. 4 is an end elevation looking toward the receptacle end of the device.

Fig. 5 is a transverse section substantially on line 5—5 of Fig. 1.

Fig. 6 is a section on the same line looking in the opposite direction, as indicated by line 6—6 of Fig. 1.

Fig. 7 is a detail section of a portion of the body section shown in Fig. 1 taken substantially on line 7—7 of this figure.

Fig. 8 is a diagrammatical drawing showing the use of the device as a combined pendant switch and attachment plug, and

Fig. 9 is a similar view illustrating its use as a two wire feed through cord switch.

The device comprises a body made of two sections 10 and 11 of insulating material, in which the various electrical elements are mounted and by which they are enclosed. For convenience in manufacture, inspection and repair the electrical devices are all mounted on one section 10 and the other section 11 is applied after the device is assembled to close the open side of the section 10 and enclose the electrical devices.

Mounted adjacent one end of the section 10 are a plurality of binding posts which

may vary in number. I contemplate in the present construction to use either two or three of these binding posts depending on whether the device is to be employed as a feed through cord switch or as a combined pendant switch and attachment plug. In Figs. 1 to 8 I have shown the elements which are employed for the latter use, and the device is so constructed that when it is to be used as a two wire feed through cord switch certain of these elements are merely omitted, the construction being otherwise unchanged.

Referring to Figs. 1 to 8, there are mounted in the section 10 adjacent one end thereof three binding posts 12, 13 and 14 adapted to be connected to lead wires which may pass through an opening 15 in the adjacent end of the body. The screw for the central binding post is threaded into a suitable insert 17, shown in Fig. 2, and where the body is made of molded insulating material this insert is preferably molded in the section. Mounted adjacent one side of the section and spaced from each other longitudinally thereof is a pair of switch contacts 17 and 18 secured to the body section by suitable screws 19 and 20 respectively threaded into suitable inserts 21 in the body section. The screw 19 is also used to secure the binding post 12 and through the metal strap 22 to form an electrical connection between this binding post and the contact 17. The body section is provided adjacent its other end with recesses or pockets 22 in which are mounted receptacle contacts 24 and 25. The contact 24 is also secured in the body section by the screw 20 and has electrical connection with the switch contact 18. The other receptacle contact 25 is secured in the casing by a screw 26 threaded into an insert 27 and the third binding post 14 is secured in the section by a screw 28 threaded into an insert 29. The screws 26 and 28 are also employed to connect a jumper strap 30 with the binding post 14 and the contact 25 to form an electrical connection between them.

Mounted in a suitable recess 31 in the body section 10, is a switch support 32 secured to the section by suitable screws 33. This support is provided with laterally projecting pivot studs 34 upon which the movable switch element 35 is pivotally mounted. This element is preferably substantially U-shaped, as shown, and has openings adjacent

the free ends of the sides thereof to receive said pivot studs. The support 32 is also provided with upwardly projecting stop lugs 36 to limit the swinging movements of the switch element. Mounted to slide on the support between the lugs 36 is a reciprocable operating member 37 connected to one end of the member 38 supporting one end of the compression spring 39, the other end of this spring embracing a stud 40 carried by the free end of the switch element. The operating member 37 is provided with buttons 41 projecting through openings in the sides of the casing so that they are accessible for operation at the outside of the body.

The central binding post 13 is electrically connected with the switch contact 18 and the receptacle contact 24 through the strap 42. This strap is secured to the insert 16 by passing the end of the insert through the strap and spinning it over, as shown at 16', and the strap extends downwardly and under the support 32 and is spaced therefrom, as shown in Fig. 2. It is provided with an extension 43 on the other side of the switch which extends upwardly and is secured by the screw 20. In order to be sufficiently spaced from the switch element 35 and to clear the operating member 41 the jumper strap 30 is made substantially U-shaped, as shown in Fig. 2, and projects into a recess in the section 11 and above the member 41 and the switch element. The end of the body adjacent the receptacle contacts 24 and 25 is provided with inlet openings 44 for passage of the projecting contact blades 45 of an attachment cap 46, as shown in Figs. 8 and 9. The two sections of the body are secured together by suitable screws 47 passing through one of the sections, in the present case the section 10, and threaded into metal inserts 47 in the other section.

When the device is to be used as a combined pendant switch and attachment plug the connections are made, as indicated in Fig. 8. In this figure 49 indicates any desired type of overhead lighting fixture and 50 and 51 the feed wires for this fixture. One of these feed wires, as 51, is connected by a wire 52 to the fixture, and the other wire 53 from the fixture is connected to the binding post 12. The wire 51 is also connected to binding post 14 by wire 54. The other feed wire 50 is connected to the central binding post 13 by wire 55. It will now be apparent that the switch 35 will control the lighting fixture, but that no matter in what position this switch may be the receptacle contacts 24 and 25 are in electrical connection with feed wires 50 and 51 respectively, and therefore, by inserting the cap 46 of a movable attachment 56 current may be secured for this attachment at any time regardless of the position of the switch. The three wires 53, 54 and 55 may be in a single cord

for convenience and to give a neat appearance, this cord passes through the opening 15 in the ends of the body member.

When the device is to be used as a two wire feed through cord switch the connections are made, as shown in Fig. 9. In this arrangement the feed wires 50 and 51 are connected to the binding posts 12 and 14 respectively by the wires 57 and 58 respectively, and in this arrangement the central binding post 13 and strap 42 are omitted. It will be apparent that the connection from one of the receptacle contacts, as contact 24, to its feed wire is controlled by the switch 35. In this arrangement the switch is, therefore, used to control the circuit through the movable attachment 56.

It will be apparent that, as the body is made in two sections which are separable longitudinally thereof, when these sections are separated all the elements are easily accessible. This greatly facilitates the assembly of the device, the making of the necessary electrical connections, inspection and repair. The device is also simple in construction, and therefore, is not likely to be easily gotten out of order in operation.

Having thus set forth the nature of my invention, what I claim is:

1. In an electrical device of the character described, an insulating body divided into two sections longitudinally thereof, the sections of said body being recessed on their opposed faces to provide an entrance for lead wires at one end, recesses adjacent the opposite end with guide openings leading from said end to the recesses for passage of the terminal blades of an attachment cap, and a switch chamber intermediate the recesses and the lead wire entrance, three binding posts mounted in one of the sections on opposite sides of and in alignment with said entrance, spaced switch contacts in the switch chamber connected to two of said posts, a movable switch element adapted to bridge said contacts, means for operating the switch element, contacts in said recesses electrically connected to one of the binding posts connected to the switch contacts and the third binding post respectively, and means for securing the sections together to enclose the contacts and switch.

2. In an electrical device of the character described, an insulating body divided into two sections longitudinally thereof, conductors arranged between the opposed faces of the body parts, said body parts being recessed to form entrance for lead wires, channels for the conductors, and a switch chamber, binding posts mounted adjacent said lead wire entrance and mounted respectively on opposite sides of and in alignment with said entrance, a switch contact connected with one of the side binding posts, receptacle contacts mounted in the opposite end of the body

from the binding posts, conductors connecting one of the side binding posts and the binding post mounted in line with said entrance and the receptacle contacts, a switch
5 contact extending from one of said conductors into predetermined location with respect to the first mentioned switch contact and spaced therefrom, a reciprocating operating member mounted between said switch
contacts and having extensions projecting
10 through the opposite sides of the body, a movable switch element adapted to make and break connections between said switch contacts, and an operative connection between
15 the operating member and the switch element for operating the latter.

In testimony whereof I affix my signature.

HARVEY HUBBELL.