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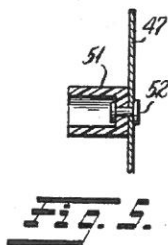
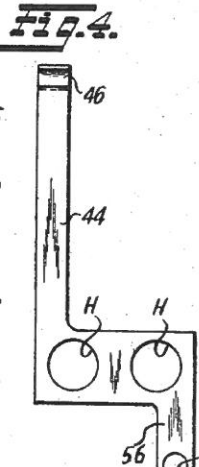
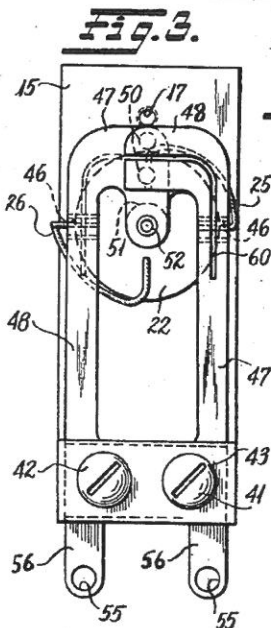
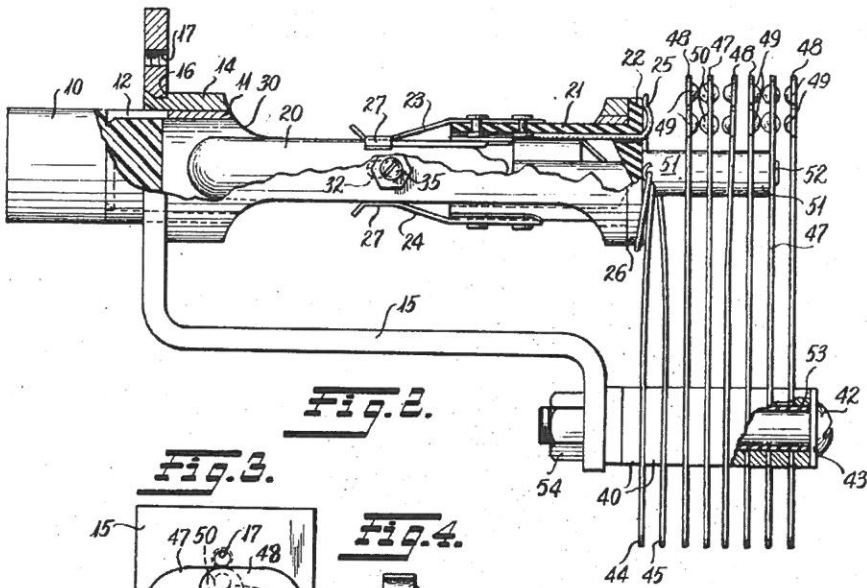
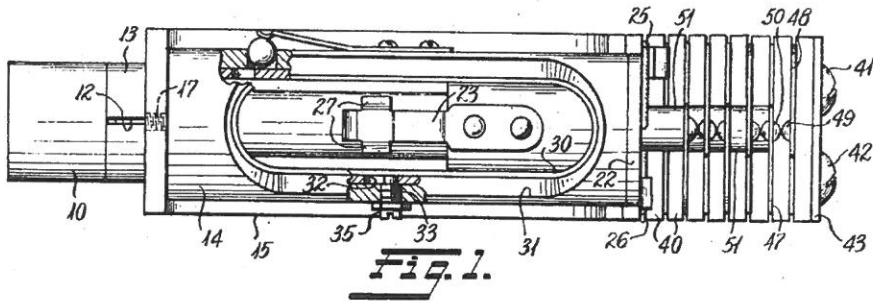
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ELECTRIC MULTIPLE SWITCH

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2 Sheets-Sheet 1



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ELECTRIC MULTIPLE SWITCH

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4 Claims. (Cl. 200—1)

This invention relates to switches and in particular 15 to push-button multiple switches.

It is an object of this invention to provide a switch which will control a number of circuits simultaneously.

It is a further object of this invention to provide a switch that is simple and compact in construction and readily assembled.

Yet, another object of this invention is to provide a switch which eliminates side motion thereby eliminating unnecessary wear and tear.

Another object of this invention is to provide a switch 25 having a minimum of moving parts.

These and other objects of this invention will be apparent from the following description and claims.

In the accompanying drawings which illustrate by way of example various embodiments of this invention,

Fig. 1 is a top plan view of the switch broken away in part;

Fig. 2 is a side elevational view of the switch broken away in part;

Fig. 3 is a rear elevation of the switch;

Fig. 4 is a plan view of the lamp spring connecting member;

Fig. 5 is a fragmentary view showing one of the separating members;

Figs. 6 and 7, Figs. 8 and 9 and Figs. 10 and 11 show 40 plan views of various forms of cooperating spring leaf contact members which may be used interchangeably with the cooperating spring leaf contact members shown in Figs. 1, 2 and 3.

Referring to Fig. 1, the switch comprises a transparent plastic plunger button 10 which is attached to a tubular plunger 11. The plunger 11 is slotted at one end as at 12 to provide spring fingers 13 which grip the button 10 and secure it rigidly to the plunger 11.

Plunger 11 is slideably mounted in an outer cylindrical tube 14 which is secured to a bracket member 15 by a welding or spinning or the like operation. A shoulder 16 on tube 15 provides a seat for the bracket member 15. The bracket is of S-shaped construction and has a threaded opening 17 for receiving a screw or nail for mounting purposes.

An electric lamp 20 such as a Sylvania 60A-2 type bulb is inserted into a socket 21. The socket 21 is carried by the plunger 11 and has a base 22 limiting the depth of insertion of the socket 21 into the plunger 11. Contacts 23 and 24 are secured to opposite sides of a socket 21 and engage corresponding contacts on the lamp 20. Leads 25 and 26 run from contacts 23 and 24 through the base 22 of the socket 21. Contacts 23 and 24 have gripping members 27 which prevent the lamp 20 from sliding from the socket.

Plunger 11 and tube 14 have cut outs 30 and 31 respectively which serve to keep the bulb cool and provide for circulation of air about the lamp 20.

A slot 32 is provided in the side of plunger 11. A hole 33 in tube 14 is provided in which a screw 35 is

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inserted which passes into the slot 32 limiting the travel of the plunger 11.

A series of insulators 40 having holes therein for receiving bolts 41 and 42 are secured to bracket member 15. A back-up plate 43 maintains constant pressure on the insulators and prevents damage to the end insulator. Lamp spring connecting members 44 and 45 are provided with holes H to receive the bolts 41 and 42. Insulating members 40 are placed between the lamp spring connecting members. The ends of lamp spring connecting members 44 and 45 are recessed to form fingers 46 which receive the ends of leads 25 and 26 respectively. The ends of the leads may be soldered or otherwise secured to the fingers 46.

Alternately spaced cooperating spring leaf contact members 47 and 48 are mounted upon the bolts 41 and 42 in a manner similar to lamp spring connecting members 44 and 45. The spring leaf contact members 48 each have two contact points 49 on one side and the spring leaf contact members 47 have two contact points 50 on each side.

Spring leaf contact members 47 have spacer insulating members 51 (Fig. 5) secured thereto by a rivet 52 or the like. It is to be noted that spacers 51 are cup-shaped. Spring leaf contact members 47 are movable. Spring leaf contact members 48 are stationary.

An insulating sleeve 53 is provided for insulating the bolts 41 and 42 from the lamp spring connecting members 44, 45 and the cooperating spring leaf contact members 47 and 48. Nuts 54 prevent dislocation of the bolt and contact assembly from the bracket 15.

Member 44, 45, 47 and 48 each have a hole 55 in a projecting finger 56 in which may be inserted a circuit lead wire.

The stationary, that is, the non-movable pairs of contact springs 48 are relieved so that the spacers 51 do not engage therewith; i. e. the movable members 47 move freely without moving the stationary members 48.

Operation

Referring to Fig. 2, as shown, the contact points 50 on the left hand side of movable members 47 engage the contacts 49 on the right hand side of stationary members 48. When the plunger is depressed, the blades 47 move to the right with the plunger and contact is broken with the aforementioned contacts and contact points 50 on the right hand side of movable members 47 engage the contact points 50 on the left hand side of stationary members 48.

Each of the stationary members 48 is provided with a slit or slot 60 which allows for positive action during the contact operation.

Figs. 6 and 7, 8 and 9, and 10 and 11, show cooperating spring leaf contact members which may be interchanged with contact members 47 and 48.

Fig. 6 shows a stationary contact arm 75 centrally located on the base 71 of member 70. A central opening 72 is provided to allow for clearance of the spacer 51. It is to be noted that the end of the contact member 70 is slotted as at 73 in a manner similar to the slots shown in Fig. 3 of contact spring 47 except that in contact member 47, the end of the member makes a right angle turn. Fig. 7 shows the mating contact member 80 of Fig. 6, the central portion of this member has a small opening 81 through which the rivet 52 of the spacer member 51 is passed. Arm 85 is disposed centrally of base 81 of member 80.

Figs. 8 and 9 show a stationary contact member 100 and a movable contact member 90 which could be substituted for members 47 and 48. Members 90 and 100 have spring arms 94 and 95 and 104 and 105 respec-