

Sept. 8, 1942.

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2,295,068

REMOTE CONTROL SWITCH

Filed July 24, 1940

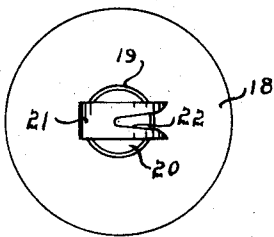
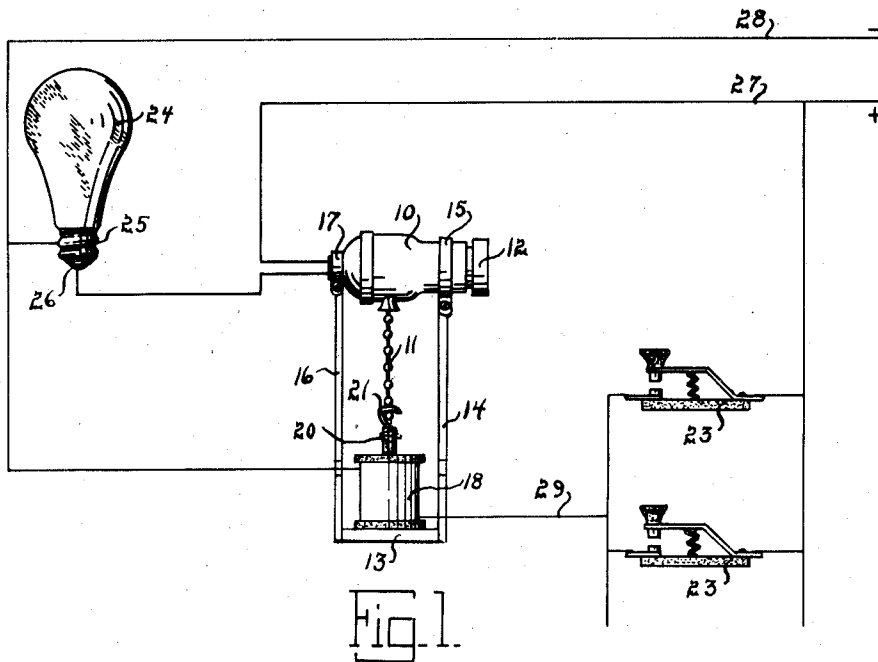


Fig. 2

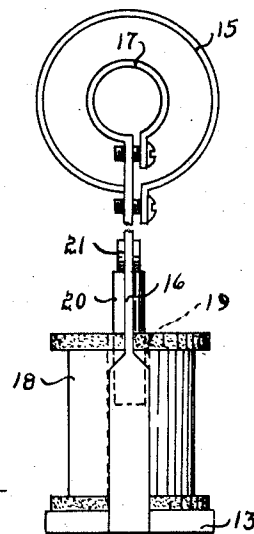


Fig. 3

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2,295,068

REMOTE CONTROL SWITCH

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Application July 24, 1940, Serial No. 347,181

3 Claims. (Cl. 200-111)

The principal object of this invention is to provide a remote control switch which may be placed near a light fixture or similar item permitting the light fixture or like to be turned on from remotely stationed switches without resorting to complicated wiring circuits.

A further object of my invention is to provide a remotely controlled electric switch which will conform to all electric codes and regulations and which will leave the circuit dead when it is in an off position.

A still further object of this invention is to provide a remote control switch for electrical devices that is extremely economical in manufacture, durable and efficient in use.

These and other objects will be apparent to those skilled in the art.

My invention consists in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained as hereinafter more fully set forth, pointed out in my claims and illustrated in the accompanying drawing, in which:

Fig. 1 is a diagrammatical view of a wiring circuit having my switch incorporated therein.

Fig. 2 is an enlarged top elevational view of the solenoid coil or magnet.

Fig. 3 is an enlarged side elevational view of the magnetic switch control and bracket unit.

Heretofore, it has been necessary, when using remotely situated lights, motors and the like, to use complicated three-way switches when controlling these lights from more than one point. Also, it has been necessary to run four wires from the electrical apparatus to the switching point. This made this type of installation costly. One of the principal uses for remote controlled switches is on the farm, where it is desirable to have yard lights which may be controlled from various buildings. Such installations have heretofore required such costly and elaborate switching and wiring arrangements as to make them beyond reach of the parties needing the same. Furthermore, it has been difficult when using these switches to comply with the various electrical codes, especially where direct current is used on these installations which requires that the positive side of the circuit be dead when the circuit is turned off. I have overcome such disadvantages as will be appreciated and as will be hereinafter more fully set forth.

Referring to the drawing, I have used the numeral 10 to indicate an ordinary pull chain type of socket having the ordinary ball link chain 11, as shown in the drawing. This ordinary type

socket constitutes the switch member used in my circuit and in order to make it function as a switch and to further increase the efficiency of the circuit, I have provided that a fuse plug 12 be placed in the socket ordinarily occupied by a light bulb or the like, thus giving a continuous circuit through the socket when its incorporated switch is closing the circuit. The numeral 13 indicates a base member having an upwardly extending arm 14 secured thereto, which in turn has a split ring receiving element 15 secured to its upper end and which may be clamped around one end of the socket switch 10. The numeral 16 indicates a similar vertical arm member having its lower end secured to the base 13 extending upwardly and terminating in a split ring member 17, which secures the rearward end of the socket switch 10 in position. It will here be noted that an ordinary type of pull chain switch may be used in place of the socket switch 10 and the fuse 12 placed in another position, however, by using the socket switch 10, a switch is obtained as well as a receiving socket for a fuse in the circuit. The numeral 18 indicates an ordinary solenoid coil or magnet having a hole 19 in its center in the usual manner. The numeral 20 indicates an iron rod or the like which is loosely fitted in the hole 19 and upon which the solenoid coil 18 will act when current is passing through the coil. The numeral 21 indicates a hook portion secured to the top of the core bar 20 and having a notch 22 cut therein for receiving one of the ball joints of the chain 11 as shown in Fig. 1 of the drawing. As is well known, the socket switch 10 has a switch and spring therein so that when the chain is pulled down, the switch is open and must then be released so that the chain returns and is pulled to its extended position again for closing the circuit. In other words, one complete reciprocating motion of the chain 11 is necessary to turn the switch on and one complete reciprocating motion is necessary to pull the switch off. Inasmuch as the bar 20 is above the magnetic field of the coil 18, the magnetic field of the coil, when it is in communication with a source of electrical energy, will pull the bar downwardly, thus pulling the chain 11 and actuating the switch 10 after which the spring within the switch 10 will return the chain 11 as well as the bar 20 and hook 21 to a position where it will actuate again the next time the current is applied to the magnetic coil 18. To make possible this momentary influx of current into the coil 18, I have provided the switches 23, which are merely manually actuated contact

points having a spring return means thereon, so that as soon as manual pressure is released on the switch the switch will open. With my circuit and switch, any number of these manual switches may be used in any number of points by merely connecting them in multiple as shown in Fig. 1. The numeral 24 indicates an ordinary incandescent bulb or similar electrical fixture having the sleeve contact point 25 and the center point contact 26.

The electrical wiring incorporated in my circuit is as follows, and inasmuch as the same circuit would be followed for alternating current without relation to the polarity of the current I will describe my circuit for use on direct current. I have used the numeral 27 to designate the positive line of the electrical circuit. This positive line 27 is in communication with one side of the socket switch 10 and with one pole of each of the switches 23. The numeral 28 indicates the negative line of the electrical current which is connected to the sleeve contact 25 of the bulb 24 and is also connected to one side of the solenoid coil 18. The numeral 29 indicates an electric lead line in communication between the other side of the solenoid coil and the other pole of each of the switches 23. By this arrangement, when any one of the switches 23 is manually closed, the solenoid coil will be actuated, causing the bar 20 to be pulled to the center of the magnetic field of the coil 18 and actuating the pull chain 11, thus closing the circuit to the bulb 24. Upon releasing the switch 23, the chain will return to its retracted position so that the next time the switch 23 is actuated, the circuit to the bulb 24 will be broken. When the switches 23 and the socket switch 10 are in their open positions, it will be noted that the circuit is dead that no positive current will be flowing into the coil 18 or into the receptacle for holding the bulb 24. Obviously any number of bulbs can be controlled by this method, and motors or other electrical apparatuses utilized in place of the bulb 24. Inasmuch as the bulbs and the socket switch are generally placed adjacent a power pole, it is only necessary that two wires be run to the various buildings or points where it is desired that the switches 23 be located, thus simplifying the wiring and installation of my switch.

Thus it will be seen that I have provided an extremely simplified remote control switch and circuit which is extremely economical to manufacture, which will pass the electrical codes governing such circuits, that is free from complicated relays and the like, that does not consume additional current for its operation, and which permits the operation of electrical devices from several remote points. Obviously the basis for the simplification of the circuit is my novel re-

mote control switch assembly and any kind of a switch requiring a complete reciprocating movement for each of its two positions may be used in place of the socket switch 10. With my device, the hook 23 may be placed over any one of the ball links 11 for adjusting the throw of the switch relative to the pull of the magnetic field of the coil 18 providing a simplified adjustment of the switch member. The whole switch assembly may be shielded and weather-proofed, and an economical remote control switch is thus obtained.

Any means may be employed for supporting and holding the socket switch 10 in spaced relationship to the magnet 18, and the support arms 14 and 16 may be secured directly to the coil form 18.

Some changes may be made in the construction and arrangement of my improved remote control switch without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims any modified forms of structure or use of mechanical equivalents which may be reasonably included within their scope.

I claim:

1. In a device of the class described, a base member, a solenoid coil mounted on said base member, a bar member capable of being actuated by the magnetic field of said solenoid coil when said solenoid coil is in communication with a source of electrical energy, a hook portion secured to said bar, and arms formed on said base member capable of supporting an ordinary pull chain lamp socket; said pull chain being engaged by said hook portion for operating said pull chain and said lamp socket when said solenoid coil is operated.

2. In a device of the class described, a frame member, upwardly extending arms on said frame member for supporting and securing thereto a lamp socket of the pull chain type, a solenoid coil secured to said frame member, a core bar in said solenoid coil capable of being reciprocated by said coil when the coil is energized, and an engaging means on the end of said core bar for engaging the pull chain of the lamp socket.

3. In a device of the class described, a base member, a solenoid coil mounted on said base member, a bar member capable of being actuated by the magnetic field of the coil when said coil is energized, and engaging means secured to said bar, and arms formed on said base member capable of supporting an ordinary pull chain lamp socket so that said chain is engaged by said engaging means on said bar for pulling the pull chain on said lamp socket when said coil is energized.

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