

UNITED STATES PATENT OFFICE

JOHN D. GARRETT, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE ARROW-HART & HEGEMAN ELECTRIC COMPANY, OF HARTFORD, CONNECTICUT, A CORPORATION OF CONNECTICUT

PLURAL SWITCH OPERATING MEANS

Application filed October 30, 1930. Serial No. 492,318.

In radio receiving sets all the amplifying tubes may be needed when the set is tuned to "bring in" a distant station but, it is often desirable to "cut out" a number of amplifying tubes when the set is tuned to a local station. It is possible by means of known circuits to use a three element switch which when in one position will put all the tubes in circuit and in the other position will connect only certain selected tubes in the circuit. Besides this three element switch another switch is usually provided to disconnect the source of power from the radio set. These switches often are toggle snap switches.

It is an object of my invention to provide a single actuator to turn on the power switch and also to control the local-distance switch. Another object of my invention is to provide a single actuator to control two toggle snap switches which are adapted for use in the above circuit.

Another object of my invention is to provide an operating means for switches of the above type, which will be compact, easy to operate and composed of a small number of easily made parts.

Other objects will appear as my invention is described in connection with the accompanying drawing.

In the drawing:—

Fig. 1 is a side elevation view of a pair of switches and an operating means therefor constructed according to the principles of my invention.

Fig. 2 is a plan view of the switches and operating means shown in Fig. 1.

Referring to the drawing, the switches A and B, which are to be controlled are toggle type switches having a switch mechanism of the type shown in Guett Patent No. 1,280,018, and having a switch base and contact structure of the type shown in Guett Patent No. 1,744,629, dated January 21, 1930. In the present invention one of the switches, A, need only be provided with fixed contacts at one end of the base, since that switch will be used ordinarily only to make or break the circuit to the power supply. The other switch, B, however must have one or more contacts at each end of the base in order to control the

circuits for local or distance reception as above mentioned.

Power switch A is controlled by a toggle lever 10 while "local distance" switch B is controlled and actuated by an oscillatable sleeve 12 which is connected with the switch mechanism. Both of these switches are secured upon a U-shaped metal bracket 14, the switch A being secured by a nut screwed on a boss extending through a hole in one leg of the bracket while switch B is secured in a similar manner to the base of the bracket. The toggle lever 10 and the sleeve 12 are both controlled and actuated by a reciprocable and rotatable switch control shaft 16. This control shaft is round and can slide and rotate within a bushing 18 located in the leg of the U-shaped bracket opposite to the switch B. The inner end of the control shaft 16 slidably engages the sleeve 12 and in order that this sliding relationship may be maintained while at the same time the shaft 16 may rotate the sleeve 12, a key 20 is provided on the inner end of the control member. This key slides in a longitudinal slot 22 in the sleeve. Thus when the shaft 16 is rotated the key 20 engaging one side or the other of the slot 22 causes the sleeve to be rotated to operate switch B.

In order to operate the switch A, the mid-portion of the shaft 16 is reduced in diameter, as at 17, to fit within a slot in the spheroidal head of the toggle lever 10. The reduced portion 17 is just long enough to permit the reception of the spheroidal head of the toggle lever. Thus when the shaft 16 is pushed in or pulled out the shoulders adjacent the reduced portion of the shaft engage the spheroidal head to move the toggle lever and cause actuation of the switch A. A knob 30 is provided on the end of the control shaft 16 whereby the control shaft may be more easily reciprocated or rotated.

The full line position shown in Fig. 1 shows the power switch A "on" and the local-distance switch B in position to connect only a few of the tubes for receiving local signals. The dotted line position in Fig. 1 shows the power switch A "off" and local-distance switch B in position to connect all the tubes

for distance receiving. When the switch A is in either "on" or "off" position the switch B may be actuated to the dotted position by simply rotating the control member 16 counterclockwise. Thus either the local circuit or distance circuit can be completed by merely rotating the knob 30 for a fraction of a revolution to cause the key 20 and slot 22 to occupy the full line position (local "on"), or the dotted line position (distance "on").

Although I have shown only two switches it is obvious that three or more could be actuated in the same manner. Therefore I do not limit my invention to the construction shown nor to use in a radio receiving circuit, nor do I limit it to the specific construction of the switches shown herein or in Guett Patents Nos. 1,744,629 and 1,280,018.

I claim:—

1. The combination comprising a bracket, a plurality of switches supported thereon, slotted operating members projecting from said switches, and a single control member having means engaging in the slots of said operating members whereby predetermined movements of said control member will cause actuation of said switches.

2. The combination comprising a bracket, a plurality of switches supported thereon, slotted operating members projecting from said switches, and a single control member having means engaging in the slots of said operating members, said control member being capable of rotation and reciprocation whereby at least one of said switches may be operated by reciprocation of said control member and at least one of said switches may be operated by rotation of said control member.

3. The combination comprising a bracket, a plurality of toggle switches mounted thereon, operating members projecting from said switches, a shaft engaging said members, said shaft being rotatable with respect to the first of said members and reciprocable with respect to the second of said members, said first member being actuated upon reciprocation of said shaft and the second member being actuated upon rotation of said shaft.

4. The combination comprising a bracket, a plurality of toggle switches mounted thereon, a lever projecting from one of said switches, a sleeve projecting from the other of said switches, a shaft engaging with said sleeve and said lever whereby said lever may be moved upon reciprocation of said shaft, and said sleeve may be rotated upon rotation of said shaft.

5. The combination comprising a bracket, a bearing in said bracket, an operating member mounted in said bearing for rotation and reciprocation, a switch mounted in said bracket and having a slotted lever projecting therefrom, another switch mounted in said bracket and having a slotted sleeve project-

ing therefrom, said operating member telescoping with said sleeve and having a key engaging with said slot, said operating member also having a reduced portion fitting in the slot of said lever whereby said switches may be operated upon reciprocation and rotation, respectively, of said operating member.

6. The combination comprising a U-bracket, a bearing in one arm of said bracket, an operating shaft mounted in said bearing for rotation and reciprocation, a switch having a slotted lever projecting therefrom mounted in the base of said bracket, and another switch having a slotted sleeve projecting therefrom mounted in the other arm of said bracket, said operating shaft telescoping with said sleeve and having a key engaging in the slot thereof, said operating shaft having a reduced portion receiving said slotted lever, whereby said switches may be operated by reciprocation and rotation, respectively, of said operating member.

In testimony whereof I have signed my name to this specification.

JOHN D. GARRETT.