W. W. DEAN.

CIRCUIT CONTROLLER.

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1,122,261.

Patented Dec. 29, 1914.

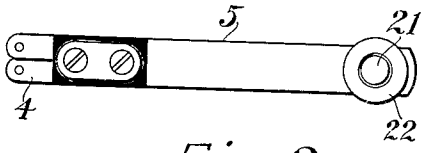


Fig 2

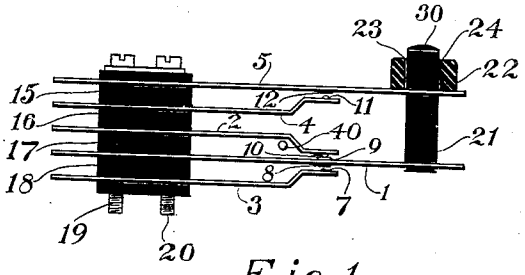


Fig 1

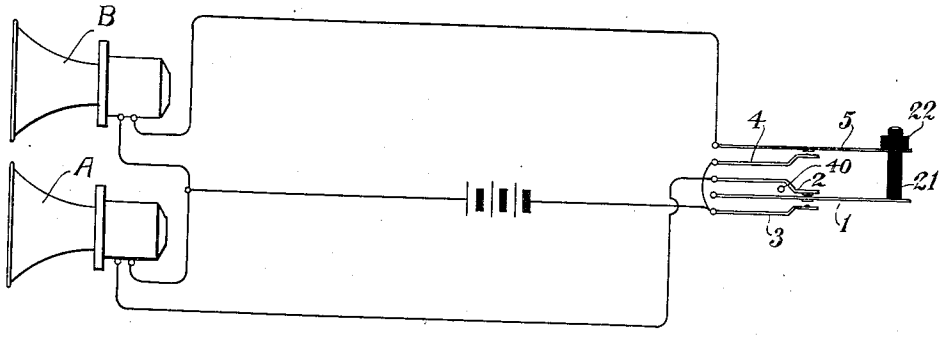


Fig 3

Witnesses

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CIRCUIT-CONTROLLER.

1,122,261. Specification of Letters Patent. Patented Dec. 29, 1914.

Original application filed January 21, 1911, Serial No. 603,826. Divided and this application filed February 23, 1912. Serial No. 679,396.

To all whom it may concern:

Be it known that I, WILLIAM W. DEAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Circuit-Controllers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to devices for controlling circuits, and more specifically to devices of this character which are adapted to control a plurality of switches which are intended to be operated in sequence to one another in order to control electro-responsive devices, likewise intended to be operated in sequence to each other.

Another object of my inevntion is the provision of a circuit controller by which it is possible to select and operate one or more electro-responsive devices to the exclusion of the others. By my invention I am able to effect this by a single circuit controller with the result that the operation in sequence or the selection may be effected with little attention on the part of the operator.

An example of the use of my device is illustrated in the operation of signaling devices. For example when it is desired to employ two warning signaling devices of different character upon a vehicle such for example as an automobile, it is desired to select and operate these signaling devices with a minimum amount of attention on the part of the driver, whose attention is demanded by the exigencies of the situation and the operation of the other mechanism upon the vehicle. In cases of this kind he may, with my invention, select and operate either of the signals by the use of the thumb alone, and in fact such selection is done almost automatically by the driver. I have merely given this as an illustration of the use of my device, and I do not wish to be limited thereto.

Other objects of my invention and the invention itself will be best understood in connection with a detailed description which is to follow.

This application is a division of my application #603,826, filed January 21, 1911.

Referring now to the drawings which illustrate one specific form of my invention: Figure 1 is a side elevation of the circuit controller showing certain of the parts in section. Fig. 2 is a plan view of the circuit controller shown in Fig. 1, and Fig. 3 is a diagram of circuit connections illustrating a use for which my circuit controller is adapted.

Referring now to the drawings and the particular form of the invention illustrated therein, electric contacts are illustrated at 7—8—9—10—11 and 12. These contacts are connected into electric circuit connections when the device is in use, and are mounted upon means by which they may be associated in electric switches. I prefer to mount these upon contact springs such as are illustrated at 1—2 3—4 and 5 in the drawings, the contacts being mounted near one end of the springs. The other ends of the springs are spaced apart by the insulating members 15—16—17 and 18. The springs and these insulating members are connected together by fastening means, such as screws 19 and 20, which may extend into the base (not shown) for the support of the circuit controller. The contacts are controlled by a plurality of push buttons, a pair 21 and 22 only being shown in the form illustrated. These buttons are mounted adjacent to each other, so that both may be operated simultaneously by the pressure of the thumb or finger, and in order that one may be operated independently of the other, I extend one of said buttons above the surface of the other; thus as illustrated in Fig. 1, the button 21 extends above the surface 23 of the button 22, so that the button 21 will be operated before the button 22. I also find it better to recess one of the buttons, and extend the other one into this recess. For example, the button 22 is recessed at 24. In fact, in the form shown, the button 22 is hollowed out, so that the recess in the button constitutes a bore therein, through which the button 21 extends. By this arrangement, the button which lies below the surface of the other will be caught and depressed when the first button is pressed to its way-down position. I prefer to mount the push buttons upon leaf springs, and to control the contacts by the buttons through the leaf springs.

In the form shown, the leaf spring 1 car-

ries the button 21, which extends above the surface 23 of the button 22. In the form shown the spring 1 is not connected directly to any of the conductors and is, therefore, idle. The leaf spring 1 normally engages the follow-up spring 2 carrying the contact 10, which is adapted to coöperate with the contact 9. Below the contact spring 1 is shown the contact spring 3 carrying the contact 7 which coöperates with the contact 8 upon the leaf spring 1. The contacts 9 and 10 are in engagement and the contacts 7 and 8 are separated when the button 21 is in a normal position as illustrated in Figs. 1 and 3. When the button 21 is depressed to intermediate position, the surfaces 23 of the button 22 and 30 of the button 21 will be substantially flush with one another, the contacts 7 and 8 will engage, while the contact spring 10 will follow the contact spring 1 during this portion of its travel. When in this position, a circuit will be closed through the electro-responsive device A in the arrangement illustrated in Fig. 3, as will be readily seen by reference to that figure. During this part of the movement of the button 21 the power or "touch" required to operate the button 21 will be comparatively light, since it is only necessary to overcome the resistance of the spring 1, which is partly overcome by the pressure of the follow-up spring 2. Should it be desired to close the contacts controlled by the push button 22, the "touch" of the thumb is increased and the button 21 further depressed to its way-down or farthest position. In this motion the button 22 will also be caught by the thumb and depressed along with the button 21. As soon as the button 21 leaves its intermediate position, the follow-up spring 2 is caught by the stop 40 separating the contacts 9 and 10, and in the device illustrated in Fig. 3, opening the circuit through the electro-responsive device A. When in the way-down position, the contacts 11 and 12 engage and in the device illustrated in Fig. 3 the circuit is closed through the electro-responsive device B. During the movement from the intermediate to the way-down position of the button 21, it is necessary to overcome the full resistance of both the springs 1 and 5, so that now a comparatively heavy "touch" is required. By this means the driver may by sense of touch alone select and operate either of the signals, for which in the case illustrated in Fig. 3 I preferably employ a low-tone instrument at A and a loud-tone instrument at B. In fact under conditions of excitement which are very apt to prevail in emergencies, at which time the loud signal is desired, the driver will unconsciously press the buttons to their way-down position and operate the loud signal. When the thumb is removed from the push buttons and the same released, the springs 1 and 5 will return them to normal position.

While I have described one particular use of my invention for the purpose of better illustrating it, I do not wish to be limited thereto, as it will readily be apparent that the circuit controller has other uses. I have also shown this particular form of my invention which I prefer, as in my opinion being most adapted for this use, though I do not wish to be limited to this form, as it will be obvious to those skilled in the art that numerous and extensive departures from the forms and details of the apparatus here shown may be made without departing from the spirit of the invention, the same being herein shown solely for the purpose of clearly illustrating a specific form of the invention.

I claim:

1. In an electric circuit controller, the combination of a plurality of contact springs, a hollow push button mounted on one of said springs and a second push button mounted on a second of said springs, said second push button extending through the bore in the first push button.

2. In an electric circuit controller, the combination of a plurality of contact springs, a hollow push button mounted upon one of said springs, and a second push button mounted upon a second of said springs and extending through the bore of said first push button, the surface of said last named push button projecting beyond the surface of the hollow push button.

3. In an electric circuit controller, a pair of contacts, a hollow button controlling said contacts, a second pair of contacts, a second button controlling said second pair of contacts, said second button extending into the bore in said first button, one of said buttons being below the surface of the other.

4. In an electric circuit controller, a push button having a bore therethrough, a leaf spring upon which said button is mounted, a second push button extending through said bore in the first button and means to restore said second button to normal when released.

5. In an electric circuit controller, the combination of a plurality of contacts and a pair of bush buttons controlling said contacts, one of said buttons extending through and projecting beyond the other and each of said buttons being movable in the same direction to operate said contacts.

6. In an electric circuit controller, the combination of a plurality of contacts and a pair of bush buttons controlling the same, leaf springs upon which said buttons are mounted, one of said buttons consisting of an annular button and the other button extending through the bore thereof.

7. In an electric circuit controller, a push button having a bore therethrough, a leaf

spring carrying an electric contact, controlled by said button, another electric contact adapted to coöperate with the first named contact, a second push button, extending through said bore in the first button, an electric switch controlled by said second push button and spring means to restore said second button to normal when released.

8. In an electric circuit controller, the combination of a plurality of contacts, a pair of push buttons controlling the same and leaf springs adapted to be operated by said buttons to operate said contacts, one of said buttons consisting of an annular button and the other button extending through the bore thereof.

9. In an electric circuit controller, the combination of a plurality of contact springs, a hollow push button controlling one of said springs, and a second push button controlling a second of said springs, said second push button extending through the bore in the first push button.

10. In a circuit controller, the combination of a pair of push buttons mounted contiguous to each other, a pair of electric switches, one controlled by each of said buttons, each of said switches being closed when its controlling button is depressed and means to open one of said switches when both the buttons are depressed simultaneously.

11. In a circuit controller, the combination of a pair of electric switches, power transmitting means mounted contiguous to each other, one controlling each of said switches, the top surface of one of said means being normally above the top surface of the other, each of said switches being closed when its controlling means is operated and means to open one of said switches when both said means are operated simultaneously.

12. In a circuit controller, the combination of a pair of electric switches, a pair of push buttons mounted contiguous to each other each one controlling one of said switches, each button adapted to close its controlled switch when depressed individually and means to open one of said switches when said buttons are depressed simultaneously.

In testimony whereof, I affix my signature in the presence of two witnesses.

WILLIAM W. DEAN.

Witnesses:
A. D. T. Libby,
F. O. Richey.