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G. D. DOTY

CIRCUIT CONTROL

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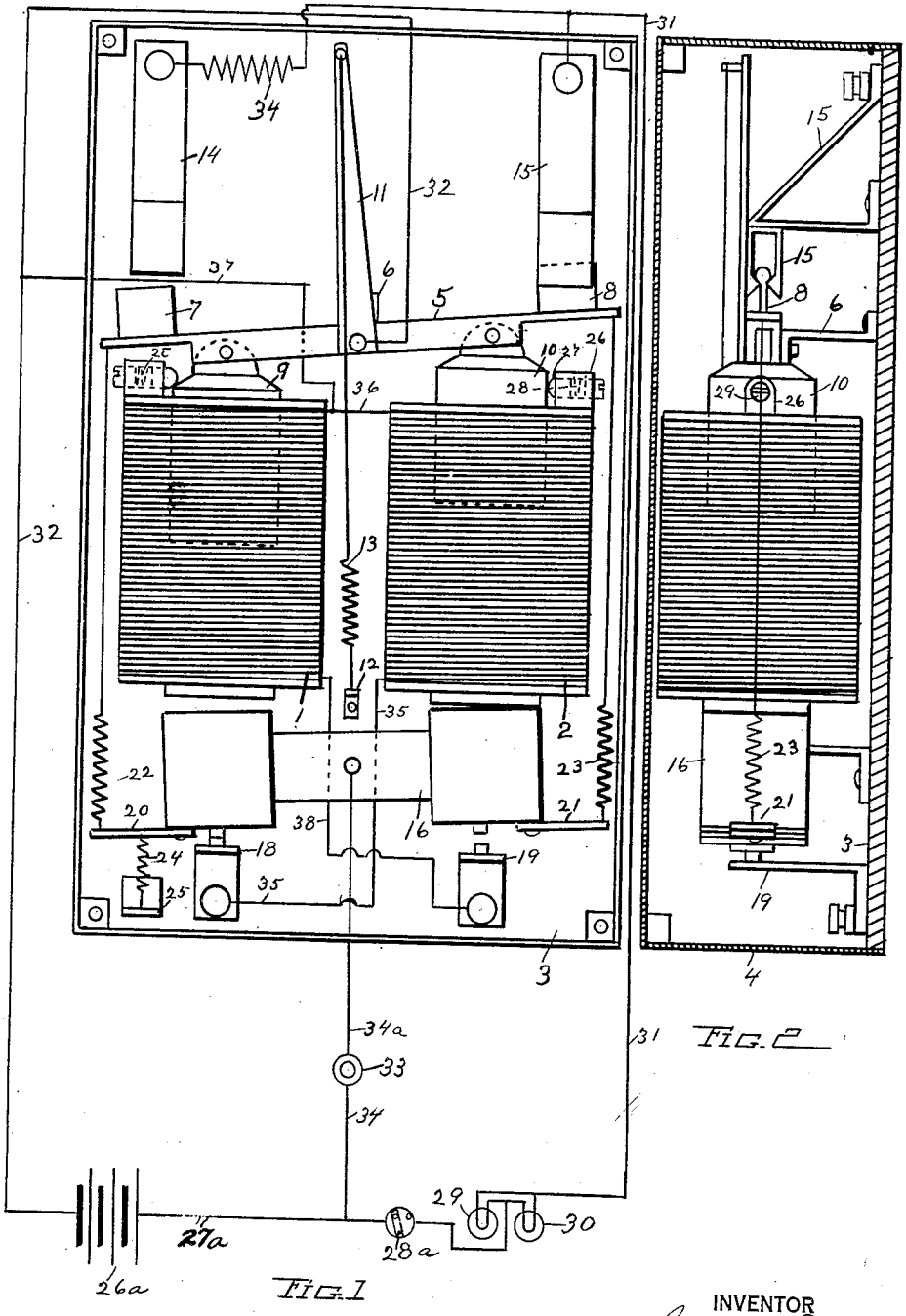


FIG. 2

FIG. 1

INVENTOR

George D. Doty

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GEORGE D. DOTY, OF COLORADO SPRINGS, COLORADO.

CIRCUIT CONTROL.

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My invention relates to devices to control electric circuits for lights or power.

My object in general is to provide a device of this character whereby a single manual switch such as a push button, will alternately change the circuit. A specific object is to provide such a device for use with the head lights of automobiles whereby the lights will be alternately dimmed and brightened by the operation of a single push button or other switch mounted at any convenient place such as on the steering wheel.

Figure 1 represents a front elevation of the device, the front of the housing being removed; and Fig. 2, a side elevation, the housing being shown in section.

Although I have shown the preferred form of my invention, I do not thereby limit myself to the precise form shown, but wish it understood that within the scope of what hereinafter is claimed, various changes in the precise details of construction may be made without departing from the spirit of the invention.

Two coils 1 and 2 are mounted on a base 3 within a housing 4, each coil being a combined electro-magnet and a solenoid. An arm 5, carrying contact members 7 and 8, is pivotally mounted on a support 6 and pivotally connected to the movable cores 9 and 10 of the solenoids. An arm 11 is rigidly mounted on arm 5 and the free end is connected to a standard 12 by a spring 13. Terminal members 14 and 15 are mounted on base 3 adjacent to arm 5 and are adapted to contact with the contact members 7 and 8, respectively. An armature 16 is pivotally mounted on a support 17 adjacent to the electro-magnets and is adapted to contact therewith. Terminal members 18 and 19 are mounted on the base 3 adjacent to the armature 16 and are adapted to contact with said armature. Extensions 20 and 21 are mounted on armature 16 and connected to arm 5 by springs 22 and 23. A spring 24 is secured to a standard 25 mounted on the base 3 and is connected to the extension 20. A bearing 26 is mounted on each coil adjacent to the movable core. A plunger 27 and a spring 28 are disposed in said bearing and a bolt 29 is screwed against said spring 28.

The drawings show the lights in the bright circuit. The current flows via wire 27^a, switch 28^a, lights 29—30, wire 31, terminal member 15, arm 5, and wire 32 to the battery 26^a. When it is desired to dim the lights, the push button 33 is pressed which completes the coil circuit. The current then flows via wire 27^a, wire 34, push button 33, wire 34^a, armature 16, terminal member 18, wire 35, coil 2, wire 36, wire 37 and wire 32 to the battery. This energizes the coil 2 and draws the movable core 10 within, thereby swinging arm 5 which breaks the contact with the terminal member 15 and makes a contact between contact member 7 and terminal member 14. The light current now flows from wire 31 via the resistance member 34, terminal member 14, arm 5 and wire 32 to the battery. In this circuit the resistance member 34 causes the lights to be dim.

When the pressure of the push button 33 is released, the coil circuit is broken and the magnet loses its power and the spring 22 acting upon the extension 20, swings the armature 16 against the terminal member 19, therefore when the coil circuit is again completed by the push button, the current flows from the armature 16 via the terminal member 19, wire 38, coil 1, wire 36, wire 37 and wire 32 to the battery. This energizes the coil 1 and draws the core 9 within, and returns the arm 5 to the position shown in the drawings, thereby returning the lights to the bright circuit. The spring 24 is provided in case the arm 5 and armature 16 should ever stop on dead center.

When the arm 11 swings past center, the action of the spring 13 causes the contact members 7 and 8 to snap into the jaws of the terminal members 14 and 15, respectively.

The plungers and springs within the bearings 26 are provided to hold the movable cores snugly after they have been drawn within their respective coils. The springs 28 permit the movable cores to push the plunger aside when said cores are moved by the arm 5.

I claim:

1. In a device of the class described, the combination of a base; a pair of connected coils disposed parallel and mounted on said base, each coil having a fixed core in one end and a movable core in the opposite end; an arm pivotally mounted on said base and pivotally connected to said movable cores; contact members on said pivotally mounted arm; main terminal members mounted on said base and provided with contact members adapted to engage the contact members on said pivotally mounted arm; an armature

pivotally mounted adjacent to said fixed cores and adapted to contact therewith; secondary terminal members, each secondary terminal member being mounted adjacent to one coil and connected to the opposite coil; extensions on said armature, and springs connecting said extensions with said pivotally mounted arm.

2. In a device of the class described, the combination of a base; a pair of connected coils disposed parallel and mounted on said base, each coil having a fixed core in one end and a movable core in the opposite end; an arm pivotally mounted on said base and pivotally connected to said movable cores; contact members on said pivotally mounted arm; main terminal members mounted on said base and provided with contact members adapted to contact with the contact members on said pivotally mounted arm; an armature pivotally mounted adjacent to said fixed cores and adapted to contact therewith; secondary terminal members mounted on said base adjacent to said armature, each secondary terminal member being mounted in alignment with one coil and connected to the opposite coil; extensions on said armature; springs connecting said extensions and said pivotally mounted arm; and a spring secured below one extension and attached thereto.

GEORGE D. DOTY.