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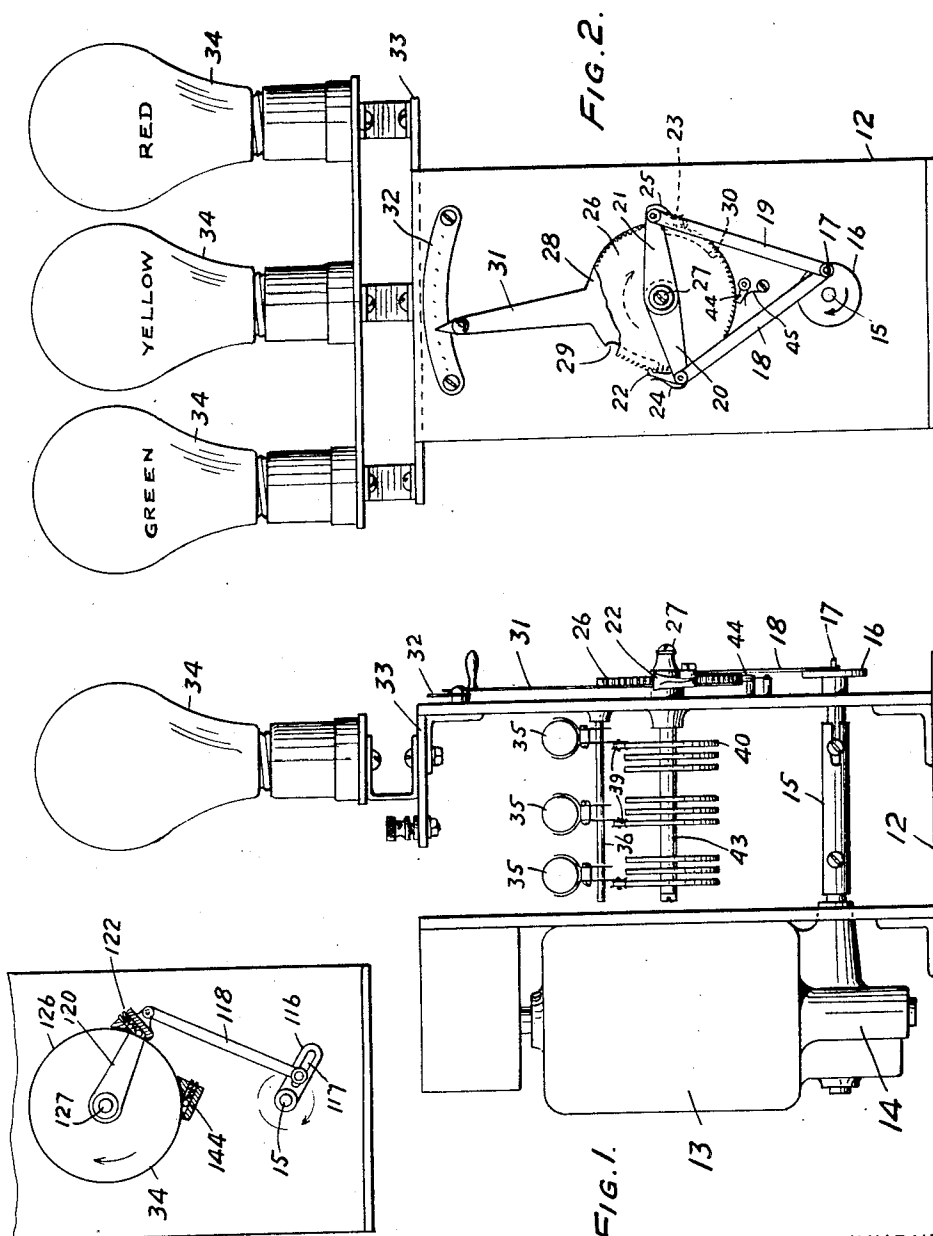
J. L. LE GORRE

1,950,312

DEVICE FOR CONTROLLING THE ILLUMINATION OF LAMPS

Filed Oct. 30, 1931

2 Sheets-Sheet 1



WITNESS:

Robt P. Kitchel.

FIG. 6.

FIG. 1.

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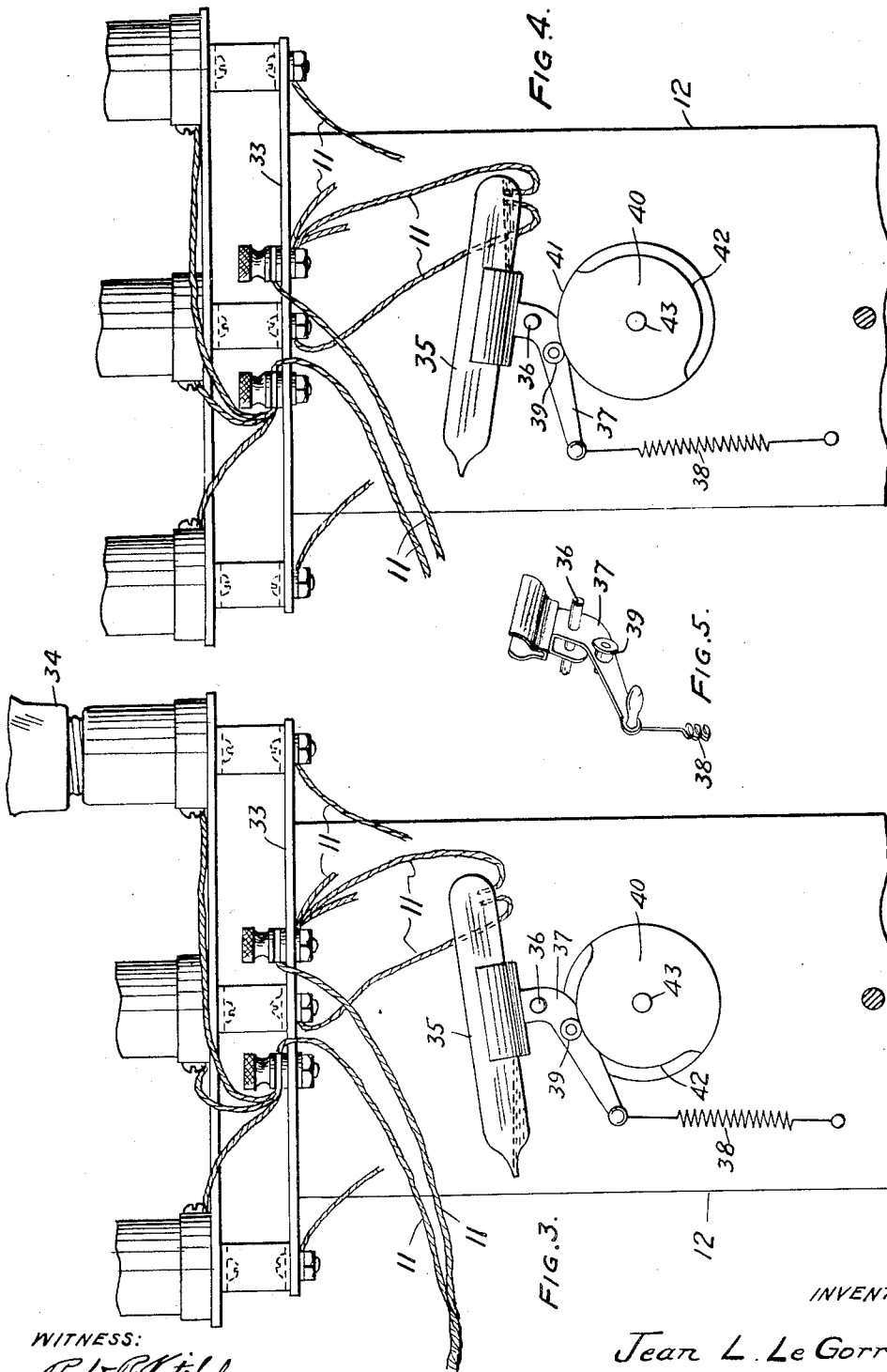
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DEVICE FOR CONTROLLING THE ILLUMINATION OF LAMPS

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

1,950,312

DEVICE FOR CONTROLLING THE
ILLUMINATION OF LAMPS

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Application October 30, 1931, Serial No. 572,181

2 Claims. (Cl. 200—32)

The subject of my invention is a device for controlling the illumination of lamps, particularly those used as signals on highways or at intersections of highways where a lamp is caused to flash off and on or three lamps are used to show red, yellow, or green lights or other combinations of colored lights to control traffic.

My device consists essentially of a source of current, a rotary motor, a speed reducing gearing, means for controlling the speed delivered by said gearing independent of the speed of the motor, a plurality of cams, one or more switches actuated by said plurality of cams, one or more lamps controlled by said switches, and appropriate electrical connections for said motor, said switches and said lamps to said source.

For a further exposition of my invention reference may be had to the annexed drawings and specification at the end whereof my invention will be specifically pointed out and claimed.

In the drawings,

Figure 1 is a side elevation of my device.

Figure 2 is a front view of my device as applied to three lamps.

Figure 3 is a rear view of the forward portion of my device.

Figure 4 is a view similar to Figure 3 showing the switch in closed circuit position.

Figure 5 is a view in projection showing a cradle for supporting a switch.

Figure 6 is a partial front view showing a modified form of gearing.

In the embodiment of my invention chosen for illustration in the drawings, my device is shown as consisting of a plurality of wires 11 attached to a source of current not shown. There is provided a frame generally indicated at 12 in which is mounted in suitable bearings a motor 13 which may conveniently be electric but which may be of any other suitable type. Motor 13 may, if desired, drive the reduction gearing, generally indicated at 14, which in turn drives shaft 15 connected to a speed reducing gearing.

This speed reducing gearing may conveniently consist of a disk 16 operatively connected to shaft 15 and carrying a pin 17 thereon. Pin 17 serves as a pivot for one end of each of a pair of links 18 and 19 respectively. The opposite ends of links 18 and 19 are pivotally connected to arms 20 and 21 respectively. Arms 20 and 21 may conveniently carry thereon pawls 22 and 23 which may be stressed by springs 24 and 25. Pawls 22 and 23 cooperate with the serrated surface of a ratchet or cam disk 26 which is mounted rotatably about a pivot 27. Pivot 27 also carries

a ratchet shield 28 having notches 29 and 30 therein. Ratchet shield 28 may also carry an indicator 31 adapted for cooperation with a stationary scale 32. Frame 12 conveniently carries a shelf 33 which may be of insulating material and which may support one or more lamps 34 thereon. Lamps 34 are connected with the source of current by wires 11. Lamps 34 may readily be made to show green, yellow and red lights so as to control traffic.

Interposed in wires 11 between the source of current and the lamps 34 there may be provided switches 35, which are shown as glass tubes containing mercury and having enclosed contacts. Switches 35 may, however, be of any type adapted to be frequently opened and closed without injury. Switches 35 may be mounted on a pivot 36 by means of a carriage 37 most clearly shown in Figure 5. Carriage 37 may have attached to one arm thereof a spring 38 and may also carry a cam follower 39. Cam follower 39 may cooperate with any one of a plurality of cams 40 having high spots 41 and low spots 42 thereon. Cams 40 are conveniently mounted on a shaft 43 attached to ratchet wheel 26 so as to be operated thereby.

In the modification shown in Figures 1 and 2 there is provided a stationary holding pawl 44 spring pressed by spring 45 into contact with ratchet 26.

In the modification disclosed in Figure 6 there is shown a speed reducing gearing in which shaft 15 carries an arm 116 having a slot 117. In slot 117 is adjustably mounted one end of a link 118, the other of which is pivotally attached to a rotatable arm 120 which is pivotally mounted about pivot 127. There is provided a disk 126 also pivotally mounted about 127. Arm 120 carries a ratchet 122 adapted to grasp the edge of disk 126 in one direction of rotation of arm 120 and to free the edge of the disk upon rotation in the opposite direction. Disk 26 is therefore driven from shaft 15 in the direction shown by the arrow in Figure 6. There is also provided a stationary pawl 144 which serves to hold disk 126 when the disk is not driven by pawl 122.

The operation of my device is as follows:—When the lamps 34 are connected by wires 11 through switches 35 to a suitable source of current, the cams 40 are so disposed relative to the cam followers 39 that but one of the lamps 34 is lighted at any particular instant. Motor 13 drives shaft 15 through reduction gearing 14. Shaft 15 drives shaft 43 through the speed reducing gearing. The speed at which shaft 43 is

driven depends upon the position of ratchet shield 28 which may be adjusted to allow pawls 22 and 23 to engage ratchet 26 for a longer or shorter period of travel and to thereby rotate

- 5 ratchet 26 for a longer or shorter distance for each rotation of disk 16. This action is secured by adjusting the positions of notches 29 and 30 relative to the pawls 22 and 23, respectively, since shield 28 prevents these pawls from operating except when the pawls are opposite the notches. Switches 35 are operated according to whether their cam follower 39 rides on a high portion 31 or on a low portion 42 of their particular cam 40. As shown in Figure 1, there may be provided for 15 each switch 35 a plurality of cams 40. These cams have their high portions 41 and their low portions 42 varied. Convenient ratios of the portions 41 to the portions 42 are 1 to 1, 1 to 3 and 3 to 1. Cam 40, by which it is desired to control switch 35, may be selected by simply sliding 20 cradle 37 along its pivot 36 until the cam follower 39 is in contact with the desired cam.

From the foregoing it will be seen that I provide means whereby a single lamp may be flashed at equal intervals or unequal intervals or where- 25 by a plurality of lamps may be lighted or extinguished for overlapping periods or periods in sequence to one another.

I do not intend to be limited in the practice of my invention save as the scope of the prior art and of the attached claims may require.

I claim:

1. A traffic signal mechanism including a motor, a switch actuated by said motor, a pawl actuated by said motor, a ratchet actuated by said pawl, a shield for varying the time of contact between said ratchet and said pawl, a plurality of cams actuated by said ratchet and arranged to vary the times at which said switch is actuated relative to each other, and a slidable mounting for said switch for selecting one of said cams to operate said switch. 80 85

2. A traffic signal mechanism including a motor, a pawl actuated by said motor, a ratchet actuated by said pawl, a shield for varying the time of contact between said ratchet and said pawl, a pointer on said shield, indicating means cooperating with said pointer, a plurality of cams actuated by said ratchet, a switch arranged to be actuated by one of said cams, and a slidable mounting for said switch for selecting one of said cams. 90 95

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