TRAFFIC LIGHT CONTROL MECHANISM

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1 Claim. (Cl. 340—40)

This invention relates to a traffic light control mecha-
nism for use in converting traffic light control systems
for manual operation previously utilized in transferring
the system from that of a sequential arrangement of
"stop," "caution" and "go" lamps to that of a flashing
"caution" or "stop" lamps during periods, especially at
night, when traffic is at a minimum.

The device comprising the present invention comprises
an adapter interconnecting the operating arm of a time
clock such as the model TS 60 S. P. Inter-matic as manu-
factured by the International Register Co., of Chicago,
Illinois. The invention is installed inside a time clock
and the time clock is of conventional construc-
tion the adapter is installed in association with the time
clock actuating arm normally used for switching. The
invention provides mechanical means for autono-
matically selecting either a sequential arrangement of "go," "cau-
tion," and "stop" lamps or flashing circuits.

Still further objects and features of this invention re-
side in the provision of an adapter for use in conjunc-
tion with substantially conventional traffic control sys-
tems which adapter is simple in construction and manu-
facture, can be readily utilized in conjunction with var-
ious types of timer clocks which is easy to install, and
which will, because of its automatic operation reduce
the time necessary for a police force of a municipality
to properly maintain its traffic system.

These, together with the various ancillary objects and
features of the invention which will become apparent as
the following description proceeds, are attained by this
traffic light control mechanism, a preferred embodiment
of which has been illustrated in the accompanying draw-
ings, by way of example only, wherein:

Figure 1 is an elevational view of the time clock case
with the cover thereof removed illustrating the manner
in which the adapter comprising the most important ele-
ment of the present invention is interconnected with the
time clock and the sets of contacts;

Figure 2 is a partial front elevational view of the cover
of the timer clock illustrating the traffic control switch
and the flasher switch;

Figure 3 is an elevational view illustrating the traffic
and flasher switches with the cover open;

Figure 4 is a sectional detail view as taken along the
plane of line 4—4 of Figure 1 illustrating the sets of
contacts associated with the flasher switch;

Figure 5 is a sectional detail view as taken along the
plane of line 5—5 of Figure 1 illustrating the construc-
tion of the contacts associated with the traffic switch;

and

Figure 6 is a circuit diagram of the traffic control sys-
tem, but not showing the conventional cam unit consist-
ing of a group of contacts for selecting the sequential
operation of the traffic lights.

With continuing reference to the accompanying draw-
ings wherein like reference numerals designate similar
parts throughout the various views, reference numeral
10 generally designates the timer clock casing which can
be mounted in any convenient position. Within the timer
clock casing there is a timer clock mechanism 12 adapted
to actuate a time indicator pointer 14 which is station-
ary. The clockwork mechanism of the clock timer 12
includes an indicator dial 16 which revolves clockwise.

Cooperating with the indicator dial 16 is a pair of set-
ting members 18 and 20 held in position by set screws
which when they contact the indicator pointer 14 the
operating arm 22 of the clock timer 12 will become act-
uated. Attached to the operating arm 22 is an adapter
46 for forming an important element of the invention.

As can be readily recognized the timer clock 12 actu-
ates adapter 46 which disconnects cam unit, now shown,
of a type GS 4 synchronous timer manufactured by the
Crouse-Hinds Co., Syracuse, New York, which controls
a plurality of contacts controlling operative electrical
supply circuits to the individual lamps of the traffic
lights being controlled by this device. These auxiliary
circuits which combine with the circuitry shown in Figure 6 are
not shown inasmuch as they are a part of the type GS 4
synchronous timer.

The timer clock 12 is driven by a suitable synchronous
two motor 24 receiving current through hot feed line
38 to suitable terminals on the controller plug in strip
36, thence through line 34 to the contact 44, and then
through line 34 to the single pole toggle switch 30. Line
32 is a common or ground line which is connected at
the main terminal connection bar and is connected to
motor 24.

It is to be noted that there are mounted in associa-
tion with the timer clock 12 opposed sets of contacts 40
and 42. The arrangement of the contacts 40 and 42 is
conventional and a third set of contacts previously desig-
nated 44 which is normally manually operated is auto-
matically directed into engagement with either set of con-
tacts 40 or the set of contacts 42 by operation of the oper-
ating arm 22. This is because there is provided an
adapter 46 which consists of a downwardly extending
shank portion 48 adapted to be attached to the operat-
ing arm by means of recess 58. The shank portion ter-
minates in a substantially horizontally extending portion
50 carrying an inverted channel-shaped member 52 of
insulating material which is adapted to engage over the
upwardly extending ends of the sets of contacts 44. The
member 52 is fastened to the adapter 46 by means of a
small machine screw on the bottom side of the por-
tion 50.

It is to be recognized that the contacts 40 and 42 are
mounted and insulated by a suitable insulating mounting
block having portions designated 54 and 56 respectively.
The contacts 44 extend outwardly from the mounting
block 56 but are insulated from the set of contacts 42.
It is noted that the upper end of the shank 48 may be
provided with a recess 58 therein for reception of the
lower end of the operation arm 22 or may be otherwise
attached to the operating arm 22.

Connected to the contacts 42 is a flasher switch F op-
erated through a toggle 60 mounted on the casing 10.
As can be readily seen the flasher switch is connected
through the conductor 62 to the set of contacts 42 which
are interconnected by a conductive plate 64 and is then
connected to the traffic controller plug in strip 36 and
from there to the GS 4 type traffic controller 36.

A traffic switch T controlled by means of a single pole
toggle switch 66 is interconnected through conductor 68
to contacts 40 from the plug in strip 36.

The switches 60 and 66 are interconnected through the
respective conductors for the reason that they are con-
tinent to either the flashing or the traffic sequence circuits
whenever it is needed and still not interrupt the synchron-
ous timing of the other traffic lights at the next inter-
sections, whether it be for service or otherwise.


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Hence utilizing the present invention, with for example the setting member 20 set at midnight and the setting member 18 set at 6:00 A.M. as is shown on dial 16, when the clock motor 24 is energized dial 16 will start to revolve, this moving member 20, the first one to line up with the time indicator pointer 14, this will actuate arm 22 which will urge the adapter 46 to cause the 44 contacts to engage with 42 contacts, his will cause an operative electrical circuit to be completed to the flashing unit in the GS4 traffic controller, and open the circuits that control the cam unit, thus selecting the flashing lamps, now when the time has elapsed so as to bring member 18 in line with the time indicator pointer 14, this will again actuate arm 22 which urges adapter 46 back to the opposite side moving the contacts 44 so as to make contact with the contacts 40, this then opens the flashing circuit, and completes the circuits to the cam unit in the GS4 flashing circuit, and completes the circuits to the cam unit in the GS4 traffic controller for the traffic sequence, “go” “caution” “stop” lamps.

As can be readily seen in the wiring diagram shown in Figure 6, an operative electrical circuit is completed from the amber main street light indicated at A through conductor 72, to the second from the front connection terminal of contact 44, when contacts 44 are engaged with contacts 42 and as can be readily seen that contacts 42 are interconnected by a conductive plate 64, this then completes the circuits through conductor 62 to the flasher control switch, thence to the position at the controller plug in strip 36 (plug in strip is the female receptacle, and the GS4 traffic controller has a male receptacle on the wiring harness that has to be plugged into plug in strip 36), in order to complete all circuits to the different flashing lamps to be selected.

It is noted that the toggle switches 60 and 66 will be in the “on” position unless the traffic requires it to be any other way or the serviceman has to turn them off for some reason.

The manual connecting terminal M has two terminals, the line connected to the bottom terminal thence goes to the controller plug in strip 36, where it interconnects with conductor 68, and the 66 traffic control switch.

Now conductor 76 starts at the top M connection terminal and thence goes to the position on the controller plug in strip 36, now again in order to complete any circuits the GS4 traffic controller has to be plugged into position into controller plug in strip 36, the manual switch is left in an operative position and is not shown because this is conventional to the GS4 traffic controller, which the purchaser can have or do without also.

There is provided with all traffic control systems a jumper block 80 which has selective terminals with jumpers so that in lieu of the flashing amber light the flashing red light can be selected also.

Further it is to be recognized that this device may be utilized for more complicated systems having two cross street lamps instead of just one cross street lamp, which is the standard cross street intersection.

From the foregoing, the construction and operation of the device will be readily understood and further explanation is believed to be unnecessary. However, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claim.

What is claimed as new is as follows:

In combination with a traffic light system having a master timer clock for controlling a sequential arrangement of actuation of “stop,” “caution,” and “go” signal lamps mounted on a series of traffic lights, said systems including a normal traffic control switch for connecting a first set of contacts with said traffic lights, said system further including a flasher control switch for connecting a second set of contacts with a flasher and said traffic lights, a third set of contacts being adapted to selectively contact said first set of contacts and said second set of contacts, said timer clock having an operating arm, and an adapter interconnecting said operating arm of said timer clock with said third set of contacts, said adapter including an upwardly extending shank, said shank being secured to said arm, a recess in the upper end of said shank for engagement with said operating arm, and a substantially inverted channel-shaped portion overlying said third set of contacts for simultaneous movement of said third set of contacts into selective engagement with said first set of contacts and said second set of contacts.

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