Sept. 15, 1931. S. E. TEST 1,823,008

TRAFFIC CONTROL SYSTEM FOR MULTIFLOOR GARAGES

Filed Nov. 20, 1926

FIG. 1

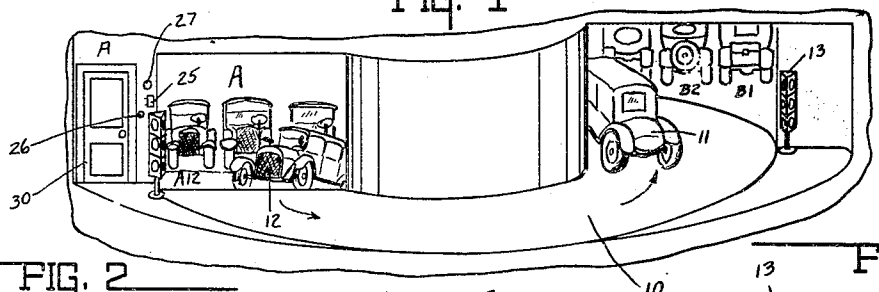


FIG. 2

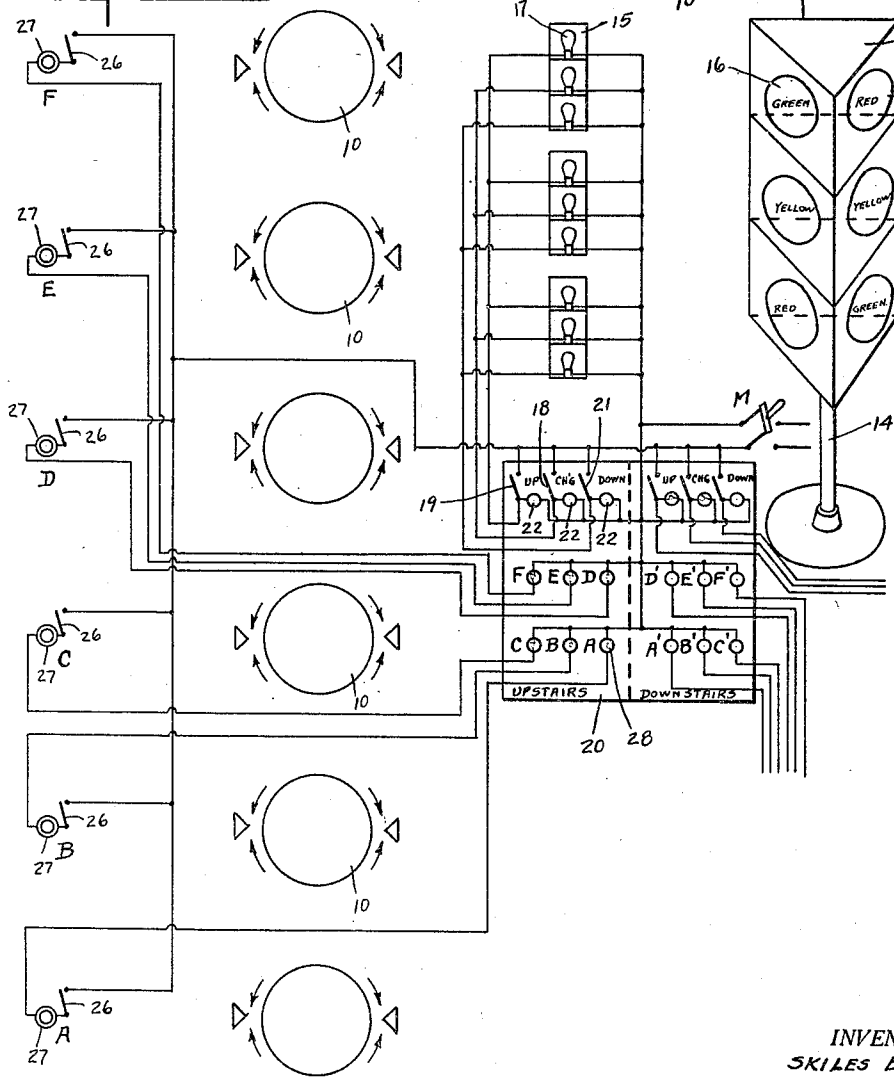


FIG. 3

INVENTOR.
SKILES E. TEST.

BY Fortwendel Fortwendel
Goldsmith & Galt
ATTORNEYS.

Patented Sept. 15, 1931

1,823,008

UNITED STATES PATENT OFFICE

SKILES E. TEST, OF INDIANAPOLIS, INDIANA

TRAFFIC CONTROL SYSTEM FOR MULTIFLOOR GARAGES

Application filed November 20, 1926. Serial No. 149,633.

This invention relates to a system of traffic control.

The chief object of the invention is to control traffic in a garage or the like where the patrons are constantly bringing cars for storage and are taking their cars from storage, so that the parons' cars may be most expeditiously placed in the garage and taken therefrom and delivered to the patron at the entrance.

The chief feature of the invention in addition to the general arrangement of the storage spaces and car movements, consists in the provision of a traffic control system which permits the main dispatcher to control the entire traffic in the garage and permits intersignaling and inter-communication where necessary from said traffic control station to the several floor stations.

Another feature of the invention consists in the particular arrangement of the traffic controlling signal.

A further feature of the invention consists in the general arrangement and connections associated with the main traffic control panel or board.

The full nature of the invention will be understood from the accompanying drawings and the following description and claims:

In the drawings Fig. 1 is a perspective view of a portion of the garage showing the single car width traffic driveway or ramp arranged in helical formation and illustrating the sub-station control and signal, intercommunication device and the traffic control signals simultaneously operable from the main or central control station. Fig. 2 is a wiring diagram of the traffic control system circuits. Fig. 3 is a perspective view of one form of traffic signal.

In the drawings 10 indicates a helical driveway or ramp leading from floor to floor and of just sufficient width for a single car to pass either up or down thereon. Said driveway is suitably banked and cars may be driven therefrom to the several floor storage areas which are arranged at approximately half the usual floor elevations, as shown. However, a pair of half floor elevations in the present system have a common floor designation and have a common floor control, and in Fig. 1 the portion of the lower half of floor A is shown with three vehicles parked in certain designated spaces, one of which is numbered A—12. The portion of the lower half of floor B is also shown with cars parked in the spaces B—1 and B—2, as well as B—3 thereon. Vehicle 11 is being driven up the driveway 10 and is followed by vehicle 12.

The system is arranged that at this particular time the traffic signals only permit cars going up to have the right-of-way. At suitable places along the driveway traffic signals 13 are provided and these are suitably supported as by hanging or by being supported on pedestal 14 as herein shown. These driveway signals are positioned so that they are simultaneously visible from opposite directions, that is, the drivers of cars when going up or going down can read the signals indicated thereon. Herein in view of the helical single track arrangement, a triangular outlined signal box is utilized, these being positioned at the outer edge of the ramp.

Each signal includes three superposed compartments 15 and each compartment upon opposite faces includes two visual signal indicators in the form of colored glass or lenses 16 and mounted in each compartment is a lamp 17. Therefore, when lamp 17 is energized in any one compartment, the two visual indicators 16 are simultaneously illuminated. All of the signals above the main station or traffic control station are connected in parallel. Thus, there are three main signaling circuits. For convenience, assume all the signal units to be identical and properly positioned. All of the upper compartment lamps 17 will be simultaneously energized when the main switch controlling the same is closed, said switch being positioned on the main panel board 20 and indicated by the numeral 19. When switch 19 is closed the lamp 17 in the upper compartment 15 of each signal is energized which will indicate in the assumed condition that the green lens 16 is illuminated and shows down the ramp so that it is only visible to a driver approaching from a lower floor and driving up the ramp. Simultaneously at all of the signal units the other

and red lens 16 of the same compartment is illuminated and this is only visible to drivers attempting or waiting to come down the ramp so that if any driver attempts to come down the pathway while the signal is set for "up" traffic, he is visually advised at the first signal that traffic direction is against him. Immediately below the upper compartment 15 is another compartment and both lenses 16 therein are preferably colored yellow or orange to indicate caution or change. When lamp 17 in the caution compartment is energized by closing the main switch 18 on the panel board 20, the caution signal is displayed to all drivers throughout the ramp and travelling thereon and will indicate to the drivers that the signal will change. Immediately below the second compartment is a third compartment also containing an individual lamp 17 and having oppositely directed lenses 16 which are simultaneously illuminated when the respective lamp is energized. If the uppermost lower directed lens 16 is green, the lowermost lower directed lens 16 will be red. The upper directed uppermost and lowermost lenses 16 are conversely arranged.

The operator at the main panel board 20 thus is adapted to control traffic by throwing the respective switches 18, 19 or 21, the last mentioned controlling all of the lowermost lamps 17. Thus, if switch 19 is assumed closed, all the traffic will be "up". If it is desired to change the traffic, the switch 18 is closed with switch 19 remaining closed so that the two compartments in each signal unit are both illuminated. After a predetermined period if no other signal indication is received, as will be hereinafter pointed out, switch 19 is opened and the switch 21 is closed permitting reverse travel on the ramp. A lamp 22 is in parallel with each signal circuit and visually indicates which switch is closed.

It may be stated that in public garages of the character indicated traffic has a definite trend at certain periods of the day and night. Thus, patrons will be leaving cars for storage in the early morning hours, will be withdrawing cars from storage around noon, will be returning cars for storage shortly after noon, will be withdrawing cars from storage shortly before evening, will be returning cars for storage early in the evening and withdrawing cars from storage later in the evening. The foregoing are the general traffic trends and during these periods the traffic control system will generally be held without change for considerable periods in the predetermined direction, that is, when cars are being left for storage, traffic control will generally be "up" until a patron desirous to have a car withdrawn from storage, and when patrons are generally withdrawing cars from storage, traffic generally will be down until a patron leaves a car for storage. In each instance the signals are reversed to permit handling of the car to be moved counter to the then prevailing traffic.

At each floor there is provided a telephone 25. A switch in the form of a push button 26 or otherwise, and a light 27 are connected in series and the wires therefrom lead to the main panel board 20 and to a lamp 28 thereon. Thus, when the switch 26 at floor A is closed, light 27 immediately adjacent thereto will be illuminated and light 28 on the panel board and indicated "A" thereon is illuminated. Failure of either lamp will be indicated by the failure of either or both lamps remaining dark. The attendant at floor A, by operating a switch 26, can indicate on the main panel board 28 his desires to the traffic control operator at the main panel board. Thus, for example, a continuous illumination of lamp 28 at the main panel board might indicate that telephone conversation is desired between the attendant and the main traffic control station. Intermittent operation of switch 26 and therefore intermittent operation of lamp 28 at the main board, may indicate a traffic change is desired. Various combinations can be affected. The main operator at central station 20 can flash a reply or indicate that the signal is received by intermittent actuation of main switch 18 which will simultaneously flash intermittently the lamp 17 in the "change" signal compartment of each of the signals. If different grades of traffic or service are employed, that is, "ordinary" and "express," the floor attendant can indicate the same by operating switch 26 to flash the desired signal through lamp 28 to the central station, for example, after the intermittent flashing is obtained and acknowledged through the change signals by the central station attendant, the operator at the floor station can then maintain light 28 illuminated for a considerable period of time until this indication is again acknowledged. The attendant at the central station would thereupon recognize that "express" service was desired in a direction contrary to the general traffic direction heretofore maintained and would immediately close the switch 18 to indicate a change in traffic direction. Since each of the vehicles is equipped with a horn or siren or similar audible warning device, each driver of the vehicle then on the roadway when the "change" signal comes on while he is driving a car to a designated location, energizes the audible signal. The construction of the building is such that this signal is readily heard by the operator at the main station. This audible signal is maintained until the operator of the vehicle arrives at the designated location on the ramp, whereupon it is discontinued. The operator at the central station then knows that the traffic can be safely changed, that is, reversed, whereupon the other main control switch 19 or 21, re-

spectively, will be closed and the other switch 21 or 19 respectively, will be opened, after which switch 18 is opened.

As shown in Fig. 1, a door 30 leads from the floor A and this may be to a stairway, escalator or endless conveyor. This facilitates attendant travel, that is, drivers of vehicles going up after parking their cars or delivering their cars to a floor attendant, will return to the main station by the stairway, or by stepping on the endless conveyor or escalator be conveyed thereto. Likewise, when the traffic is in the reverse direction and patrons are removing cars from the garage, the driving attendants can arrive at the cars at the proper floor by using the stairway, escalator or conveyor. All traffic other than vehicular is thereby eliminated from ramp 10. Of course, in such instances as where a car is being delivered for storage and one is desired to be withdrawn and the cars utilize either the same space or adjacent spaces, the same attendant may deliver the second car and return the first car. Also by having the floors designated and the storage spaces individually designated, the entire capacity of the garage can be utilized with maximum efficiency. It will be apparent also that by employing suitable checks and a tally system the exact location of every car in the garage can be readily designated.

Generally the central control station 20 will be at the entrance or the floor corresponding to the entrance so that the traffic control operator at the panel board 20 can control traffic.

If servicing is performed, such as washing, cleaning, polishing, oiling, greasing, refinishing and repairing and inasmuch as this traffic generally is not of the storage character, that is "in and out", but is of special character, a duplicate panel board is provided for these floors and the duplicate panel board and signaling system for each of these floors is of substantially the same arrangement as that previously described for the main storage floors. It may be desirable where ground area is not available to store cars in the lower floors, that is, the basement and various sub-basements. In this event since traffic is independent above and below the entrance level, although utilizing the same entrance, the duplicate control system described will serve for these lower floors.

The main feature of the invention consists in the simultaneous control of traffic upon a single width ramp by the provision of a plurality of traffic signals simultaneously energized to indicate traffic in one direction and bar traffic in a reverse direction and supplemental thereto, the provision of a signal system between each floor station and the central station for inter-communication or indicating a desire to have the traffic reversed.

While the equilateral triangular signal 13 is shown employed with the circular ramp 10 so that two faces are simultaneously visible for reverse travel, a rectangular or square signal would probably be more satisfactory where a straight ramp is utilized or required so that opposite or adjacent faces may be simultaneously visible for signaling.

The invention claimed is:

1. In combination, a garage having at least three floors for automobile storage and including ramp means leading from floor to floor and of substantially a single car width and upon which automobiles are driven to and from storage places on the floors, traffic directing means visible substantially from any point on the ramp means and the floor portions immediately adjacent thereto for directing traffic to proceed up the ramp and restrain down traffic and vice versa, and a central station control for manually controlling the traffic directing means.

2. In combination, a garage having at least three floors for automobile storage and including ramp means leading from floor to floor and of substantially a single car width and upon which automobiles are driven to and from storage places on the floors, traffic directing means visible substantially from any point on the ramp means and the floor portions immediately adjacent thereto for directing traffic to proceed up the ramp and restrain down traffic and vice versa, a central station control for manually controlling the traffic directing means, and manually operable means for calling the central station from each floor for indicating at the central station the desire at the floor to reverse the direction of traffic.

In witness whereof, I have hereunto affixed my signature.

SKILES E. TEST.