

March 24, 1970

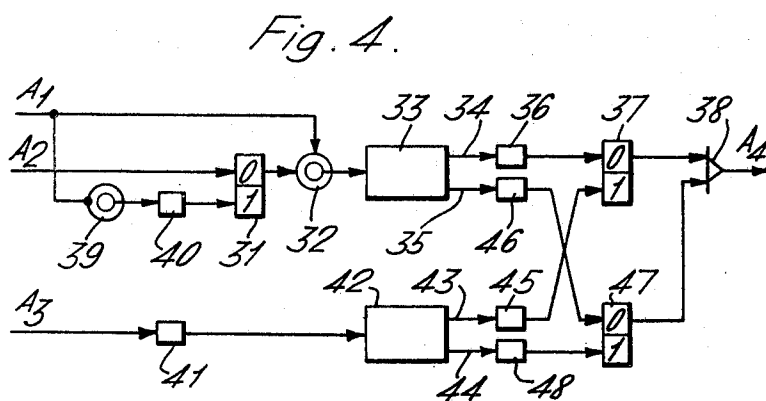
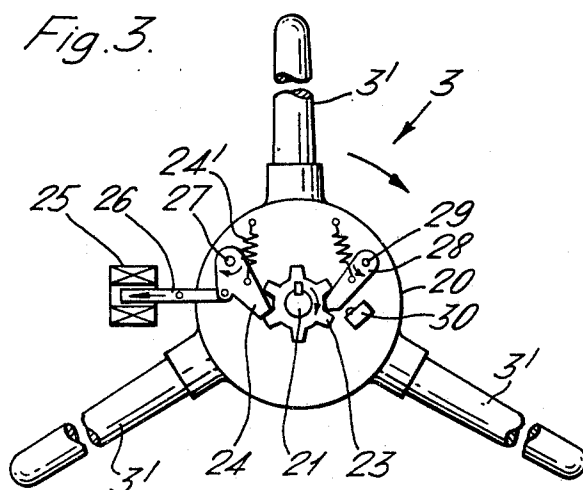
KEISUKE OSAKI

3,502,185

AUTOMATIC TICKET GATE

Filed Feb. 5, 1968

4 Sheets-Sheet 2



INVENTOR
KEISUKE OSAKI
BY
Christensen, Sanborn, & Matthews
ATTORNEYS

March 24, 1970

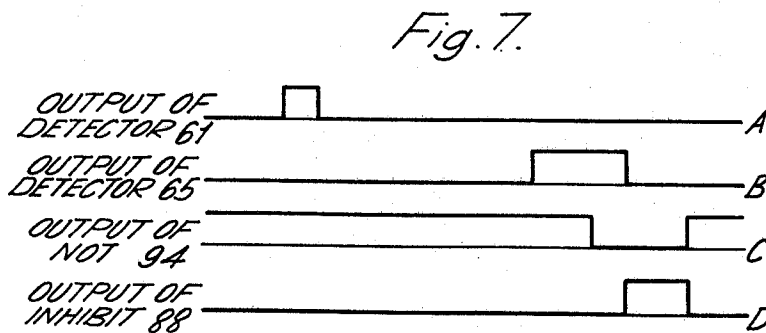
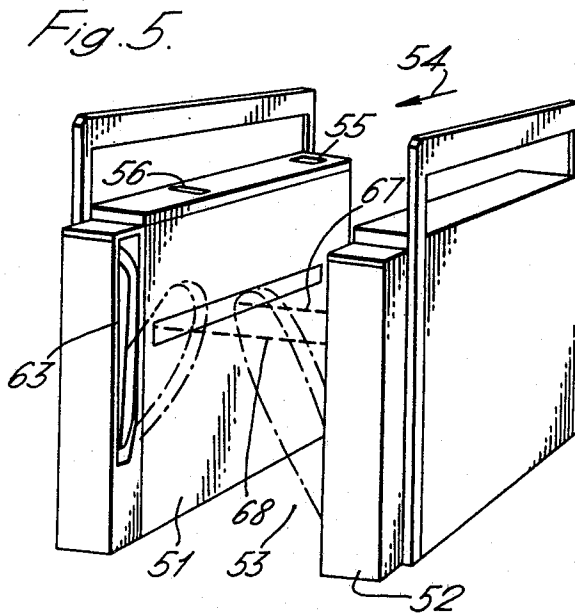
KEISUKE OSAKI

3,502,185

AUTOMATIC TICKET GATE

Filed Feb. 5, 1968

4 Sheets-Sheet 3



INVENTOR
KEISUKE OSAKI
BY *Christensen, Sanford & Matthews*
ATTORNEY

March 24, 1970

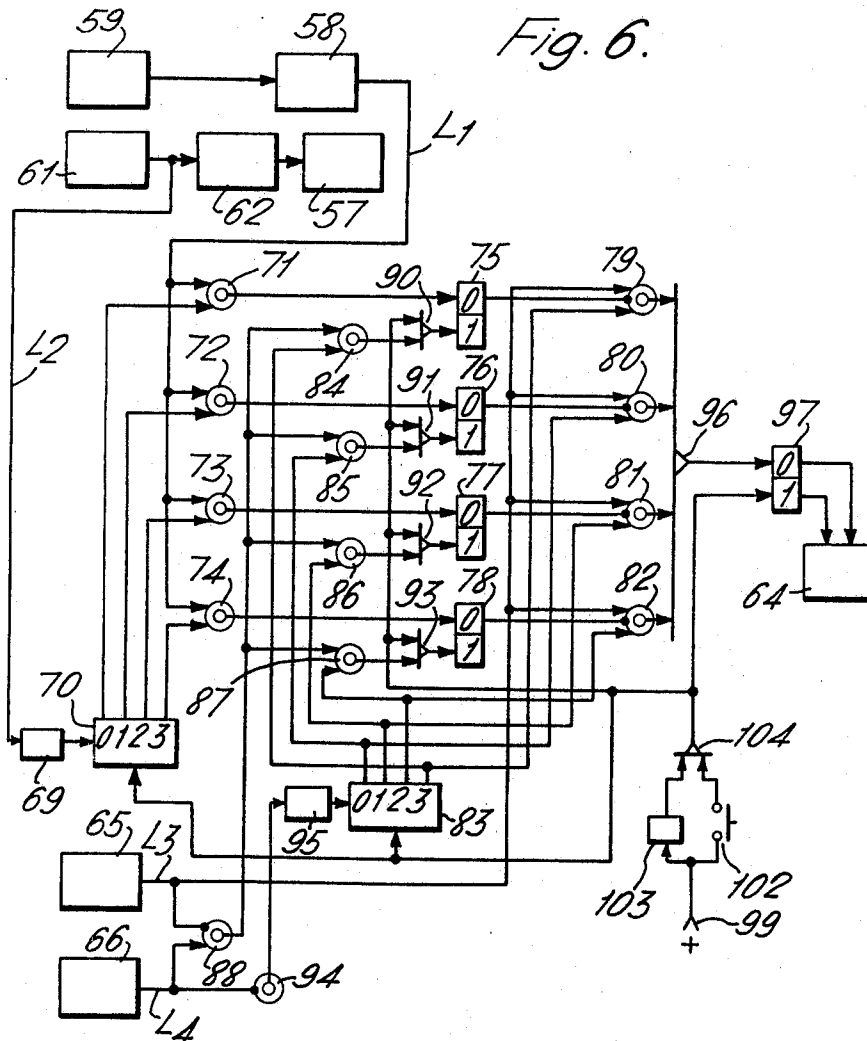
KEISUKE OSAKI

3,502,185

AUTOMATIC TICKET GATE

Filed Feb. 5, 1968

4 Sheets-Sheet 4



INVENTOR
KEISUKE OSAKI
BY
Christensen, Anton & Mathews
ATTORNEY

1

2

3,502,185

AUTOMATIC TICKET GATE

Keisuke Osaki, Kyoto, Japan, assignor to Omron Tateisi Electronics Co., Kyoto, Japan, a company of Japan
Filed Feb. 5, 1968, Ser. No. 703,048

Claims priority, application Japan, Feb. 7, 1967, 42/7,848

Int. Cl. G07f 1/06

U.S. Cl. 194—4

10 Claims

ABSTRACT OF THE DISCLOSURE

This invention provides an automatic ticket gate which is capable of accepting a plurality of passengers in rapid succession, that is, a succeeding passenger before a preceding passenger has not yet completely passed through the gate and yet regulating passage of each passenger through the gate, depending upon the validity or invalidity of the ticket he uses.

There is known an automatic ticket gate wherein a passenger who wishes to pass therethrough inserts his ticket into a slot provided on the gate, wherein the ticket is checked with respect to its validity, and when it has been recognized as valid, the gate is opened or kept opened for the passenger to pass through. Such a prior art ticket gate, however, cannot accept any succeeding passenger until the preceding one has completely passed through the gate. This certainly is very inconvenient and poses a serious problem especially during rush hours when many passengers swarm into the gate.

Accordingly, the primary object of this invention is to provide an automatic ticket gate which can accept a plurality of passengers in rapid succession, thereby greatly improving the passage efficiency of the gate. In accordance with the invention, any passenger need not wait in front of the gate until the preceding one has completely passed through the gate. When the ticket inserted into a slot formed in the gate by a passenger has been recognized as valid, that fact is memorized and the gate is opened or kept open on the basis of that memory for that passenger to pass through. At the same time the gate can accept a succeeding passenger. When the ticket inserted by this passenger has been recognized as valid, that fact is also memorized. These two facts are memorized individually and in the order they have occurred. When the first passenger has passed through the gate, the first memory about him is erased, but the gate is kept opened due to the second memory for the succeeding passenger to pass through. When this succeeding passenger has passed through the gate, the second memory about him is then erased. If the ticket inserted by the succeeding passenger has been recognized as invalid, the gate is closed against him after the preceding passenger has passed therethrough. Thus, in accordance with the invention, since the validity or invalidity of the tickets inserted by passengers entering the gate one immediately after another is memorized individually and in the order they have come in, so that the opening or closing of the gate is controlled for individual passengers on the basis of the individual memories, the gate can accept a succeeding passenger while it is still dealing with the preceding one, that is, many passengers in rapid succession, thereby improving its passage efficiency.

The invention with its features and advantages will be fully understood by reading the following description of preferred embodiments thereof with reference to the accompanying drawings, wherein:

FIG. 1 is a schematic perspective exterior view of an automatic ticket gate embodying the invention;

FIG. 2 schematically shows the interior mechanism of the ticket gate shown in FIG. 1 when used as an entrance gate;

FIG. 3 schematically shows a control mechanism for the turnstile shown in FIG. 1;

FIG. 4 is a block diagram of a control circuit for the mechanism shown in FIGS. 1 and 3;

FIG. 5 is a schematic perspective exterior view of another automatic ticket gate embodying the invention;

FIG. 6 is a block diagram of a control circuit for the ticket gate shown in FIG. 5; and

FIG. 7 is a time chart for explanation of the operation of the circuit shown in FIG. 6.

Referring to FIG. 1, there is shown an automatic ticket gate comprising a pair of side structures 1 and 1' defining a gateway to, say, a platform of a railway station. Let it be assumed that the gate is used as an entrance gate. Passengers are supposed to pass through the gate in the direction of an arrow X. As they enter the gate, they insert a ticket 50 into a slot 2 formed on the top wall of the side structure 1. The side structure 1 is also provided with a turnstile 3 normally closing the gateway.

Just inside the slot 2, there are provided a pair of rollers 4 and 4' in frictional contact with each other. The roller 4' is mounted on the outer end of a rod 5' adapted to act on a limit-switch 5. The ticket 50 that has been inserted into the slot 2 pushes the rollers 4 and 4' apart thereby moving the rod 5' lengthwise rightward in the figure, so that the switch 5 is actuated to energize a motor, not shown. When energized, the motor rotates rollers 6 and 7 clockwise. The rollers 6 and 7 are in frictional contact with rollers 8 and 9, respectively, so that the inserted ticket is drawn downward by the two pairs of rollers.

Between the vertically spaced pairs of rollers 6, 8 and 7, 9 there is provided a device 10 for reading the information such as the period of availability, the range of journey, etc. recorded on the ticket as it passes thereby. The device may for example be a magnetic reading head. The information read by the reading head 10 is tested with respect to its validity by a suitable device, not shown, and upon recognition of the validity of the ticket inserted a signal appears at a terminal A2 in FIG. 4. At the same time, a solenoid 11 in FIG. 2 is energized for a short period of time so as to pull in a plunger rod 12. This causes a lever 13 connected to the outer end of the plunger rod to be tilted counter-clockwise about a pivot pin 13'. The roller 9 is mounted on a lever 14 pivotable about a pin 14'. The counter-clockwise tilting of the lever 13 causes the lever 14 to be turned clockwise about the pin 14' so that the roller 9 thereon is moved away from the opposite roller 7, whereupon the rollers 7 and 9 release the ticket they pinch between themselves, thereby letting it to gravitate onto a cutter 16. The ticket on the cutter, however, has its upper edge positioned at a height ready to be nipped again by the rollers 7 and 9 in the manner to be described later.

When the ticket is recognized as valid, a solenoid 15 is also energized so that the cutter is turned counter-clockwise about a pin 17 so far as the cutter cuts or clips part of the forward edge of the ticket and at the same time actuates a microswitch 18, whereupon the rollers 6 and 7 are rotated counter-clockwise. With the solenoid 11 having been deenergized to restore the roller 9 to the original position to nip the ticket between itself and the roller 7, the counter-clockwise rotation of the rollers 7 and 6 moves the ticket upward. During the course of the upward movement, the ticket again moves the rod 5' to actuate the switch 5, which is restored when the ticket has been pulled out of the slot 2 by its owner.

When the switch 5 is again actuated after the production of a signal at the terminal A2 upon recognition of the validity of the inserted ticket and then restored, a

3

signal appears at a terminal A1. This signal is used to operate the circuit shown FIG. 4 on the one hand and to stop the rotation of the rollers 6 and 7 and restore the cutter 16 on the other hand.

As shown in detail in FIG. 3, the turnstile 3 comprises a disc 20 and three arms 3' secured to a shaft 21 journaled in the disc 20. When the arms 3' are rotated, the shaft 21 is also rotated. Upon rotation of the arms 3' the gate is opened in a well known manner. A ratchet wheel 23 is secured to the shaft for rotation therewith. A pawl 24 pivoted as at 27 on the disc 20 engages one of the teeth of the wheel 23 to prevent the rotation of the shaft 21. When a solenoid 25 is energized as will be described later, it pulls in a plunger 26 thereby to pivot the pawl 24 clockwise to disengage from the wheel tooth, thereby releasing the lock on the shaft 21. Under the condition, the passenger can move the turnstile with his hands to open the gate. Another pawl 28 pivoted at 29 on the disc 20 engages the ratchet wheel 23 for prevention of reverse (counterclockwise) rotation of the shaft 21.

When the turnstile and consequently the shaft 21 is rotated clockwise, the pawl 28 is pivoted counterclockwise about the pin 29, thereby actuating a microswitch 30, whereupon a signal appears at a terminal A3 in FIG. 4. The appearance of this signal at the terminal A3 is considered to indicate that the passenger has now passed through the gate. When the switch 30 has been actuated, the solenoid 25 is deenergized as will be described later, so that the pawl 28 is returned by a spring 24' to engage into the next one of the teeth of the ratchet wheel 24, thereby locking the turnstile again.

Turning to FIG. 4, the signal appearing at the terminal A2 when the ticket inserted has been recognized as valid is applied as a set input to a flip-flop 31, the set output from which is applied as one input to an AND element 32. To the other input of the AND element is applied the signal appearing at the terminal A1 when the ticket has been pulled out of the slot after the recognition of its validity. When the AND elements 32 receives the two inputs in this manner, it produces an output to be applied as a trigger input to a binary counter 33. The counter 33 has two output lines 34 and 35, on each of which an output always exists. Every time the counter 33 receives a trigger input signal, the output on one of the two lines 34 and 35 is shifted to the other. Let it be assumed that initially, an output, that is, a signal "1" exists on the line 35 while no output, that is, a signal "0" exists on the other line 34. Under the condition, when a trigger signal is applied to the counter 33, the output condition thereof is reversed, so that an output appears on the line 34 while the output on the line 35 disappears. The output on the line 34 is applied as a set input to a flip-flop 37 through a differentiator 36. The set output from the flip-flop 37 appears at a terminal A4 through an OR element 38. The signal at the terminal A4 energizes the solenoid 25 to cause the pawl 24 to pivot out of engagement with the ratchet wheel 23 (FIG. 4). Thus, the first passenger who inserted the ticket is allowed to pass through the gate.

When the signal at the terminal A1 disappears, that is, when the ticket has been pulled out of the slot, a NOT element 39 produces an output, which is applied as a reset input to the flip-flop 31 through a differentiator 40. Under the condition, the validity of the ticket that has been pulled out of the slot is still memorized by the flip-flop 37. This memory is removed or erased in the following manner. As previously mentioned, when the passenger has passed through the gate, the switch 30 is actuated to provide a signal at the terminal A3. This signal is applied to a differentiator 41, the output pulse from which is applied as a trigger input signal to another binary counter 42 of the same construction as

4

the previously mentioned binary counter 33, whereupon the signal on the output line 43 of the counter 42 that has until then been "0" becomes "1" and the signal on the other output line 44 that has until then been "1" becomes "0." The signal "1" on the output line 43 is applied through a differentiator 45 to the flip-flop 37 to reset the same, thereby removing therefrom the memory that has been memorized with respect to the passenger that has just passed through the gate.

If, before the flip-flop 37 is reset, that is, the passenger has passed through the gate, a succeeding passenger happens to come in and insert his ticket into the slot and then pulls it out again, a signal appears on the terminals A1 and A2 if the ticket is valid. At this time, since the flip-flop 31 has already been reset by the output pulse from the differentiator 40 upon pulling out of the previous ticket by the preceding passenger who is still on the gateway, the signal at the terminal A2 again sets the flip-flop 31, so that the AND element 32 produces an output, which reverses the output condition of the counter 33 so that the signal on the line 35 becomes "1" and the signal on the line 34 becomes "0." The signal "1" on the line 35 is differentiated by a differentiator 46, the output from which is applied as a set input to a flip-flop 47. Thus, the information about the succeeding passenger has been memorized by the flip-flop 47. The set output from the flip-flop 47 appears at the terminal A4 through the OR element 38, thereby keeping the gate opened for this passenger to pass through.

As previously mentioned, when the preceding passenger passed through the gate, the flip-flop 37 was reset and the reset condition continues. When the succeeding passenger has passed through the gate, the signal at the terminal A3 causes the output condition of the counter 42 to be reversed so that the signal on the line 44 becomes "1," which is differentiated by a differentiator 48, the output from which resets the flip-flop 47, thereby removing or erasing the memory about the succeeding passenger.

If, before the flip-flop 47 has been reset, another succeeding passenger inserts a ticket into the slot, the flip-flop 37 is again set provided that the ticket is valid.

The gate shown in FIGS. 1-3 may be used either as an entrance or an exit gate. In the latter case, however, the ticket that has been checked with respect to its validity is not returned to its owner but be collected into a suitable receptacle provided in place of the cutter and its associated parts. The gate may also be used with commutation tickets only. In this case, the cutter 16 and its associated parts are not required either.

In the embodiment shown in FIGS. 1-3, the arrangement is such that the information about only two successive passengers are memorized. With the arrangement of FIGS. 5-7, it is possible to accept more than two succeeding passengers in succession before the preceding passenger has passed through the gate.

FIG. 5 shows a gate comprising a pair of side structures 51 and 52 defining a gateway 53 therebetween. As in FIG. 1, passengers are supposed to enter the gate in the direction of an arrow 54. Adjacent the entrance side of the top wall of the structure 51 there is formed a ticket inlet slot 55 and adjacent the opposite end thereof a ticket outlet slot 56 is formed. The ticket inserted into the slot 55 is conveyed by a suitable ticket conveying device provided inside the structure 51 and shown as a block 57 in FIG. 6 onto the outlet slot 56.

Each ticket has a predetermined information such as the period of availability and the range of journey recorded thereon in a well known manner. While the ticket is being conveyed inside the structure 51, the information thereon is read by a suitable reader 59 and then is tested with respect to its validity by a suitable testing circuit 58 (FIG. 6). When the information is recognized as valid, a signal appears on a line L1. Inside the ticket inlet slot

5

55 there is provided a detector for detecting a ticket inserted in the slot 55 so as to produce a signal on a line L2. The detector is shown as a block 61 in FIG. 6 but may comprise a microswitch with its associated parts similar to those shown in FIG. 2. The signal produced by the ticket detector 61 is applied also to a driving circuit 62, the output from which drives the ticket conveying device 57.

Each of the two gateway defining side structures 51 and 52 is provided adjacent the exit end thereof with a bar 63 normally retracted into the structure. When a bar driving circuit 64 operates as will be described later, the bars 63 are pivoted into the gate closing position as shown in dash-and-dot lines in FIG. 5.

The gate is also provided with a pair of passenger detectors 65 and 66 spaced apart longitudinally of the gateway. Each detector may comprise a light source mounted on one of the structures 51 and 52 so as to project a light beam 67, 68 onto a photosensitive element mounted on the opposite structure. When the light beam 67 and then 68 is intercepted by a passenger passing through the gate, a signal appears on the output lines L3 and L4 of the detectors 65 and 66, respectively.

Suppose that four passengers A, B, C and D enter the gate in succession and in the order mentioned, and that the third passenger C use an invalid ticket and the other three, a valid one. When the first passenger A inserts his ticket into the slot 55, the ticket detector 61 produces an output on the line L2 as shown in FIG. 7A. This output is also applied to the driving circuit 62, the output from which causes the ticket conveying device 57 to carry the inserted ticket from the inlet slot 55 onto the outlet slot 56. The signal on the line L2 is differentiated by a differentiator 69, the output pulse from which is applied as a trigger pulse to a quaternary counter 70. The counter 70 has four output lines "0," "1," "2," and "3" connected to one input of four AND elements 71-74, respectively. The output line L1 from the ticket information tester 58 is connected to the other input of all these four AND elements. Initially, the counter 70 produces an output on its output line "0." When the counter has received one trigger signal from the differentiator 69 caused by the insertion of a ticket by the passenger A, the output of the counter 70 is shifted onto the next output line "1." This output is applied as one input to the AND element 72. On the other hand, since the ticket inserted is a valid one, the tester 58 produces an output on the line L1, which is applied as the other input to the AND element 72. As a result, the AND element 72 produces an output, which sets a flip-flop 76, the set output from which is in turn applied as an inhibit input to an AND element 80. So long as the AND element 80 receives the inhibit input, it cannot produce any output.

Flip-flops 75, 77 and 78 with their respective AND elements 79, 81 and 82 are associated with the AND elements 71, 73 and 74, respectively, in the same manner as the flip-flop 76 with its AND element 80 is associated with the AND element 72.

As will be easily understood from the foregoing description, when the second passenger B inserts his ticket, which is valid, into the slot, the output of the counter 70 is shifted onto the third output line "2," so that the AND element 73 produces an output to set the flip-flop 77, the set output from which is applied as an inhibit input to the AND element 81.

When the third passenger C inserts his ticket into the slot, the counter 70 shifts its output onto the fourth output line "3." This output is applied as one input to the AND element 74. However, since the ticket inserted by the passenger C is invalid, no signal appears on the line L1, so that the AND element 74 produces no output. Consequently, the flip-flop 78 remains reset.

When the fourth Passenger D inserts his ticket which is valid into the inlet slot, the flip-flop 75 is set, as will be easily understood from the foregoing description.

6

Thus, when the four passengers A, B, C and D have successively inserted their tickets, the flip-flops 76, 77 and 75 are successively set whereas the flip-flop 78 remains reset.

Another quaternary counter 83 has four output lines "0," "1," "2" and "3" connected to one input of the AND elements 80, 81, 82 and 79, respectively, on the one hand and to one input of four AND elements 85, 86, 87 and 84, respectively, on the other hand. Initially, the counter 83 has an output on the line "0," which is applied as one input to the AND elements 80 and 85. As the first passenger A advances through the gateway 53, the first passenger detector 65 detects him to produce a signal on the line L3 as shown in FIG. 7B. This signal is applied as the other input to the AND elements 79-82. As a result, the AND element 80 receives two inputs. However, the flip-flop 76 applies an inhibit input to the AND element 80 at this time, as previously mentioned, so that the latter produces no output.

The signal on the line L3 is also applied as an inhibit input to an INHIBIT element 88. When the passenger A is presently detected by the second passenger detector 66, an output is produced on the line L4 so as to be applied as an input to the INHIBIT element 88. At this time, however, if the passenger A is still being detected by the first detector 65 at the same time, that is, if he is still intercepting the light beam 67 of the first detector 65, the INHIBIT element produces no output as it is receiving the inhibit signal from the line L3. It is only when the passenger A has passed the first detector 65 that the INHIBIT element 88 produces an output as shown in FIG. 7D. This output is applied as the other input to the AND elements 84-87. Consequently, the AND element 85 produces an output to reset the flip-flop 76 through an OR element 91, thereby removing its set output that has been applied as an inhibit signal to the AND element 80. At this time, although the input to the AND element 80 from the output line "0" of the counter 83 is yet maintained, the other input thereto from the output line L3 of the detector 65 no longer exists, so that the resetting of the flip-flop 76 does not cause the AND element 80 to produce any output. As a result, the gate-bar driving circuit 64 remains inoperative, that is, keeps the gate open for the passenger A to pass through.

The output on the line L4 is also applied to a NOT element 94. When a passenger is detected by the second detector 66, the existing output from the NOT element 94 disappears and when the passenger has completely left the detector 66, the NOT element produces an output again as shown in FIG. 7C. This output is differentiated by a differentiator 95, the output pulse from which causes the counter 83 to step forward. In the present case, when the passenger A has passed the detector 66, the counter 83 has its output shifted from its output line "0" onto "1." The shifted output is applied as one input to the AND elements 81 and 86.

OR elements 90, 92 and 93 are associated with the AND elements 84, 86 and 87 and the flip-flops 75, 77 and 78, respectively, in the same manner as the OR element 91 is associated with the AND elements 85 and the flip-flop 76.

When the second passenger B inserts a valid ticket into the inlet slot, the counter 70 has its output shifted from its output line "1" onto "2." This output is applied simultaneously with the output on the line L1 to the AND element 73, so that the flip-flop 77 is set. When the detection of the passenger B by means of the detector 65 and then 66 has been completed, the flip-flop 77 is reset and then the counter 83 has made a forward step onto "2." Consequently, as in the case of the first passenger A, the gate-bar driving circuit 64 remains inoperative so that the gate is kept open.

When the third passenger C comes in with his invalid ticket, the counter 70 has its output shifted onto the output

line "3." However, no output is produced on the line L1, so that the flip-flop 78 remains reset, producing no set output to be applied as an inhibit input to the AND element 82, to which the output on the output line "2" of the counter 83 is already being applied. Under the condition, when the passenger C is detected by the first detector 65, the AND element 82 receives another input from the output line L3 of the detector 65, whereupon the AND element 82 produces an output to be applied as a set input to a flip-flop 97 through an OR element 96. The set output from the flip-flop 97 is applied to the gate-bar driving circuit 64, the output from which drives the gate-bars 63 to close the gate, thereby preventing the passenger C from passing through the gateway. An alarm such as a buzzer may be provided so that it sounds simultaneously with the closing of the gate-bars to summon a station employee.

When a reset switch 102 is closed, a signal is applied through an OR element 104 to all the flip-flops and the counters 70 and 83 to reset them. The same result is obtained when a terminal 99 has been initially connected to a source to cause a differentiator 103 to apply a reset signal to the flip-flops and counters through the OR element 104.

Having illustrated and described preferred embodiments of the invention, it is understood that there are many modifications thereof within the scope of the invention.

What I claim is:

1. An automatic ticket gate in which tickets each having predetermined information recorded thereon are used for passage therethrough, comprising: means for receiving a plurality of tickets successively from a plurality of persons who intend to pass through said gate; means for testing the information of each said ticket to produce a first signal when said information has been recognized as valid; means for memorizing each said first signal to produce a corresponding second signal; means operable in response to each said second signal to permit passage of one of said persons through said gate; means for detecting passage of each said person through said gate to produce a third signal, said means for testing being operable to test a second ticket prior to the production of a said third signal by the passage of a first person through said gate; and means operable in response to each said third signal to erase one of said first signals memorized in said memorizing means.

2. The automatic ticket gate of claim 1, further including means for returning said tickets to their respective owners.

3. The automatic ticket gate of claim 1, further including means for returning said tickets to their respective owners and means for cutting part of said tickets before they are returned to their respective owners.

4. The automatic ticket gate of claim 1, wherein said passage permitting means includes a member capable of selectively taking a first condition under which said gate is closed and a second condition under which said gate is open, said member being normally under one of said conditions and being changed upon production of said second signal from said one condition to the other and upon disappearance of said second signal from said other condition back to said one condition.

5. An automatic ticket gate in which tickets each having predetermined information recorded thereon are used for passage therethrough, comprising: means for receiving a plurality of tickets successively from a plurality of persons who intend to pass through said gate; means for testing the information of each said ticket to produce a first signal corresponding to the validity or invalidity of each said ticket; a plurality of memorizing means; means for successively applying each said first signal to one of said memorizing means so that said plurality of memorizing

means memorize the validity or invalidity of said plurality of tickets, respectively, in the order they have been received by said receiving means; means for detecting each said person to produce a corresponding second signal; means operable upon production of each said second signal to cause each said memorizing means to produce a third signal corresponding to the memory therein; means operable in response to each said third signal to regulate passage of each said person through said gate depending upon each said memory that was caused by each said person; and means operable upon production of each said third signal to erase each said memory that was caused by each said person that has passed through said gate.

6. The automatic ticket gate of claim 5, further including means for returning said ticket to their respective owners.

7. The automatic ticket gate of claim 5, further including means for returning said tickets to their respective owners and means for cutting part of said tickets before they are returned to their respective owners.

8. The automatic ticket gate of claim 5, further including means for storing said tickets so as not to be returned to their respective owners.

9. The automatic ticket gate of claim 5, wherein said passage regulating means operates so that passage of each said person through said gate is permitted when said memory caused by said person is that of the validity of the ticket of said person, while passage of said person through said gate is prevented when said memory is the invalidity of the ticket of said person.

10. An automatic ticket gate in which tickets each having predetermined information recorded thereon are used for passage therethrough, comprising: means for receiving a plurality of tickets successively from a plurality of passengers; first detecting means for detecting each said passenger to produce a first signal; second detecting means for detecting each said passenger to produce a second signal; ticket detecting means for detecting each said ticket to produce a third signal; means for testing the validity of each said ticket to produce a fourth signal when the validity of each said ticket has been recognized as valid; a first counter having a plurality of output lines and being operable in response to each said third signal to have its output shifted successively from one of said output lines onto the next; a plurality of memorizing circuits each adapted to be set to a first condition under which it produces a set output and alternatively reset to a second condition under which it has its set output removed, each said memorizing circuit being set when the output on a corresponding one of said first counter output lines coincides with said fourth signal; a second counter having a plurality of output lines and being operable in response to the termination of said second signal to have its output shifted successively from one of said output lines onto the next; a plurality of AND circuits each adapted to receive said set output from a corresponding one of said memorizing circuits as an inhibit input, said first signal and said output on the corresponding one of said second counter output lines as two inputs and adapted to produce a fifth signal when it receives said two inputs at the same time in the absence of said inhibit input; means operable in response to said fifth signal to permit passage of each said passenger through said gate; and means for applying said output from said second counter to a corresponding one of said memorizing circuits to reset the same successively in the order they were set.

References Cited

UNITED STATES PATENTS

3,282,388	11/1966	Lester et al.	
3,374,872	3/1968	Guillerm	194—10

STANLEY H. TOLLBERG, Primary Examiner