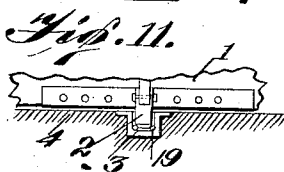
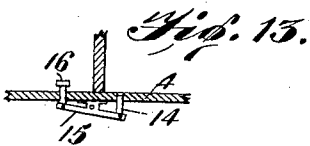
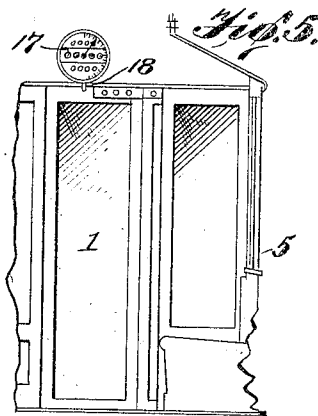
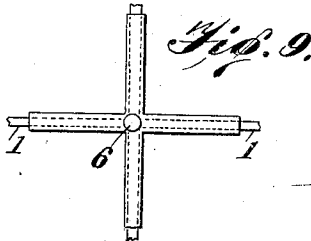
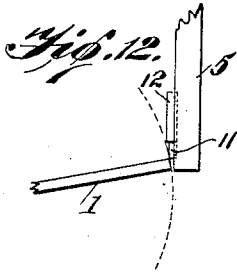
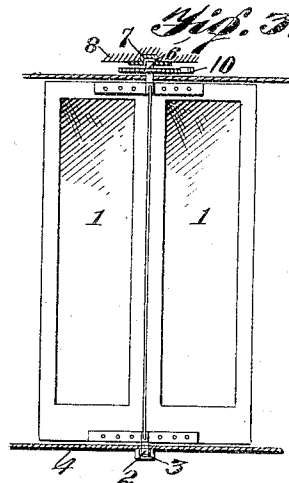
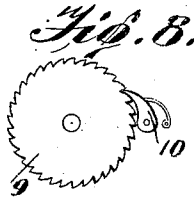
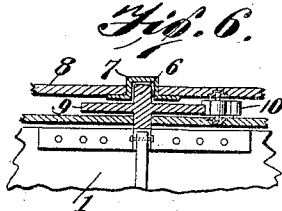
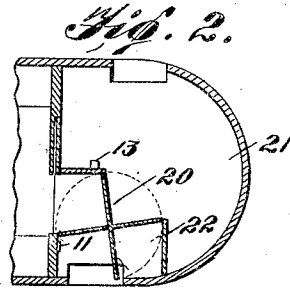
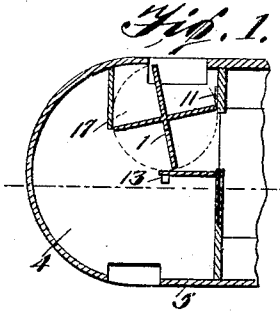


I. M. DE PUY.
REGISTERING DEVICE.
APPLICATION FILED AUG. 2, 1912.

1,064,620.

Patented June 10, 1913.

3 SHEETS-SHEET 1.



Witnesses
D. Carlson.
A. S. Porter

Inventor
IRA M. De PUY.

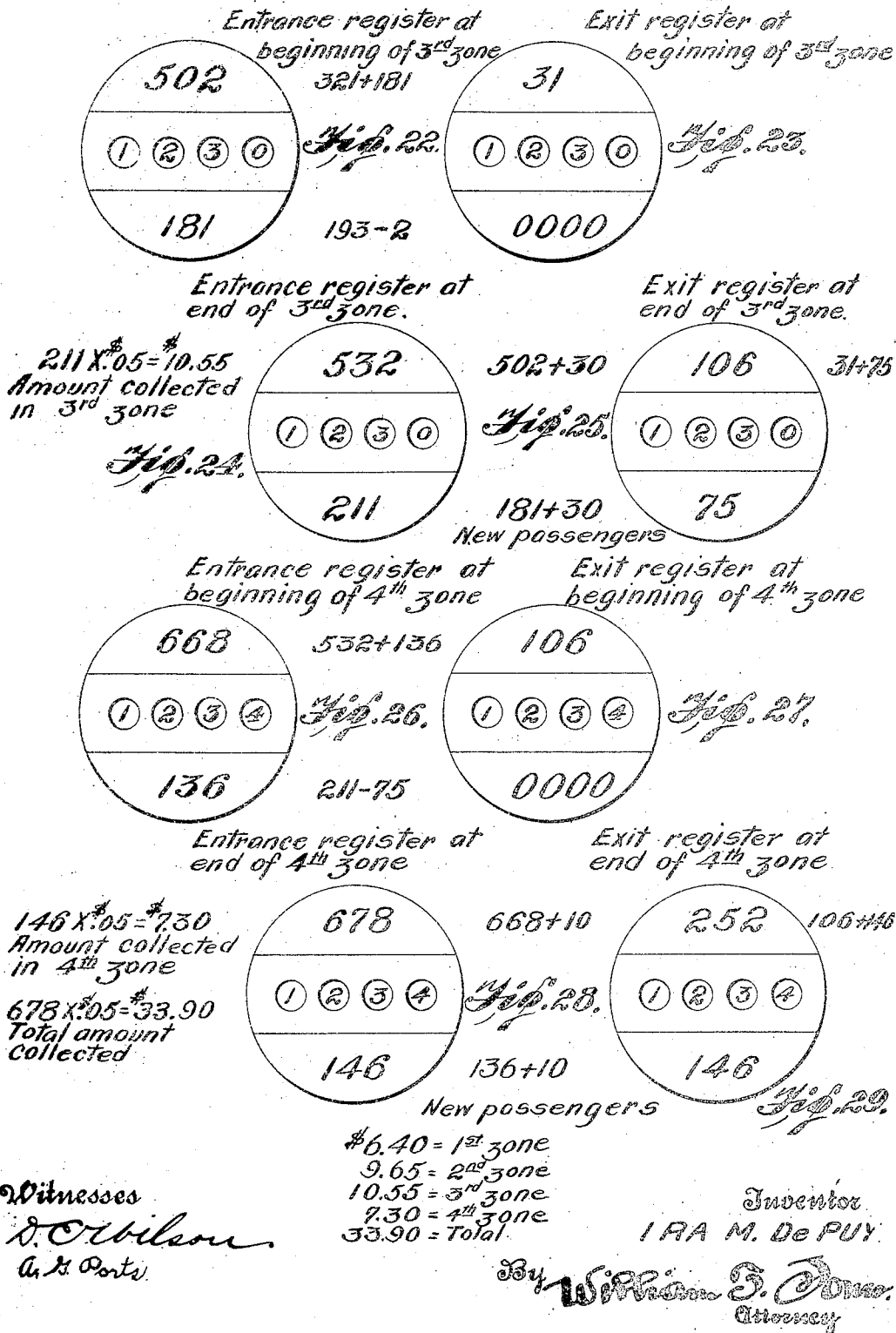
By William S. Donno.
Attorney

I. M. DE PUY.
REGISTERING DEVICE.
APPLICATION FILED AUG. 2, 1912.

1,064,620.

Patented June 10, 1913.

3 SHEETS-SHEET 2.

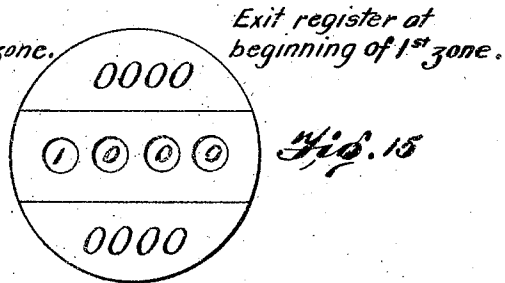
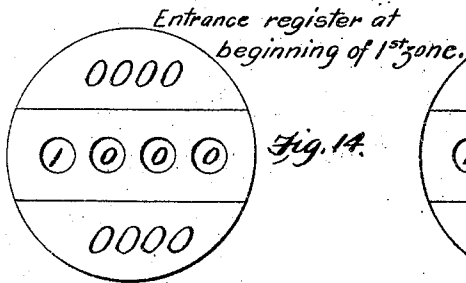


I. M. DE PUY.
REGISTERING DEVICE.
APPLICATION FILED AUG. 2, 1912.

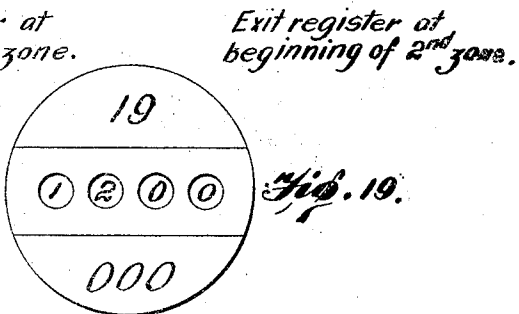
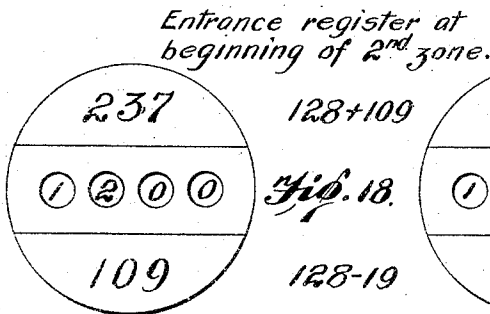
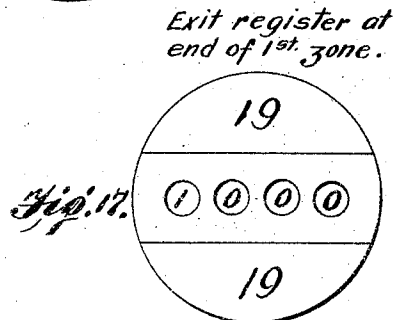
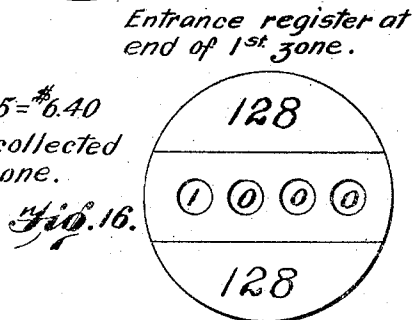
1,064,620.

Patented June 10, 1913.

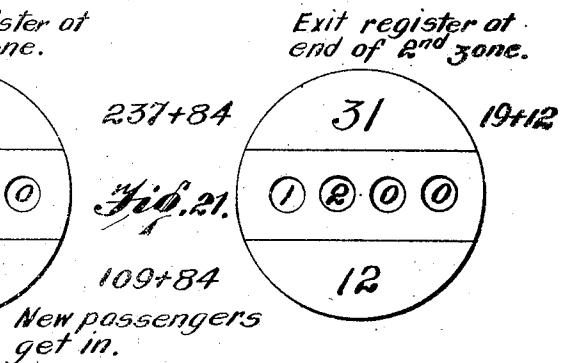
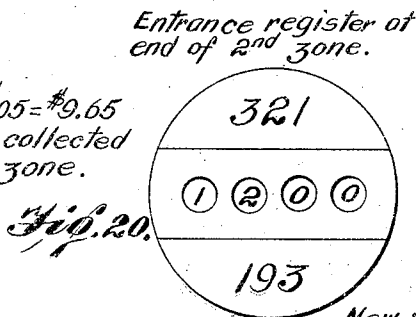
3 SHEETS—SHEET 3.



$128 \times \$0.05 = \$6.40$
Amount collected
in 1st zone.



$193 \times \$0.05 = \$9.65$
amount collected
in 2nd zone.



Witnesses

W. Wilson
Attest

Inventor

IRA M. De PUY.

By *William S. Dore*
Attorney

UNITED STATES PATENT OFFICE.

IRA M. DE PUY, OF HACKENSACK, NEW JERSEY.

REGISTERING DEVICE.

1,064,620

Specification of Letters Patent.

Patented June 10, 1913.

Application filed August 2, 1912. Serial No. 712,960.

To all whom it may concern:

Be it known that I, IRA M. DE PUY, a citizen of the United States, residing at Hackensack, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Registering Devices, of which the following is a specification.

This invention relates to certain new and useful improvements in registering devices having for its object primarily to provide a simple and cheap yet durable and efficient device for automatically registering the number of persons entering and departing from a car, building, conveyance, room or other apartment or inclosure, and the fares or fees paid by them as to accurately account for every entrance fare, for each and every plural fare thereafter and to do away with friction between passengers and conductors arising from a question as to whether fares had been previously paid, as well as cutting out disputes between the conductor and the company as to the correct number of fares, and between inspectors and conductors, for as in the present system now in use the inspectors tell the conductors to ring up plural fares, and sometimes the inspectors get the number wrong and often times the conductor cannot find the number of plural fares. I aim also to eliminate the expense of inspectors now usually employed and also to keep an accurate record of each zone through which the car passes, when the invention is applied to a car or other moving means of conveyance.

By my present invention I am by simple, convenient and effective means enabled to determine the exact number of persons in the conveyance or apartment at any particular time or times as well as the total number of fares or fees that have been collected.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the appended claims.

The objects hereinbefore outlined, as well as those generally sought in devices of this character are accomplished by the device illustrated in the accompanying drawings which, with the numerals of reference thereon, form a part of this specification and in which—

Figure 1 is a plan view of the rear or entrance platform of a car provided with my

device. Fig. 2 is a plan view of the front or exit platform of a car provided with my device. Fig. 3 is an elevation of the door parts being broken away. Fig. 4 is an elevation of the platform of a car provided with my device. Fig. 5 is a view of my device from within the car. Fig. 6 is a view in section of the upper pivot, socket and registering device. Fig. 7 is a plan view of the upper socket member. Fig. 8 is a view of the dog and ratchet. Fig. 9 is a plan view of the door and pivot. Fig. 10 is a plan view of the lower socket member. Fig. 11 is a view in section of the lower hinge member. Fig. 12, is a view of a section of the door and detaining bolt. Fig. 13 is a view of the locking member. Figs. 14 to 29 show face views of the entrance and exit registers at the beginning and end of different zones or routes or portions of routes, the designations thereon clearly explaining the different views.

Like numerals of reference indicate like parts throughout the several views.

While the invention as hereinafter disclosed is designed particularly for use upon car and like conveyances for automatically registering the fares and recording the number of passengers entering and departing from the car or other vehicle of conveyance and is so illustrated in the present instance, it is evident that the invention is clearly valuable for other uses and in places where it is desired to register or record the number of persons entering and leaving.

In the forms of "pay-as-you-enter" or registering cars now in use, the ringing up or registering of the fares is done by an employee (and often incorrectly and inaccurately done), but in my improved device the number is registered automatically by the passenger himself. In many of the car routes fares are charged for each of several sections or divisions of the route, or zones and my device is also designed to accomplish the registering of plural fares thus charged.

In my improved device the number of persons entering and leaving is registered or recorded on separate registering devices so that the number of persons in a car at any point on the route may be ascertained by subtracting the total number of persons who have left the car as registered on the exit register from the number who have entered as registered on the entrance register, thus at the commencement of each section the number of persons who have en-

tered and departed from the car as registered is set or fixed on each registering device and the number of fares to be collected from the persons remaining upon the car for the section then commenced is readily ascertained.

The construction which I at this time consider preferable as embodied in a device for accomplishing the foregoing ends comprises a four leaf or turnstile door 1 having a pivot 2 set in a socket member 3 in the floor 4 of a car or other structure 5. Upon the top of the turnstile door 1 I provide a pivot 6 set in a socket member 7 in the roof 8 of the car 5. Upon the top of the door 1 I provide a ratchet member 9 rotating with the door 1 and a dog 10 to engage the ratchet member 9 and prevent the reverse movement or rotation of the door 1. Upon the car structure 5 and in the plane of rotation of door 1 I provide a detaining bolt 11 which is normally held in the set plane of rotation by means of a spring within the case 12 or by any similar well known device. This spring is of sufficient strength to hold the door against rotation by its own momentum but will permit the door 1 to rotate when pressure is applied to it by a passenger. Within the floor 4 of the car 5 I set an engaging member 13 comprising a pin 14 which may be raised into the plane of the rotating door 1 by means of a lever 15 pivoted upon the under side of the floor 4 of the car and a foot push button 16 whereby the pin 14 may be raised into the plane of rotation of the door 1 locking it against rotation when it is desired to prevent the admission of passengers, when fare has not been paid, or to prevent entrance of passengers when conductor is inside car, or prevent persons from swinging door and thus registering fares at any time, or for any other reason, same should not be done. In other words, by means of lever 15, push button 16 and pin 14, the conductor has complete control to prevent entrance without registering, but he cannot misuse that control to admit without registering.

Upon the car structure 5 at a suitable position adjacent to the door 1 I provide an entrance register 17 of any desired form which will operate to register the fares or movement of the door 1 by means of a lug 18 connected therewith and lying in the plane of rotation of the door 1 in such manner that the entrance register 17 will register each passage of each leaf of the door 1 as they respectively engage the lug 18 in the usual well known manner. If desired ball bearings 19 may be provided in the socket 3 to reduce the friction and permit the door to rotate easily.

I have thus described the device as applied to the entrance of a car or other

apartment and the entrance register connected therewith; the exit is provided with a counterpart device which by the rotation of its four leaf or turnstile door 20 on the front platform or exit 21 of the car or apartment, registers, in the manner above described, the number of persons or passengers departing from or leaving the car or apartment on its exit register 22 which operates in all respects in the same manner as the entrance register above described. And as has been above described the number of passengers in a car at the commencement of a section of the route for which an additional fare is charged may be registered by setting or recording the entrance and exit registers at such point when the dials thereof may be returned to zero, and in accounting for fares collected the collector will be charged accordingly.

It is to be understood that at the end of each fare limit or zone the conductor enters the car and makes a record in his book of each register, and then turns the clock or register, the lower part coming to zero adding those fares to the total above, at the same time registering the next number of fare zone. Thus the conductor has his record for his use and the clock or register for the company's use, thus dispensing with the services of an inspector. Furthermore, when the conductor enters the car to collect plural fares he is registered on the entrance register, and as he leaves after collecting fares he is registered on the exit register, the company making him an allowance for one entrance and one exit for each plural zone.

In the illustrations above given it will be understood that the upper third or portion of the entrance register or clock, registers the total fares rung up either by persons entering the car or by the conductor entering the car and ringing up the fares at the beginning of a new zone. At the end of the last section of the route, or the last zone, in this case is reported the total number of fares collected on the entire trip. The middle third or portion of both the entrance and exit registers is the section or zone indicator. The lower third of the entrance register is a trip register indicating the number of fares collected in each zone. If any person enters the car it is automatically registered here as he enters, while at the beginning of a new zone the conductor enters the car as above stated then rings up the plural fares of persons then in the car and collected fares going out of the exit door. The upper third of the exit register indicates the total exit. At the end of the trip it will be the record of the total number of persons leaving the car during the entire trip. The lower third registers the exit as each person leaves the car and shows

the number of exits in each zone or section. At the beginning of each zone the exit register, the lower portion, is turned to zero which automatically changes the middle third or portion to the number of the new zone. At the end of each zone the number of plural fares to be collected at the beginning of the new zone is determined by subtracting the number of exits in the lower third of exit register from the number of fares in the lower third of the entrance register. Then the conductor enters the car, collecting and ringing up the fares.

The mode of operation and advantages of my device will be readily understood from the foregoing description especially when taken in connection with the annexed drawings.

It will be seen that I have means, authentic in its nature, which will positively show the employees how long the passengers may have ridden between the stations. The company fixes the distance by having fare limits. As no person can enter the car without registering, the entrance clock will show how many fares must be collected in the first zone or portion or section of the route. This same number of fares must be collected in the second zone, less the number which the exit register shows, had departed, plus those shown on the entrance register which have entered in the second zone, and so on for any number of zones or fare limits. This gives an absolute and positively correct and reliable account of every fare, and makes it absolutely impossible for the conductor to knock-down any fares. Reference to Figs. 14 to 29 in connection with the following illustration and explanation will make this matter clear; Figs. 14 and 15 show the entrance and exit registers respectively at the beginning of the first zone. Fig. 16 shows the entrance register at the end of the first zone. It shows that 128 passengers have entered the car since it first started for which the conductor should have collected 128 fares which at five cents apiece would amount to \$6.40. Fig. 17 shows the exit register at the end of the first zone, showing that 19 passengers have left the car. This leaves 109 of the passengers still remaining in the car at the beginning of the second zone. Fig. 18 shows the entrance register at the beginning of the second zone showing at the bottom the number of passengers in the car at the end of the first zone and at the top this number plus the number of passengers that entered during the passage of the car through the first zone, 109 plus 128. Fig. 19 shows the exit register at the beginning of the second zone, the number who left the car during the first zone, namely 19, being shown at the top and the bottom showing zero. Suppose during this trip, that is through the second zone, 12

passengers left the car. We have this number indicated at the bottom of the register in Fig. 21 and this number plus the number (19) who left the car at the end of the first zone—31 in all, shown at the top of this register. During this passage of the car through the second zone 84 passengers entered. There is at the bottom of the register shown in Fig. 20 193 being the number, 109 in the car when it reached the end of the first zone plus the 84 who entered during the second zone, and at the top of the register in said Fig. 20 there is 321 being 237 shown in the top of Fig. 18 plus the 84 who entered the car during its trip through the second zone.

In Fig. 23 there is shown at the top of the register 31, that being the number who have left the car during the first and second zone, the lower part of the register showing zero. In Fig. 22 there is at the upper part of the register 502 plus 181 the number remaining at the end of the second zone, while at the bottom there is shown 181 being the number 193 shown at the bottom in Fig. 20 minus 12 who left the car during the passage through the second zone. This shows 193 fares that should have been collected during the second zone, which at five cents per fare would amount to \$9.65. When the car reaches the end of the third zone 75 passengers have left the car as indicated at the bottom of the register in Fig. 25, the number 106 at the top of such register showing the number that had previously left, namely 31, plus the number who left during the third zone. In Fig. 24 there is at the top 532 being the number shown at the top of Fig. 22 plus 30 who entered the car during the third zone. At the bottom in Fig. 24 there is the number 211 which is the number in the car at the beginning of the third zone, namely 181, plus those who entered making 211 fares which should have been collected which at five cents per fare amounts to \$10.55. In Fig. 26 there is shown at the top 668 which is the number found at the top of Fig. 24, namely 532, plus 136, the number of passengers—211 in the car during its passage through the third zone minus the number—75 who left during the passage of the car through such zone. Fig. 27 shows at the top the number 106 being a total of the number of passengers who left the car during its trip through the first, second and third zones, namely 31 plus 75. Fig. 28 shows the entrance register at the end of the fourth zone during which time 10 people entered the car, the register showing at the top 678, being the number 668 shown at the top of the register in Fig. 26 plus the 10 who entered the car during its trip over the fourth zone. At the bottom of the register in this figure will be found the number 146, which is that at the bottom of

Fig. 26 plus the 10 who entered the car during its passage through the fourth zone. In Fig. 29 it will be found at the bottom the number 146, the same being the number of people who left the car at the end of the fourth zone which we will assume to be the end of the route. This corresponds with the number 146 at the bottom of the register shown in Fig. 28 while at the top of Fig. 29 will be found the number 252 being the number 106 shown at the top of Fig. 27 plus the number 146 of the passengers who left the car at the end of the fourth zone. The numbers of the fares to be collected, then during the passage of the car through the fourth zone is 146 which at five cents per fare amounts to \$7.30. We have then \$6.40 collected for fares during the first zone; \$9.65 for the second zone; \$10.55 for the third zone and \$7.30 for the fourth zone, making a total of \$33.90. At the top of the register in Fig. 28 we have the number 678 showing the total number of fares which the conductor should have collected at five cents per fare which makes a total of \$33.90.

What is claimed as new, is:—

1. In a device of the character described, a car, a turnstile and trip and total register-

ing devices operatively connected therewith to register the entry of the passengers during the passage of the car through each zone and the total number of passengers entering the car during any number of zones, and an independent turnstile and trip and total registering mechanism operable thereby to register the number of persons leaving the car during its passage through each zone and the total number of exits during the passage of the car through a multiplicity of zones.

2. The method of registering carfares which consists in automatically registering the number of passengers entering a car during each zone, automatically registering the number of exits from the car in each zone, registering the number of passengers in the car during its passage through each zone, registering the number of exits in each zone, and the total number of exits in a multiplicity of zones.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

IRA M. DE PUY.

Witnesses:

LOUIS W. SHAFFER,
FRANCES SCHANTZ.