

D. A. L. McDONALD.
TURNSTILE MECHANISM.
APPLICATION FILED SEPT. 27, 1910.

1,049,587.

Patented Jan. 7, 1913.

2 SHEETS—SHEET 1.

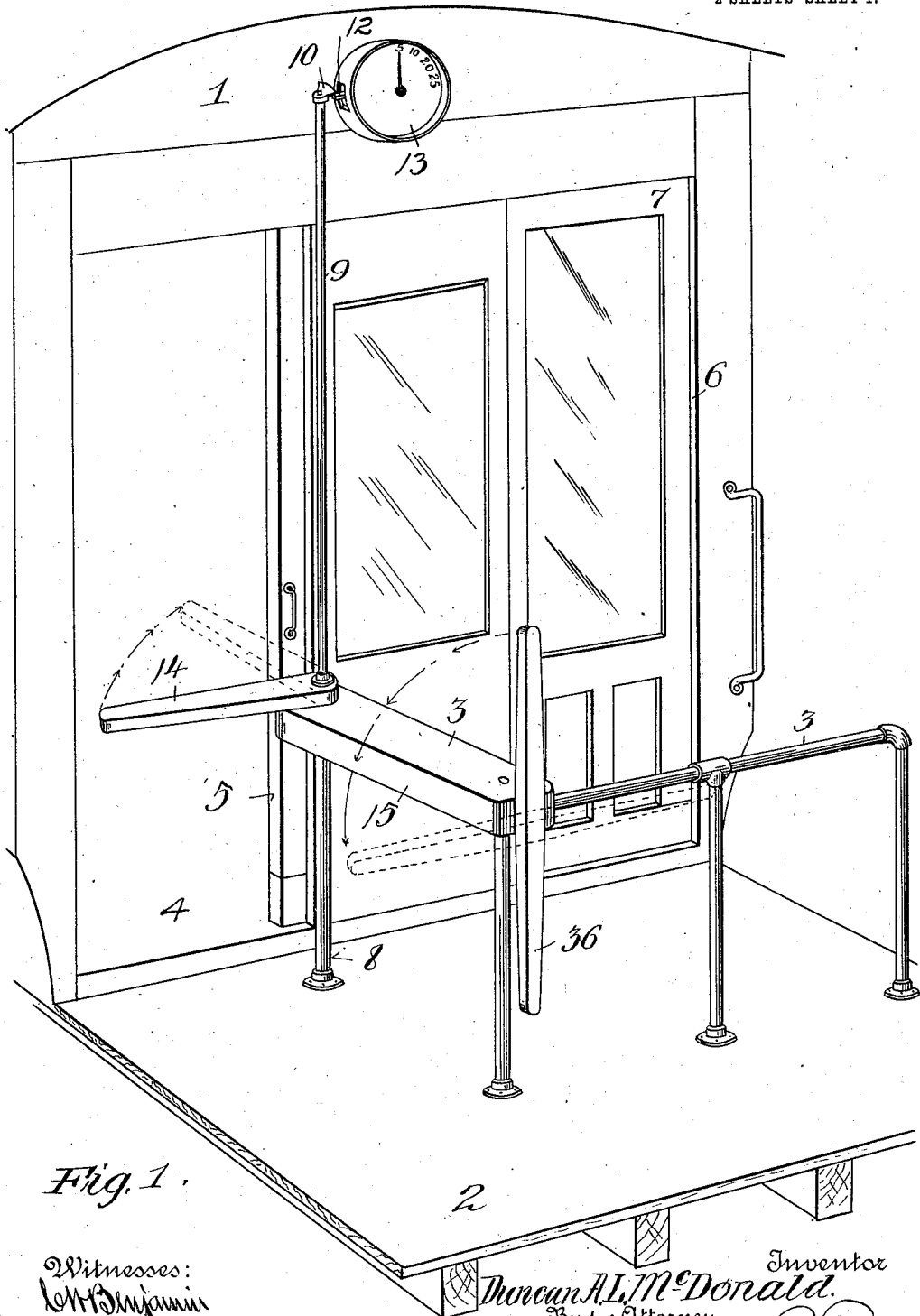


Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 2.

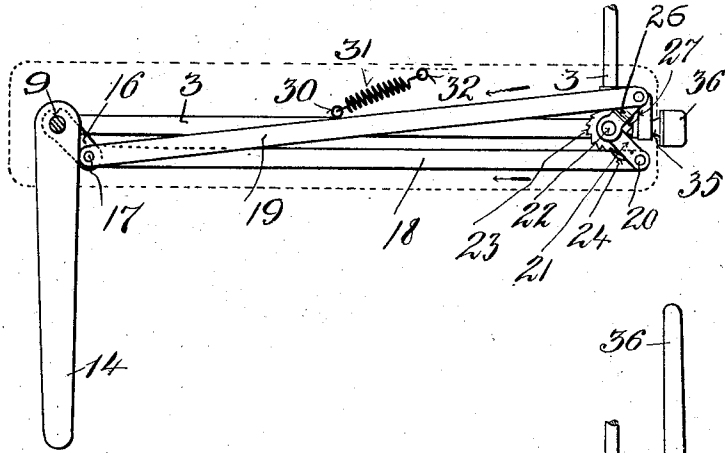


Fig. 3.

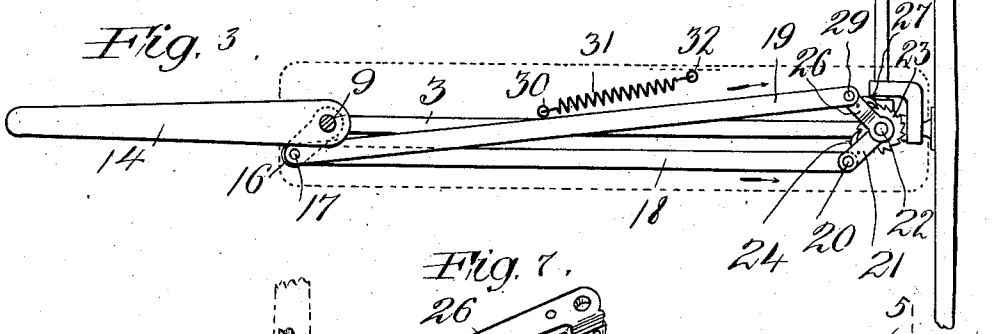


Fig. 7.

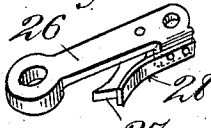


Fig. 5.

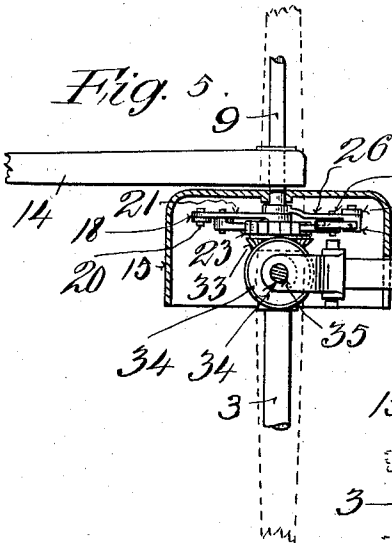


Fig. 4.

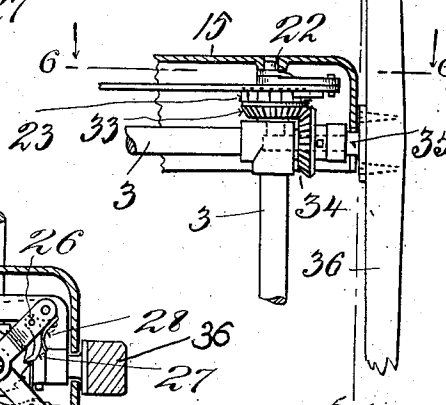
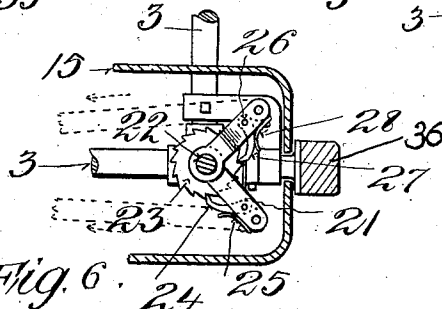


Fig. 6.



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UNITED STATES PATENT OFFICE.

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TURNSTILE MECHANISM.

1,049,587.

Specification of Letters Patent.

Patented Jan. 7, 1913.

Application filed September 27, 1910. Serial No. 583,983.

To all whom it may concern:

Be it known that I, DUNCAN A. L. McDONALD, a subject of the King of Great Britain, and a resident of Montreal, Province of Quebec, Dominion of Canada, and whose post-office address is care of Montreal Street Railway Company, Montreal, Canada, have invented a new and useful Improvement in Turnstile Mechanism, of which the following is a specification.

The object of my invention is to provide a car of this class which will permit one passenger to be on a given portion of the platform at a time, so that fares can be collected without confusion, and from each passenger as he passes this part of the platform. This object is accomplished by my invention, one embodiment of which is hereinafter set forth.

For a more particular description of my invention, reference is to be had to the accompanying drawings, forming a part hereof, in which:

Figure 1 is a perspective view of a portion of the car provided with my improvement. Fig. 2 is a plan view of a portion of the mechanism. Fig. 3 is a similar view except that the parts are shown in a different position. Figs. 4, 5 and 6 are sectional views of a portion of the mechanism, Figs. 5 and 6 being taken on the lines 5—5 and 6—6, respectively, of Fig. 4, looking in the direction of the arrows, with parts omitted. Fig. 7 is a perspective view of a pawl which is a component part of the mechanism.

Throughout the various views of the drawings, similar reference characters designate similar parts.

In the embodiment of my invention herein shown, the car 1 is provided with a platform 2 which has a rail 3 which separates the outgoing from the incoming passengers. The incoming passengers pass through a doorway 4 closed by a door 5, and the outgoing passengers pass through an exit doorway 6 which may be closed by a door 7. One of the uprights 8 which supports the rail 3 also supports a vertically disposed shaft 9 which turns in the same and is provided with a cam 10 that is fixed to its upper end. This cam 10 has a beveled surface which rides over a trigger or lever 12 that extends from the register 13 so that a movement of the cam 10 through an angle of about 90 degrees will shift the lever 12 once and cause

the register 13 to register a fare. Immediately above the railing 3 the shaft 9 carries a bar 14 which is fixed thereon and opposite the doorway 4, so that a passenger must shift this bar 14 substantially 90 degrees to get into the car, and by so doing, he automatically registers a fare.

It is obvious that if the mechanism were confined to what has been described in detail above, that when the bar 14 is once thrown, as shown in dotted lines in Fig. 1, any number of passengers could enter without further registering their fares. To prevent this additional mechanism is required. The rail 3 is enlarged to form a casing 15 in which is placed this mechanism. The shaft 9 carries a crank 16 on which is a crank pin 17, fixed in the conventional manner, and this crank pin 17 is connected to two links 18 and 19, respectively. The link 18 is at its other end, journaled on a pin 20 which is fixed in a short link 21 that is loosely mounted on a vertical shaft 22. This vertical shaft 22 has a ratchet wheel 23 fixed thereon, so that it is adapted to be engaged by the pawl 24 mounted on the short link 21 and pressed against the ratchet 23 by means of a leaf spring 25 which is also secured upon the link 21, in the conventional manner. The shaft 22 also carries a link 26 which has a pawl 27 and a leaf spring 28 all mounted and connected the same as the link 21 and its pawl 24 and spring 25, except that the link 26 is pivotally connected to the link 19 by means of a pin 29. The link 19 is also provided with an eyelet 30 to which is connected a coil spring 31 that runs to a second eyelet 32 fixed on the interior of the casing 15. The links 18 and 19, are, for the sake of clearness, removed from Fig. 6 but indicated in another relative position by dotted lines.

The links 18 and 19 together with the connecting parts are so arranged and disposed that when the bar 14 is thrown through an angle, the link 18 throws the ratchet 23 and the shaft 22 through a corresponding angle and when the bar 14 is restored to its former position through the action of the spring 31, the link 19 through the small link 26 and ratchet 23 throws the shaft 22 through a second angle equal to the first. The shaft 22 has fixed thereon a bevel gear 33 immediately below the ratchet 23 or in some other convenient location, and this bevel gear 33 engages a second bevel gear

34 on a short stud shaft 35 at the end of which is mounted an arm 36 in any desired manner. This arm 36 is mounted so as to be symmetrical of the shaft 35 with which it
5 revolves.

The shafts 22 and 35 are stud shafts with their axes at right angles to each other and both are journaled in the railing 3, the stud shaft 22 being journaled in the casing 15 as well. The bars 14 and 36 are so placed with regard to each other that when the bar 14 is across the doorway 4, the bar 36 is vertically disposed as shown in Fig. 1. When the bar 14 is thrown through the doorway 4
15 so as to permit the entrance of a passenger, the bar 36 is thrown into a horizontal position, as indicated by dotted lines in Fig. 1. The length of the casing is such that there is only room for one passenger between the
20 bars 36 and 14, so that it is easy for the conductor of the car to prevent more than one passenger being opposite the casing 15 at one time. The passengers leaving the car do so through the doorway 6 and are prevented from mixing with the entering pas-
25 sengers by means of the rail 3.

From the foregoing it is obvious that my invention provides a simple mechanism for admitting one person at a time into the interior of a car and simultaneously registering
30 the number of persons so admitted.

While I have shown and described one embodiment of my invention, it is obvious that it should not be restricted thereto but
35 that it is broad enough to cover all structures that come within the scope of the annexed claims.

In my Patent No. 1,016,948 issued to me February 13, 1912, application for which

was filed of even date herewith, I have shown and claimed the broad features herein disclosed but to which no claim is made in this my pending application.

What I claim is:

1. In a device of the class described, combination of a railing, a doorway, two bars, one adapted to normally rest across said doorway and the other in a vertical position, and link mechanism connecting said bars so that when one is shifted in said doorway, the other is moved to a horizontal position.

2. In a device of the class described, a railing carrying two bars, one mounted on a vertical and the other on a horizontal shaft, and link mechanism connecting said shafts so that when the one mounted on a vertical shaft is shifted through an angle and back, the one mounted on a horizontal shaft is shifted twice the angular distance in one direction.

3. In a device of the class described, a car with entrance and exit doors, a platform, a railing separating the said doorways, a horizontally disposed bar carried by said railing, a bar with a horizontal axis carried by said railing and link mechanism connecting said bars, so that when the horizontally disposed bar is thrown through an angle and back, the bar with a horizontal axis is thrown through twice the angle in one direction.

Signed at the city of Montreal, this 22nd day of August, 1910.

DUNCAN A. L. McDONALD.

Witnesses:

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