

S. R. MARKS.

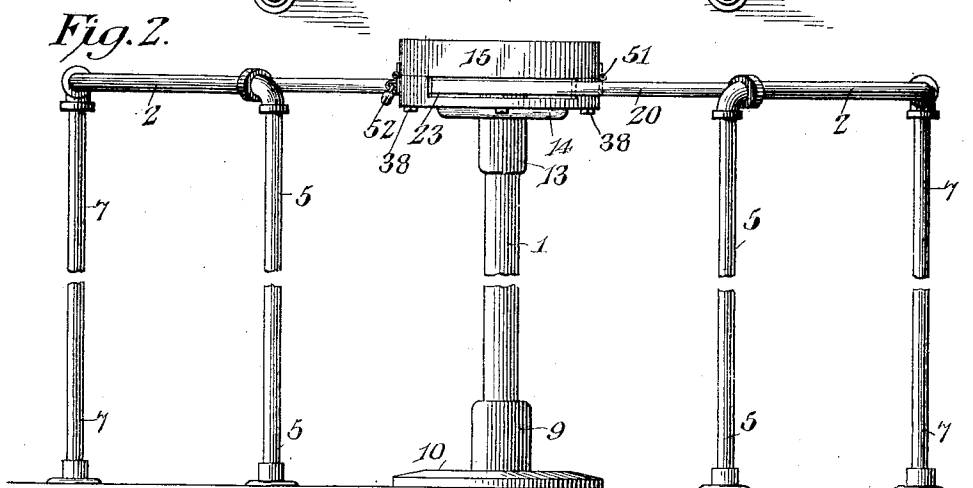
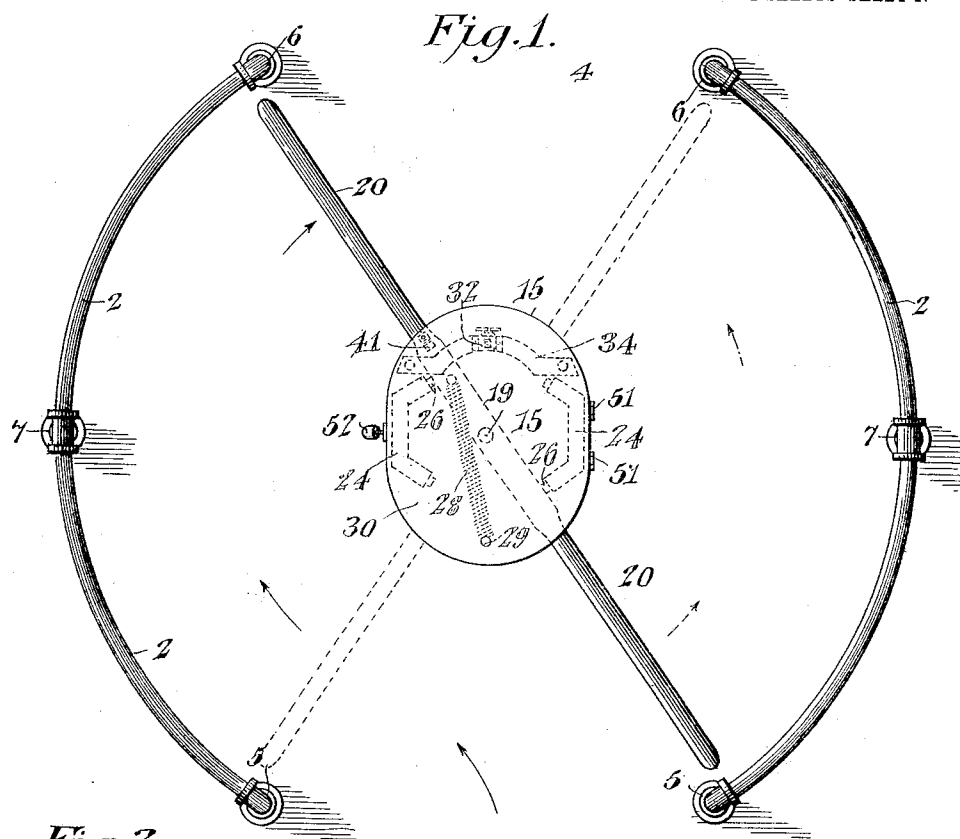
TURNSTILE.

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1,107,975.

Patented Aug. 18, 1914.

2 SHEETS—SHEET 1.



WITNESSES

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2 SHEETS-SHEET 2.

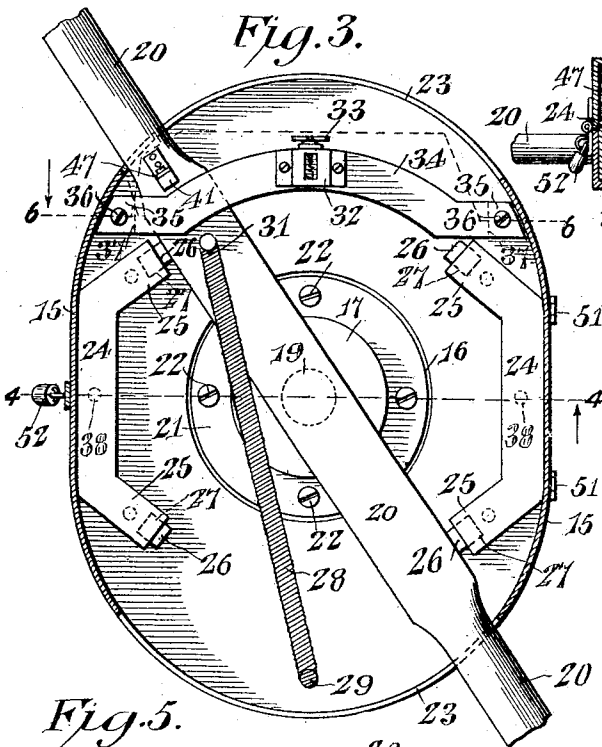


Fig. 5.

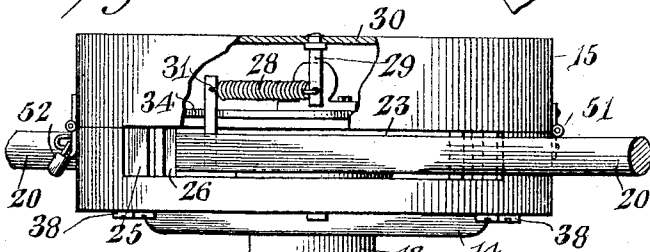


Fig. 6.

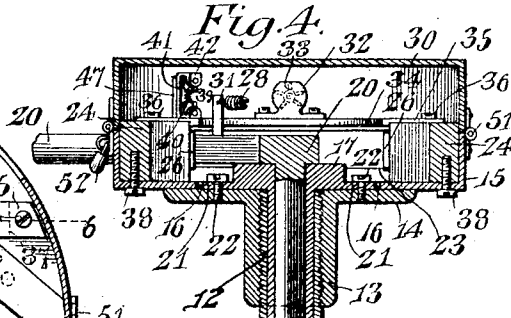
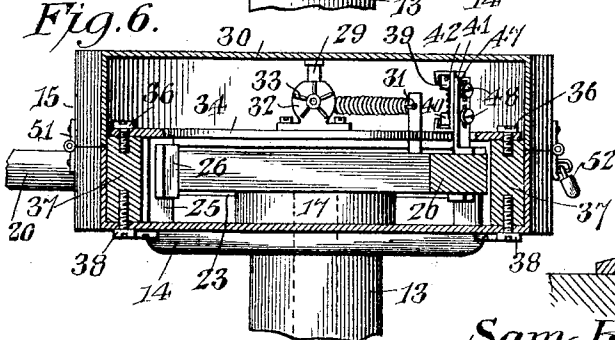


Fig. 4.

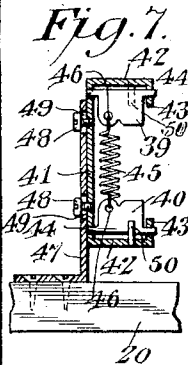
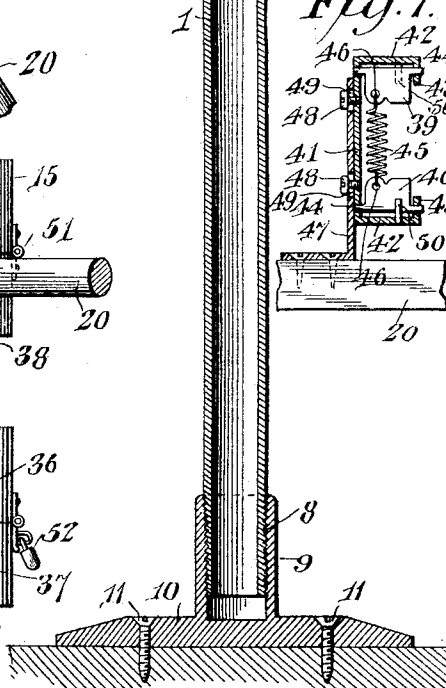


Fig. 7.



WITNESSES

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# UNITED STATES PATENT OFFICE.

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## TURNSTILE.

1,107,975.

Specification of Letters Patent.

Patented Aug. 18, 1914.

Application filed March 31, 1913. Serial No. 757,992.

*To all whom it may concern:*

Be it known that I, SAM R. MARKS, a citizen of the United States, residing at Jacksonville, in the county of Duval and State of Florida, have invented a new and useful Turnstile, of which the following is a specification.

The invention relates to improvements in turnstiles.

10 The object of the present invention is to improve the construction of turnstiles, and to provide a simple, efficient and comparatively inexpensive turnstile, designed for use on street cars and adapted to be operated by the passengers independently of the conductor for registering the number of passengers entering a car, and capable also of general use for registering the number of persons entering or leaving any building or inclosure.

20 With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

30 In the drawings:—Figure 1 is a plan view of a turnstile, constructed in accordance with this invention. Fig. 2 is a front elevation of the same. Fig. 3 is an enlarged horizontal sectional view of the central portion of the turnstile. Fig. 4 is a transverse sectional view of the same on the line 4—4 of Fig. 3. Fig. 5 is a front elevation of the central portion of the turnstile, the casing being partly broken away. Fig. 6 is a transverse sectional view on the line 6—6 of Fig. 3. Fig. 7 is a detail sectional view, illustrating the construction of the upper and lower reversely swinging pawls or dogs, which actuate the registering mechanism.

40 Like numerals of reference designate corresponding parts in all the figures of the drawings.

50 In the accompanying drawings in which is illustrated the preferred embodiment of the invention, 1 designates a vertical tubular supporting post or standard arranged centrally within inclosing railings 2, preferably curved, as clearly illustrated in

Fig. 1 of the drawings, and spaced apart at their terminals to provide entrance and exit openings 3 and 4. The curved inclosing railings are preferably supported by inner and outer end posts 5 and 6 and intermediate posts 7, but they may be of any other desired form and while they are shown constructed of tubular metal, any suitable material may, of course, be employed in the construction of the inclosing railings or the other portions of the turnstile. The supporting posts of the inclosing railings may be provided at their lower ends with any suitable means for securing them to the platform of a car or other supporting surface. The central post has its lower end 8 exteriorly threaded and screwed into an interiorly threaded socket 9 of a base 10, which is secured by screws 11 or other suitable fastening devices to the platform of a car or other supporting surface. The upper end 12 of the central post or standard 1 is also exteriorly threaded and screwed into a sleeve 13, provided at the upper end with an attaching flange 14 to which a casing 15 is suitably secured. The casing 15, which is constructed of sheet metal, or other suitable material, is provided at the bottom with a central opening 16 to permit a circular horizontal bearing portion 17 of a bushing 18 to rest upon the flange 14. The bushing 18, which extends downwardly into the upper portion of the central post or standard 1, has a smooth interior and forms a bearing for a central pivot 19 of a horizontal oscillatory turnstile bar or member 20, which rests upon the said circular bearing portion 17. The circular bearing portion 17 has a reduced peripheral attaching portion 21, which is secured by screws 22 or other suitable fastening devices to the upper face of the horizontal flange of the sleeve 13, and the center of the horizontal bearing portion 17 projects above the plane of the bottom of the casing and supports the oscillatory bar or member 20 in an elevated position above the bottom of the casing.

100 The pivot 19, which is suitably fixed to the oscillatory bar or member 20, depends from the center of the same, and the opposite portions or arms of the bar or member 20 extend through arcuate end openings 23 of the casing 15, which also contains opposite stops 24 for limiting the swinging or oscillatory movement of the bar or member 20. The horizontal oscillatory bar terminates short

of the inclosing railings, and the stops are spaced apart a sufficient distance and the arcuate slots 23 are of sufficient length to permit the oscillatory bar to swing across the entrance and exit openings 3 and 4 from the full line position illustrated in Fig. 1 of the drawings to the dotted line position in the said figure. A person entering in the direction of the arrow when the oscillatory turnstile bar or member is in the full line position shown in Fig. 1 will pass around to the left of the center post and push the rear portion of the oscillatory bar ahead of him and cause the same to swing to the dotted line position in Fig. 1, and the next person entering will pass around to the right as indicated by the dotted arrows and will swing the turnstile bar or member back to the full line position. The turnstile bar or member is alternately oscillated in opposite directions by persons passing through the turnstile, which, in practice, will be of a size to permit only one person to pass conveniently through it at each operation of the turnstile bar or member 20, and the inclosing railings will, of course, be arranged so as to prevent passengers and other persons passing around the outside of the turnstile exteriorly of the railings.

The stops 24 consist of bars or pieces fixed to the bottom of the casing and consisting of central longitudinal portions and angularly disposed terminal portions 25. The terminal portions at each end of the device converge, as clearly shown in Fig. 3, and are equipped with suitable buffers 26, which are arranged to cushion the oscillatory bar or member 20. The buffers 26, which are designed to be constructed of rubber or other suitable material, are secured in sockets 27 in the ends of the stop bars or pieces 24, but any other suitable stop may, of course, be employed for limiting the oscillatory movement of the turnstile bar or member.

The turnstile bar or member is moved beyond the central position by a person passing through the turnstile, and its oscillatory movement is assisted and completed by a coiled contractile spring 28, secured at one end at 29 to the top 30 of the casing in the median plane of the same and connected at its other end 31 to the oscillatory bar or member 20 at the opposite side of the pivotal point. Any suitable means may be employed for securing the terminals of the spring 28 to the top of the casing and to the oscillatory bar or member 20, and when the latter swings from one position to the other, the end 31 of the spring is carried through an arcuate path and the spring is placed under highest tension when the bar or member 20 is in a central position, and when the said bar or member 20 is moved past such central position, the spring acts automatically to continue and complete the move-

ment of the bar or member. In practice the width of the exit opening will be such that a person passing through the same will necessarily move the oscillatory bar or member 20 beyond its central position so that the operation of a device 32 for registering the number of persons passing through the turnstile will be assured.

The registering device, which may be of any desired construction, is provided with a star wheel 33 and is mounted in a central position on an arcuate support 34, located in a horizontal plane above the rear arm of the oscillatory bar or member 20 and having straight transverse terminal portions 35, which are secured by screws 36, or other suitable fastening devices, to the upper faces of blocks 37. The blocks 37, which are located at opposite sides of the rear portion of the casing, are secured to the bottom of the latter by screws 38, but any other suitable means may, of course, be employed for supporting the registering device 32 in position to be operated by a pair of pawls or dogs 39 and 40, which are carried by the oscillatory bar or member.

The star wheel of the registering device is preferably provided with five arms or points and the actuating pawls or dogs are pivoted within the upper and lower portions of an adjustable support 41, composed of a straight vertical body portion and upper and lower horizontal arms 42, having terminal lugs or flanges 43. The pawls or dogs 39 and 40 are provided with suitable pivots 44, projecting from the upper edge of the upper pawl or dog 39 and from the lower edge of the lower pawl or dog 40 and arranged in horizontally aligned bearing perforations of the body portion of the support and the lugs or flanges 43 thereof. The pawls or dogs 39 and 40 are normally maintained in a vertical position by a coiled spring 45, having its terminals secured in perforations 46 in the free portions of the pawls or dogs 39 and 40. The spring 45 is located adjacent to the body portion of the support 41, which is adjustably secured to a vertical portion of an L-shaped bracket 47 by screws 48 engaging threaded perforations of the support 41 and operating in vertical slots 49 in the said vertical portion of the bracket 47. The support is adapted to be raised and lowered to arrange the actuating pawls or dogs in proper position for contacting with the points or arms of the star wheel for rotating the same. The upper and lower arms of the support are provided with stops 50, consisting of projecting vertically arranged pins or studs. The upper stop is located at one of the side faces of the upper actuating pawl or dog, and the lower stop is located at the opposite face of the lower pawl or dog. The lower stop is arranged to hold the lower pawl or dog rigid when

the oscillatory bar or member moves from left to right, and the upper stop is arranged to hold the upper pawl or dog rigid when the bar or member 20 moves from right to left. When the turn-stile bar or member is oscillated, one of the pawls or dogs engages and rotates the star wheel the distance of one point or arm, and the other actuating pawl or dog swings away from its stop and slides over the star wheel during such operation. When the oscillatory bar or member is moved to its opposite position, the other pawl or dog actuates the star wheel and the first-mentioned pawl or dog swings away from its stop and slides over the star wheel. By this construction the oscillatory movements of the turnstile bar or member produce a continuous forward rotary step by step movement of the star wheel of the registering device.

The top or cover 30 of the casing is hinged at one side at 51 and is equipped at the opposite side with suitable locking means 52, which may consist of a hasp, staple, and padlock, as shown, or any other locking means for securing the top or cover of the casing in its closed position. The top or cover when unlocked is adapted to afford access to the interior of the casing for inspecting the registering mechanism or for adjusting the actuating pawls or for any other purpose.

What is claimed is:—

1. A turnstile of the class described including an inclosure provided with opposite entrance and exit openings, a central standard, an intermediately pivoted horizontal oscillatory turnstile bar or member mounted at the top of the standard and operating within the inclosure and having its terminal portions arranged to swing back and forth across the exit and entrance openings to form alternate opposite passages through the inclosure, said bar being operable by persons passing through the said passages, and registering mechanism also supported by the standard and arranged at a point between the limits of the movement of the turnstile bar or member in position to be operated by the same in each movement thereof.

2. A turnstile of the class described including an inclosure provided with opposite entrance and exit openings, an intermediately pivoted horizontal oscillatory turnstile bar or member operating within the inclosure and having its terminal portions arranged to swing back and forth across the exit and entrance openings to form alternate opposite passages through the inclosure, a contractile spring secured at one end in the median plane of the entrance and exit openings and at one side of the pivot of the oscillatory bar and extending to the opposite side of the pivot of the same and connected to the oscillatory bar or member, said spring

being arranged to actuate the oscillatory bar or member during a portion of the movement thereof.

3. A turnstile of the class described including an inclosure having entrance and exit openings, a horizontal turnstile bar or member pivoted centrally of the inclosure and having its arms arranged to swing to opposite sides of the entrance and exit openings to form opposite passages alternately through the inclosure, a spring fixed at one end and connected at its other end to the said bar or member and arranged to be carried to opposite sides of the pivot and adapted to complete the oscillatory movement of the said bar or member, registering mechanism arranged in the path of the oscillatory bar or member, and means carried by the oscillatory bar or member for actuating the registering mechanism in each of the movements of the said bar or member.

4. A turnstile of the class described including a pivotally mounted horizontal oscillatory turnstile bar or member, spaced stops arranged to limit the swing of the oscillatory member, a spring connected with the oscillatory member and arranged to be carried to opposite sides of the center for actuating the said bar or member during a portion of the movement thereof, and registering mechanism located in the path of and actuated by the bar or member.

5. A turnstile of the class described comprising a pivoted oscillatory turnstile bar or member, registering mechanism located at a point between the limits of movement of the turnstile bar or member and having a rotary member, and actuating means carried by the oscillatory bar or member and including reversely swinging pawls or dogs arranged to engage the upper and lower portions of the rotary member of the registering mechanism.

6. A turnstile of the class described comprising a pivoted oscillatory turnstile bar or member, registering mechanism located at a point between the limits of movement of the turnstile bar or member and having a rotary member, and actuating means carried by the oscillatory bar or member and including a support adjustably mounted on the oscillatory bar or member, and upper and lower reversely swinging pawls or dogs carried by the support and arranged to engage the upper and lower portions of the rotary member of the registering mechanism.

7. A turnstile of the class described comprising a pivoted oscillatory turnstile bar or member, registering mechanism located at a point between the limits of movement of the turnstile bar or member and having a rotary member, and actuating means carried by the oscillatory bar or member and including upper and lower pawls or dogs arranged to engage the upper and lower portions of the

rotary member of the registering mechanism, means for limiting the movement of the pawls or dogs and arranged to permit the same to swing in opposite directions, and a  
 5 coiled spring connecting the pawls or dogs for maintaining the same normally in a predetermined position.

8. A turnstile of the class described including a casing provided with opposite  
 10 openings, an oscillatory turnstile bar or member pivotally mounted within the casing and extending through the openings thereof and arranged to form alternately opposite passages, a spring housed within the casing and  
 15 connected with the bar or member for actuating the same during a portion of its movement, and registering mechanism also arranged within the casing at a point between the limits of movement of the turnstile bar  
 20 or member and operated by the oscillatory bar or member.

9. A turnstile of the class described including a vertical tubular post, a casing mounted upon the upper end of the post and  
 25 having opposite openings, a bushing fitting within the post and having a bearing portion located within the casing, and an os-

cillatory bar or member extending through the openings of the casing and supported upon the said bearing portion of the bushing  
 30 and having a pivot extending into the latter, said bar or member being arranged to form alternately opposite passages.

10. A turnstile of the class described including a casing having opposite openings, a  
 35 horizontal oscillatory turnstile bar or member extending through the openings and pivoted in the casing, an arcuate support arranged within the casing at one of the arms of the oscillatory bar or member, registering  
 40 mechanism mounted on the support at a point between the limits of movement of the turnstile bar or member, and means mounted on the bar or member and arranged to engage the registering mechanism for actuat-  
 45 ing the same.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

SAM R. MARKS.

Witnesses:

MARIE E. RYAN,  
 FRANCIS M. HOLT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."