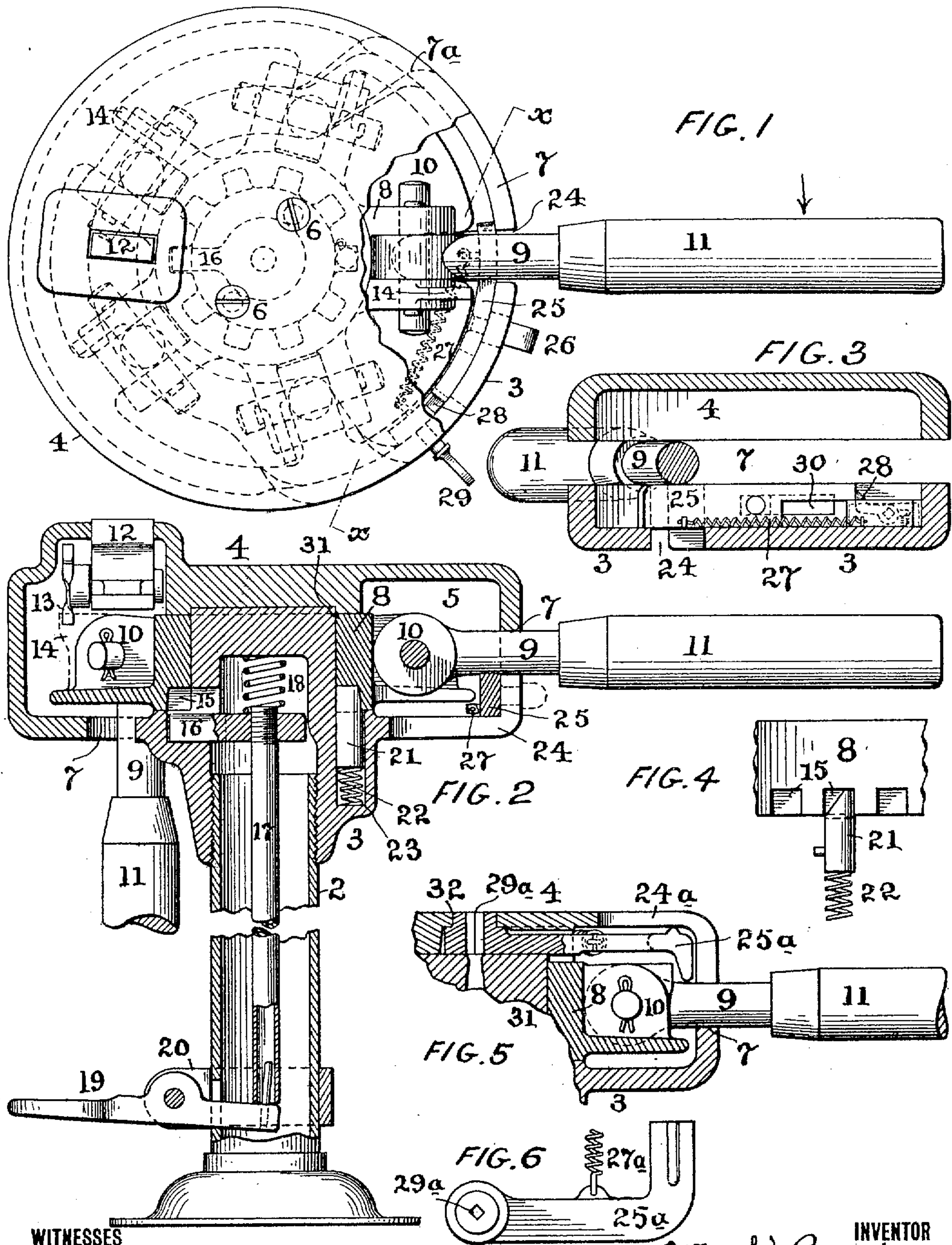


967,167.

Patented Aug. 16, 1910.



WITNESSES

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ORSON W. BRENIZER, OF PHILADELPHIA, PENNSYLVANIA.

TURNSTILE.

967,167.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ORSON W. BRENIZER, a citizen of the United States, and resident of the city and county of Philadelphia, State of Pennsylvania, have invented an Improvement in Turnstiles, of which the following is a specification.

My invention has reference to turnstiles for cars and other purposes and consists of certain improvements which are fully set forth in the following specification and shown in the accompanying drawings which form a part thereof.

The object of my invention is to provide a construction of turnstile which shall be especially adapted for use in "pay as you enter" cars and for such other uses where the space available is restricted.

My invention consists in a standard having a head provided with a cam-way and a laterally extending slot opening from said cam-way, combined with a turntable pivoted within the head and having a plurality of hinged arms extending through and guided by the cam-way, and means for preventing the arms entering the laterally extending slot except when it is desired to move the radially extending arm out of obstructing position.

My invention also consists in the above specified features when the laterally extending slot is so arranged as to permit the arm to be swung down and locked in position to stop further rotation of the turntable.

My invention also comprises the combination of a hollow turnstile head having a cam-way, with a turntable and radial hinged arms carried thereby and guided in the cam-way, and means for adjusting all of the arms into vertical or substantially vertical positions to put the turnstile out of operation or for maintaining all of the arms within the cam-way and so as to successively assume horizontal positions.

My invention also comprehends details of construction which, together with the features above specified will be better understood by reference to the drawings, in which:

Figure 1 is a plan view of a turnstile embodying my invention and with a portion broken away to show the interior construction; Fig. 2 is a sectional elevation of the same; Fig. 3 is a sectional view on line $x-x$ of Fig. 1; Fig. 4 is a detailed view of the means for preventing the backward movement of the turntable and arms; Fig. 5 is a

sectional elevation of a modified form of a portion of my improvements; and Fig. 6 is a plan view of a detail thereof.

2 is a standard in tubular form and adapted to be supported upon the floor of the car or other compartment adjacent to a door-way or passage through which the people are required to pass. Secured upon the upper part of this standard 2 is a head formed of two parts, namely, a part 3 directly secured upon the standard, and a part 4 resting upon the upper portion of the part 3 and secured thereto by screws 6. These parts 3 and 4 form a hollow head and provide between them a cam or race-way 7 which extends through the lateral or side walls of the head for about one-third of its circumference and vertically downward through the bottom wall for the remaining portion of the circumference. In addition to the cam-way 7 formed between the parts 3 and 4, the lower part 3 is further provided with a laterally extending slot 24, entrance to which is normally closed by a gate piece 25 which is guided upon the inner wall of the part 3 and provided with an extension or handle 26 extending through a radial slot 30 in the wall of the part 3.

A spring 27 is connected at one end to the gate 25 and at the other end to the part 3 as clearly shown in Fig. 3. A spring actuated lock 28 is also carried in the side wall of the part 3 and adapted to be operated by a key which may extend through the said wall as indicated at 29 in Fig. 1. When the gate 25 is pushed forward into the position shown in Figs. 1 and 3, the lock 28 snaps back of the gate and holds it in position so as to close the entrance to the slot 24, and when the gate is in this position the cam-way 7 is only available and may be considered as an endless guide-way for the radial arms 9. This adjustment of the gate is the normal position which it assumes. Arranged within the head 5 and journaled upon the cylindrical bearing part 31 of the part 3 is a turntable 8 provided with a series of radial bearings 10 in which the turnstile arms 9 are hinged, said arms extending through the cam-way or slot 7 and being provided on their ends with wooden extensions 11 against which the passenger presses in passing through the turnstile. The turntable bearings 10 are provided with projections 14 which are successively adapted to strike the registering wheel 13 of the reg-

ister 12, which latter is secured to the upper portion 4 of the head so as to be read from above, as will be clearly understood by Figs. 1 and 2. The turntable, while being centrally guided about the bearing 31 of the part 3, is held between bearings upon the parts 3 and 4 respectively arranged above and below the turntable, so that while the turntable is free to rotate it is smoothly guided without liability of rattling. The under part of the turntable is provided with a series of notches 15 with which a detent 21 engages, said detent, being forced into the notches by means of a spring 22. This detent and spring are guided in a pocket 23 in the part 3 of the head. One side of the detent 21 is beveled, as shown in Fig. 4, so that the turntable may freely rotate in one direction, namely, that for admitting the passenger, but cannot be rotated in a backward direction.

16 is a locking arm and is guided in a slot in the part 3 and when raised is adapted to engage one of the notches 15 in the turntable to prevent it being rotated. This arm 16 is secured upon the upper end of a tube 17 arranged within the standard 2, the lower part of which tube rests upon a pivoted treadle 19 carried by an adjustable yoke 20 clamped about the standard. One end of the treadle 19 extends through a slot in the standard and receives the bottom of the tubular rod 17 and is provided with a pin for holding said tubular rod in engaging position, as shown in Fig. 2. A spring 18 is arranged between the upper part of the arm 16 and the part 3 so as to normally depress the rod 17 and hold the arms 16 out of engagement. If, for any reason, it was desired to prevent the turn-stile being operated, the conductor or person in charge, simply places his foot upon the treadle 19 and raises the arm 16 into locking position with the notches of the turntable. When this is done, the turntable cannot be turned. For normal operation the parts are as indicated in Figs. 1, 2 and 3 and under these conditions the arms 9 with their extensions 11 will assume a horizontal position when passing through the cam-way 7 which is formed in the side walls of the head, but at all other positions the said arms will project vertically downward as indicated in dotted lines in Fig. 1 and in full lines in Fig. 2. When the arm, shown in full lines in Fig. 1, is being pushed forward in the direction of the arrow, it brings the next arm to the rear from its vertical position upward into a horizontal position in passing through the portion 7^a of the cam-way 7, so that at all times there is at least one arm in horizontal position, and sometimes two, the latter condition being only that which takes place during the passing of a passenger, or person whose passage is

to be registered. Under normal conditions this operation is continuous, but if for any reason it was desired to permit the passage of a person without registering the passage, the gate 25 is withdrawn to permit the arm 9 to be lowered. To accomplish this result, the lock 28 is turned, and the spring 27 automatically pulls back the gate 25 and permits the radial arm 9 with its extension 11 to be dropped into the slot 24, in which position the turn-stile is locked against movement. When in this position, the gate may be pushed forward again and locked by the lock 28, so that if the key is removed, the turn-stile could not be turned or put into operation to register and this position would be that which would be assumed over night or when the turnstile was temporarily out of operation for the reasons above stated.

By arranging the slot 24 and the gate appliances therefor, in the lower and side portions of the head, there is no liability for dirt to enter and clog the mechanism, and in this way an entirely closed top is provided. If, however, it is desired that the arm 9 shall be turned upward instead of downward the radial slot may be made in the upper part 4 of the head as indicated at 24^a in Fig. 5, and the gate for closing the entrance to said slot may be formed as a pivot arm 25^a held in closed position by spring 27^a, and provided at its central pivot with a key slot 29^a by which the gate may be turned out of locking position to permit the arm 9 to be turned upward into a vertical location. This construction is not as preferable as that in which the arm may be depressed, as it leaves an open slot in the head as well as an upwardly exposed key slot, both of which are undesirable.

I do not restrict myself to any particular construction, of the gate, nor manner of operating the same and while in the construction shown in Figs. 1, 2 and 3 I have shown the gate adapted to be moved into a position to be closed against the action of the spring 27, whereas, in Figs. 5 and 6 I have shown the gate as adapted to be moved into closed position by the action of the spring 27^a, and while I prefer the former construction, I do not limit myself to either of these manners or in any other manner desired and which is adapted to accomplish the purpose.

While I have shown the general construction of the turnstile in the form which I prefer for commercial use I do not restrict myself to the details as these may be modified in various ways without departing from the spirit of my invention.

Having now described my invention what I claim as new and desire to secure by Letters Patent, is:

1. In a turnstile, a standard provided at

its top with a hollow head having a continuous cam-way extending for a portion of its length through the side walls and also provided with a laterally arranged slot opening from the cam-way in the side-walls, combined with a turntable inclosed within the head, a plurality of pivoted arms jointed to the turntable and extending through the cam way so as to be guided thereby, and an adjustable gate adapted to normally close the entrance to the lateral slot.

2. In a turnstile, a standard provided at its top with a hollow head having a continuous cam-way extending for a portion of its length through the side walls and also provided with a laterally arranged slot opening from the cam-way in the side-walls, combined with a turntable inclosed within the head, a plurality of pivoted arms jointed to the turntable and extending through the cam-way so as to be guided thereby, an adjustable gate adapted to normally close the entrance to the lateral slot, a spring to normally shift the said gate to open the entrance to the slot, and a lock for locking the gate in closed position against the action of the spring.

3. In a turnstile, a standard provided at its top with a hollow head having a continuous cam-way extending for a portion of its length through the side walls and also provided with a laterally arranged slot opening from the cam-way in the side walls, combined with a turntable inclosed within the head, a plurality of pivoted arms jointed to the turntable and extending through the cam-way so as to be guided thereby, an adjustable gate adapted to normally close the entrance to the lateral slot, means to prevent the backward rotation of the turntable, a lock to hold the turn table temporarily against rotation, and a treadle supported by the standard for operating the lock.

4. In a turnstile, the combination of a standard, a hollow head supported by the standard and consisting of a lower part secured to the standard and an upper part secured to the top of the lower part and said parts having flanged portions which form between them a continuous cam-way, a turntable journaled upon a bearing on the lower part of the head and guided between guiding surfaces formed respectively upon the lower and upper parts of the head, and hinged arms hinged to the turntable and guided in the cam-way, whereby said arms successively assume horizontal and vertical positions in their travel around the head.

5. In a turnstile, the combination of a standard, a hollow head supported by the standard and consisting of a lower part secured to the standard and an upper part secured to the top of the lower part and said parts having flanged portions which

form between them a continuous cam-way, a turntable journaled upon a bearing on the lower part of the head and guided between guiding surfaces formed respectively upon the lower and upper parts of the head, hinged arms hinged to the turntable and guided in the cam-way, whereby said arms successively assume horizontal and vertical positions in their travel around the head, and means for permitting the hinged arms when in their horizontal position to be temporarily turned into a vertical position and lock the turntable against rotation.

6. In a turnstile, the combination of a standard, a hollow head supported by the standard and consisting of a lower part secured to the standard and an upper part secured to the top of the lower part and said parts having flanged portions which form between them a continuous cam-way, a turntable journaled upon a bearing on the lower part of the head and guided between guiding surfaces formed respectively upon the lower and upper parts of the head, and hinged arms hinged to the turntable and guided in the cam-way, whereby said arms successively assume horizontal and vertical positions in their travel around the head, and means for permitting the hinged arms when in their horizontal position to be temporarily turned into a vertical position and lock the turntable against rotation said means consisting of an adjustable part which supports the arms in their horizontal position for a portion of their travel.

7. In a turnstile, the combination of a standard, a hollow head supported by the standard and consisting of a lower part secured to the standard and an upper part secured to the top of the lower part and said parts having flanged portions which form between them a continuous cam-way, a turntable journaled upon a bearing on the lower part of the head and guided between guiding surfaces formed respectively upon the lower and upper parts of the head, and hinged arms hinged to the turntable and guided in the cam-way, whereby said arms successively assume horizontal and vertical positions in their travel around the head, and a lock and treadle devices for actuating the same for temporarily locking the turntable against rotation.

8. In a turnstile, the combination of a standard, a hollow head secured upon the top of the standard and having a continuous cam-way formed partly in the side walls and partly in the bottom walls of the said head, a turntable journaled within and inclosed by the hollow head, and a series of hinged arms carried by the turntable and extended through and guided by the continuous cam-way.

9. In a turnstile, the combination of a standard, a hollow head secured upon the

top of the standard and having a continuous cam-way formed partly in the side walls and partly in the bottom walls of the said head, a turntable journaled within and in-
5 closed by the hollow head, a treadle and locking device extending through the standard and into the head for engaging the turntable and preventing its rotation when desired, and a series of hinged arms carried

by the turntable and extended through and 10 guided by the continuous cam-way.

In testimony of which invention, I hereunto set my hand.

ORSON W. BRENIZER.

Witnesses:

R. M. HUNTER,
R. M. KELLY.