

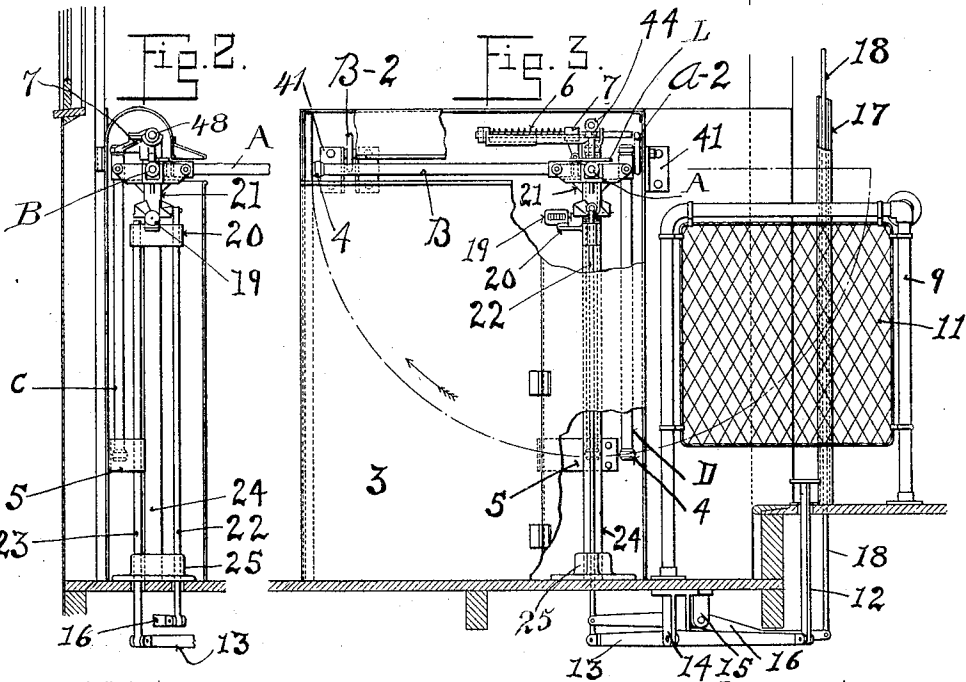
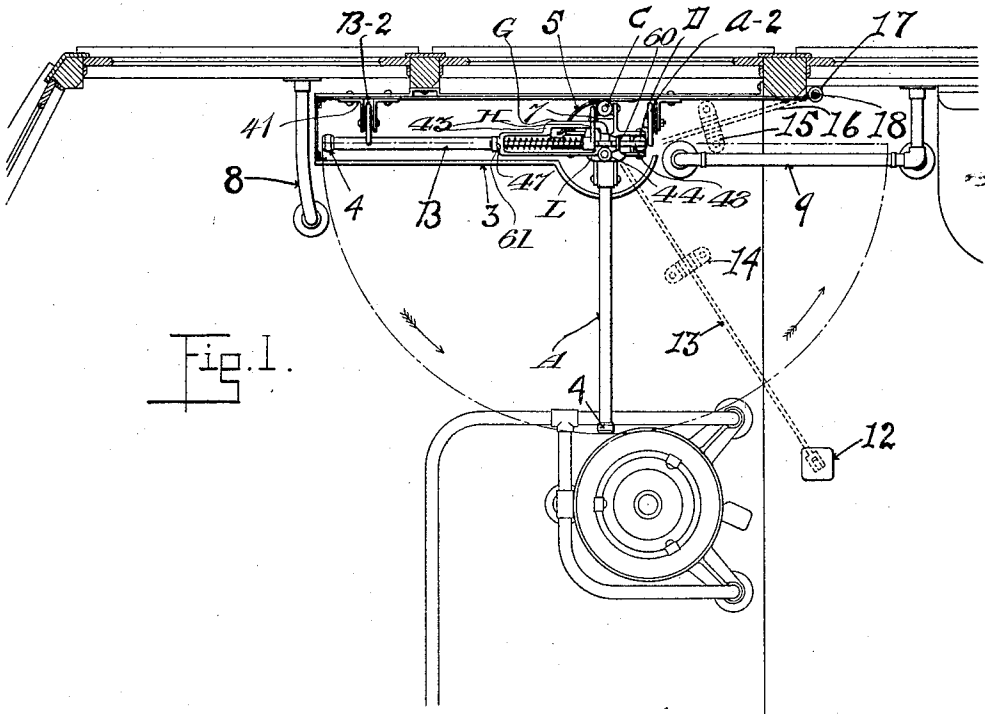
C. M. BROOKER.
TURNSTILE.

APPLICATION FILED JAN. 23, 1912.

Patented Jan. 7, 1913.

1,049,805.

3 SHEETS-SHEET 1.



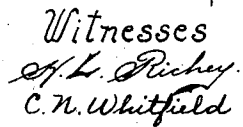
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3 SHEETS—SHEET 2.



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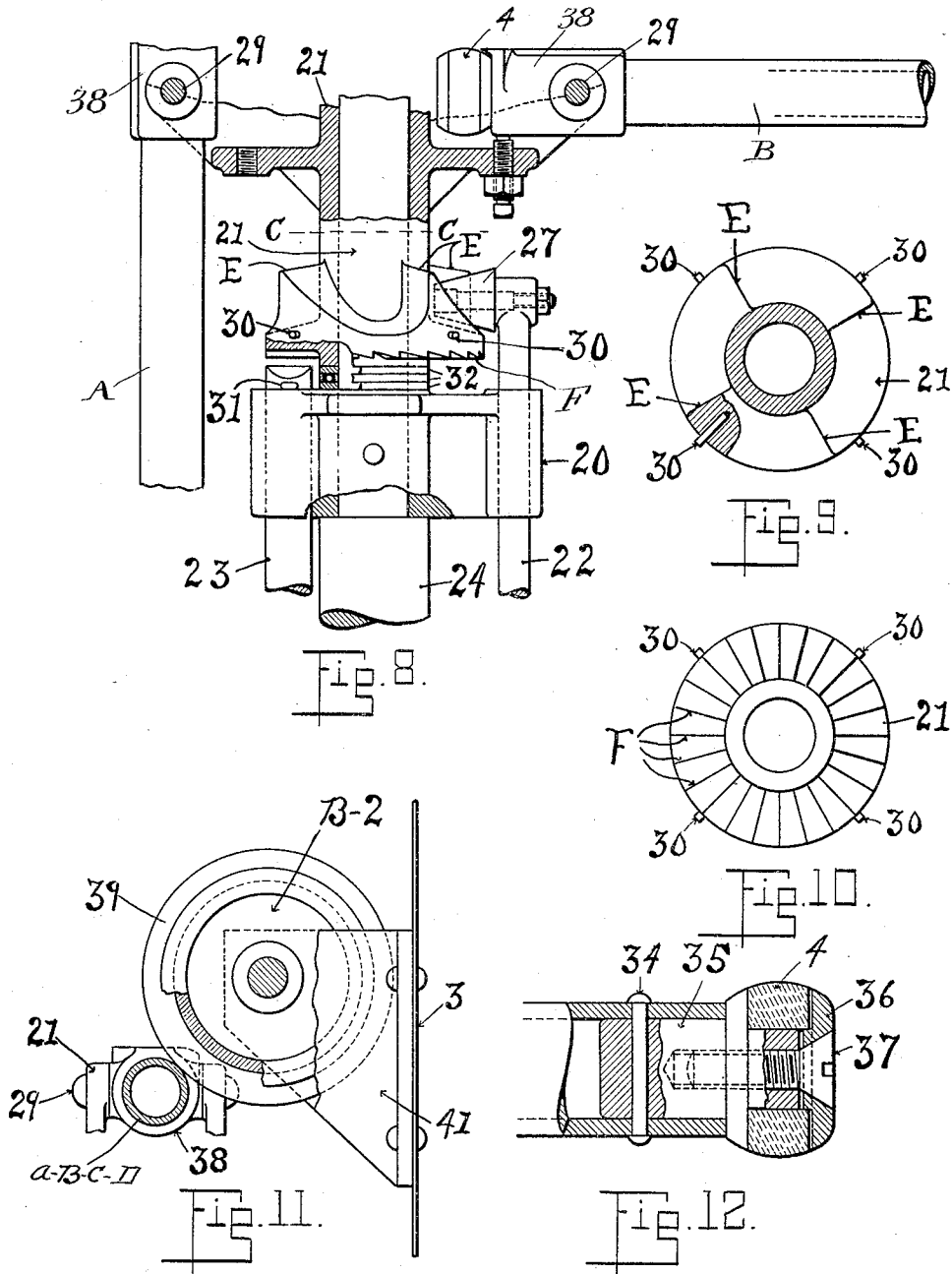
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UNITED STATES PATENT OFFICE.

CLEM M. BROOKER, OF LAKEWOOD, OHIO.

TURNSTILE.

1,049,805.

Specification of Letters Patent.

Patented Jan. 7, 1913.

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To all whom it may concern:

Be it known that I, CLEM M. BROOKER, citizen of the United States, residing at Lakewood, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Turnstiles, of which the following is a specification.

This invention relates to turnstiles, and particularly to turnstiles intended for use on pay-as-you-enter cars.

The turnstile is one of that type in which the arms drop to vertical position during part of the revolution, the purpose being to occupy a minimum of floor space. The turnstile is used to control the entry of passengers and to register fares, acting thereby as a check on the conductor. Means are provided for locking the turnstile so that the entry of passengers can be delayed when desired, as when the conductor is making change or giving a transfer.

Novel means are provided for raising the arms as the turnstile is rotated, so as to bring them into active position and to hold them so while passing the entry.

In the accompanying drawings Figure 1 is a plan view showing the turnstile located in a car. Fig. 2 is an end view of the turnstile. Fig. 3 is a side elevation of the same. Fig. 4 is an enlarged detail in plan of the devices for operating the arms. Fig. 5 is a similar view of a modified device for the same purpose. Fig. 6 is a section at *a a* on Fig. 5. Fig. 7 is a section at *B-B* on Fig. 4. Fig. 8 is a detail in section showing parts of the locking devices and registering mechanism. Fig. 9 is a section at *c c* on Fig. 8. Fig. 10 is a bottom view of a casting shown in Fig. 8. Fig. 11 is a detail showing one of the arms striking a bumper roller. Fig. 12 is a detail in section of the outer end of one of the arms.

The arms of the turnstile are indicated at A, B, C and D. A^2 and B^2 are rubber tired bumper rollers against which the arms come in contact to prevent sudden jarring, the former being struck by the arms when they drop and the latter by the arms when they are lifted.

3 is a casing which covers part of the mechanism to guard the same. At each end the arms have fiber rollers 4 held by a cap 36 and screw 37 to a block 35 fastened in the end of the tubular arm by a pin 34. Each arm is provided at its inner end with a pivot casting 38, which turns on a pivot pin 29

supported by arms projecting from a sleeve carrier casting 21 which turns on the upper reduced end of a post or shaft 24 which is fixed to the floor or platform by a foot piece 25.

The arms drop by gravity as they swing beyond the entry way, and their impact is checked by the bumper wheel A^2 carried by a bracket fastened to the back of the casing, and as the dropped arms turn their lower ends are guided and retained by a curved guide 5, attached to the casing, until they reach the position for lifting, and when they are lifted they strike the bumper wheel B^2 which is supported by suitable brackets 41 fastened to the casing.

The lifting devices for raising the arms in succession comprise a block or casting 7 which is fixed to a rod 48 which works at one end through a guide 60 mounted at the top of the post 24, and at the other end through a guide at 61 at the outer end of a frame 43 which is supported by said post and projects horizontally to one side of the post. This casting also supports rollers 44 which serve as guides for the rod 48.

A spring 6 is coiled around the rod between the end of the frame 43 and the casting 7 so that when the rod is advanced the spring is compressed. The casting 7 is guided in its movement by a guide G, forming part of the frame 43, which fits in a notch H in the casting 7, and said casting projects outwardly so that it extends into the line of movement of the roller 4 at the upper end of each of the arms, when said arms are in vertical position. Assuming that the turnstile is being rotated, the roller 4 at the upper end of the rear vertical arm will, as shown in Fig. 4, come in contact with the projection of the casting 7, and will force the same, and the rod 48, in a radial direction, compressing the spring 6, until the roller at the lower end of the arm runs off of the track 5. The casting 7 also carries a roller 49 on the underside thereof, which, when the rod 48 is advanced and the spring is compressed, is carried beyond the head 38 of the arm. When the arm runs off of the track 5 the pressure of the spring 6 is released, and said spring then forces the casting 7 backwardly or toward the center of rotation, and the roller 49, which is carried by the pin 50, strikes the flat surface K of the casting 38, above its pivot 29, and the force of the spring causes the roller to

rock the arm and swing the outer end thereof upwardly thereby lifting the arm to the horizontal position shown at B in Fig. 1, and, the rotation of the turnstile being continued, the roller 4 at the inner end thereof is caught under the guide projection L as clearly shown in Fig. 4, thereby holding the arm in raised position until the roller passes off the end of the guide L, when the arm drops to original or vertical position for the next operation.

In the modification shown in Figs. 5 and 6 a frame 42 is used, instead of the frame 43, said frame being located on the opposite side of the center to that shown in Fig. 4, and the rod 48 works in this frame 42, with a spring 6 confined in said frame against a collar 45 secured to the rod 48 by a pin 46, said collar 45 having a finger 62 which projects into a slot J in the frame to prevent the rod from turning. In this modification, the head or casting 7 is attached to the inner end of the rod 48, in position to receive the impact of the roller 4 on each dropped arm, as above described, and as the turnstile is operated the rod 48 is shifted to the left in Fig. 5, thereby compressing the spring. The subsequent operation is the same as that above described.

The rotary sleeve 21 turns on ball bearings 32, and is enlarged at the bottom, the enlargement being provided with ratchet teeth F and also with projecting pins 30. The ratchet teeth F are adapted to be engaged by the upper end of a rod 23 which works through a guide in a casting 20 fastened to the post 24. Said rod 23 is lifted by a lever 13 which is fulcrumed on a bracket 14 under the car platform and is operated by treadle rod 12 which works through a hole in the car floor where the conductor stands. By pressing down on the treadle the conductor may catch the rod 23 in one of the notches of the ratchet and so stop the rotation of the turnstile. The enlargement on the sleeve 21 is also shaped to form cams E which engage a roller 27 at the upper end of a rod 22 which is connected through a lever 16, fulcrumed on a bracket 15 under the car platform, to a rod 18 which will be connected in any suitable manner to a fare register (not shown). The rod 18 works through a pipe 17 in the car. A private or check register is also provided and is indicated at 19, with its star wheel or other operating device in position to be struck by the pins 30 which project from the rotary casting 21. The arrangement is such that both registers are operated at each quarter revolution of the turnstile.

Guards 8 and 9 protect the turnstile devices, the latter supporting a netting 11, so that the passengers cannot get in the way of the falling or rising arms.

What I claim as new is:

1. In a turnstile, the combination of a supporting post, a carrier rotatable thereon, arms pivoted to the carrier, so as to rise and drop, a guide frame mounted on the post, a spring pressed block slidable on said frame and having a part projecting into the path of the upper end of the arms when they are dropped to vertical position, whereby the spring is compressed by pressure of the arm against the block as the arms revolve, and a guide engaged by the lower part of the arms and acting to hold the arms down during part of a revolution, said spring acting to swing the arms up to horizontal position when they pass off of the guide.

2. In a turnstile, the combination of a supporting post, a carrier rotatable thereon, arms pivoted to the carrier and adapted to rise and drop during different portions of each revolution, a spring supported on the post, means actuated by the rotary movement of an arm when in vertical position to compress said spring, and a guide engaged by said arm to hold the latter down while the spring is being compressed, said spring acting to swing the arm upwardly when it passes beyond the guide.

3. In a turnstile, the combination of a supporting post a carrier rotatable thereon, vertically swinging arms pivoted to the carrier, a fixed frame at the top of the post, a spring pressed block slidable on said frame and arranged to engage each arm above its pivot during part of a revolution, whereby the block is pressed outwardly and the spring is compressed, and a guide engaged by the lower part of each arm while the spring is being compressed, said spring acting to press the block against the upper end of each arm to swing the same to horizontal position when it passes beyond said guide.

4. In a turnstile, the combination of a central supporting post, a carrier rotatable thereon, arms pivoted to the carrier to swing up and down, a guide frame extending radially from the post, above the carrier, a spring pressed block slidable radially in the guide frame and located in the path of the upper ends of the arms when they are in vertical position, whereby the spring is compressed by pressure of the said upper end against the block as the arms are revolved, a guide engaged by the arms below the pivot thereof and acting to prevent lift of the arms while the spring is being compressed, said spring and block acting by pressure against the upper ends of the arms to swing the latter to horizontal position after they pass the guide.

5. In a turnstile, the combination of a supporting post, a carrier rotatable thereon, vertically swinging arms pivoted to the carrier, a guide frame mounted on the post, a rod slidable radially in said guide frame, a

block carried by the rod and projecting into the path of the upper ends of the arms when they are in vertical position, a spring pressing against the block, and adapted to be
5 compressed by the pressure of the arms against the same during part of a revolution, and a guide confining the arms to vertical position while the spring is being compressed, said spring and block acting by
10 pressure against the upper end of each arm to swing the latter to horizontal position after it passes the guide.

6. In a turnstile, the combination of a supporting post, a carrier rotatable thereon,
15 arms pivoted to the carrier to swing up and down, a frame mounted on top of the post above the carrier, said frame having a projection under which the inner ends of the arms pass, to hold the arms in horizontal
20 position during part of the revolution, a spring pressed block slidable radially on the frame and projecting into position to be struck by the upper ends of the arms when they are in vertical position, whereby the

spring is compressed by pressure of the
25 arms against said block, and a retaining guide engaged by the lower ends of the arms while the spring is being compressed, said block and spring acting by pressure against
30 the upper ends of the arms to swing the latter to horizontal position when they pass beyond the end of the retaining guide, and the block being located adjacent to said projection, whereby the inner ends of the arms
35 will pass from the block under said projection.

7. The combination in a turnstile of a series of arms pivoted to rise and drop, and bumper wheels supported adjacent to the
40 turnstile in position to receive the impact of said arms as they are lifted and dropped.

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

CLEM M. BROOKER.

Witnesses:

JOHN A. BOMMHARDT,
STEDMAN J. ROCKWELL.

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