

No. 660,902.

P. M. KLING.

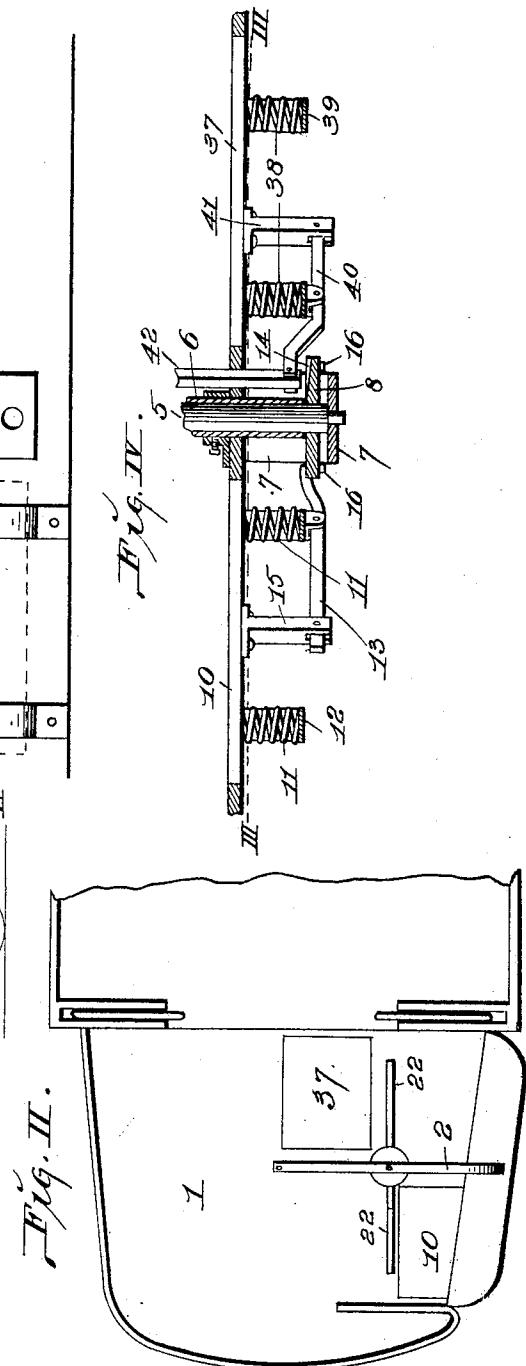
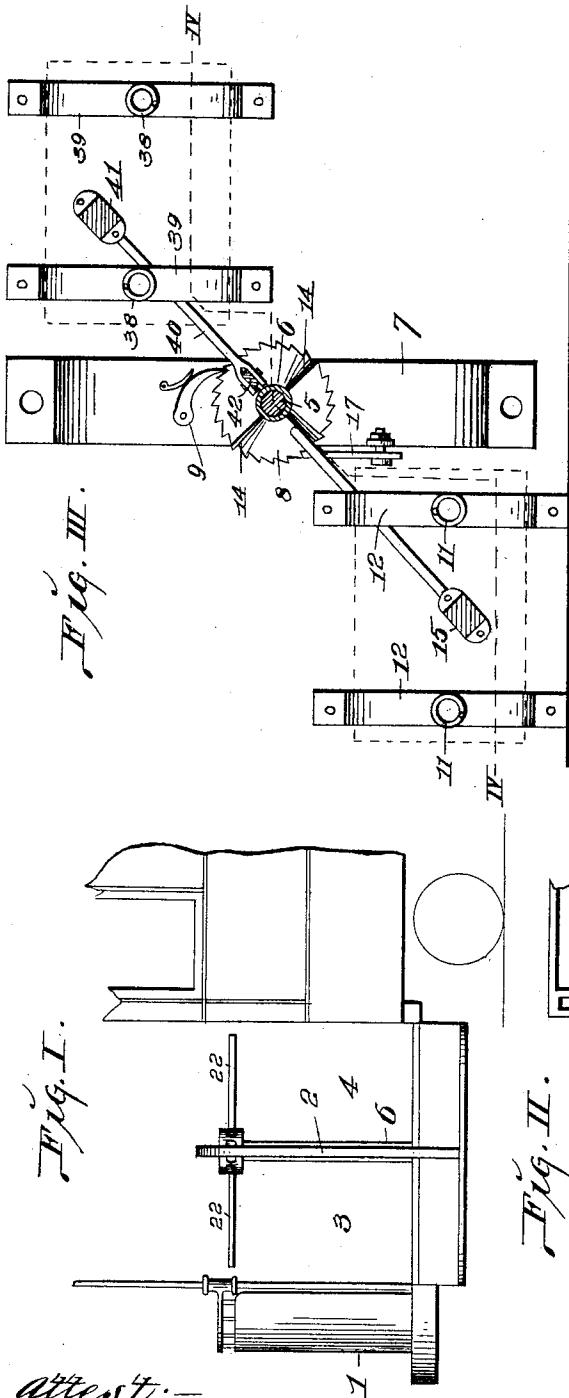
Patented Oct. 30, 1900.

## TURNSTILE

(No Model.)

(Application filed Apr. 9, 1900.)

2 Sheets—Sheet 1.



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Fig. V.

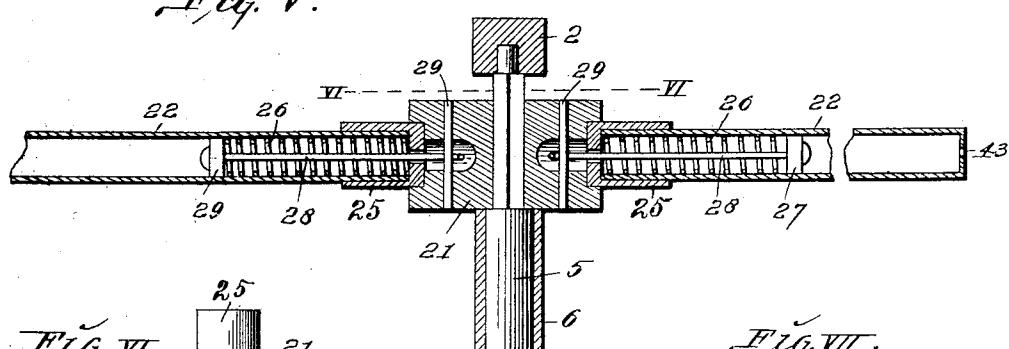


Fig. VI.

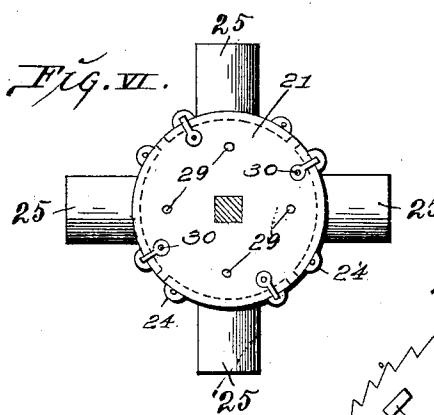


Fig. VII.

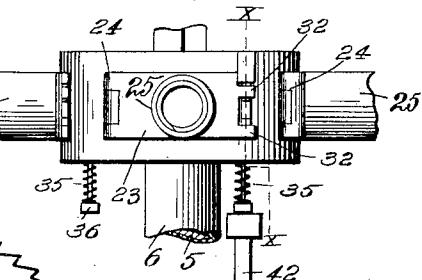


Fig. VIII.

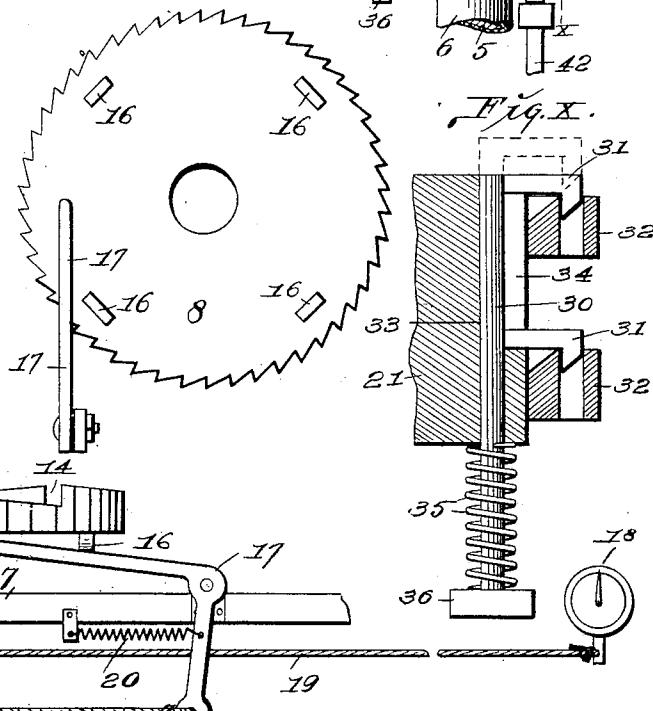
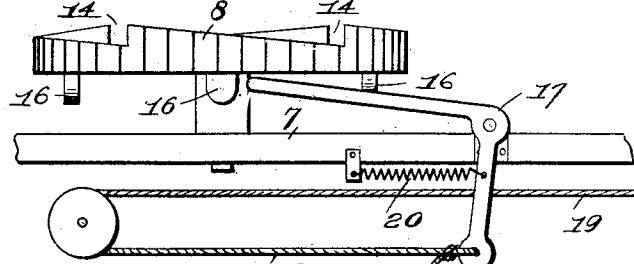


Fig. IX.



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# UNITED STATES PATENT OFFICE

PETER M. KLING, OF ST. LOUIS, MISSOURI.

## TURNSTILE.

SPECIFICATION forming part of Letters Patent No. 660,902, dated October 30, 1900.

Application filed April 9, 1900. Serial No. 12,068. (No model.)

*To all whom it may concern:*

Be it known that I, PETER M. KLING, a citizen of the United States, residing at the city of St. Louis, in the State of Missouri, have 5 invented certain new and useful Improvements in Turnstiles, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

10 My invention relates to a stile that will automatically register passengers as they enter a car, the object of my invention being to so construct and arrange the stile as that its interference with people getting on and off the 15 car will be reduced to a minimum.

My invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Figure I is detail elevation showing part of 20 a street-car with my invention applied. Fig. II is a plan or top view. Fig. III is a horizontal section taken just beneath the platform of the car on line III III, Fig. IV. Fig. IV is a vertical section taken on line IV IV, 25 Fig. III. Fig. V is an enlarged detail section showing the head of the turnstile. Fig. VI is a section taken on line VI VI, Fig. V. Fig. VII is a detail side view of the head. Fig. VIII is a bottom view of the under side of the 30 ratchet-wheel that controls the movement of the stile and operates the register. Fig. IX is a side view of the same. Fig. X is an enlarged detail vertical section taken on line X X, Fig. VII.

35 1 represents the platform of a car, which is divided transversely of the length of the car by a partition-bar 2, thus forming an ingoing passage-way 3 and an outgoing passage-way 4, between which the shaft 5 of the stile is 40 located, the shaft being inclosed within a sleeve or tube 6, that passes through the platform of the car and serves as a shield and assists in supporting the shaft. The lower end of the shaft is stepped into a strap 7, secured 45 to the under side of the platform of a car. The upper end of the shaft is journaled in the bar 2. (See Fig. V.) The lower end of the shaft carries a wheel or disk 8, that is keyed or otherwise fixed to the shaft, so as to 50 turn therewith, and the periphery of which is formed with ratchet-teeth to receive a dog

or pawl 9, (see Fig. III,) that holds the shaft from turning backward.

At the ingoing side of the platform there is a step or section 10, supported by springs 11, 55 that rest on straps 12, secured to the under side of the platform of the car. To one of these straps there is pivoted a lever 13, the inner end of which engages shoulders 14, formed in the upper face of the disk 8, and 60 the outer end of which is connected by a stem 15 to the step 10, so that when a passenger treads on the step he will cause the lever 13 to release the disk and permit the turning of the shaft forward, and as the shaft turns forward one of a series of projections 16 on the under side of the disk comes against one end of a bell-crank lever 17 (see Fig. IX) and operates a register, to which the other end of the bell-crank lever is connected by a cord 70 19, a spring 20 being employed to return the parts to their normal position as soon as the projection leaves the lever.

Fixed to the upper end of the shaft is a head 21, having arms 22. These normally-locked arms are so connected to the head that when unlocked they will yield and permit a passenger to leave the car without turning the shaft 5, while they do not yield, independently of the head and its shaft, to a passenger 80 getting onto the car. The manner shown of connecting the arms to the head consists of plates 23—one for each arm—that are hinged at 24 to the head 21. Each plate has a short tubular projection 25, that receives one of 85 the arms 22. The arms are made hollow, and within each is a coiled expansion-spring 26 and a piston 27, the piston being made fast to the head 21 by a stem 28 and a pin 29. The hinged ends of the plates 23 are away 90 from a person entering the car, so that in pressing against an arm he does not tend to swing the plate on its hinge, and to prevent a person from pulling the arm toward him, and thus entering the car without rotating 95 the shaft and operating the register, I provide a lock for the free end of the plate 23, that, as shown, consists of a sliding rod or bar 30, having L-shaped projections 31, (see Fig. X,) that enter perforated ears 32 on the 100 plate. There is of course a rod 30 for each plate. The rods fit in perforations or holes

33, formed in the head 21, and the head is slotted at 34 for the play of the projections 31. The rods are held in their lower positions by springs 35, located between the head 5 21 and heads 36 on the rods.

For the purpose of automatically unlocking the plates 23, and thus permitting the plates to swing on their hinges when the arms are pressed against by persons leaving the 10 car, I employ a step 37 in the passage-way 4, that is supported by springs (see Fig. IV) 38, that rest on straps 39, secured to the under side of the platform of the car. To one of these straps is pivoted a lever 40, one end of 15 which is connected to the step 37 by a stem 41 and to the other end of which there is connected a rod or bar 42, that passes up through the platform of the car and terminates, as shown in Fig. VII, just beneath the position occupied by the rods 30 when the stile is in its normal or fixed position. As a passenger leaves the car he treads upon the 20 step 37, which lifts the rod or bar 42 through means of the described connection between 25 the step and bar, which by lifting the rod 30 unlocks the plate 23, so that the arm 22 will swing freely away from him on the hinge 24 without turning the head 21 of the shaft 5. As the passenger releases the arm it is 30 drawn back to its normal position by the spring 26 and the latch again engages the plate and holds the arm in its extended position, and to prevent the arms being returned with too much force and speed I employ the pistons 27 and make small perforations 35 in the closed ends of the arms, so that the arms can only return to their normal positions so fast as air will enter their outer ends through the perforations 43.

40 It is manifest that various changes may be made in the details of construction of the different parts, and I wish it understood that my invention is not confined to such details of arrangement and construction.

I claim as my invention—

1. A turnstile comprising a shaft, means for locking the shaft to prevent rearward movement, means for locking the shaft to prevent forward movement, means for automatically unlocking the shaft to permit forward movement only, arms, means for connecting the arms with the shaft so as to yield in a forward direction only, means for locking the arms, and means for automatically unlocking the arms. 45

2. In a turnstile, the combination of a shaft, arms carried by the shaft, hinged plates to which the arms are connected, and means for automatically releasing the plates when the arms are to be moved in one direction, substantially as described. 50

3. In a turnstile, the combination of a shaft, arms carried by the shaft, hinged plates to which the arms are connected, latches for holding the plates in their normal positions, 65 springs for returning the arms to their normal positions, and means for automatically moving said latches, substantially as described.

4. In a turnstile, the combination of a shaft 70 provided with a head, plates hinged to the head, arms connected to the plates, spring-controlled pistons located in the arms and connected to said head, and means for automatically locking the plates in their normal 75 positions, substantially as described.

5. In a turnstile, the combination of a shaft provided with a head, plates hinged to the head, arms carried by the plates, latches for holding the plates in their normal positions, 80 a spring-supported step, and means for moving said latches when said step is moved, substantially as described.

P. M. KLING.

In presence of—

E. S. KNIGHT,  
M. P. SMITH.