J. THOSS & A. TRAUTMANN.

Passenger-Register.

No. 163,544.

Patented May 18, 1875.

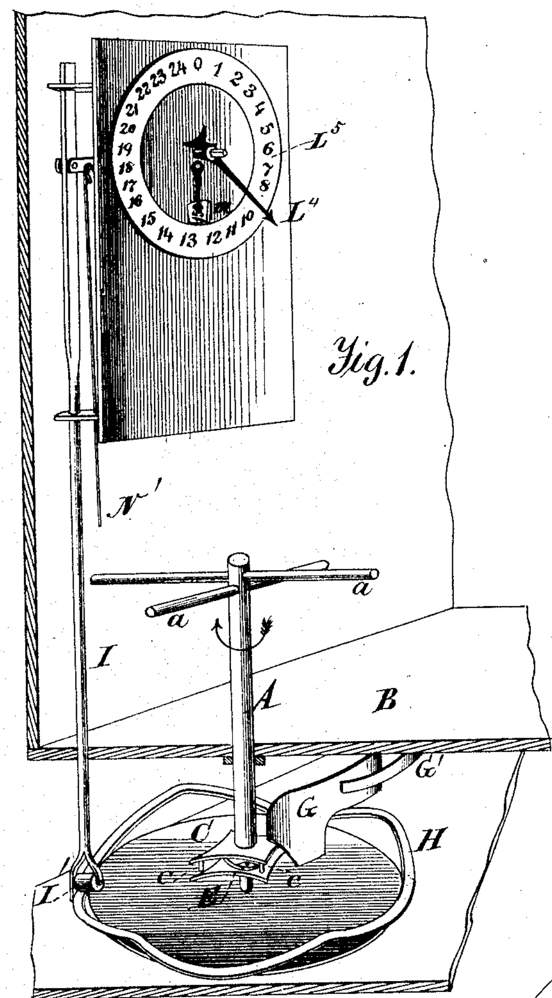


Fig. 1.

Fig. 2.

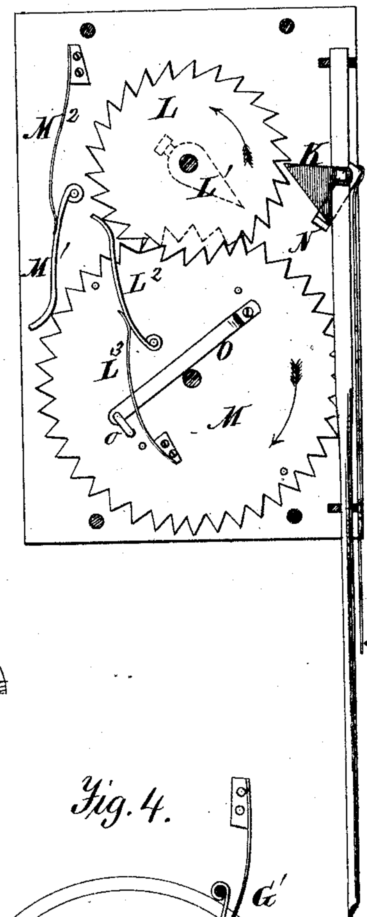


Fig. 3.

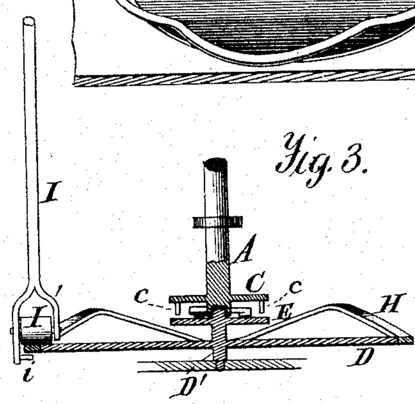


Fig. 4.

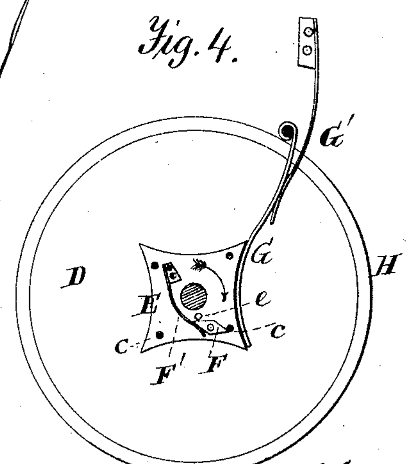
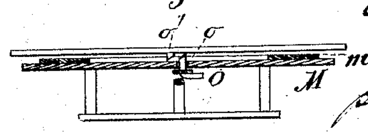


Fig. 5.



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UNITED STATES PATENT OFFICE.

JULIUS THOSS AND ADOLPH TRAUTMANN, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN PASSENGER-REGISTERS.

Specification forming part of Letters Patent No. **163,544**, dated May 18, 1875; application filed March 31, 1875.

To all whom it may concern:

Be it known that we, JULIUS THOSS and ADOLPH TRAUTMANN, both of Baltimore, in the county of Baltimore and State of Maryland, have invented a certain Improvement in Passenger-Registers, of which the following is a specification:

This invention relates to that class of registers for recording the number of passengers entering a street-railroad car or other public conveyance during a trip in which a turnstile, guarding the entrance to such conveyance so as to admit only one person at a time, is used in connection with a registering apparatus.

Our invention consists of certain novelties in the mechanism, intermediate between the turnstile and the recording works, having in view, first, a more correct action of the register, in consequence of the tendency of this mechanism to return the stile after each beat into a position so as to have one of its arms extended square across the entrance, and by providing against accidental pulsations of the recording-works, by the mere jars of the conveyance; and, secondly, an improvement in the means employed for preventing the operation of the register by the turning of the turnstile on the exit of passengers.

In the annexed drawings, Figure 1 is a perspective view of my improved passenger-register. Fig. 2 is an elevation, on an enlarged scale, of the recording-works or register proper, the rear plate having been removed to expose the wheels. Figs. 3, 4, and 5 are detail views of various parts, hereinafter more specifically referred to.

The same letters of reference are used in all the figures in the designation of identical parts.

The turnstile A guards the entrance to the conveyance over the platform B, in the ordinary manner, by means of its arms *a*. It extends through the platform and rests with its lower ends, which contain a socket, upon the spindle D′ of the turn-table D. The turnstile and turn-table are connected by a coupling composed of quadrangular plates C and E fixed respectively to the turnstile and the spindle of the turn-table, the plate C being at each angle provided with a downwardly-projecting stud, *c*, to engage, one at a time, the outer arm of a lever, F, pivoted upon the plate E, and acted upon by a spring, F′, to throw its inner arm against a fixed stud, *e*, on plate E.

So long as the turnstile is turned in the direction of the arrow, (see Figs. 1 and 4,) admitting passengers to the conveyance, the turn-table will be moved in unison with it, through the medium of the coupling just described; but, on turning the turnstile in the opposite direction, as passengers leave the conveyance, the studs *c* merely turn the lever F in passing it, without affecting the plate E, leaving the turn-table in a state of rest. The sides of the plates C and E are inverted quadrants, which are alternately borne against by an arm, G, held forcibly against the edges of the plates by a spring, G′.

A helical track, H, encircling the turn-table D imparts a vertically-reciprocating motion to a rod, I, which is forked at its lower end, and provided with an anti-friction roller, I′, running on said track, and a stud, *i*, projecting under the track. The stud *i* prevents all jumping of the rod in consequence of the jolting of the conveyance. The rod I, moving in suitable guides overhead, carries near its upper end a gravitating pawl, K, which engages the teeth of a wheel, L, of a recording apparatus, and turns it the distance of one tooth each time the rod I is lifted by the movement of the turn-table and its track.

On the descent of the rod the pawl, swinging on the rod, slides down over the next tooth and engages that, the return of the wheel being prevented by the friction of arm L^2 forced against the wheel by spring L^3. The arbor of wheel L projecting through the face-plate of the register carries a hand, L^4, moving over the circular index L^5, spaced and numbered in accordance with the number of teeth in the wheel, which is twenty-five in this instance. The arbor of wheel L also carries an arm, L^1, which, on each complete revolution of wheel L, engages a toothed wheel, M, and turns it the distance of one of its teeth. This wheel M, which is held steady by an arm, M^1, pressed against it by a spring, M^2, carries a circular index, *m*, provided with an arithmetical progression of numbers from 0 to 1,000 in this instance, the difference being 25. An aper-

ture, m', in the face-plate exposes one of these numbers at a time. To obtain the correct record the number indicated by the hand L^4 must be added to the number exposed at aperture m'. The pawl K can be thrown back out of gear by a lifter, N, operated by a rod, N′, when the register is to be set back to zero. To prevent its being turned beyond zero in setting it back, which would require another entire revolution of wheel M to again arrive at zero, we attach a spring, O, to wheel M, carrying at its free end a finger or stud, *o*, beveled at its end, as shown in Fig. 5. This stud projects through the wheel, and at a certain point in the path described by it a beveled stop, *o′*, is fixed upon the face-plate. As long as the wheel M is turned in the proper direction, that indicated by the arrow in Fig. 2, the beveled side of stud *o* will meet the bevel of stop *o′*, and ride over the same; but when turned in the opposite direction the stud will abut square against the stop when it reaches the same, and cannot pass it. When the farther turning of wheel M is thus stopped in setting the register back it will be at zero.

It will be readily perceived that the moment the roller I′ of rod I passes to either side of any one of the elevated points in the helical track the weight of the rod and its adjuncts will tend to continue the movement of the turn-table, until it reaches the depression between two adjacent apexes, and this action is aided by the pressure of spring G′ and lever G upon the plates C and E. The number of depressions is equal to the number of arms on the turnstile, and they are so arranged relatively, that whenever rods I stand in a depression one of the arms *a* reaches square across the passage guarded by the stile. Of course only one of these arms obstructs the passage at a time. The rest are covered by a suitable casing, or at least inclosed by a suitable fence, as indicated in dotted lines in Fig. 1.

All the parts of the apparatus except the stile will be suitably inclosed, so that no one but an authorized person can get access to, and tamper with, the works.

What we claim as our invention, and desire to secure by Letters Patent, is—

The combination of the turnstile A, plate C *c*, plate E *e*, lever F, spring F′, lever G, spring G′, turn-table D, helical track H, rods I I′ *i*, and the recording works, substantially as specified.

In testimony whereof we have signed our names to the foregoing specification in the presence of two subscribing witnesses.

JULIUS THOSS.
A. TRAUTMANN.

Witnesses:
HERRMAN BRANDT,
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