(No Model.)

2 Sheets—Sheet 1.

L. A. TOUCHET.

PASSENGER REGISTER.

No. 286,349. Patented Oct. 9, 1883.

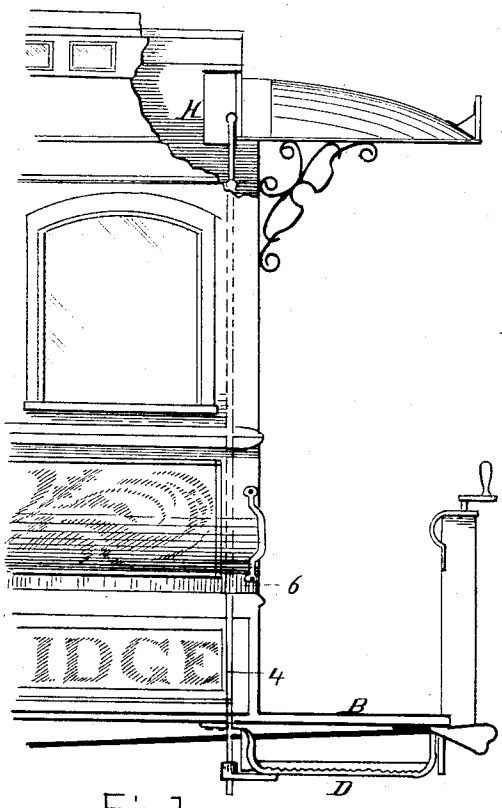


Fig. 1.

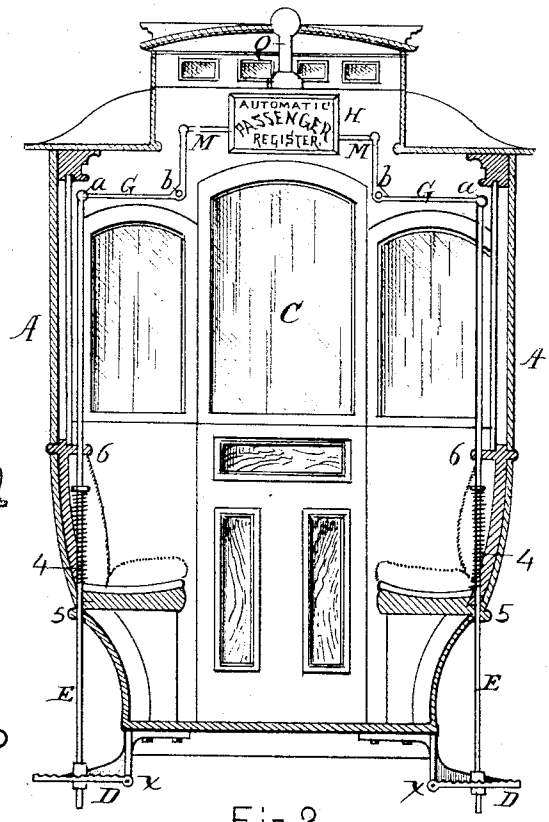


Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

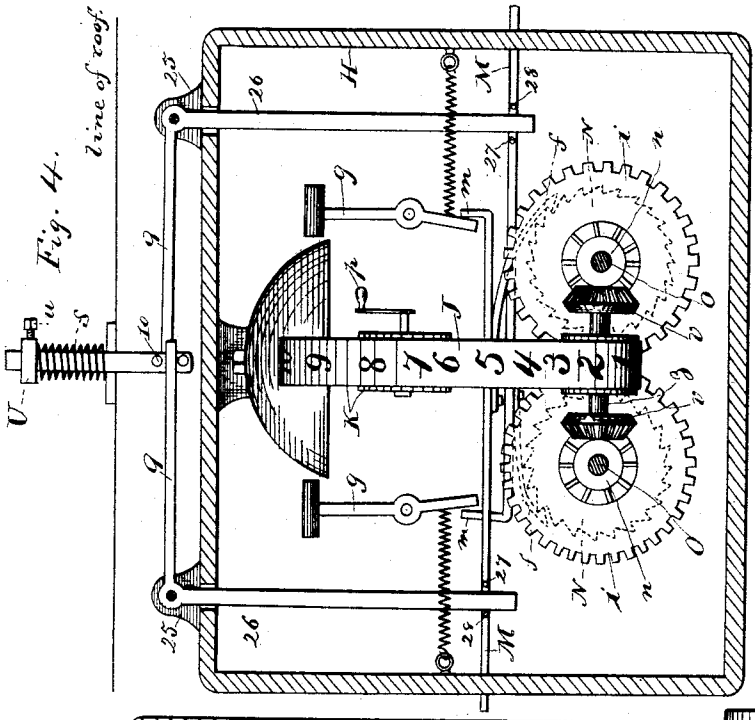


Fig. 3.

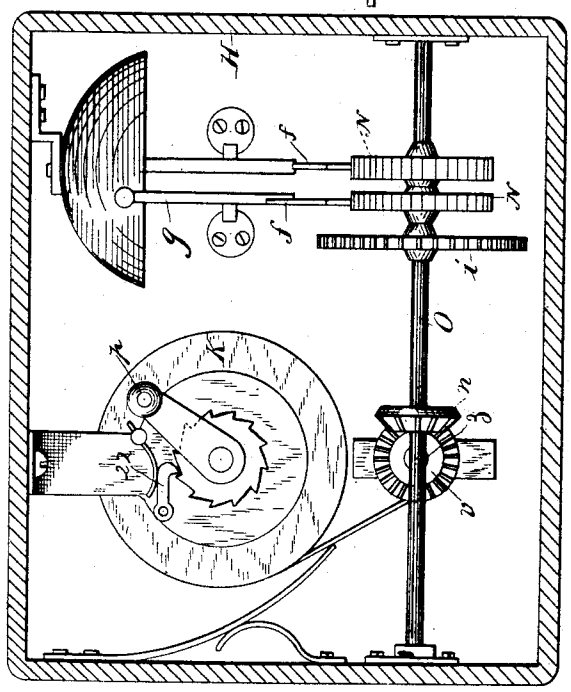


Fig. 7.

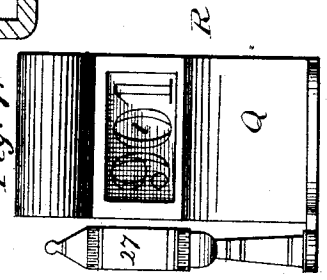


Fig. 6

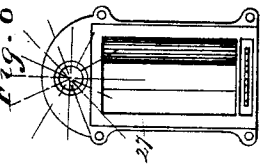
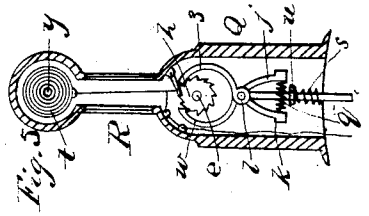


Fig. 5



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UNITED STATES PATENT OFFICE.

LOUIS A. TOUCHET, OF CAMBRIDGE, MASSACHUSETTS.

PASSENGER-REGISTER.

SPECIFICATION forming part of Letters Patent No. 286,349, dated October 9, 1883.

Application filed July 17, 1883. (No model.)

To all whom it may concern:

Be it known that I, LOUIS A. TOUCHET, of Cambridge, in the county of Middlesex, State of Massachusetts, have invented a certain new and useful Improvement in Passenger-Registers, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of a horse-car provided with my improvement; Fig. 2, a vertical transverse section representing the car with its end and platform removed; Fig. 3, a vertical longitudinal section of the registering-box; Fig. 4, a vertical transverse section of the same; Fig. 5, a view of the upper registering device; Fig. 6, a view of the lamp; Fig. 7, a side view of the lamp and tower on top of the car.

Like letters and figures of reference indicate corresponding parts in the different figures of the drawings.

My invention relates to that class of fare-registers which are designed for use with horse-cars, omnibuses, and similar vehicles; and it consists in a novel construction and arrangement of the parts, as hereinafter more fully set forth and claimed, by which a more effective device of this character is produced than is now in ordinary use.

In the drawings, A represents the body of the car, B the platform, and C the door, these parts being of the ordinary form and construction.

The steps D are jointed or pivoted at their inner sides or edges, as shown at *x*, and each provided with a vertically-arranged rod, E, connected at its upper end, as shown at *a*, with a bell-crank lever, G, pivoted at *b* to the upper end of the car.

A registering-box, H, is placed within the car immediately over the door, being provided with a glass face, opening outwardly, to show the numbers on the index-ribbon J, which is adapted to be wound on the pulleys K L, as shown in Figs. 3 and 4. The box may be arranged to face inwardly, if preferred, or so that the ribbon may be seen from the interior of the car. A rod, M, extends from the upper end of each of the levers G into the box H, these rods being provided at their inner ends with hooks *m* and spring-pawls or ratchets *f*, adapted to engage gears N on the shafts O and turn said shafts when said rods are pulled outwardly. The shafts O are also each provided with gears *i*, which intermesh with each other, and also with miter-gears *n*, which intermesh with corresponding gears, *v*, on the shaft *z* of the pulley L. A bell, P, is disposed in the upper part of the box H, and provided with two pivoted strikers or hammers, *g*, which are actuated by the hooks *m* on the rods M. The pulley K is provided with a crank, *p*, for winding the numbered index-ribbon J from the pulley L onto the pulley K, preparatory to using the register.

Disposed on the top of the car there is a tower or case, Q, provided with glazed openings R on either side, and disposed in the upper part of this tower there is a horizontally-journaled shaft, *y*, carrying a numbered ribbon or strip, *t*, which extends downwardly past said glazed openings and is wound around a shaft, *e*. The shaft *e* is journaled horizontally in the tower Q, and provided with a ratchet-wheel and pawl, *h*.

A rod, U, extends downwardly through the top of the car, near the door, and is provided at its upper end, within the tower Q, with the levers *j k*, pivoted to said rod at *l*, and having the spring *q* disposed between their lower ends, said springs acting expansively to bring the levers into engagement with the ratchet-wheel. A spring, *s*, is disposed around the rod U, its lower end resting on the top of the car and its upper end abutting against a fixed collet, *u*, on said rod, said spring acting expansively to force the rod upwardly within the tower Q. The upper end of the lever *j* is provided with a downwardly-projecting hook or pulling-pawl, *w*, and the upper end of the lever *k* with a point or pushing-pawl, 3, so that when the rod U is pulled downwardly the hook *w* will engage the ratchet-teeth on the wheel *h* and cause the ratchet to turn in the direction of the arrow, the pawl 3 slipping over the teeth of the wheel as it revolves, and when the rod U is pushed upwardly the point 3 will engage said teeth, causing the wheel to revolve while the pawl *w* slips over the same.

The teeth on the gears *n n* are so spaced as

to stand twice the distance apart of those on the gears *v v*, with which they intermesh, as best seen in the enlarged views of said gears, Figs. 7 and 8. The object of spacing the gears differently, or providing one with twice as many teeth as the other, is that the registering mechanism may be operated to register when the passenger enters the car but not when he leaves it. For instance, a passenger entering the car and stepping upon the hinged step D will draw down the vertical rod E and operate the bell-crank lever G to pull the horizontal rod M and cause its pawl *f* to turn the gear N, on which it works, thereby rotating the shaft *z* and causing the index-strip J to move forward one point or number; but when the passenger leaves the car by the same entrance and steps upon the step D to operate the rod E, lever G, rod M, and pawl *f*, the gear *n* will not act upon its companion gear, *v*, to move it, as one of its spaces between two of its teeth will then be opposite one of the teeth of the gear *v;* but when another passenger enters the car and presses upon the same step, it will cause the gear *n* to advance and engage the gear *v*, and again move the index-strip J.

Each step of the car being hinged and provided with a rod, E, lever G, and rod M, arranged to operate the pawls *f*, as described, it will be obvious that when a passenger enters the car the strip J will be moved to register, but that when the passenger leaves the car the registering-strip will not be operated on account of a difference in spacing the teeth of the gears *n v*, whereby the actuating-gear *n* moves the gear *v* at every alternate movement of the step D. A coiled spring, 4, is disposed around each of the rods E, the lower end of the spring resting on a bracket, 5, projecting from either side of the car A, and its upper end abutting against a fixed collet, 6, attached to said rod, the spring acting expansively to force the rod upward when the step D is released.

Pivoted at 25 on the box H, and extending downwardly through slots in the top of the same, are two bell-crank levers, 26, the vertical arms of said levers being provided at their lower ends with slots, and against which the studs 27 28, projecting from the rods M, are fitted to work, and the horizontal arms 9 of the levers 26 may be bifurcated and passed astride the vertical rod U between the projecting studs 10.

The lantern 27 is designed to be placed on the top of the car in such a position as to illuminate the glazed openings R in the tower Q, and is of ordinary construction, and may be placed in any convenient position for that purpose.

In the use of my improvement, when the passenger enters the car and steps upon the step D, the rod E will be depressed, acting upon the pivoted lever G to withdraw the rod M from the box H, and cause the pawl *f*, connected with said rod M, to act upon the ratchet N, thereby rotating the gear *i* and moving the registering-tape J along one point, the hook *m* at the same time actuating the pivoted spring-striker *g* to ring the bell P. When the foot of the passenger is withdrawn from the step D, the spring 4 around the rod E will force said rod upwardly and operate the lever G to push the rod M inwardly, causing its pawl *m* to advance and engage another tooth on the ratchet-wheel N. The miter-gear *n*, having, as above described, less teeth than its companion gear, *v*, with which it intermeshes, will not operate to move the gear *v* the next time the step D is depressed, so that the passenger, or any other passenger, may leave the car without moving the registering-strip J forward or causing it to be wound onto the pulley L.

It will be understood that each of the steps D, rods E, bell-cranks G, rods M, and the mechanism immediately connected therewith in the registering-box H is substantially like the other, and consequently that a description which applies to one step and its connected mechanism will apply equally well to the other.

When the registering-strip J has been wound onto the pulley L, the box H is unlocked and the strip rewound onto the pulley K by means of the small crank *p*, the pawl 22 being raised to permit this to be performed.

The registering ribbon or strip *t* in the tower Q is moved forward at every depression of the step D, being actuated by means of the pivoted levers 26 as the rods M are withdrawn, in a manner which will be readily obvious without a more explicit description.

The object of the registering mechanism in the tower Q is to furnish a means for recording the number of passengers who enter, and also those who leave the car, or to register accurately the number of times the step is depressed by the passenger, whether in entering or leaving the vehicle.

The gears *i i* are arranged to intersect, so that when one of said gears and one of the ratchets N and gears *n v* are moved forward the corresponding ratchet, N, and gears *n v* on the opposite side of the registering-strip J will also be moved forward to keep the gears *n v* in proper position.

Having thus explained my invention, what I claim is—

1. In a passenger-register, the gears *i*, ratchets N, gears *n v*, pulleys L K, and numbered registering-strip J, in combination with the rods M, pawls *f*, levers G, spring-rods E, and pivoted steps D, constructed, combined, and arranged to operate substantially as set forth.

2. In a passenger-register, the rod U, provided with the pivoted pawl-levers *j k*, in combination with the ratchet *h*, registering-strip *t*, glazed tower Q, and means for actuating the rod U, substantially as specified.

3. In a passenger-register, the pivoted levers 26, rods M, rod U, spring *s*, levers G, rods E, and pivoted steps D, combined and arranged to operate substantially as set forth.

4. In a passenger-register, the registering-strip J, in combination with the pulleys K L,

gears *v n*, ratchets N, gears *i*, pawls *f*, and means for actuating said pawls, substantially as set forth.

5. The combination of a pivoted step, two registering devices, and connected mechanism for actuating said devices, the one upon the alternate depressions of said step and the other upon the successive depressions thereof, substantially as described.

6. The combination of the pivoted steps, the shafts O O, carrying the gears *n n*, the shaft *z* at right angles thereto, carrying the gears *v v*, which have double the teeth of the gears *n n*, whereby the latter intermittently intermesh with the former, ratchet-wheels on the shafts O O, mechanism connecting said ratchet-wheels with said steps, and the gears *i i* on said shafts O O intermeshing with each other, whereby the depression of one of the steps rotates both of said shafts to bring both sets of bevel-gears into proper position, substantially as described.

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L. J. WHITE.