(No Model.) 2 Sheets—Sheet 1.

A. C. STONE.

PASSENGER RECORDER FOR RAILWAY CARS.

No. 418,391. Patented Dec. 31, 1889.

Fig. 1.

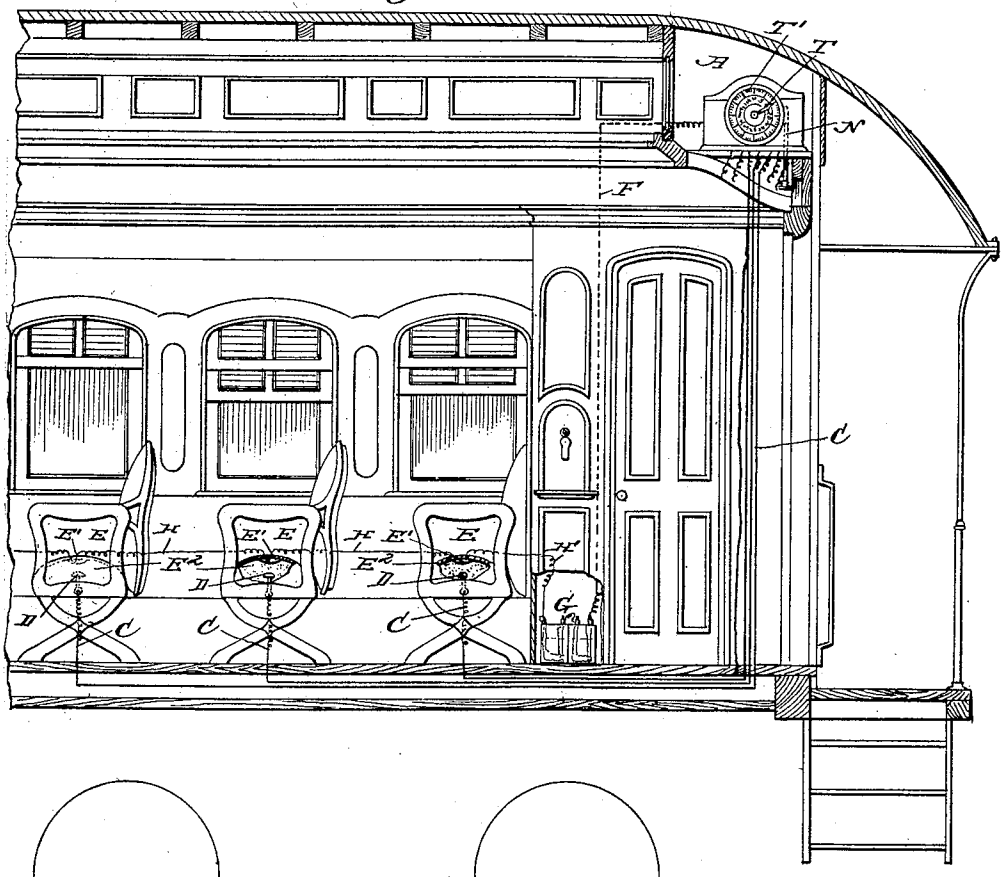


Fig. 4.

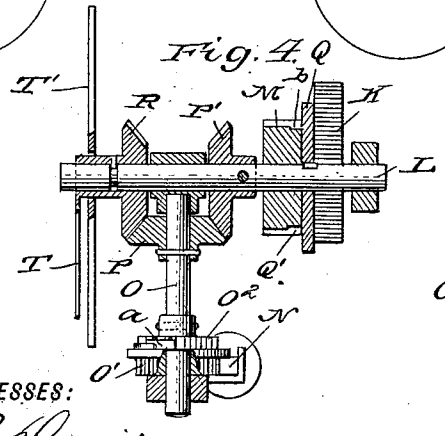
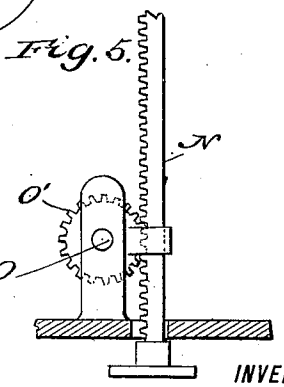


Fig. 5.



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BY Munn & Co.

ATTORNEYS.

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) 2 Sheets—Sheet 2.

A. C. STONE.

PASSENGER RECORDER FOR RAILWAY CARS.

No. 418,391. Patented Dec. 31, 1889.

Fig. 2.

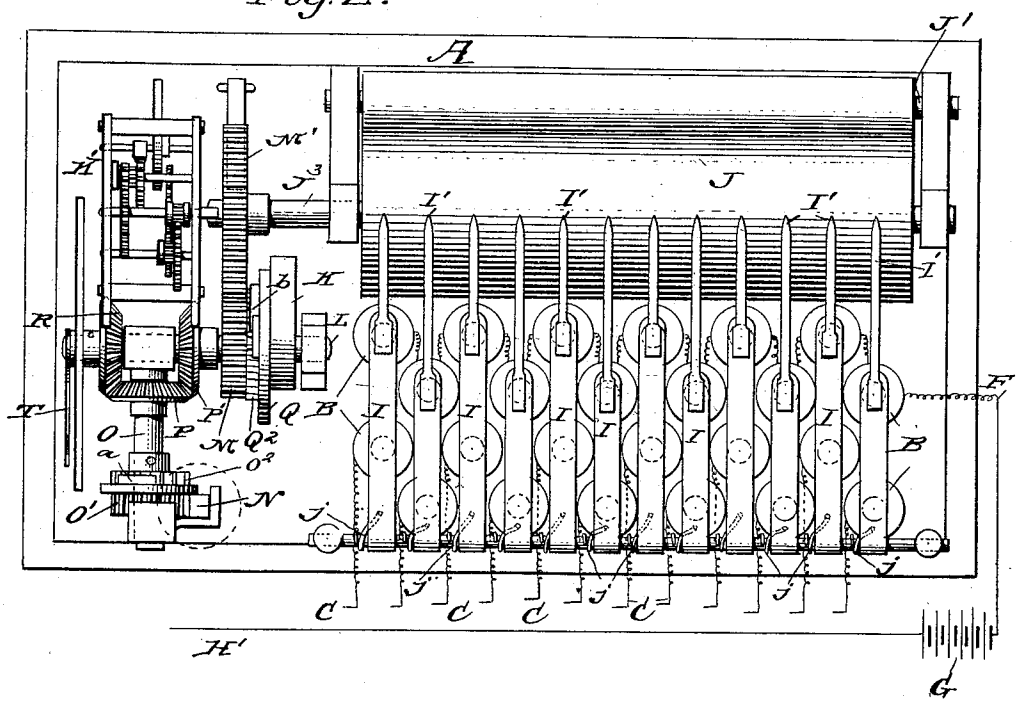


Fig. 3.

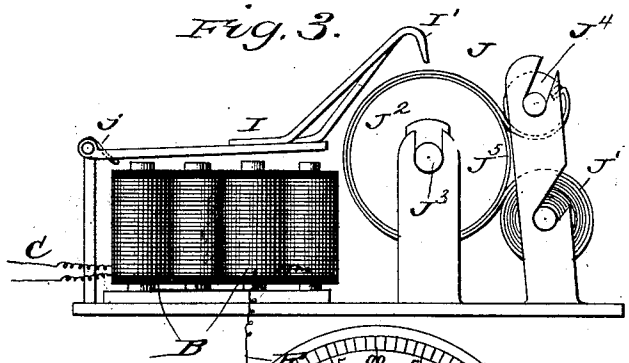
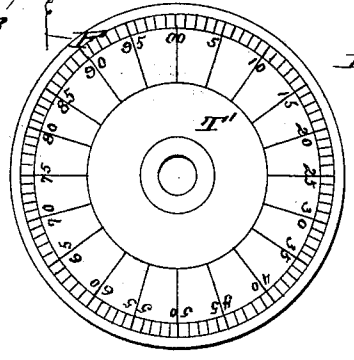


Fig. 6.



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UNITED STATES PATENT OFFICE.

ADDISON C. STONE, OF CHICAGO, ILLINOIS.

PASSENGER-RECORDER FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 418,391, dated December 31, 1889.

Application filed December 21, 1888. Serial No. 294,292. (No model.)

To all whom it may concern:

Be it known that I, ADDISON C. STONE, of Chicago, in the county of Cook and State of Illinois, have invented a new and Improved Passenger-Recorder for Railway-Cars, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional elevation of a part of a railway-car, showing one arrangement therein of my passenger-recorder. Fig. 2 is an enlarged plan view of the recording mechanism. Fig. 3 is an end elevation of the same. Fig. 4 is a sectional view of a portion of the gearing and winding mechanism. Fig. 5 is a detailed view of the winding-rack and pinion with which it engages, and Fig. 6 is an enlarged front view of the dial.

The invention will first be described in connection with the drawings, and then pointed out in the claims.

At one end, or at any convenient part of the car, I place in a suitable frame or compartment the recorder A, the magnets B B of which are each connected by a wire C to a contact-point D, located one in each seat E of the car. All of the magnets are connected by short wires, and one of them is connected by wire F to one pole of the battery G. In the cushion E^2 of each seat is located a contact-point E′. These are connected together and to the one pole of the battery G by wires H H′, and they are arranged immediately over the contact-points D, so that when a person sits down upon the seat the points E′ D are pressed in contact with each other, thus completing the circuit to the magnets in the recorder which correspond with the seat, causing the point or stylus I′, attached to the armature I, located over the magnets, to be drawn down into contact with the moving strip of paper J, marking the same, thus recording or indicating on the paper that the seat is occupied.

The strip of paper J is wound on a drum J′, and passes thence around a cylinder J^2, mounted on a shaft J^3, which is slowly revolved for carrying the paper along under the points or styluses I′. From the cylinder J^2 the paper passes onto a roller J^4, in frictional contact with the cylinder J^2. The periphery of the roller J^2 is covered with carbon paper J^5, so that the points or styluses I′ will make a distinct record. For turning the drum J^2, I prefer to use the spring K and clock mechanism K′. The said spring K is placed on the shaft L, which is geared to the shaft J^3 of the roller J^2 by gear-wheels M M′. The clock mechanism is connected to the shaft J^3 to regulate or retard the speed, so that the strip of paper will have a very slow motion.

N is the rack for winding the spring K. This is held in engagement with the gear-wheel O′ on the counter-shaft O. The said wheel O′ is loose on the counter-shaft and is provided with the spring-pawl *a*, which is adapted to engage with the ratchet-wheel O^2, made fast upon the said shaft O, so that only the down movement of the rack will turn the shaft, the wheel O′ turning independently of the shaft upon upward movement of the rack. The motion of the counter-shaft O is communicated to the shaft L through the beveled gear-wheels P P′, which winds the spring K. The gear-wheel M is loose on the shaft L, and the force of the spring K is communicated to the said gear by a pawl *b*, attached to plate Q, fixed upon the shaft, which pawl engages with a ratchet Q′, formed at one side or edge of the wheel M. The beveled gear-wheel P also meshes with the beveled gear R on the shaft L, which gear carries the pointer T in front of the dial T′. The dial is graduated in miles and indicates the extent to which the spring is to be wound. If the car is to be run, say, from New York city to Albany, when the train starts the rack N is to be operated for winding the spring until it has tension enough to keep the paper in motion during the time required to reach the next stopping-place, which tension is indicated by the pointer T as it moves over the divisions of the dial, said divisions being made to correspond with the miles traveled by the train. The paper J will now be slowly moved by cylinder J^2 under points or styluses I′. If all the seats in the car are occupied, all of the points or styluses I′ will be held by the magnets in contact with the paper. If one or more persons leave the car when the train arrives at the station, the

magnets corresponding to the seats vacated are thrown out of the electric circuit and the points or styluses I′ are elevated by springs *j* out of contact with the paper. If other passengers get in and occupy the same seats, the fact will be recorded, so that at the end of the run the strip of paper J will indicate exactly the number of seats occupied parts of and also the whole run, thus giving a perfect and reliable tally-sheet, showing the exact number of passengers, the station at which they boarded the train, where they got off, and the number of miles traveled. If the conductor collects all the fares and makes an honest return, his returns will tally exactly with the tally-sheet. The rack N is to be operated by the conductor as he passes through the car to collect fares, setting the pointer each time to the marks indicating the next stop.

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

1. In a passenger-recorder for railway-cars, the combination of a paper-carrying roller, a clock mechanism connected to the shaft of the said roller, a second shaft geared to the roller-shaft, and a spring placed on the said second shaft, substantially as and for the purpose set forth.

2. In a passenger-recorder for railway-cars, the combination of a paper-carrying roller, a clock mechanism connected to the shaft of the said roller, a second shaft geared to the shaft of the said paper-carrying roller, a spring on the second shaft, and means for winding the spring, substantially as herein shown and described.

3. In a passenger-recorder for railway-cars, the combination, with a paper-carrying roller, a clock mechanism connected to the shaft of the said roller, a second shaft geared with the shaft of the paper-carrying roller and provided with two bevel gear-wheels, and a spring on said second shaft, of a counter-shaft provided with a bevel gear-wheel meshing with the bevel gear-wheels of the second shaft, a pointer on one of the gear-wheels of the said second shaft, a dial, and means for operating the counter-shaft, substantially as herein shown and described.

4. The shafts J^3, L, and O, the spring K, gear-wheels M M′, plate Q, pawl *b*, and ratchet Q′, in combination with the gear-wheels O′ and P P′, the rack N, pawl *a*, and ratchet O^2, all arranged to operate substantially as described.

5. The shaft L, the spring K, secured thereto, and a counter-shaft geared with the said shaft L, in combination with the gear-wheel O′, rack N, ratchet O^2, pawl *a*, the gear R, and pointer T, substantially as described.

6. A passenger-recorder for railway-cars, made as herein shown and described, consisting of the following elements, namely: a roller carrying a web of paper and propelled by clock-work and spring, a spring-winding mechanism, a dial and pointer to indicate the degrees of tension given to the spring, and a stylus operated by electro-magnets which are connected with a battery and with contact-points arranged in the seats, so that when and so long as a seat is occupied its corresponding stylus will be moved and held in contact with the paper, producing a mark thereon, all as set forth.

ADDISON C. STONE.

Witnesses:
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H. C. KITTREDGE.