

(No Model.)

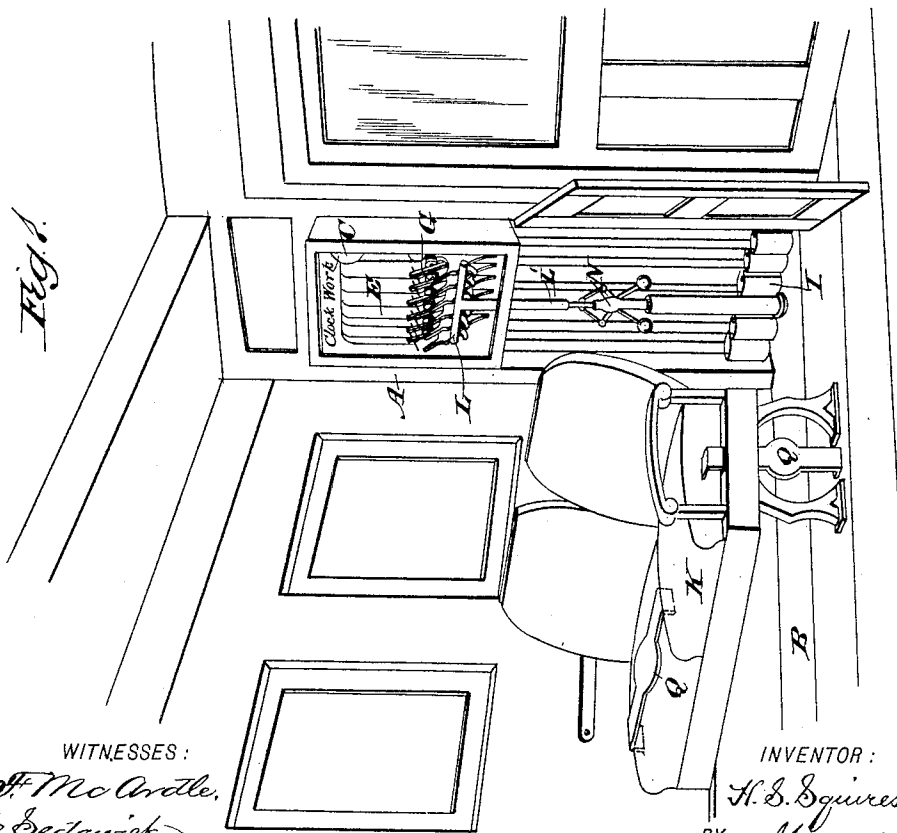
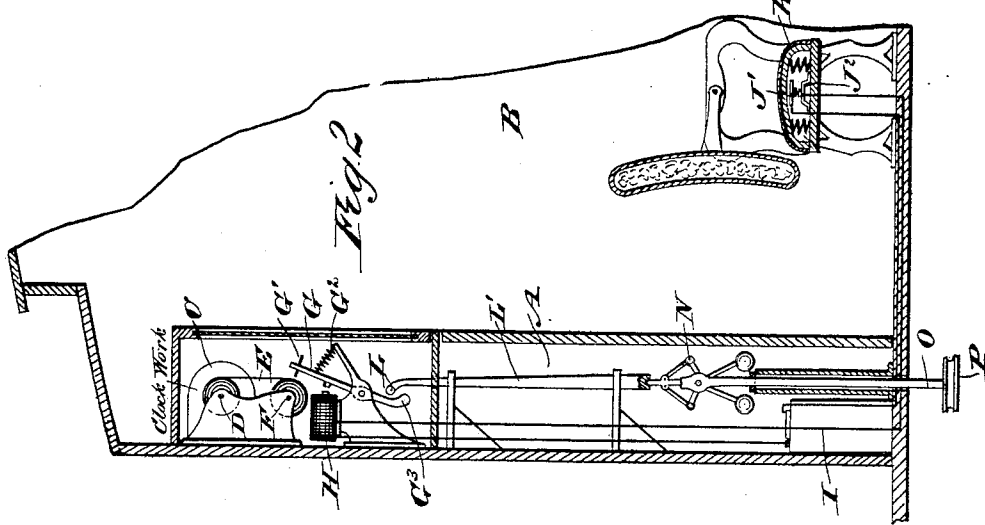
2 Sheets—Sheet 1.

H. S. SQUIRES.

AUTOMATIC MILEAGE RECORDER FOR CAR SEATS.

No. 480,526.

Patented Aug. 9, 1892.



WITNESSES:

H. M. Andle.
C. Sedgwick

INVENTOR:

H. S. Squires
BY *Munn & Co.*
ATTORNEYS

(No Model.)

2 Sheets—Sheet 2.

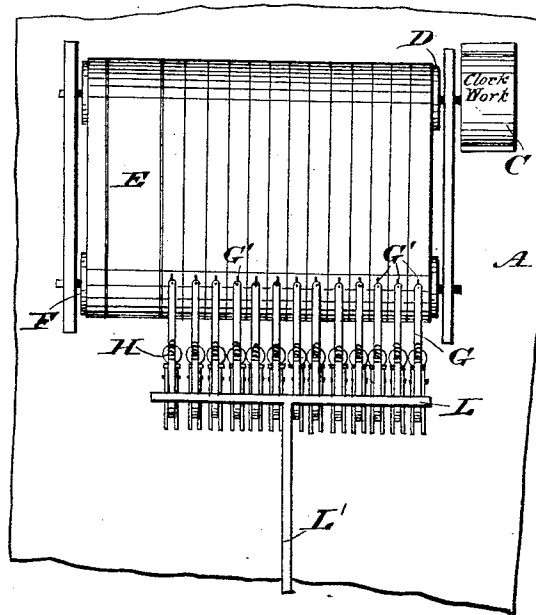
H. S. SQUIRES.

AUTOMATIC MILEAGE RECORDER FOR CAR SEATS.

No. 480,526.

Patented Aug. 9, 1892.

Fig. 3.



E

Fig. 4

AUTOMATIC CAR REGISTER														
TIME	STATION	Seat 1	2	3	4	5	6	7	8	9	10	11	12	13 14
E'	E ²	E ³								E ³				

WITNESSES:

J. McArdle.
E. Sedgwick

INVENTOR:

H. S. Squires
BY *Munn & Co.*
ATTORNEYS

UNITED STATES PATENT OFFICE.

HARRY SANFORD SQUIRES, OF NEW YORK, N. Y.

AUTOMATIC MILEAGE-RECORDER FOR CAR-SEATS.

SPECIFICATION forming part of Letters Patent No. 480,526, dated August 9, 1892.

Application filed December 8, 1891. Serial No. 414,385. (No model.)

To all whom it may concern:

Be it known that I, HARRY SANFORD SQUIRES, of the city of New York, county of New York, and State of New York, have invented a new and Improved Automatic Car-Recorder, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved recorder designed for use on passenger-cars and other vehicles for automatically recording the number of miles for which each seat is occupied.

The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

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

Figure 1 is a perspective view of the improvement as applied. Fig. 2 is a sectional side elevation of the same. Fig. 3 is a front view of part of the improvement, and Fig. 4 is a face view of the recording-sheet.

The improved automatic car-recorder is provided with a suitably-constructed casing A, located in a convenient place within the car B, preferably at one end thereof, as is plainly illustrated in Fig. 1. In the casing A is arranged a suitable clockwork C, connected with a roll D, for imparting a rotary motion to the latter, the said roll being adapted to wind up a sheet of paper E, on which the miles, &c., are recorded.

The sheet E is preferably printed as shown in Fig. 4, being provided with a column E' for marking thereon the time, with a column E² for the several stations along the route on which the car travels, and a series of columns E³, indicating the various seats within the car, one column being for each seat.

The sheet E unwinds from a roll F, and on the said sheet in each column E³ a point or pencil G' makes a record. Said point is held on a lever G, fulcrumed on a suitable bracket within the casing A and connected with a spring G² for holding the point G' of the said lever off the sheet E. Each lever G is adapted to be attracted by an electro-magnet H,

connected with a battery I, located in the bottom of the casing, as is plainly shown in Fig. 2. Each magnet is also connected with a circuit-closer arranged in the respective car-seat K, the said circuit-closer being provided with two metallic plates J' and J², located one above the other and of which the lowermost is secured to the frame of the car-seat and the uppermost J' to the movable part of the seat, so that when a passenger occupies the seat the plate J' is pressed downward and makes contact with the plate J², thus closing the circuit. The springs in the seat proper disconnect the plates J' and J² whenever the seat is unoccupied, so that the circuit is broken.

Now it will be seen that when one of the seats is occupied and the circuit is closed as described the corresponding electro-magnet H acts on its lever G so as to move the same inward. The point G' of this lever then rests on the respective column E³ and marks on the sheet traveling upward by winding upon the roller or drum D, actuated by the clockwork C. As soon as the passenger rises and the seat is unoccupied the circuit is broken and the spring G² returns the lever G to its normal position—that is, with the point G' out of contact with its column E³ on the sheet E.

In order to prevent recording during the time the car is at a standstill, either at a station or elsewhere, the following device is provided: The lower ends of the levers G are formed with an upwardly-extending projection G³, adapted to be engaged by a bar L, extending transversely over the entire series of levers G, as is plainly shown in Figs. 1 and 3. The bar L is secured on the upper end of a rod L', mounted to slide vertically in suitable bearings in the casing A and connected at its lower end with a governor N of any approved construction, so that when the balls of the governor fly outward the rod L' is pushed upward, moving the bar L in the same direction, so as to permit the levers G to move with their points G' in contact with the sheet E. When the motion of the governor ceases, the rod L' is drawn downward, moving the bar L in the same direction, thus engaging the projections G³ of the several levers G, and

thereby moving the said levers into an outermost position, raising the points G' over the sheet E, notwithstanding the fact that the electro-magnets H are in action.

5 The shaft O of the governor N is connected with the axle of the car, so that the governor is actuated as long as the car is running, and the motion of the governor ceases as soon as the car stops. For this purpose a pulley P,
10 held on the lower end of the shaft O, is connected by a belt with a pulley on the axle, so that the rotary motion of the axle is transmitted to the shaft O as long as the car travels forward.

15 In order to prevent the recording of freight or other matter when placed on the seats K, a bar Q is employed, made U-shaped and adapted to be placed across the seat, so that the seat is not pressed when bundles or other
20 like matter are placed on the same—that is, on the top of the bar Q. When the seat is to be occupied by a passenger, the bar Q is swung downward to one side of the seat, as is plainly shown in Fig. 1, thus leaving the
25 seat free for the passenger.

It will be seen that by this improved device a complete record is kept, automatically showing what seat in the car has been occupied and for how long. The sum of the times the
30 seats are occupied corresponds to the sum of the number of miles as shown by the ticket collected by the conductor, thus making a tally with the ticket sold, or, rather, collected by the conductor. As the cylinder or drum
35 D revolves continuously the time the train is in motion is recorded, but not the time the train is at rest, owing to the action of the governor N, as previously described.

The time-column E' of the sheet will correspond to the train-time and the conductor's time, so that when the train stops the exact time of stop is recorded and the length of time spent at a stop, whether a station or on the road.

45 The sheets E can be changed at the end of each conductor's run and turned in with his ticket and report, or they can be changed at the end of every complete run.

From the foregoing it will be understood
50 that the device is equally well adapted for use on street-cars, cabs, coaches, and other vehicles. For cabs a single circuit-closer in

the seat and connections, as above described, are necessary.

Having thus described my invention, I 55 claim as new and desire to secure by Letters Patent—

1. In an automatic car-recorder, the combination, with electro-magnets controlled from the seats in a car, of a series of levers, each 60 carrying a point and actuated from the said electro-magnets, a traveling sheet adapted to be marked on by the points of the said levers, and a governor actuated from the axle and adapted to lock the said levers in place, sub- 65 stantially as shown and described.

2. In an automatic car-recorder, the combination, with a traveling sheet and a clockwork for imparting a traveling motion to the said sheet, of a series of levers carrying points 70 indicating on the said traveling sheet, magnets for controlling the said levers, circuit-closers arranged on the car-seats and connected with the said electro-magnets, flexible car-seats controlling the circuit-closers, and 75 a governor from the car-axle and adapted to lock the said levers, substantially as shown and described.

3. In an automatic car-recorder, the combination, with electro-magnets controlled from 80 the seats in the car, of a series of levers, each carrying a point and actuated from the said electro-magnets, a traveling sheet adapted to be marked on by the points of the said levers, and means, substantially as described, for 85 locking the said levers in place to hold their points off the said traveling sheet at a time when the car is at a standstill, as set forth.

4. In an automatic car-recorder, the combination, with a traveling sheet and a clockwork 90 for imparting a traveling motion to the said sheet, of a series of levers carrying points indicating on the said traveling sheet, magnets for controlling the said levers, circuit-closers arranged on the car-seats and connected with 95 the said electro-magnets, and a governor actuated from the car-axle and adapted to lock the said levers, substantially as shown and described.

HARRY SANFORD SQUIRES.

Witnesses:

W. J. THOMPSON,
D. J. ROSS.