I. M. REED, DEC'D.

C. REED, ADMINISTRATRIX.

COMBINED PASSENGER RECORDER AND STATION INDICATOR.

APPLICATION FILED MAR. 19, 1909.

**992,593.**

Patented May 16, 1911.

4 SHEETS—SHEET 1.

Fig. 1.

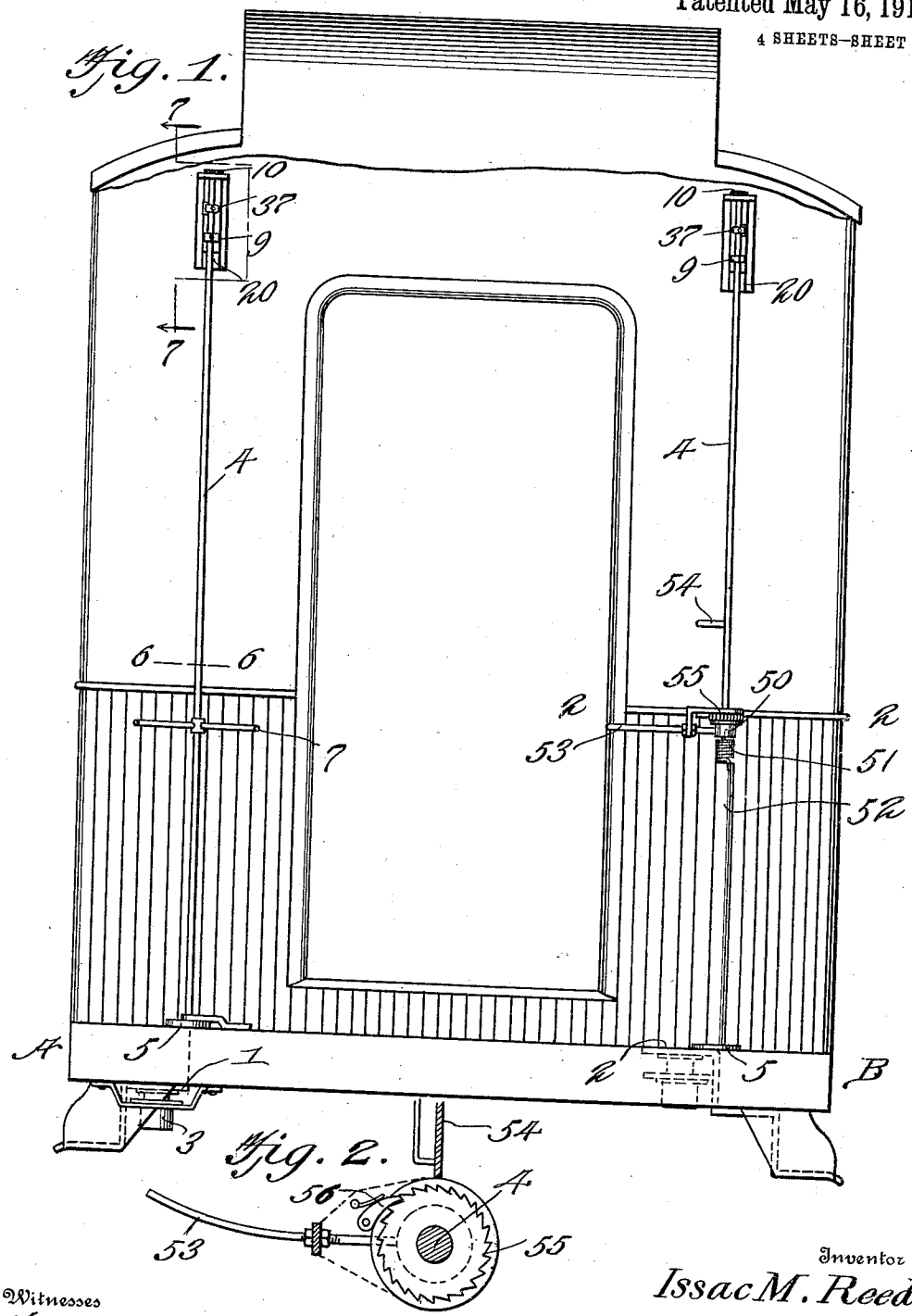


Fig. 2.

Witnesses

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4 SHEETS—SHEET 2.

Fig. 3.

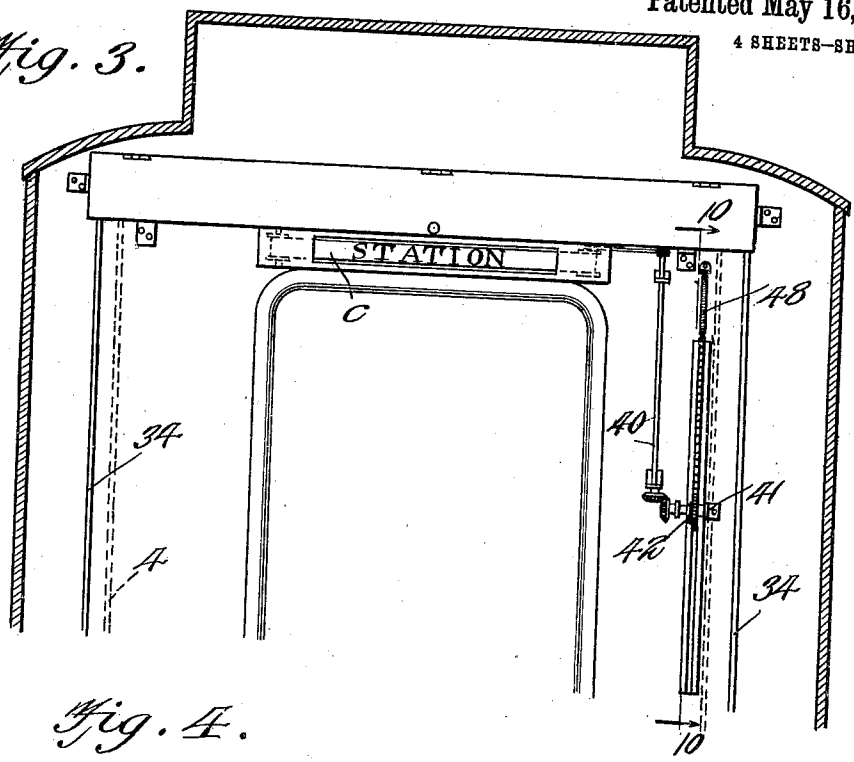



Fig. 4.

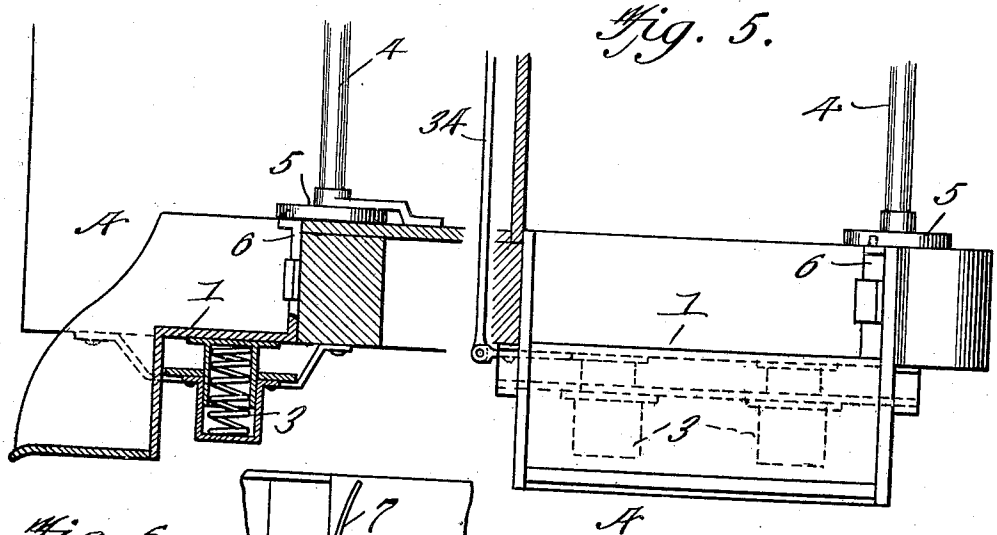
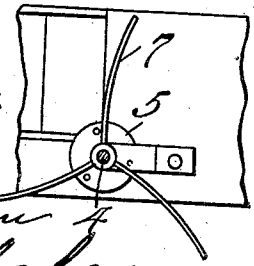



Fig. 5.

Fig. 6.




Witnesses

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4 SHEETS—SHEET 3.

Fig. 7.

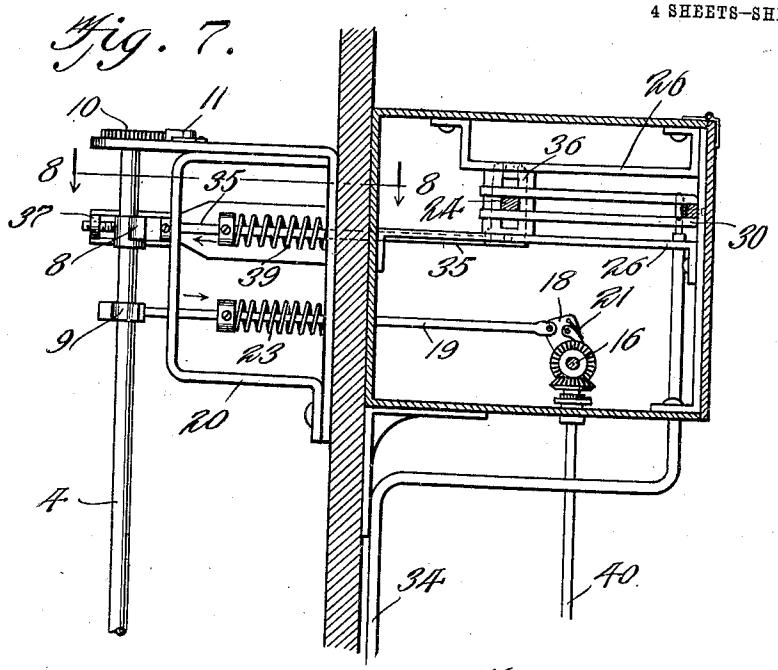



Fig. 8.

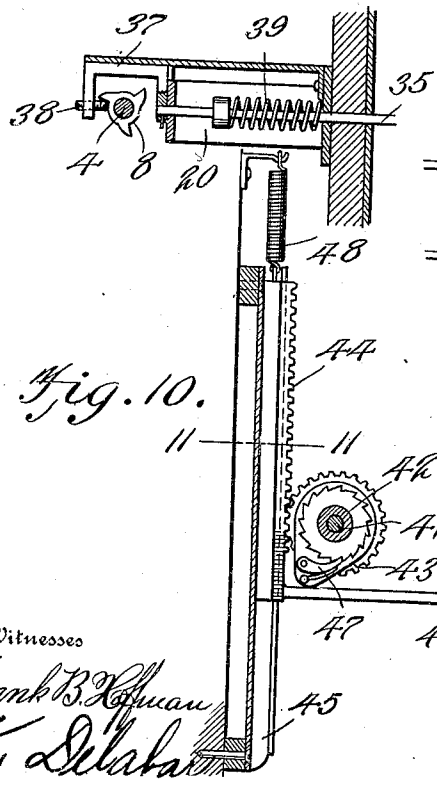



Fig. 9.

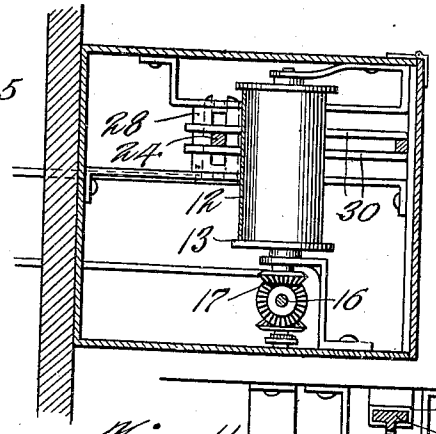
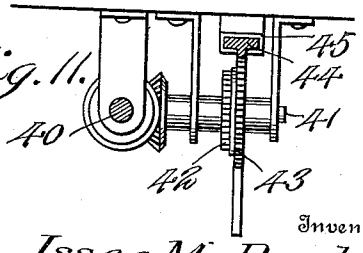



Fig. 10.

Fig. 11.




Witnesses

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4 SHEETS—SHEET 4.

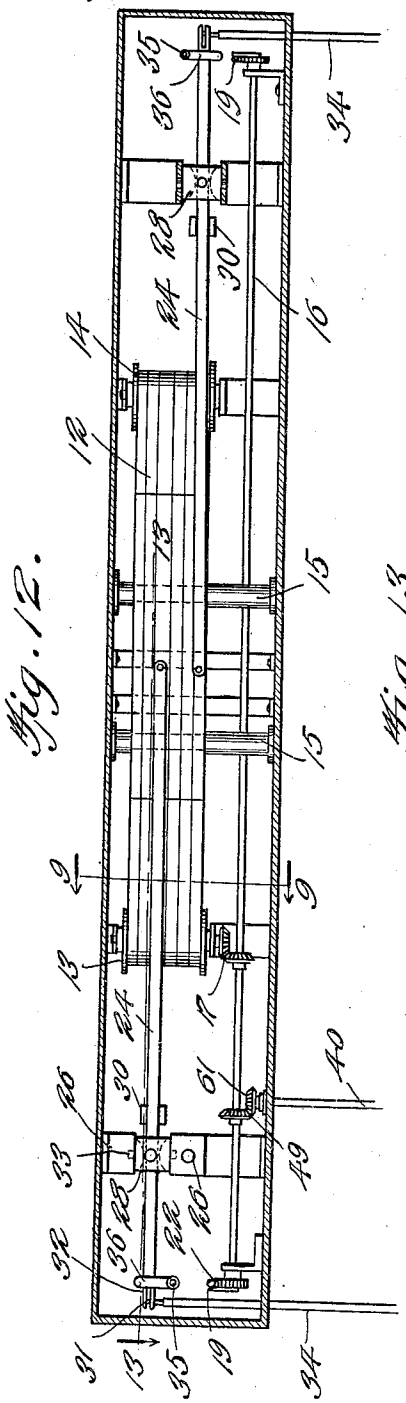

Fig. 12.

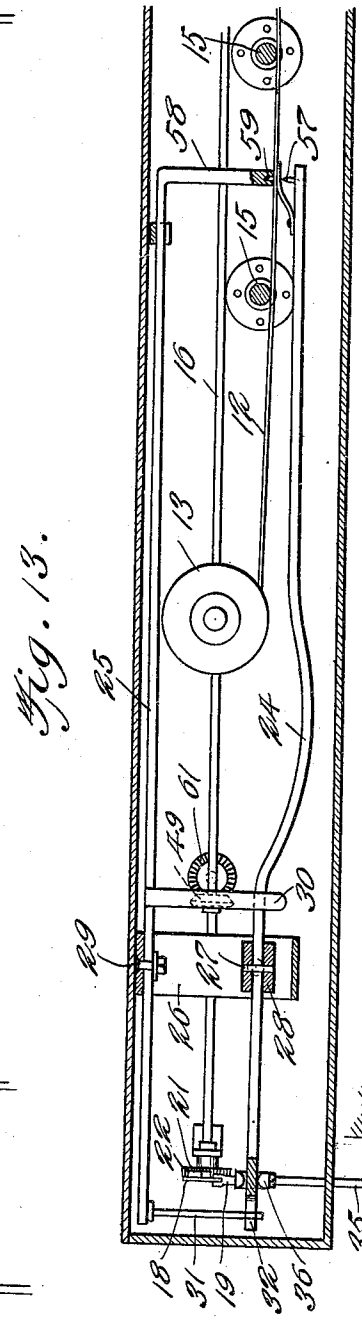

Fig. 13.

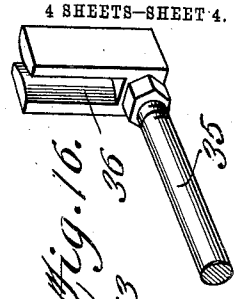

Fig. 16.

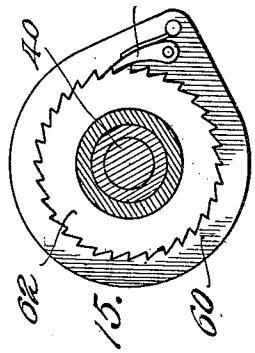

Fig. 15.

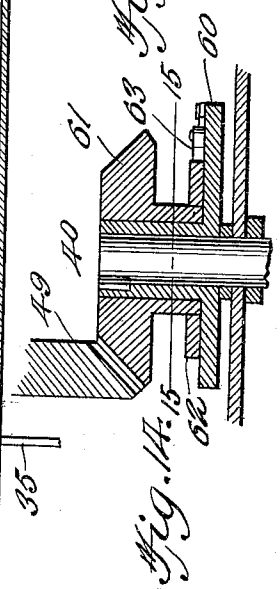

Fig. 14.

Witnesses

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# UNITED STATES PATENT OFFICE.

ISAAC M. REED, OF CORNING, ARKANSAS; CORA REED, ADMINISTRATRIX OF SAID ISAAC M. REED, DECEASED, ASSIGNOR TO LARRY BOSHEARS, OF CORNING, ARKANSAS.

## COMBINED PASSENGER-RECORDER AND STATION-INDICATOR.

992,593. Specification of Letters Patent. **Patented May 16, 1911.**

Application filed March 19, 1909. Serial No. 484,344.

*To all whom it may concern:*

Be it known that I, ISAAC M. REED, a citizen of the United States, residing at Corning, in the county of Clay and State of Arkansas, have invented new and useful Improvements in Combined Passenger-Recorders and Station-Indicators, of which the following is a specification.

The present invention has for its object to provide means for automatically recording each person upon entering and leaving a street car or other public conveyance upon which fares are collected thereby insuring accuracy in keeping tally of the number of passengers carried upon any trip thereby protecting both the conductor and the company, it being obvious that the incoming and outgoing tally must agree, under normal conditions.

The invention also contemplates recording the approximate weight of each passenger both upon entering and leaving the conveyance thereby indicating in a general way the full and half fares collected, the recording mechanism being automatically set by the weight of the person prior to its operation by the passenger passing on or off the conveyance.

The invention also has for its object to combine with the recording mechanism station indicating means so that the next stop or station may be conspicuously positioned and at the same time the tally sheet moved to space the tallies or recording made at each stop, whereby it may be known how many enter or leave the conveyance at a given station.

The invention embodies in its organization a tally sheet, recording mechanism for making a record upon the tally sheet, mechanism for positioning the recording mechanism according to the approximate weight of the passenger entering or leaving the conveyance, actuating means for operating the recording mechanism after the same has been positioned, means for normally locking the parts to prevent surreptitious operation thereof, means for releasing the operating mechanism by the weight of the passenger, station indicating means and means for spacing the readings upon the tally sheet at each top or station and at the same time adapted to move the station indicating means to bring the name of the next stop or station in conspicuous position to be read by the passengers.

The invention consists of the novel features, details of construction and combinations of parts which hereinafter will be more particularly set forth, illustrated and finally claimed.

While the drawings illustrate the preferred embodiment of the invention, it is to be understood that various changes in the form, proportions and minor details of construction may be resorted to within the scope of the subjoined claims without departing from the nature of the invention.

Referring to the drawings hereto attached forming a part of the specification, Figure 1 is an end view of the body portion of a car or like public conveyance provided with recording and indicating mechanism embodying the invention. Fig. 2 is a top plan view of the ratchet mechanism coöperating with the shaft disposed at the exit, the shaft being in horizontal section on the line 2—2 of Fig. 1. Fig. 3 is a transverse section of the upper portion of the body of the car or conveyance showing the relation of the parts as seen from the inner side. Fig. 4 is a transverse section of the steps at the entrance showing the parts on a larger scale. Fig. 5 is a front view of the parts illustrated in Fig. 4. Fig. 6 is a horizontal section on the line 6—6 of Fig. 1 showing the parts on a larger scale. Fig. 7 is a detail section on the line 7—7 of Fig. 1 looking to the right as indicated by the arrows, the parts being on a larger scale. Fig. 8 is a horizontal section on the line 8—8 of Fig. 7. Fig. 9 is a transverse section on the line 9—9 of Fig. 12 looking to the left as designated by the arrows. Fig. 10 is a vertical section on the line 10—10 of Fig. 3 looking to the right, the parts being on a larger scale. Fig. 11 is a horizontal section on the line 11—11 of Fig. 10. Fig. 12 is a front view of the recording mechanism, the casing being in section. Fig. 13 is a horizontal section of an end portion of the recording mechanism and casing on the line 13—13 of Fig. 12. Fig. 14 is a detail section of the gearing between the feed and operating shafts for moving the tally sheet after each record. Fig. 15 is a horizontal section on the line 15—15 of Fig. 14. Fig. 16 is a perspective view of the inner end of the rod whereby movement is

transmitted to the operating member of the recording mechanism.

Corresponding and like parts are referred to in the following description, and indicated in all of the views in the drawings by the same reference characters.

In the installation of the invention both the recording and the station indicating mechanisms are located to the best possible advantage for observation. As shown in Fig. 3 all the mechanisms are located at one end of the car upon the interior above the doorway. So far as the recording mechanism is concerned, it is not absolutely necessary that the same be exposed because the general public is not interested therein. The working parts are suitably housed for protection and to prevent tampering therewith. Another advantage for locating the mechanisms at the end of the car or conveyance is for the convenience of operation by the usual means of entrance and exit.

The invention is shown applied to a car which is provided at each end with a platform at the ends of which are steps both for entrance and exit. The topmost step of the conveyance is made depressible, so that the weight of the person may be utilized to release the operating mechanism and to properly position the recording mechanism to indicate approximately a full and a half fare. The topmost tread of the exit steps is likewise made depressible for a like purpose namely, to release the recording mechanism and to properly position the same.

The entrance is indicated by the letter A, and the exit by the letter B. The depressible step of the entrance is designated by the numeral 1 and the depressible tread of the exit is indicated by the reference numeral 2. The depressible portions 1 and 2 are similarly guided and supported by means of springs 3. A vertical shaft 4 is located at one side of the entrance and is suitably mounted in bearings both at the top and bottom. A disk 5 is fast to the shaft 4 and is provided with a series of openings, any one of which is adapted to receive a lock pin 6 by means of which the shaft 4 is prevented from turning. The lock pin 6 has connection with the depressible step 1 to move therewith and when the step is pressed downward by the weight, the lock pin 6 is withdrawn from engagement with the plate 5 thereby releasing the shaft 4 and admitting of its turning. A series of arms 7 radiate from the shaft 4 forming in effect therewith a turn stile to prevent more than one person passing at a time. Three arms 7 are shown and the plate or disk 5 is provided with three openings so as to lock the shaft 4 in any one of three positions. The upper portion of the shaft 4 is provided with two trip wheels 8 and 9 which are adapted to actuate the recording and feed mechanisms respectively. The trip wheels 8 and 9 are pointed, the teeth being beveled to act as cams in the operation of the parts depending for movement thereon. The form of trip wheels is best indicated in Fig. 8. A ratchet wheel 10 is fast to the upper end of the shaft 4 and a pawl 11 coöperates therewith to prevent backward movement of the shaft.

The recording mechanism comprises a tally sheet 12 and two spools or drums 13 and 14. The tally sheet 12 consists of a strip of paper wound upon the spool 14 and adapted to be unwound from said spool and wound upon the spool 13. The tally sheet is divided longitudinally from a medial line toward opposite longitudinal edges into strips to indicate approximately the weight of the passengers so that whole or half fares may be determined with reasonable accuracy. The tally sheet 12 may consist of a ribbon or paper or other cheap material. Two spools 15 are located between the spools 13 and 14 and are spaced apart to engage with the intermediate portion of the tally sheet so as to retain the same in place. A longitudinal shaft 16 is arranged below the tally sheet and spools and is geared to the spool 13 so as to intermittently turn the same and wind the tally sheet thereon in the operation of the device. Beveled gearing 17 connect the shaft 16 with the shaft or journal of the spool 13. The shaft 16 is adapted to be intermittently operated so as to move the tally sheet after each record. This result is effected by means of a trip wheel 9 through the instrumentality of the following means: A plate 18 is pivotally mounted upon the shaft 16 or in line therewith and has a rod 19 connected therewith, the same passing horizontally through a side of the housing and through a bracket 20, its outer end terminating in the path of the points or cogs of the trip wheel 19 to be engaged thereby, the pawl 21 pivoted to the plate 18 coöperates with a ratchet wheel 22 fast to the shaft 16. A spring 23 normally exerts an outward pressure upon the rod 19 to hold the same in contact with the trip wheel 9. As the shaft 4 turns, the point or cog of the trip wheel 9 presses the rod 19 inward and oscillates the plate 19 and moves the shaft 16 a distance determined by the pawl 21 and ratchet wheel 22. The shaft 16 is moved in a direction to turn the spool 13 to wind a portion of the tally sheet 12 thereon.

The recording mechanism comprises essentially the impression lever 24 and a platen lever 25. These two levers are arranged to move in unison when positioning the recording mechanism and the impression lever 24 has an independent movement to make an imprint upon the tally sheet. The two le-

vers 24 and 25 are pivotally mounted upon a bracket 26. The impression lever 24 is pivoted at 27 to a post or block 28. The platen lever 25 is pivoted at 29 to the bracket 26. Both pivots 27 and 29 are in line to admit of the levers 24 and 25 moving together when positioning the recording mechanism. A slotted arm 30 projects from the platen lever 25 and embraces the upper and lower sides of the impression lever 24 and serves as a guide to direct the impression lever 24 in its pivotal movements when making a record upon the tally sheet. A rod 31 projects laterally from the platen lever 25 and operates in a slot 32 of the lever 24. The rod 31 also acts in the capacity of a guide and also provides convenient means for attaching the operating means to the recording mechanism. The post or block 28 is pivoted at 33 to the bracket 26. The lever 24 turns upon its pivot connection 27 with the post or block 29 when positioning the recording mechanism and when making an impression upon the tally sheet, the lever 24 moves with the post or block 28 about the vertical axis 33. A rod or bar 34 has its upper end connected with the rod 31 and its lower end connected with the depressible step 1, hence, downward movement of the step 1 causes a corresponding descent of the rod or bar 34 and a like movement of the ends of the levers 24 and 25 connected thereto with the result that the inner or recording levers are moved upward upon the tally sheet. The greater the weight imposed upon the depressible part 1, the higher the relative position of the recording mechanism upon the tally sheet.

A rod or bar 35 is arranged horizontally and is mounted in the bracket 20 and is provided at its inner end with a yoke 36 which embraces opposite sides of the impression lever 24. The outer end of the rod or bar 35 is provided with a yoke 37 which receives the trip wheel 8 as indicated most clearly in Fig. 8. An adjustable stop 38 is applied to the outer member of the yoke 27 to be engaged by the points or cogs of the trip wheel 8. When the rod or bar 35 is moved outward by a point or cog of the trip wheel 8, the impression lever 24 is operated to make a record upon the tally sheet. A spring 39 coöperates with the rod or bar 35 to normally press the same inward. The yoke 26 admits of a movement of the impression lever when positioning the recording mechanism. The trip wheels 8 and 9 are relatively disposed so that the recording and feed mechanisms are operated at different times.

The station indicating mechanism is indicated at C and comprises a name strip and spools, said name strip being adapted to unwind from one spool and wind upon the other spool in the manner well understood. A shaft 40 is vertically arranged upon the interior of the car or conveyance and is suitably connected with a drum of the station indicating mechanism to effect turning thereof. The lower end of the shaft 40 is geared with a horizontal shaft 41 to which is secured a ratchet wheel 42 and upon which is loosely mounted a mutilated gear wheel 43 or plate provided with cog gearing which meshes with a vertically disposed rack bar 44 slidably mounted in a guide 45 and having a handle 46. A pawl 47 pivoted to the part 43 is in mesh with the teeth of the ratchet wheel 42. A spring 48 normally holds the rack bar 44 elevated. Downward movement of the rack bar causes the plate 43 to turn and the pawl 47 carried thereby and in engagement with a tooth of the ratchet wheel 42 rotates the latter and the shaft 41 and by reason of said shaft 41 being geared to the shaft 40, the latter is likewise rotated and thereby sets the station indicating mechanism to expose the name of the next station or stopping place. The shaft 40 is geared at 49 to the shaft 16 as indicated most clearly in Fig. 12, hence, the tally sheet 12 is also moved simultaneously with the station indicating mechanism so as to space the records made at each station or stop whereby it may be ascertained how many passengers enter the car or depart therefrom at any particular station or stop.

The incoming and the outgoing recording mechanisms and concomitant or adjunctive parts are substantially duplicates, hence, a detailed description of both is not deemed necessary, corresponding and like parts being indicated by like reference characters. It may be well to state that in arranging the two sets of recording mechanisms, the levers 24 and 25 are located in different relative planes as indicated most clearly in Fig. 12. One recording mechanism that corresponding to the incoming of the passengers operates from the medial line of the tally sheet toward the upper edge, whereas the recording mechanism corresponding to the outgoing of the passengers is disposed so as to operate from the lower edge of the tally sheet toward the medial line thereof. When a passenger steps upon either the part 1 or the part 2, the operating rod or bar 34 is pulled downward, thereby positioning the recording mechanism and at the same time releasing the shaft 4. The degree of movement of the operating rod or connection 34 is determined by the weight of the passenger which in the event of a child will be small thereby positioning the recording mechanism to record a half fare and in the event of an adult, the connection 34 will move downward to a greater extent so as to position the recording mechanism for recording a full fare. After the recording mechanism has been positioned and the shaft 4 released,

the person passing into the car or conveyance or leaving the same, turns the shaft 4 a distance corresponding to the predetermined movement, thereby operating the impression lever 24 to make a record upon the tally sheet and subsequently actuating the feed mechanism to move the tally sheet into proper position for the next record. After the person has entered or left the conveyance, the parts 1 and 2 return to normal position and lock the shaft 4 against further movement until again actuated by the next passenger.

A hub or sleeve 50 is loosely mounted upon the shaft 4 provided at the exit and is held in a given position by means of a spring 51 of the helical type having one end secured to the part 50 and its opposite end attached to a support 52. The hub or sleeve 50 is provided with an arm or like part 53 and with a corresponding part 54, said parts 53 and 54 serving to prevent more than one passenger leaving the car or conveyance at a time. A ratchet wheel 55 is fast to the shaft 4 and a tooth thereof is engaged by a pawl 56 pivoted to an extension or part connected with the hub or sleeve 50. When a passenger passes from the car or conveyance, the sleeve or part 50 is turned and at the same time the shaft 4 is rotated by the ratchet mechanism 55 and 56 so as to operate the recording mechanism in the manner stated. As the passenger clears the part 54 the same is returned to normal position by the spring 51. The shaft 4 is locked against further movement until such time as released by a passenger stepping upon the tread 2 preliminary to leaving the conveyance.

From the foregoing taken in connection with the accompanying drawings it will be understood that the invention provides simple and effective means automatic in operation for recording each passenger both upon entering and upon leaving the conveyance as also indicating with reasonable certainty the character of the passenger, whether an adult or child so that the number of full or half fares may be recorded. It is also observed that in the event of the invention being applied to street railway cars having entrance and exit at both ends, each end of the car will be simultaneously equipped with recording mechanism embodying the invention so that passengers may enter and leave the car at either end, it being understood that entrance must be had by way of the incoming passage and the exit by the outgoing way.

The recording mechanism indicated consists of a punch and die, the impression lever 24 being provided with a punch 57 and the platen lever with a bent end 58 having an opening 59 to receive the punch 57. Both levers 34 and 35 move in unison when positioning the recording mechanism but the impression lever 24 alone has a movement to effect recording. It is to be understood that any means may be provided for making a record.

It is to be understood that the shafts 40 and 16 are geared as indicated at 49 and in order that the shaft 16 may be intermittently turned during the time that the shaft 40 is stationary, the shaft 40 is provided with a plate 60 fast thereto and with a gear wheel 61 loose thereon. A ratchet wheel 62 fast to the gear wheel 61 is adapted to have its teeth engaged by a pawl 63 pivoted to the plate 60. When the shaft 16 is turned and the shaft 60 is stationary, the gear wheel 61 and the ratchet wheel 62 likewise turn, the teeth of the ratchet wheel riding under the pawl 63. When the shaft 40 is turned by operating the rack bar 44 in the manner stated, the plate 60 turns therewith and through the ratchet mechanism 62 and 63 turns the gear wheel 61 and shaft 16 to move the tally sheet for spacing the registrations made each stop or station.

Having thus described the invention, what is claimed is:—

1. In passenger recording mechanism, recording means for making a record, means operated solely by the weight of a passenger for variably positioning the recording mechanism with reference to a tally sheet according to the weight of the passenger, and means actuated by the passenger for operating the recording mechanism after the same has been positioned.

2. In passenger recording mechanism, recording means for making a record, means actuated by the weight of the passenger for variably positioning the recording mechanism with reference to a tally sheet according to the weight of the passenger, means for automatically operating the recording mechanism by the passenger, tally sheet feeding mechanism, and means for operating the tally sheet feeding mechanism independently of the recording operating mechanism.

3. In combination, recording means for making a record, means operated solely by the weight of a passenger for positioning the recording mechanism with reference to a tally sheet according to the weight of the passenger, operating means for the recording mechanism automatically actuated by the passenger after said recording mechanism has been positioned, and securing means for the recording mechanism automatically released by the passenger.

4. Means for recording the incoming and the outgoing of persons, the same comprising recording mechanisms for the entrance and for the exit, said recording mechanisms being differently positioned with reference to a tally sheet, means automatically operated by the weight of a person for positioning the recording mechanism with ref-

erence to the tally sheet according to the weight of the person, and other means actuated by the person for automatically operating the recording mechanism after the same has been positioned by the weight of the person.

5. In recording mechanism of the character set forth, a recording mechanism means actuated by the weight of the passenger for variably positioning the recording mechanism with reference to a tally sheet according to the weight of the person, other means for automatically operating the recording mechanism, a feed mechanism for moving the tally sheet after each record, an indicating mechanism, and means for simultaneously moving the said indicating and feed mechanisms comprising a ratchet mechanism to admit of independent operation of the feed mechanism.

6. In combination recording mechanism comprising an impression lever and a platen lever each mounted to move in unison or to admit of the impression lever having independent movement, operating means actuated by the weight of a person for variably positioning the said levers with reference to a tally sheet according to the weight of the passenger, and other means for operating the impression lever independently of the platen lever.

7. In combination recording means for making a record, the same embodying a platen lever arranged to operate upon one side of a tally sheet, an impression lever located upon the opposite side of the tally sheet and pivotally mounted in line with the platen lever to move in unison therewith or independently thereof, means operated by the weight of the passenger to move both levers in unison to variably position them with reference to the tally sheet according to the weight of the passenger, and other means actuated by the passenger for moving the impression lever independently of the platen lever.

8. In combination recording means for making a record, the same embodying a platen lever located upon one side of a tally sheet and mounted to move in a plane parallel therewith, an impression lever arranged upon the opposite side of the tally sheet and mounted to move with the platen lever in the plane of the tally sheet or independently of the platen lever in a plane at a right angle to the tally sheet, connecting means between the two levers to admit of the beforementioned relative movements thereof, means actuated by the weight of the passenger for variably positioning the levers with reference to the tally sheet to indicate the approximate weight of the passenger, and independent means for operating the impression lever after the two levers have been positioned.

9. In combination recording means for making a record, the same embodying a platen lever located upon one side of a tally sheet and mounted to move in a plane parallel therewith, an impression lever arranged to operate upon the opposite side of the tally sheet, connecting means between the two levers to admit of their movement in unison in planes parallel with the tally sheet to admit of the impression lever having an independent movement in a plane at a right angle to the plane of the tally sheet, a pivotal support for the impression lever, means pivotally connecting the impression lever to said pivotal support, means actuated by the weight of the passenger for variably positioning both levers to record the approximate weight of the passenger upon the tally sheet, and actuating means for operating the impression lever after both levers have been positioned.

10. In combination recording means for making a record, the same embodying platen and impression levers arranged upon opposite sides of a tally sheet and mounted to move in unison in planes parallel with the plane of the tally sheet, the impression lever having an independent movement toward and from the platen lever, operating means adapted to be actuated by the weight of the passenger for simultaneously moving the two levers to variably position them with reference to the tally sheet, and actuating means for operating the impression lever comprising a connection having a yoke embracing opposite sides of the impression lever so as not to interfere with its movement independently of the platen lever.

11. In passenger recording mechanism, recording means for making a record, the same comprising a platen and an impression lever connected for simultaneous movement, tally sheet feeding mechanism, means actuated by a person for operating the recording and the tally sheet feeding mechanisms, the same comprising a shaft, trip wheels mounted upon the shaft, and connecting means adapted to be operated by the said trip wheels to transmit movement to the recording and feed mechanisms.

12. In combination a recording mechanism, means actuated by the weight of a person for variably positioning the recording mechanism with reference to a tally sheet according to the weight of the person, a feed mechanism for advancing the tally sheet after each operation of the recording mechanism, a shaft, a ratchet mechanism for preventing rotation of the shaft in one direction, lock means normally holding the shaft against movement and adapted to be automatically released by the weight of the person, trip wheels mounted upon the said shaft and adapted to be operated by the weight of the person, and connecting means

adapted to be actuated by said trip wheels for operating the recording and the tally sheet feed mechanisms.

13. In combination, a recording mechanism, operating means for the recording mechanism including a shaft, arms or like parts loosely mounted upon said shaft and having ratchet connection therewith to turn the shaft inward but admit of said arms returning to normal position, a return spring coöperating with said arms to restore the same to given position when released after being actuated.

14. In combination recording mechanism, a feed mechanism for advancing a tally sheet after each operation of the recording mechanism, a station indicator, other means for operating the tally sheet feeding mechanism to space the records made at any one station or stop, a shaft, connecting means between the station indicating mechanism and the tally sheet feed mechanism including a ratchet mechanism, a second shaft in gear with the first mentioned shaft, a rack bar, and a ratchet connection between said rack bar and said second shaft.

In testimony whereof I affix my signature in presence of two witnesses.

ISAAC M. REED.

Witnesses:
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