

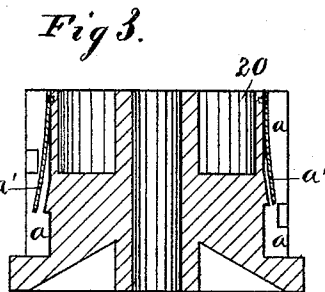
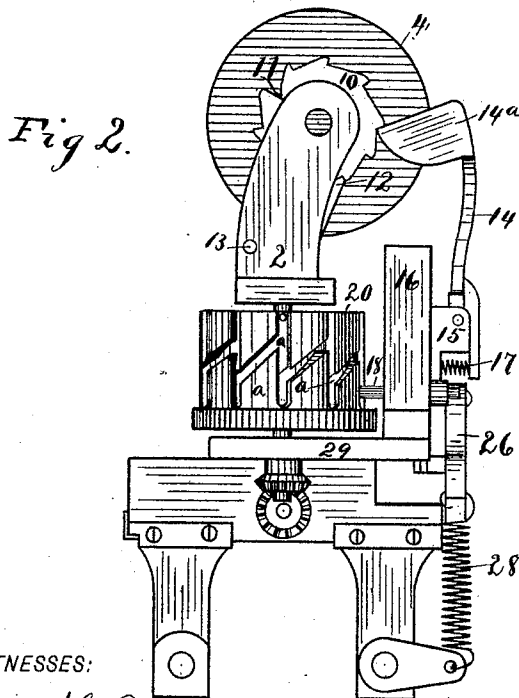
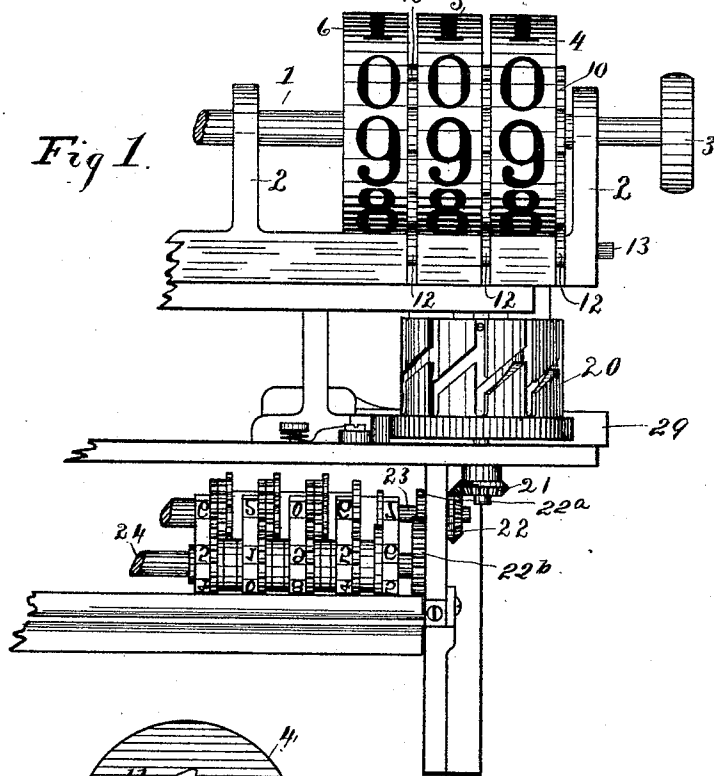
(No Model.)

2 Sheets—Sheet 1.

A. PFAFF.
FARE REGISTER.

No. 529,803.

Patented Nov. 27, 1894.



WITNESSES:

Lester L. Allen.
A. J. Brinni

INVENTOR

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(No Model.)

2 Sheets—Sheet 2.

A. PFAFF.
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Fig 4.

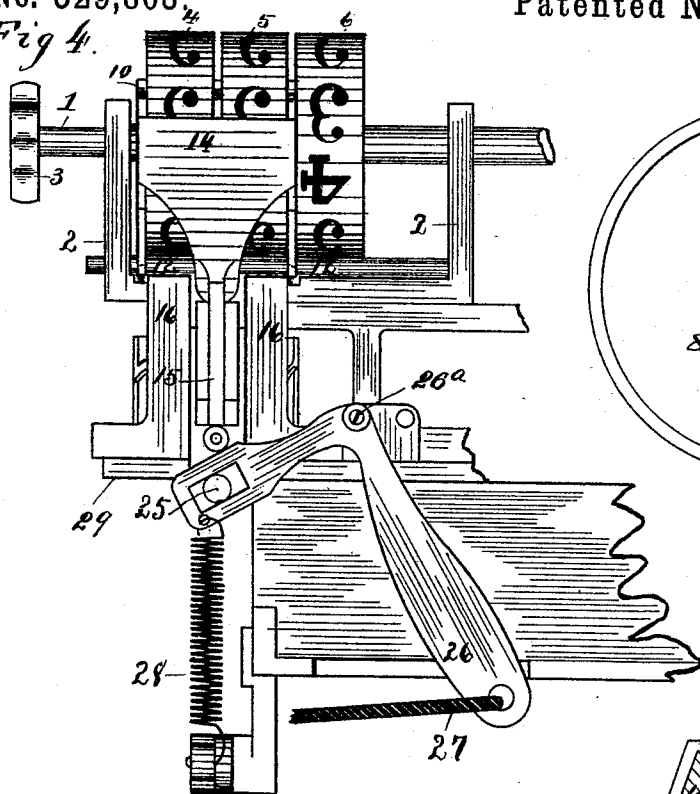


Fig. 8.

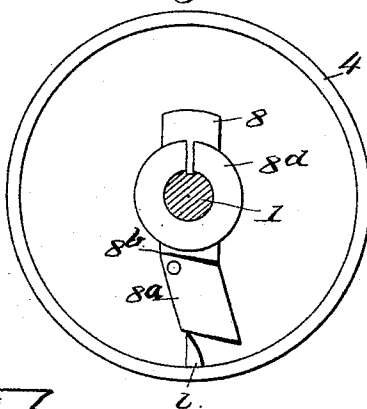


Fig 5.

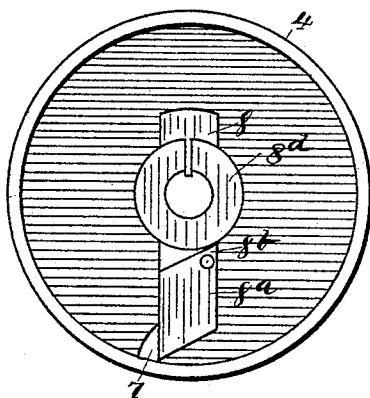


Fig 6.

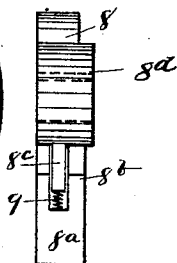
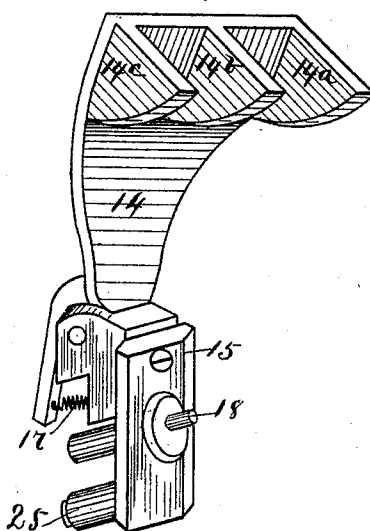


Fig 7.



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UNITED STATES PATENT OFFICE.

ALBERT PFAFF, OF DAYTON, OHIO.

FARE-REGISTER.

SPECIFICATION forming part of Letters Patent No. 529,803, dated November 27, 1894.

Application filed May 21, 1894. Serial No. 511,924. (No model.)

To all whom it may concern:

Be it known that I, ALBERT PFAFF, of Dayton, county of Montgomery, State of Ohio, have invented a new and useful Improvement in Fare-Registers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in fare registers for street cars, and other similar means for public conveyance.

The object of the invention is to simplify and reduce the mechanism for performing certain functions, and thereby render said mechanism less complicated, more positive in action, and reliable in results.

To these ends said improvements have reference to means for operating the trip registering wheels; and to means for resetting said trip registering wheels at zero, at the commencement of a trip. To this extent the present invention is an improvement of that described and claimed in a pending application for United States Letters Patent filed by me March 31, 1894, Serial No. 505,868.

In the drawings hereto annexed, Figure 1 is a front elevation, showing one set of the trip registering wheels; the casing removed; Fig. 2, an end elevation; Fig. 3, a vertical section of the slotted drum; Fig. 4, is a rear elevation, showing the set of trip registering wheels; Fig. 5, a view of one of the trip registering wheels, dismantled, showing the dished side thereof, and a pawl; Fig. 6, a detached, detail view of one of the pawls for resetting the trip registering wheels to zero; Fig. 7, a detached, detail perspective view of the slide, pawl, and pin, through the agency of which the trip registering wheels and the slotted drum are given motion. Fig. 8 is a view similar to Fig. 7, showing the pawl yielding to the pressure of the tooth (7) when the trip registering wheel is being turned to register fares.

1 indicates a shaft journaled in uprights 2, on the upper part of the supporting frame.

3 is a finger-piece by which said shaft is turned to set the wheels to zero.

4, 5, and 6 designate trip registering wheels, say of the lower order, that its units, tens, and hundreds, with numerals on their peripheries from 0 to 9, which register through a sight opening in the inclosing case, the number of passengers taken on in each trip; the wheels all being set at zero at the commencement of the trip, in a manner presently described. These trip registering wheels are loosely mounted on the shaft 1, one independent of the other, and are dished. Each of these wheels has a tooth 7 projecting inwardly from its inner periphery, as shown in Fig. 5, at a point near the part where the figure 2 is located.

A series of ratchet pawls composed of parts 8 and 8^a are mounted on the shaft 1 to rotate therewith, and are placed in the dished portions of said wheels. These pawls are composed of two members, 8, and 8^a, the latter having a pivotal connection with the former, and being movable in one direction, while it remains rigid when pressure is exerted against it from an opposite direction; the shoulder 8^b thereof, engaging with the hub portion 8^d of part 8 which hub portion prevents the lower member (8^a) of said pawl from turning on its pivot when brought in contact with the tooth or projection (7) to turn the trip registering wheels to zero. The part 8^a has a recess therein in which a helical spring 9 is seated, the upper end of said spring being confined by a stem 8^c projecting from the member 8, to normally keep said spring in the position shown in Fig. 5. By turning the shaft 1, these pawls are carried around until they come in contact with the teeth 7 on the trip registering wheels when said wheels are rotated therewith until 0 appears at the sight opening.

To the right hand face of the trip registering wheels, are fixed, ratchet wheels 10, with a corresponding number of teeth. Two of said wheels 10,—that is the units and the tens wheels,—have each notches 11, deeper than the notches intervening between the remaining teeth.

12 are spring-pressed detents, loosely mounted on the shaft 13 which is in the supporting frame. These detents engage with said ratchet wheels 10 to prevent a backward rotation thereof.

14 is a pawl having a plurality of teeth 14^a, 14^b, and 14^c, of graduated lengths. This pawl is pivoted directly to a slide 15 which moves in vertical guides 16, 16 mounted on the horizontal portion (29) of the frame.

17 is a coil spring that exerts, normally, a pressure on the shank of the pawl to keep the teeth thereof, in contact with the ratchet wheels.

18 is a pin rigidly mounted on the slide 15 and projecting in the cam slots (a) in the rotating drum 20.

(a') are spring plates secured in the vertical slots on said drum. Upon the shaft of the drum 20, there is a bevel gear wheel 21 that meshes with a similar wheel 22 keyed to shaft 23, upon which, and the shaft 24, the total registering wheels are mounted. This drum and the total registering mechanism are shown and described in the pending application hereinbefore referred to, with the exception of the spring plates (a'), which are seated in the vertical slots in said drum to protect said slots and the pin 18 from frictional wear. The drum in the present instance has ten vertical slots intercepted by a similar number of inclined slots, as shown in the drawings. One trip of the pin 18 will move said drum one tenth of a rotation, and the gear wheels 21 and 22 will be correspondingly moved. On the shaft of wheel (22) there is a pinion 22^a that meshes with a similar pinion (22^b) loose on shaft (24) upon which shaft, the total registering wheels are loosely mounted. The one of said wheels adjacent to pinion (22^b), moves therewith, and upon one rotation thereof, the next adjacent wheel is moved, and so on through the series.

25 is a lug or pin projecting from the slide 15; 26, a bell-crank lever with a slot at one end inclosing said pin. To the other end of this lever the cord 27 is attached by which said lever is turned upon its fulcrum 26^a. When the lever 26 is thus turned by drawing on the cord, it will drive the slide upward and the pawl 14 therewith. Said pawl will therefore, rotate the (indicator) wheels upon its upward movement. When the draft on the cord is released, the tension of the spring 28 attached to an arm of the bell-crank lever 26, and to the frame, see Fig. 4, draws the said lever back to its normal position and the pawl is thereby

brought downwardly to re-engage with the teeth on the ratchet wheels to further rotate the trip registering wheels, upon the next operation of the lever.

Owing to the length of tooth 14^a being greater than the lengths of either of the remaining teeth, that tooth is always engaged with its respective ratchet wheel, on the units trip registering wheel. Therefore, this wheel is moved one tooth by every operation of the pawl. When the tooth 14^a enters the space 11 on its respective ratchet wheel, the tooth 14^b is then permitted to engage with the teeth on its respective wheel, and the units and tens trip registering wheels are simultaneously moved. The movement of the "hundreds" trip registering wheel is effected when both of the teeth 14^a and 14^b engage with their respective deep notches 11.

I am aware that it is not new to construct a ratchet pawl with a plurality of teeth varying in length, and adapted to actuate at different times, a series of ratchet wheels, together, or independently of each other. Therefore, I am not a claimant, in a broad sense, thereof. I am further aware, that heretofore, a slide has been used to operate said pawl, with various adjunctive devices intervening between said slide and pawl. In the present instance, it will be observed, I mount the pawl directly on the slide, thus subjecting said pawl to a positive movement, rendering these parts less liable to become inoperative by displacement or other causes.

Having described my invention, I claim—

The combination of the trip registering wheels provided, each with a tooth on its inner rim, ratchet wheels fixed to the face of said trip registering wheels, a series of pawls composed of two members, adapted to rotate the trip registering wheels in one direction, and to yield when said wheels are rotated to indicate the fares; a pawl provided with a plurality of teeth adapted to engage with the ratchet wheels on the trip registering wheels; a slide to which said pawl is immediately pivoted; a spring between the shank of said pawl, and the slide, whereby pressure is exerted to maintain the pawl in normal engagement with the ratchet wheels, and a bell-crank for actuating said slide, substantially as described.

In testimony whereof I have hereunto set my hand this 7th day of May, 1894.

ALBERT PFAFF.

Witnesses:

R. J. McCARTY
LESTER L. ALLEN.