A. E. POST.

FARE REGISTER.

No. 190,617. Patented May 8, 1877.

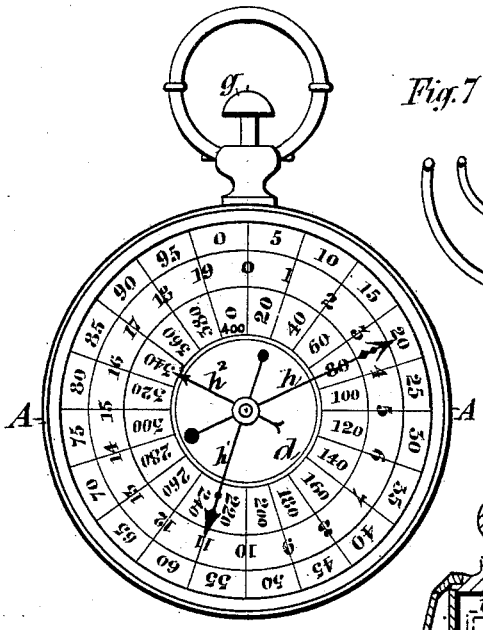

Fig. 1

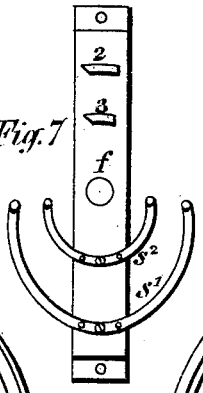

Fig. 7

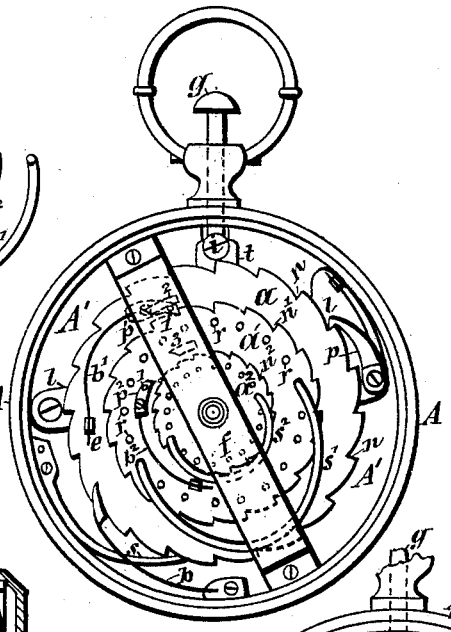

Fig. 2

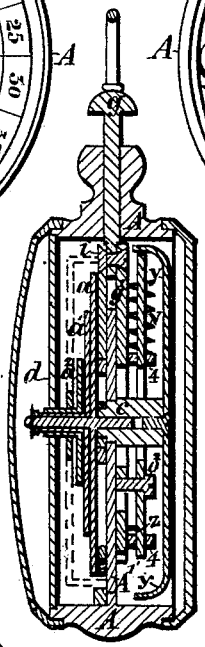

Fig. 5

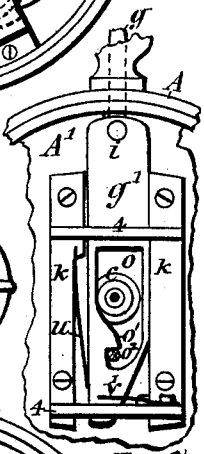

Fig. 8

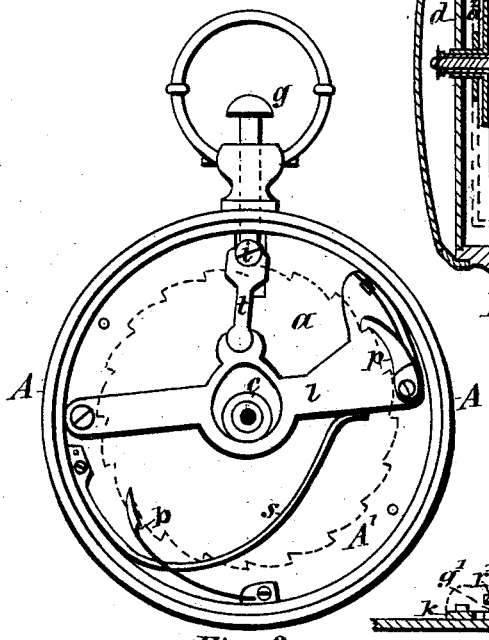

Fig. 3

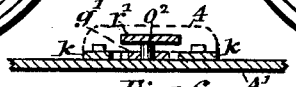

Fig. 6

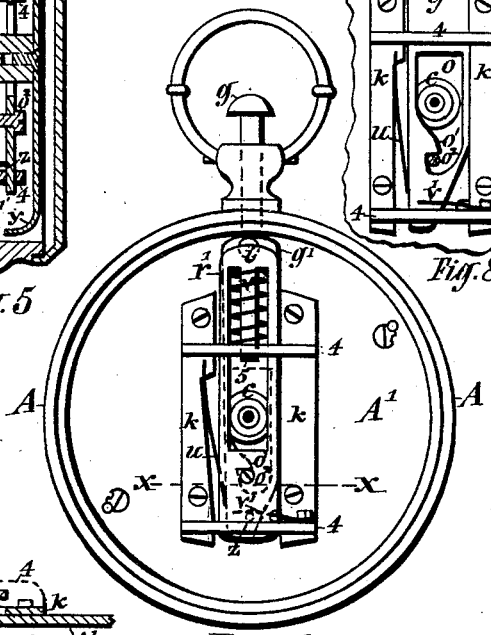

Fig. 4

WITNESSES:

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Emil Bendixsen.

INVENTOR:

Albert Eugene Post

per E. Lauss Atty

UNITED STATES PATENT OFFICE.

ALBERT E. POST, OF SYRACUSE, NEW YORK, ASSIGNOR OF ONE-THIRD HIS RIGHT TO ALBERT E. SPENCER, OF SAME PLACE.

IMPROVEMENT IN FARE-REGISTERS.

Specification forming part of Letters Patent No. **190,617**, dated May 8, 1877; application filed February 10, 1877.

To all whom it may concern:

Be it known that I, ALBERT EUGENE POST, of Syracuse, in the county of Onondaga, in the State of New York, have invented a new and useful Improvement in Fare-Registers, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description:

This invention relates to that class of fare-registers which are carried by the conductor of public conveyances, and which, in their general external appearance, resemble a watch, with a dial and hands indicating the number of fares collected, and have an alarm-bell signaling the registry of such fares.

The invention consists in a novel construction, combination, and arrangement of the integral parts of the fare-register, whereby the same is rendered simple and durable in construction, effective and accurate in its operation, and convenient to carry, and which protects the mechanisms from dust and tampering with its effectiveness, all as hereinafter fully described.

The invention is clearly illustrated in the accompanying drawing, wherein Figure 1 is a front view of my invention; Fig. 2, the same with the dial removed; Fig. 3, the same with the dial and registering-wheels removed to show the mechanism which actuates the registering-wheels; Fig. 4, a rear view of the fare-register, with the cover and bell removed to show the alarm mechanism. Fig. 5 is a central vertical section of the fare-register complete. Fig. 6 is a transverse section of the alarm mechanism on line *x x* in Fig. 4. Fig. 7 is a view of the under side of the bar which holds the registering-wheels in their respective position, and Fig. 8 a view of the alarm-actuating mechanism with the bell-dart removed.

Similar letters of reference indicate corresponding parts.

A is a circular casing similar to that of a watch. It is divided into two separate and distinct compartments by a diaphragm, A′, at or near the center of its depth. In the front compartment is placed the registering mechanism, and in the rear compartment the alarm mechanism. These mechanisms, though having one actuating-plunger in common, and operating in unison with each other, are thus otherwise disconnected to allow one to be operated or repaired irrespective of the other, and both giving greater security against dust and tampering with their effectiveness.

The registering mechanism is composed of the following elements, viz: *a* is the first registering-wheel, having twenty ratchet-teeth, *n*, of equal length in its periphery. It is provided in the center of its rear surface with a gudgeon or pintle, by which it is pivoted in a stud, *c*, in the center of the diaphragm A′, and in its front with a central post, which extends through the dial *d*, and carries on its end a hand or pointer, *h*, pointing to the first circle of figures on the dial, indicating either the amount of money received for fares in fractions of five cents each up to one dollar, or the number of fares collected from one to twenty. The central stud *c* projects above the surface of the diaphragm A′, to support the registering-wheel *a* at a sufficient distance from the diaphragm to allow the main actuating mechanism, consisting of the lever *l*, toggle *t*, and spring *s*, to move freely between them. The lever *l* is arranged centrally across the case, pivoted at one end to the diaphragm A′, and carries on the top of its free end a spring-pawl, *p*, which engages with the ratchet-teeth *n* on the periphery of the registering-wheel *a*. It is held in its dormant position by the vibrating spring *s*, which is attached at one end to the case near the pivoted end of the lever *l*, bowed to act as a support for one-half of the registering-wheel *a*, and bearing upon the lever *l* near the free end thereof, thus obtaining greater purchase upon the lever *l*, and greater elasticity for the spring. The lever *l* is connected, at or near its center, with the actuating-plunger *g* by the toggle *t*, which has a circular head on one end, fitting a corresponding circular bearing on the lever, and provided with an eye at the other end, and connected thereat with the plunger *g* and the alarm mechanism by the screw or pin *i*, passing through the inner end of the plunger. By extending the lever *l* across the entire case, pivoting it at one end and applying the power at the center, as described, the friction at the

pivot and the length of the stroke of the plunger is materially diminished. Each depression of the plunger *g* rotates the registering-wheel *a* the distance of one tooth, *n*. A spring, *b*, secured at one end to the case, and having its free end engaging with the ratchet-teeth *n* on the periphery of the wheel *a*, prevents retrogression of the latter.

Upon the registering-wheel *a* is the second registering-wheel, a^1, of smaller circumference, but having, likewise, twenty ratchet-teeth, n^1. It has on its under side a collar, supporting it above the wheel *a*, and on top a sleeve, fitted to the post of the wheel *a*, and projecting through the dial *d*, and carrying on its end a hand, h^1, pointing to the second circle of figures, which indicates either the amount received for fares in sums of one dollar each up to twenty dollars, or the number of fares collected, in quantities of twenty each, from twenty to four hundred. The wheel a^1 is rotated the distance of one of its ratchet-teeth n^1 at each entire revolution of the registering-wheel *a*, and is actuated by the pawl p^1, which is pivoted to the registering-wheel *a*. This pawl is held disengaged from the registering-wheel a^1 by a spring-bar, b^1, which is attached to the rear end of the pawl, and movably connected at its other end with a post, *e*, on the registering-wheel *a*. *f* is a bar extended centrally across the top of the registering-wheels, and secured at each end to the case. As the wheel *a* carries the pawl p^1 under the bar *f* a pin, 1, on the free end of the pawl, comes in contact with a cam, 2, on the under side of the bar *f*, and is thereby depressed and caused to engage with one of the ratchet-teeth n^1 on the registering-wheel a^1, and thus rotate the latter the distance of one of its ratchet-teeth, when the pin 1 passes from under the cam 2, and allows the spring b^1 to raise the pawl out of the tooth.

The wheel a^1 is held in its position by a crescent-shaped spring, s^1, attached at the center to the bar *f*, and having on each end a spur, engaging with one of a series of twenty recesses, *r*, in the top surface of the wheel a^1. The recesses are beveled, so as to allow the forward movement of the wheel to raise the spring s^1 out of the recesses. The spring, at the same time, bears with sufficient force upon the wheel a^1 to hold it against the wheel *a*.

Upon the wheel a^1 is a third registering-wheel, a^2, of still smaller circumference, but having also twenty ratchet-teeth, n^2. It is supported above the wheel a^1 by a collar on its under side to reduce friction, and provided in the center of its top surface with a sleeve, fitted to the exterior of the sleeve on wheel a^1, and projecting through the dial *d*, and carrying on its end a hand, h^2, pointing to a third circle of figures, indicating either the amount received for fares, in sums of twenty dollars each, from twenty to four hundred dollars, or the number of fares collected, in quantities of four hundred each, from four hundred to eight thousand. The wheel a^2 is rotated the distance of one of its ratchet-teeth at each complete revolution of the wheel a^1, and operated in the same manner by a pawl, p^2, on wheel a^1 becoming engaged with the ratchet-teeth on wheel a^2 by contact with a cam, 3, on bar *f*, and is held in the same manner as wheel a^1 by a semicircular spring, s^2, attached to bar *f*, and bearing with spurs on its ends in two of a series of twenty recesses on the top surface.

The cams 2 and 3 and springs s^1 and s^2 are best seen in Fig. 7.

The alarm or signal mechanism is arranged in the rear compartment, as aforesaid, and is constructed and operated as follows:

A sliding push-bar, *g'*, is pivoted at one end to the inner end of the plunger *g* by the screw or pin *i*, which also connects, on the opposite side, the registering mechanism with the plunger, as before described, and forms the only connection of the two mechanisms. Thus, though caused to operate in unison with each other, and simultaneously with one pressure of the plunger, yet either of the mechanisms is allowed to be removed or repaired without materially disturbing the other.

The push-bar *g'* has an elongated aperture, *o*, through which the central stud *c* projects. Near the free end of the push-bar the aperture *o* forms a cam-hook, o^1, on the inside, and the opposite outer edge of the bar is beveled to the end. The push-bar slides between two guides, *k k*, and has a play therein sufficient to allow the cam-hook o^1 to be thrown off a pin, o^2, on the bell-dart *r'*, hereinafter described.

When dormant, the cam-hook o^1 is held against the pin o^2 by a spring, *u*, attached to one of the guides *k*, and pressing against the edge of the push-bar. In pressing the plunger inward the push-bar is forced to slide longitudinally, carrying, by its cam-hook o^1, the bell-dart *r'* with it until the contact of a pin or block with the beveled free end of the push-bar forces the latter against the side, where held by the spring *u*, and throws the hook o^1 off the pin o^2. As soon as released the bell-dart is forced to strike the bell *y* by the spiral spring *v*, and instantly retracted therefrom by a spring, *v'*, pressing upon a pin, *z*, on the under side of the bell-dart, thus allowing the bell to vibrate. The push-bar is carried back to its operative position by the retraction of the plunger *g*, which latter is caused by the action of the spring *s* in the front compartment.

The bell-dart is above the push-bar, and is guided in slots in the bridges 4 4 on guides *k k*, and has the main actuating-spring *v* on a central tongue, 5, formed at the forward end by two parallel slots intersecting at their rear end an elongated opening in the bell-dart. The bell *y* is attached at its center to the central stud *c* by a screw engaging with screw-threads in an axial hole in said stud. The axial hole aforesaid extends through the stud *c*, and connects with the pivot of the register-

ing-wheel a at the opposite side of the case, and the registering-wheels a^1 and a^2 are each provided with an orifice near its center, communicating with the main axial hole and the bearings of the registering-wheels a^1 and a^2, and forming a channel for lubricating the said wheels. The lubricant is applied through the end which holds the bell, the screw which attaches the same serving as a stopple to the lubricator, thus providing for this essential auxiliary of its operativeness without recourse to the compartment containing the registering mechanism.

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

1. The combination and arrangement of the casing A, having the central diaphragm A′, forming two separate and distinct compartments, respectively, for the registering mechanism and alarm mechanism, and the said mechanisms connected with each other and with the actuating-plunger g by the screw or pin i, substantially as described and shown, for the purpose set forth.

2. In a circular case, A, having diaphragm A′, the combination of the wheel a, supported by stud c on A′, the lever l, extending across the case, and pivoted at one end to the case, and provided at its free end with spring-pawl p, the toggle t, pivoted to the lever l and to the plunger g, and the spring s, the lever and spring being located between wheel a and diaphragm A′, substantially as described and shown, for the purpose set forth.

3. The combination and arrangement of the ratchet-wheels a a^1 a^2, rotated in succession at the ratio of twenty revolutions of one wheel to one revolution of its contiguous wheel, and each provided with a hand or pointer, h, and the dial d, having three series of numbers, indicating either the number of fares collected or the amount of money received for same, all constructed, combined, and arranged with the case A, substantially in the manner described and shown, for the purpose specified.

4. The combination and arrangement, with the ratchet-wheels a a^1 a^2, of the pawls p^1 p^2, pivoted, respectively, to the wheels a a^1, and provided at their forward or free end with the pin i, and held disengaged by the spring-bars b^1 b^2, attached at one end to the rear of the pawls, and at the other end movably in the studs e e on the said wheels a a^1, and the bar f, extended centrally across the top of the ratchet-wheels, and secured at its ends to the case, and provided on its under side with the cam-shoulders 2 and 3, all constructed substantially in the manner specified and shown, for the purposes set forth.

5. The combination of the registering-wheels a^1 a^2, each having a series of twenty recesses, r, in its top surface, and the semicircular springs s^1 s^2, attached at their center to the under side of the bar f, and having spurs on their free ends, engaging with the recesses r, substantially in the manner and for the purpose described.

6. The combination and arrangement of the plunger g, pin or screw i, toggle t, lever l, extended across the case, pivoted at one end to the same, and at the center to the toggle t, and carrying on its free end the spring-pawl p; spring s, attached at one end near the pivoted end of the lever l to the case, extended and bearing upon the free end of said lever; spring b; registering-wheels a a^1 a^2, each having twenty ratchet-teeth, n, and each of the last two having a series of twenty recesses, r; the pivoted pawls p^1 p^2, provided, respectively, with springs b^1 b^2, movably attached to posts e, and with pins 1 at their free ends; the bar f, having attached to its under side the cams 2 and 3 and springs s^1 and s^2; the dial d, having three series of numbers, indicating either the number of fares collected or amount of money received for same, respectively; and the hands or pointers h h^1 h^2, all constructed, combined, and arranged to operate substantially in the manner specified, for the purpose set forth.

7. The alarm-actuating mechanism, consisting of the push-bar g', having cam-hook o' formed in aperture o, and its free end beveled on the side opposite the cam-hook, and sliding between guides k k; the spring u, pressing upon the edge of the push-bar at the rear of the cam-hook o^1; a wedging block or pin in front of the beveled end of the push-bar, for throwing the cam-hook off its connection with the bell-hammer; and the spring v, pressing against the pin Z on the under side of the bell dart or hammer, all constructed and operating substantially as described, for the purpose set forth.

8. The combination of the plunger g, pin or screw i, push-bar g', having cam o^1 in aperture o, and its free end beveled on the side opposite the cam, guides k k, having bridges 4 4, with guide-slots for the bell-dart, spring u, a wedging block in front of the beveled end of the push-bar, spring v', and the bell-dart r', having spring v on tongue 5, and provided with pin o^2 and check-pin Z, all constructed and combined to operate substantially as described, for the purpose set forth.

9. The combination and arrangement of the central stud c, having an axial orifice, with a screw in one end attaching the bell thereat, and communicating with the bearings of the registering-wheels at the opposite end, substantially as and for the purpose described.

In testimony whereof I have signed my name and affixed my seal in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga and State of New York, this 27th day of January, 1877.

ALBERT EUGENE POST. [L. S.]

Witnesses:
EMIL BENDIXEN,
JOSE CUST. AHIMA.