

F. KORF & J. W. ATWELL.

FARE REGISTER AND INDICATOR.

No. 177,523.

Patented May 16, 1876.

FIG. 1.

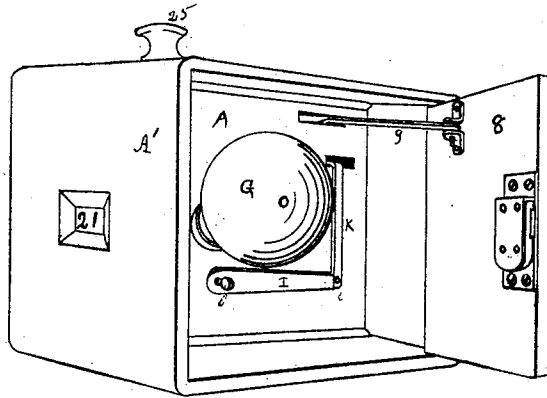
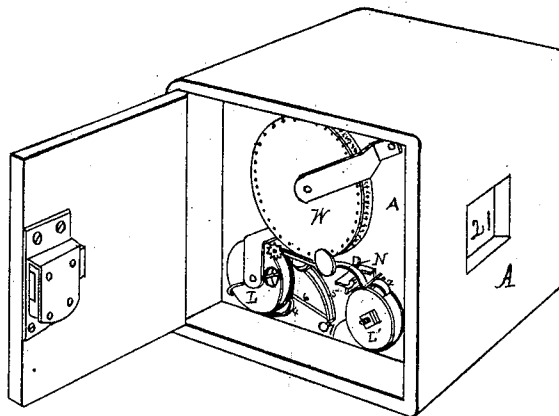


FIG. 11.



WITNESSES.

F. B. Townsend.
Will St. Moxon

INVENTOR

Frederick Korf
James W. Atwell
per attys.
A. H. Evans & Co.

F. KORF & J. W. ATWELL.

FARE REGISTER AND INDICATOR.

No. 177,523.

Patented May 16, 1876.

FIG. III.

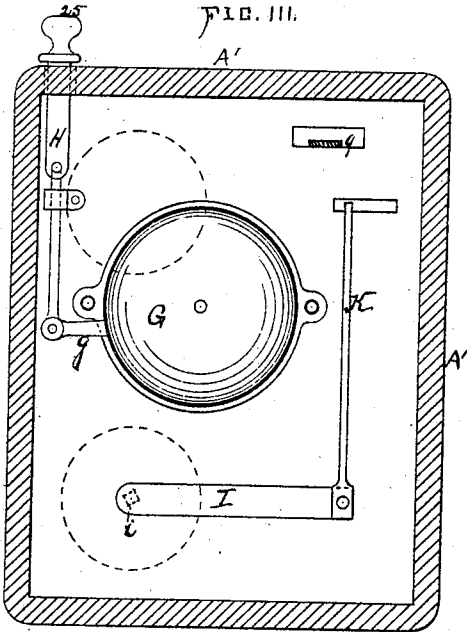


FIG. IV.

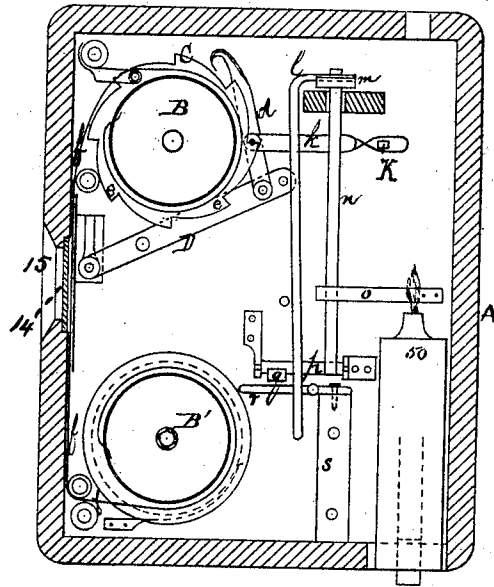


FIG. V.

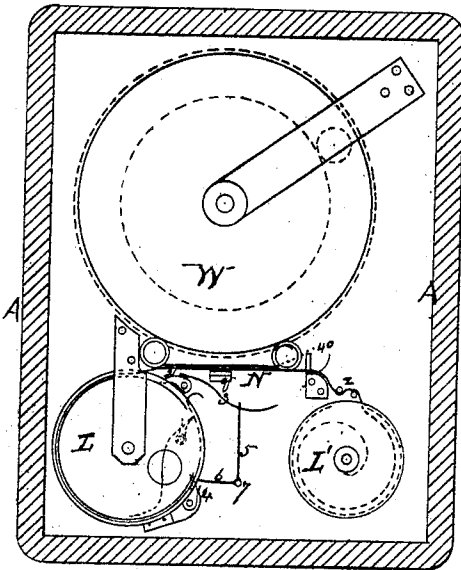
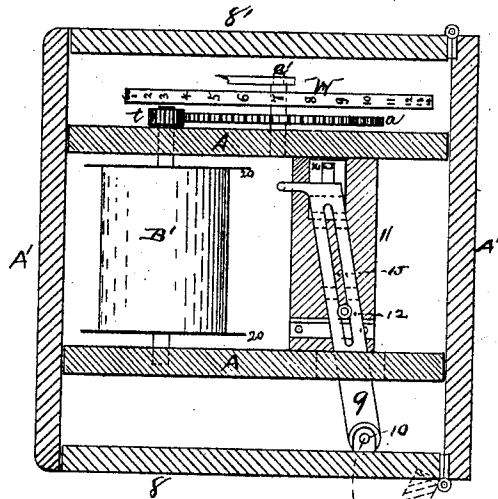


FIG. VI.



WITNESSES.

G. B. Townsend,
Hill & Moxon

INVENTORS

Frederick Korf
James W. Atwell

per Atty

A. H. Evans & Co.

F. KORF & J. W. ATWELL.
FARE REGISTER AND INDICATOR.

No. 177,523.

FIG. VII.

Patented May 16, 1876.

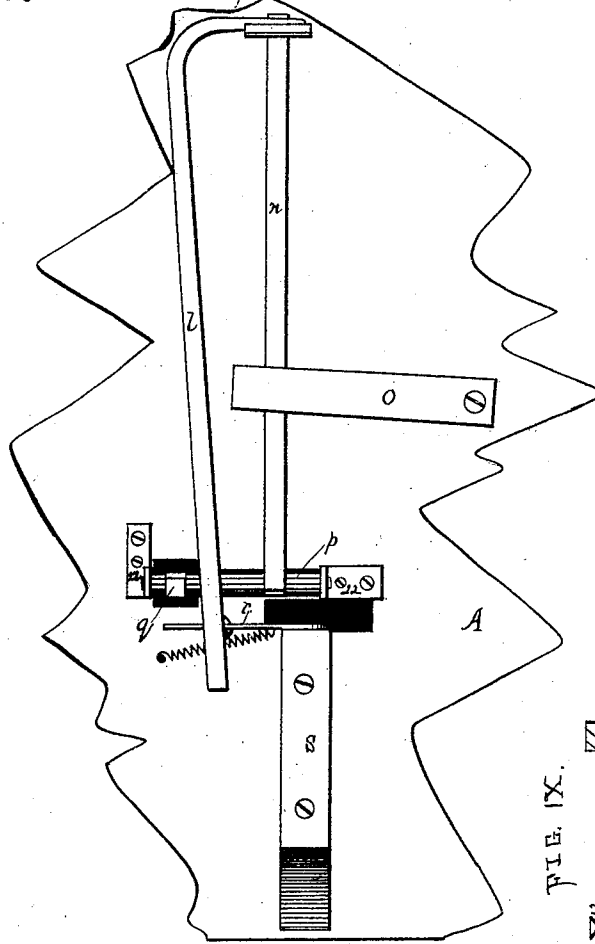


FIG. IX.

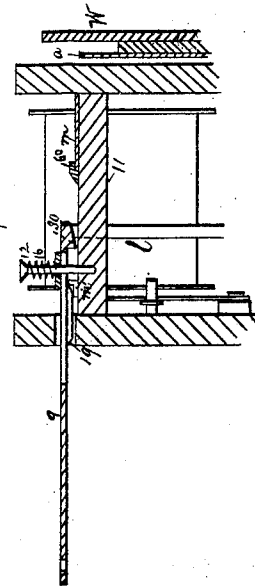
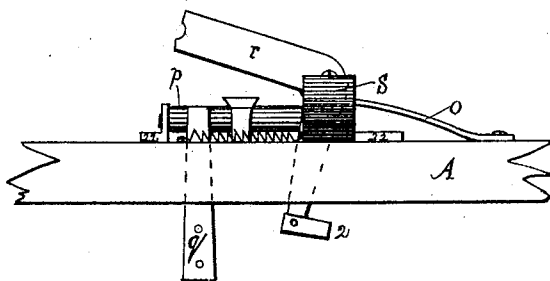


FIG. VIII.



WITNESSES.

G. B. Townsend,
Wm. H. Moxon

INVENTORS

Frederick Korf
James W. Atwell
per Atty. A. H. Evans & Co.

UNITED STATES PATENT OFFICE.

FREDERICK KORF AND JAMES W. ATWELL, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN FARE REGISTERS AND INDICATORS.

Specification forming part of Letters Patent No. **177,523**, dated May 16, 1876; application filed March 9, 1875.

To all whom it may concern:

Be it known that we, JAMES W. ATWELL and FREDERICK KORF, of Chicago, in the county of Cook and State of Illinois, have invented certain Improvements in Passenger-Fare Indicators and Registers; and we hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view with one door open. Fig. 2 is a perspective with the other door open. Fig. 3 is a side elevation of the frame and mechanism removed from the case. Fig. 4 is a vertical cross-section on the line *xx* of Fig. 1. Fig. 5 is a side elevation, showing printing-register. Fig. 6 is a plan view of the machine with the top of the box removed. Figs. 7, 8, and 9 are details referred to.

The object of our invention is to provide a check to the dishonesty of car drivers, conductors, and others; and it consists in combining in our machine an alarm, an indicator visible to the person paying the fare, and a printing-indicator, that is closed so as to offer a check to those having access to the visible indicator.

In order that those skilled in the art may make and use our invention, we will proceed to describe the manner in which we have carried it out.

In the said drawings, A is a frame to furnish bearings and supports for the mechanism. Having their bearings in this frame are two rollers, B B', having flanges 20 20. Around the roller B' is coiled a ribbon, *f*, upon which are a series of numbers, and one end passes up and is secured to the roller B. One of the flanges C of the roller B is provided with a series of ratchet-teeth, *ee*, which are fed forward intermittently, so as to have the roller B take up the ribbon *f*. The roller is actuated by the following means: A pull, H, provided with a handle, 25, passes through the top of the box A', and, passing down, is attached to a gong, G, upon the outside of the frame A, which the driver should strike upon the payment of each fare. When the driver or conductor pulls the handle 25 to ring the gong, he also raises the lever D, which has its end pivoted to the pull H, and the pawl *d* is

brought down. As this is done, the hook on the end of the pawl engages one of the teeth *ee*, and feeds the roller B, so as to wind a small quantity of the ribbon from the roller B'. A coiled spring passes across the angle between the lever D and pawl *d*, to keep the hooked end pressed against the ratchet-wheel.

When the entire ribbon has been wound upon the roller B it is necessary to wind it back upon roller B'. In order to do this, we extend the shaft of the roller B' through the casing A, and form a stud for the reception of a key, as seen in Fig. 3 at *i*. When the ribbon is being wound off roller B, it is necessary to withhold the pawl *d* from the teeth *ee*. In order to insure this we pivot to the casing the crank-lever K, having a broad arm, I, one end of which covers the key-hole, and the other end extends upward and through the casing, and engages in a loop on the rod *k*, which is attached to the pawl *d*. When the broad arm is raised to insert the key, the rod *k* withdraws the pawl and keeps it out of contact with the teeth *ee* until the key is withdrawn, when the coiled spring on the pawl throws it back in contact and covers the key-hole again with the broad arm I.

Now, it is possible that the driver and starter, by conspiring, might so manipulate and falsify the report from the ribbon-indicator as to make fraudulent returns of fare. In order to avoid this we use the following means: The journal of the roller B passes through the side A of the casing, and bears a pinion, *t*, which engages with a cog-wheel, *a*, mounted on a spindle, *a'*. The same spindle carries a wheel, W, having on its periphery a series of type representing numbers corresponding with those upon the ribbon. The gearing of this type-wheel is such that, as the roller B takes up a number on the ribbon, a number corresponding to the one before the glass pane 14 is at the lowest point of the type-wheel. On proper rollers beneath the type-wheel is an inking-ribbon, 40. A paper-receiver, L', in which is coiled a paper ribbon, is attached to one side below the type-wheel, and the paper ribbon passes through tension-pins *zz* and beneath the inking-ribbon to a receiving-roller L. This receiving-roller is constructed with a ratchet upon its inner side,

for a purpose hereinafter described. The door 8, which is only accessible to the starter, is provided with the eye 10, to which is pinned a rod, 9, resting upon a cross-bar, 11, and having a slot, 15, through which passes a pin, 12, having between its head and the said bar a spiral spring, 16. On the under side of said rod 9 is a projection, 19, having its ends beveled off. On the end of the bar is the hook 30 and bent descending rod *l*, which reaches down opposite a bent lever, *r*, pivoted in a plane at right angles to rod *l*. On the cross-bar 11 is a sliding, hooked, and slotted piece, *m*, at one end, and the lifting-stop *m'* at the other, near the pin 12. (See Fig. 9.) Through the end of the slot in the piece *m* engages a bar, *n*, which terminates in a rock-shaft, *p*, having proper bearings 22 and 22. A projection, *q*, passes through the side of the frame and terminates directly beneath the lowest type on the wheel W with the paper and ink-ribbon between it and the type. A flat spring, *o*, is fastened to the frame and bears against *n*, keeping it against the frame. The bent lever *r* passes through the frame and bears on its end a spring-pawl, 2, which engages the ratchet-teeth on the paper-wheel L, and feeds it forward. A restraining-pawl, 4, controls the wheel L. When it is desired to move the wheel L without restraint, by pulling down the pin 7 both pawls are taken from contact. A lamp, 50, may be arranged so that the light passing through the ribbon *f* and glass pane 14 will make the numbers visible at night.

In the act of closing door 8, the bar 9 is pushed forward until the hooked end 30 laps over the catch 60 on the sliding piece *m*, and there remains. The stage or car leaves the depot, and as each fare is received the driver gives the handle 25 a pull, and a new number is fed forward both on the ribbon *f* and the wheel W, so that at any moment the number at the window 14 and on the lowest type of the wheel correspond. At the end of the route

the starter opens the door 8 to wind up the ribbon on roller B'. As he does this the hook on the end of the bar 9 draws back the slide *m*, and with it the bar *n*, the rock-shaft is turned, the projection *q* is forced up against the lowest type, and there is imprinted the number at the lowest point at the moment the door is opened, on the paper N. This leaves a record of the number at which the door 8 was opened. When the door 8 is again closed the bar 9 moves back, its hooked end engaging with the sliding piece *m*. At the same time the rod *l* strikes the bent lever *r*, moves it back, the pawl 2 seizes a tooth of the ratchet on the wheel L and moves it forward, thus feeding fresh paper under the printing-point of the type-wheel W.

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

1. In a passenger-fare register, the combination of an audible, a visible, and a type-printing recording-indicator, substantially as and for the purpose set forth.

2. The pull H, levers D and *g*, and pawl *d*, in combination with the ratchet C, drums B B', bell G, and numbered ribbon *f*, as and for the purpose described.

3. The pull H, lever D, pawl *d*, roller B with ratchet C, in combination with the pinion *t*, cog *a*, and type-wheel W, as specified.

4. The bar 9, with the projection and catch, in combination with the bar *n*, rock shaft *p*, and projection *q*, as and for the purpose set forth.

5. The bar 9 and rod *l*, in combination with the crank-lever *r*, pawl 2, and roller L, as described.

JAMES W. ATWELL.
FRED. KORF.

Witnesses:

JESSE M. SPEARS,
FR. W. WOLF.