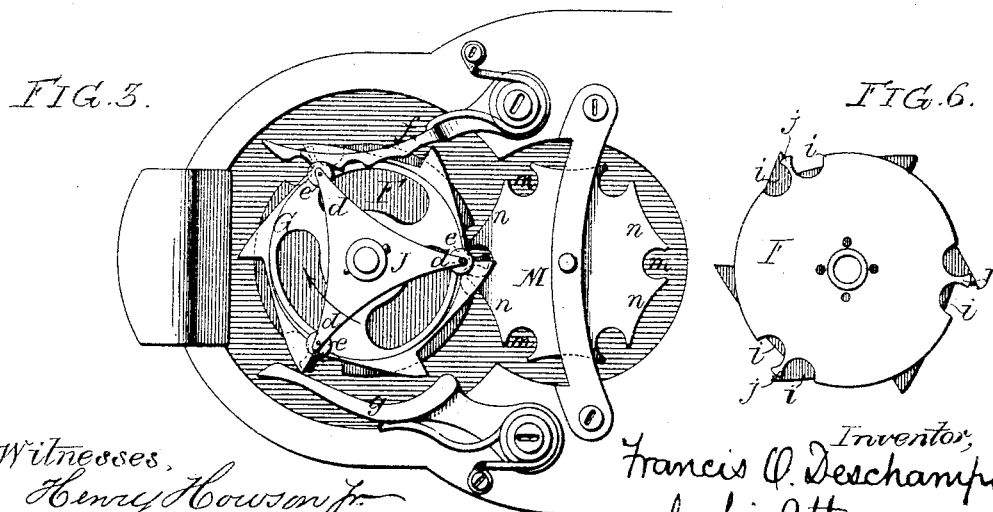
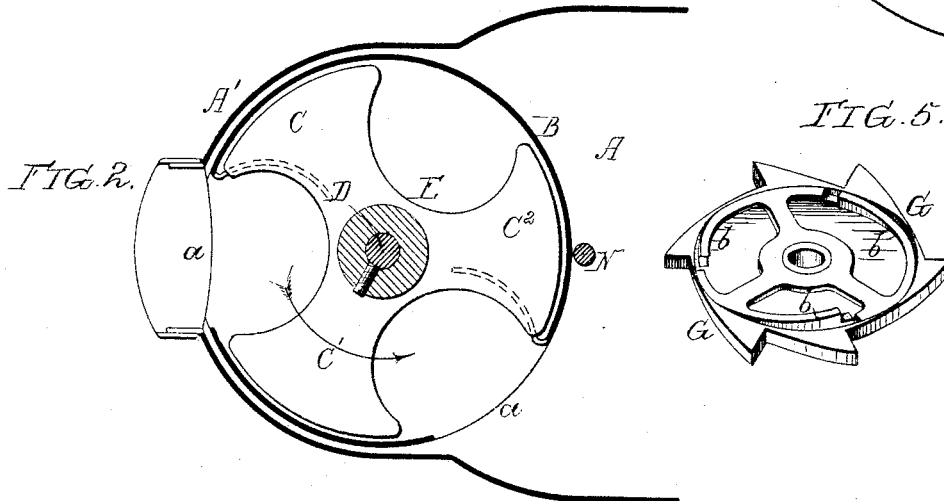
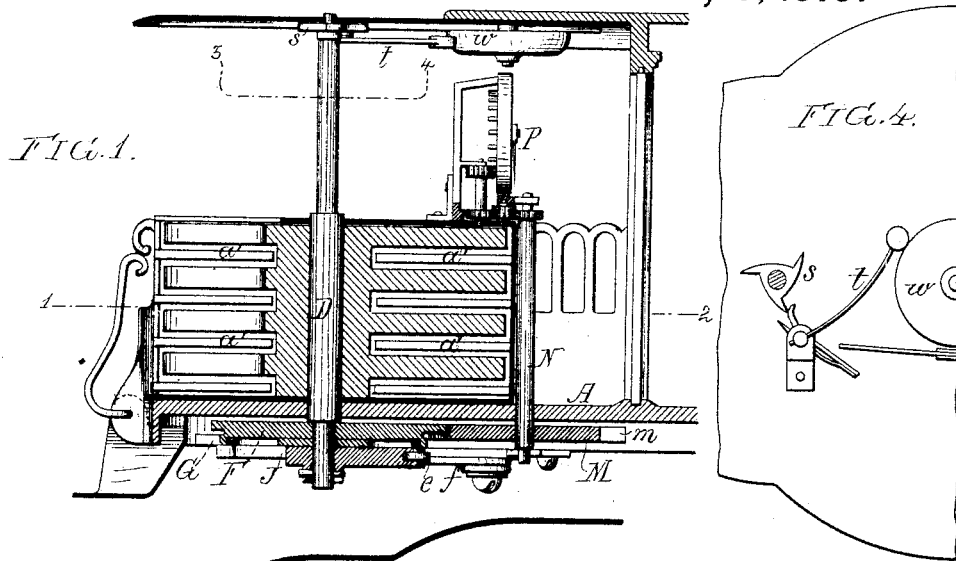


F. O. DESCHAMPS.  
Turnstile-Register.

No. 215,104.

Patented May 6, 1879.



Witnesses,  
Henry Howson Jr.  
Henry Smith.

Inventor,  
Francis O. Deschamps  
by his Attorneys  
Howson and Son

# UNITED STATES PATENT OFFICE.

FRANCIS O. DESCHAMPS, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN TURNSTILE-REGISTERS.

Specification forming part of Letters Patent No. **215,104**, dated May 6, 1879; application filed August 10, 1878.

*To all whom it may concern:*

Be it known that I, FRANCIS O. DESCHAMPS, of Philadelphia, Pennsylvania, have invented a new and useful Improvement in Registering Devices for Street-Cars, &c., of which the following is a specification.

The object of my invention is to construct an accurate registering device, especially adapted for use on street-cars or in public halls, &c. This object I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal vertical section of a street-car platform with my improved registering apparatus applied thereto; Fig. 2, a sectional plan on the line 1 2, Fig. 1; Fig. 3, an inverted plan view; Fig. 4, a section on the line 3 4, Fig. 1; and Figs. 5 and 6, detached views of part of the device.

A represents the rear platform of a street-car or other vehicle. This platform is closed at the sides, and has a similarly-closed extension, A', which carries a circular box or cage, B, having ingress and egress openings *a* at the points shown. Through this cage passes a central shaft or spindle, D, to which is secured a turnstile, E, having three arms, C, C', and C<sup>2</sup>, each arm consisting, in the present instance, of four bars, arranged one above the other, with intervening spaces, so as to permit the use of guard-arms *a'* on the cage B.

Each of the arms of the turnstile is enlarged at the outer end, so that the spaces between the arms, while large enough to contain one person, cannot accommodate two, the enlarged ends of the arms also serving to prevent the fraudulent entry of passengers into the car, as said arms so block the openings *a* that a passage from one opening to the other cannot be effected without such a movement of the turnstile as will effect the operation of the registering devices, explained hereinafter.

To the spindle D, beneath the extension A' of the platform, are loosely hung a disk, F, and a ratchet-wheel, G, the two being formed in one piece, or otherwise secured together.

Secured to or forming part of the ratchet-wheel G are three spring-arms, *b*, one end of each of which projects up into the path of one of the arms *d* of a triangular-plate, J, the hub

of which is secured to the lower end of the spindle D.

The spring-arms *b* are such that when the plate J turns in the direction of the arrow the ends of the arms are struck by the arms *d* of said plate, and the ratchet G and disk F are turned in the same direction; but when the plate J is turned in a direction contrary to that shown, the spring-arms are simply depressed, and do not transmit any movement to the wheel and disk.

The end of each of the arms *d* of the plate J carries an anti-friction roller, *e*, which, as the plate turns, bears against the recessed inner side of a spring-arm, *f*, hung to the bottom of the platform at one side of the same. To the opposite side of the platform is hung a spring-pawl, *g*, adapted to the teeth of the ratchet G.

The continuity of the periphery of the disk F is interrupted by a number of recesses, *i*, arranged one on each side of a series of lugs or projections, *j*, forming part of the disk, these lugs or projections being adapted to recesses *m*, formed in the edge of a disk, M, secured to the lower end of a vertical shaft, N, at the upper end of which is arranged suitable gearing for operating the pointer of a registering device, P, the face of which is opposite the rear door of the car, so as to be in view of the passengers.

The portions *n* of the disk M, between the recesses *m*, have concave edges, to which are adapted the convex portions of the disk F, so that between the movements imparted to the disk M by the lugs *j* of the disk F said disk M is firmly locked in position.

To the shaft or spindle D, near the top of the same, is secured a tappet-disk, *s*, which actuates the spring striking-arm *t* of a gong, *w*, secured to the roof of the platform, said tappet-disk being so arranged in respect to the pawl *g* that as soon as the latter engages with one of the teeth of the ratchet G, so as to prevent the backward movement of the latter, the arm is released and the gong sounded.

The operation of the above-described registering apparatus is as follows: The parts, when at rest, are in the position shown in Figs. 1 and 2. A person desiring to enter the car

passes through the opening *a* at the rear of the cage B, and enters the space between the arms C and C' of the turnstile. The passenger then turns the latter in the direction of the arrow until the occupied space coincides with the opening *a* adjacent to the platform A, through which opening and onto the platform the passenger passes, leaving the turnstile in proper position for either entrance to or departure from the car.

The effect of this partial rotation of the turnstile E was to partially rotate, in the direction of the arrow, the plate J, a like rotation being thereby imparted to the ratchet-wheel G and disk F, and by the latter to the disk M, which operates the registering apparatus.

The passenger can retreat at any time before the pawl *g* engages with the tooth of the ratchet G—that is to say, before the gong *w* is sounded; but after this point has been passed his entrance has been registered. Sufficient chance is thus afforded before the operation of the registering device for the passenger to ascertain whether the car about to be entered is the correct one.

Passengers desiring to leave the car move the turnstile in a direction contrary to that shown by the arrow, such movement having no effect on the ratchet-wheel G and disk F, as the plate J is free to turn in this direction without imparting a corresponding movement to the said wheel and disk.

The object of recessing the inner face of the spring-arm *f* is to hold the plate J in case the pressure upon the arm of the turnstile is removed, thereby preventing the sudden forward or backward movement of the turnstile which would take place if a plain spring-arm only were used—a movement which would result in striking the passenger a more or less severe blow.

I claim as my invention—

1. The combination of the box or cage B, having ingress and egress openings *a*, as described, a turnstile, E, having arms enlarged at their outer ends, a registering apparatus, and devices whereby the movement of the turnstile is transmitted to the registering apparatus, all substantially as specified.

2. The combination of the turnstile-shaft D and its plate J, having arms *d*, with the disk F and the ratchet-wheel G, having spring-arms *b*, as specified.

3. The combination of the turnstile-shaft D, having a plate, J, with arms *d*, with the spring-arm *f*, having recesses on the inner side, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANCIS O. DESCHAMPS.

Witnesses:

HENRY HOWSON, Jr.,  
HARRY SMITH.