W. H. HORNUM.

Fare-Register.

No. 207,740. Patented Sept. 3, 1878.

Fig. 1.

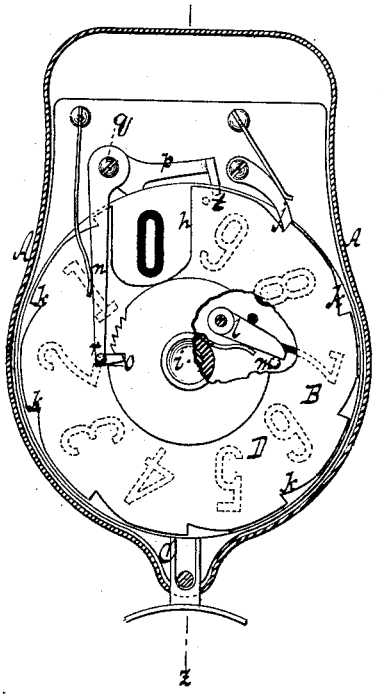


Fig. 2.

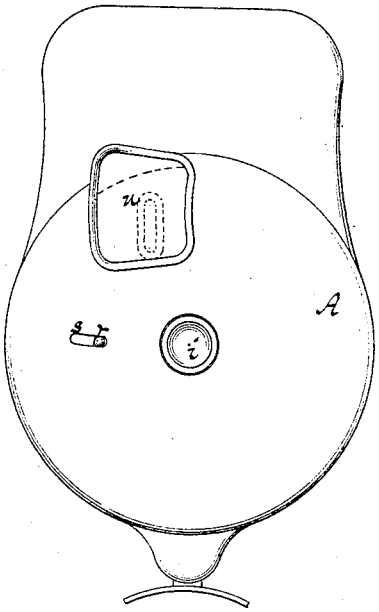


Fig. 3.

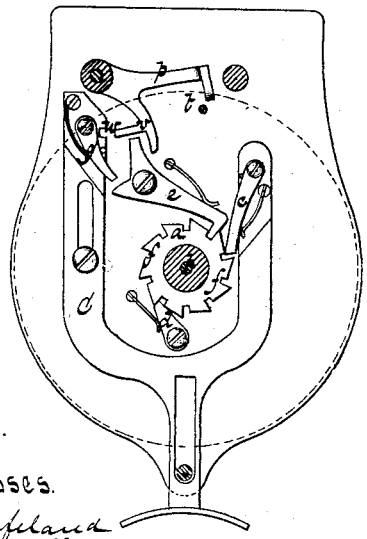
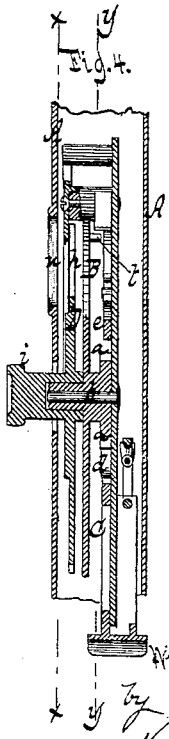


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

WILLIAM H. HORNUM, OF NEW YORK, N. Y., ASSIGNOR TO THE HORNUM PATENT REGISTER MANUFACTURING COMPANY, OF SAME PLACE.

IMPROVEMENT IN FARE-REGISTERS.

Specification forming part of Letters Patent No. **207,740**, dated September 3, 1878; application filed August 8, 1878.

To all whom it may concern:

Be it known that I, WILLIAM H. HORNUM, of the city, county, and State of New York, have invented a new and useful Improvement in Fare-Registers, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a section in the plane *x x*, Fig. 4. Fig. 2 is a face view. Fig. 3 is a section in the plane *y y*, Fig. 4. Fig. 4 is a transverse section in the plane *z z*, Fig. 1.

Similar letters indicate corresponding parts.

This invention consists, first, in the combination, in a fare-register, of a trip-registering disk operated step by step by a prime mover, an independently-pivoted rotating disk concentric therewith, and adapted to be turned forward by hand, mechanism for engaging the two disks when given points thereon coincide, a safety-pawl for preventing the registering-disk from moving forward more that one step at a time, and mechanism for disengaging said safety-pawl from said wheel and simultaneously locking the prime mover of said wheel, substantially as hereinafter described; second, in the combination, in a fare-register, of a trip-registering wheel operated step by step by a prime mover, a rotating disk adapted to be turned forward by hand, mechanism for locking said rotating disk at a given point and simultaneously releasing the registering-disk from a zero-guard, substantially as hereinafter described; third, in the combination, in a fare-register, of a step-by-step registering-wheel operated by a prime mover, a safety-pawl which prevents said wheel from turning, a rotating plate pivoted concentrically with said registering-wheel and adapted for engagement therewith at a single point, said rotating disk being adapted to be turned forward by hand, mechanism for locking said rotating disk and for unlocking the same, and simultaneously and automatically locking the prime mover, and operating a zero-guard to prevent the movement of the registering-wheel beyond a certain point, substantially as hereinafter described.

In the drawing, the letter A designates a case which incloses the registering devices and the mechanism for actuating the same.

In the example shown in the drawing I have represented only the unit-disk B of the trip-register; but in practice said trip-register consists of a units-disk and tens-disk, which work one inside the other. The permanent or general register is also omitted in the drawing, since the same forms no part of my present invention.

The units-disk B is firmly secured to a ratchet-wheel, *a*, and both together turn freely on a stud, *b*, fastened in the partition-plate of the case A. The forward motion of the units-disk or of the trip-register is produced by the action of a slide or prime mover, C, (see Fig. 3,) which carries a spring-pawl, *c*, that acts against the square shoulders of the teeth of the ratchet-wheel *a* whenever said prime mover is drawn out. A stop-pawl, *d*, prevents the trip-register from being rotated in the wrong direction. With the ratchet-wheel *a* is combined a safety-pawl, *e*, which engages with notches *f* in the edge of said wheel. When the prime-mover is drawn out a spring-pawl, *g*, secured to said prime mover, strikes the tail of the safety-pawl *e* and throws said pawl out of gear with the ratchet-wheel just before the actuating-pawl *c* begins to act; but as soon as the spring-pawl *g* has passed the tail of the safety-pawl *e* the latter bears down upon the inclined face of the tooth of the ratchet-wheel just opposite to it, and as soon as the ratchet-wheel has been rotated for the space of one tooth the safety-pawl engages with the next notch *f*, and thereby the trip-register is prevented from moving forward more than one number for each stroke of the prime mover.

With the trip-register is combined a plate or disk, D, which may be of the same diameter, or nearly so, as the registering disk or disks of the trip-register, and provided with an aperture, *h*, through which the figures of the trip-register can be seen, or which may be made considerable smaller than the registering disk or disks, so that it does not cover up the figures on the same. This plate turns freely on the hub of the units-disk, and it is provided with a finger-button, *i*, by means of

which it can be turned forward, a pawl, *j*, which engages with ratchet-teeth *k* in the edge of said plate, preventing its backward movement. On the inner surface of the plate D is a spring-pawl, *l*, and when the plate is turned forward this pawl strikes a pin, *m*, which projects from the face of the units-disk, so that said units-disk is compelled to turn also. Whenever the pawl *l* strikes the pin *m* the aperture *h* in the plate D is over the cipher on the units-disk, and by turning the plate D forward the trip-register can be set to zero. With the plate D is combined a stop-lever, *n*, which engages with a notch, *o*, (see Fig. 1,) and which also carries the zero-guard *p*, both these parts being made to turn on a common fulcrum, *q*. From the lever *n* projects a finger-piece, *r*, through a slot, *s*, in the face-plate of the case A. When the stop-lever *n* is thrown in gear with the notch *o*, the plate D is locked and prevented from being displaced accidentally. At the same time the zero-guard *p* is raised, so that it does not obstruct the motion of the trip-register; but when the stop-lever is thrown back out of gear with the notch *o* the zero-guard *p* is moved in the path of a pin, *t*, secured in the units-disk B, and the forward motion of the plate D and of the trip-register is arrested at zero, the aperture *h* of the plate D being opposite a glazed opening, *u*, in the front plate of the case A, and the cipher or ciphers of the trip-register being exposed to view. With the stop-lever *n* is also combined a latch, *v*, which is adapted to engage with a notch, *w*, Fig. 3, in the prime mover, so that whenever the stop-lever is thrown out of gear with the notch *o* the prime mover is locked, and the trip-register can be moved forward only by the action of the plate D. When the stop-lever *n* is thrown back it or any part connected thereto acts on the safety-pawl *e*, so as to throw the same out of gear with the ratchet-wheel *a* and allow the trip-register to turn forward with the plate D.

By the action of the safety-pawl the registering-disks are prevented from being propelled forward by the action of the prime mover more than one number at a time, the zero-guard prevents the registering-disks from being flung around independent of the plate D, the latter being arrested by hand, and the latch *v* prevents the conductor from ringing the alarm during the time the trip-register is free to be set by hand; and when the rotating plate is made to cover all the figures but one on the disks of the trip-register the stop-lever prevents said plate from getting accidentally displaced, so as to conceal all the figures of the trip-register.

The rotating plate, when thus constructed, I do not claim as my invention, such having been used before.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a fare-register, of a trip-registering disk operated step by step by a prime mover, an independently-rotating disk concentric therewith and adapted to be turned forward by hand mechanism for engaging the two disks when given points thereon coincide, a safety-pawl for preventing the registering-disk from moving forward more that one step at a time, and mechanism for disengaging said safety-pawl from said wheel and simultaneously locking the prime mover of said wheel, substantially as described.

2. The combination, in a fare-register, of a trip-registering wheel operated step by step by a prime mover, a rotating disk adapted to be turned forward by hand, mechanism for locking said rotating disk at a given point and simultaneously releasing the registering-disk from a zero-guard, substantially as described.

3. The combination, in a fare-register, of a step-by-step registering-wheel operated by a prime mover, a safety-pawl, which prevents said wheel from turning, a rotating plate pivoted concentrically with said registering-wheel and adapted for engagement therewith at a single point, said registering-disk being adapted to be turned forward by hand mechanism for locking said rotating disk and for unlocking the same and simultaneously and automatically locking the prime mover, and operating a zero-guard to prevent the movement of the registering-wheel beyond a certain point, substantially as described.

4. The combination, with the registering-wheel having pin *t* and its ratchet-disk *a*, of the safety-pawl *e*, prime mover C, trip-pawl *g*, stop-lever *n*, latch *v*, and zero-guard *p*, substantially as described.

In testimony that I claim the foregoing I hereunto set my hand and seal this 30th day of July, 1878.

WILLIAM H. HORNUM. [L. S.]

Witnesses:

W. HAUFF,

W. C. HAUFF.