2 Sheets—Sheet 1.

W. H. HORNUM.

FARE-REGISTER.

No. 187,632. Patented Feb. 20, 1877.

Fig. 1.

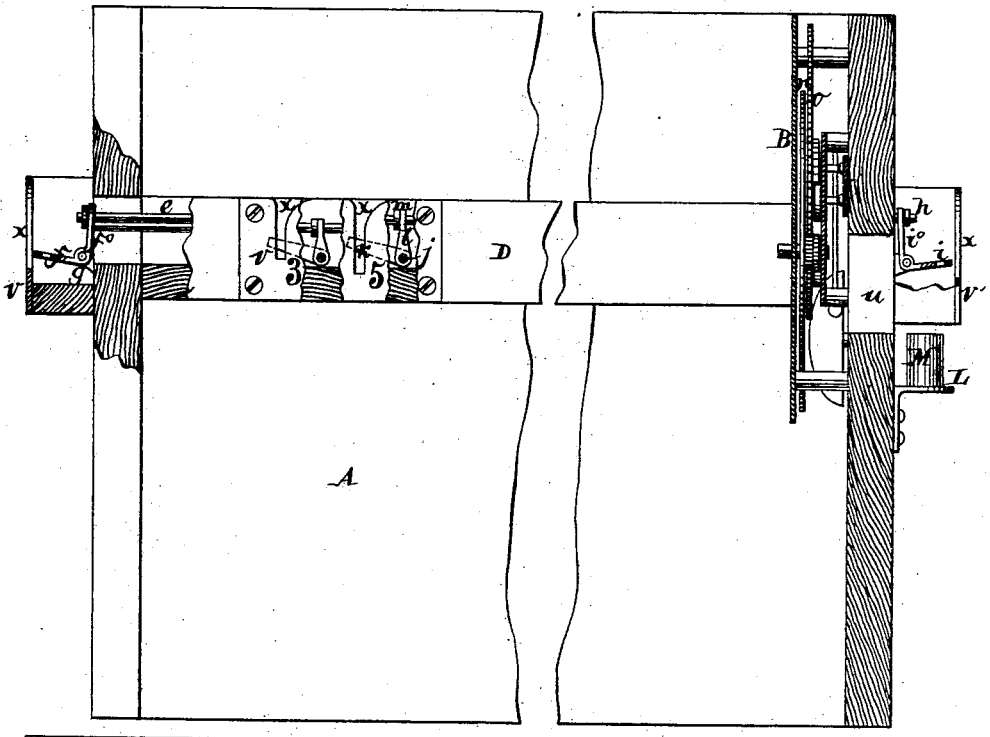
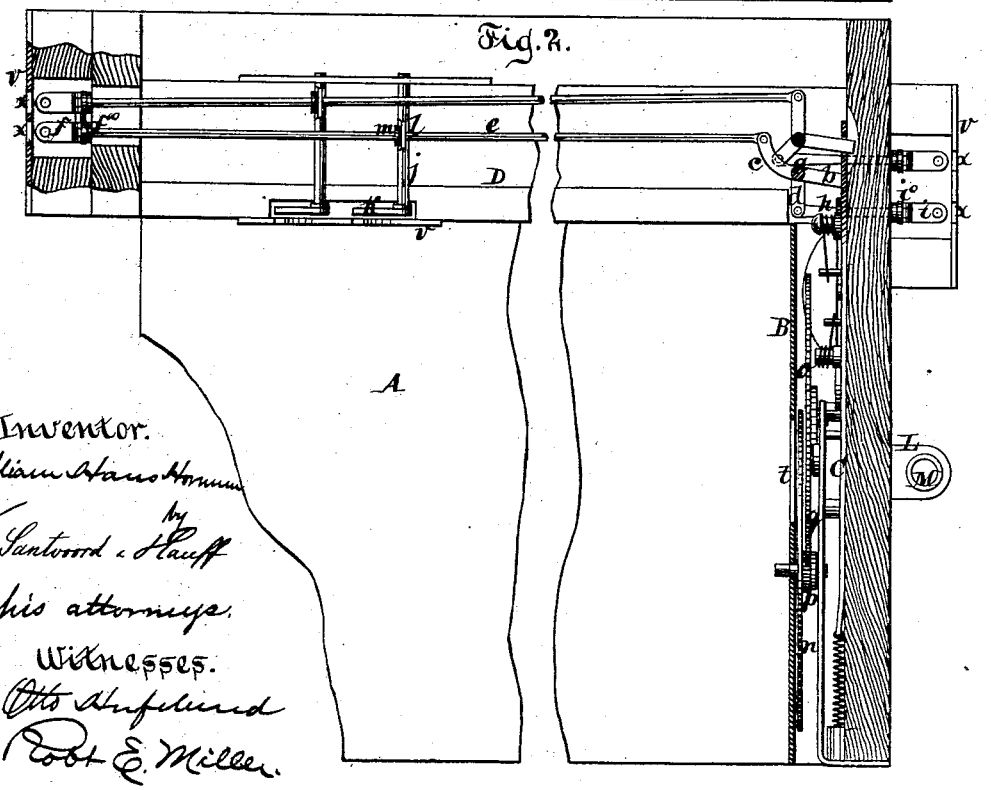


Fig. 2.



Inventor.
William Hans Hornum
by
Van Santvoord & Hauff
his attorneys.
Witnesses.
Otto Hufeland
Robt E. Miller.

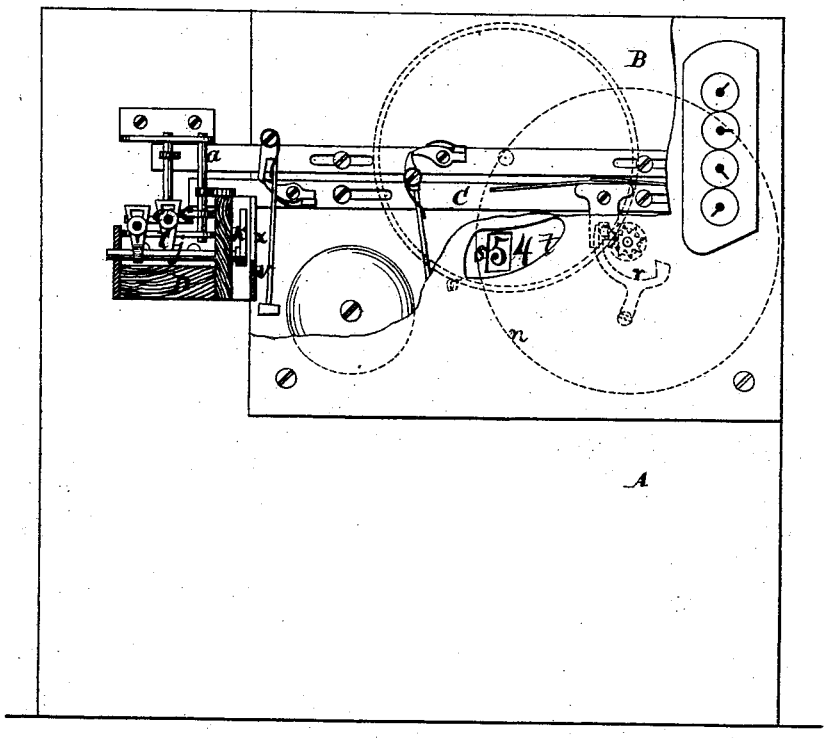
2 Sheets—Sheet 2.

W. H. HORNUM.

FARE-REGISTER.

No. 187,632. Patented Feb. 20, 1877.

Fig. 3.



Witnesses.

Otto Stufeland.

Robt. E. Miller.

Inventor.

William Hans Hornum

by

Van Santwood & Hauff

UNITED STATES PATENT OFFICE.

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

IMPROVEMENT IN FARE-REGISTERS.

Specification forming part of Letters Patent No. **187,632**, dated February 20, 1877; application filed December 26, 1876.

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-Register, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a longitudinal vertical section of a railroad car provided with my fare-register. Fig. 2 is a horizontal section of the same. Fig. 3 is a transverse section of the same.

Similar letters indicate corresponding parts.

This invention consists in the combination of a series of bell-crank levers with a registering apparatus, which is firmly secured in the interior of a railroad-car or other vehicle, said bell-crank levers being made to connect with the prime mover of the registering apparatus, and being distributed throughout the car and protected in such a manner that one of them can be reached conveniently from either of the platforms, or from the interior of the car, and that they cannot be operated by any unauthorized person. The registering-disks are made translucent, and they revolve in front of a lamp or light, so that the movements of the registering mechanism can be observed at night as well as in day-time.

In the drawing, the letter A designates a railroad-car, on one end of which is permanently secured a registering apparatus, B, which consists of suitable registering disks, drums, or hands, and of an alarm-bell, both the registering device and the hammer of the alarm-bell being actuated by one and the same slide or prime mover C.

In order to enable the conductor to actuate the prime mover from any part of the car I have devised the following means: Close to the slide C is situated a vertical rock-shaft, *a*, on which is firmly fastened a lever, *b*, that engages with a slot in the slide. On said rock-shaft are also secured two other levers or arms, *c d*, which, together with the slide-actuating lever *b*, and with the rock-shaft, form a triple bell-crank lever. The arm *c* connects, by a rod or wire, *e*, with a bell-crank lever, $f\,f^0$, which has its fulcrum on a pivot, *g*, (see Fig. 1,) secured in a bracket, which is fastened on one end of the car on its outside, over one of the platforms, and the arm *f* of said bell crank lever is provided with a hole to receive a hook or other device, which serves to operate the registering mechanism. The arm *d* of the rock-shaft *a* connects, by a rod or wire, *h*, with a bell-crank lever, $i\,i^0$, situated at the opposite end of the car, and constructed like the bell crank lever $f\,f^0$. In the interior of the car is a box, D, which conceals the wire or rod *e*, and which forms the bearings for a horizontal rock-shaft, *j*. On this rock-shaft is mounted a lever, *k*, which can be reached from the interior of the car, and another lever, *l*, which straddles the rod or wire *e*, and bears against a collar, *m*, that is fastened on said rod. By applying a suitable hook to the lever *k* and pulling down, the slide C is moved, and the registering mechanism and alarm are actuated.

In the example shown in the drawing the registering apparatus consists of a single trip-register and of a general register, the former being so arranged that it can be set back to the starting-point after each trip, while the general register continues to count up the fares of a large number of trips. Said single-trip register consists, essentially, of a unit-disk, *n*, and a ten-disk, *o*, which are geared together by a pinion, *p*, and cog-wheel *q*, the unit-disk and its pinion being firmly connected to an escapement-wheel, which receives a step-by-step motion by an anchor, *r*, and the slide C. In the unit-disk are ten apertures, *s*, which are arranged in a convolute curve, and on the face of said disk are marked the figures 0 to 9, one opposite to each of the apertures *s*. On the face of the ten-disks are marked the figures 0 to 9 in a circular line. As the unit-disk receives a step-by-step movement, the figures on its face are successively brought opposite to an aperture, *t*, in the face-plate of the registering apparatus. At the same time the ten-disk receives a slow revolving motion, so that each of its figures will successively appear through the convolute aperture *s* in the unit-disk.

In the end of the car, behind the registering apparatus, is an aperture, *u*, Fig. 1, and

opposite to this aperture is a bracket, L, for the reception of a lamp or candlestick, M, and the disks *n o* are made translucent, so that when the lamp or candle is lighted the figures on said disks will be distinctly visible at night.

When it is desirable to register fares of different amounts different registering apparatuses are secured in the car—one for three-cent fares, one for five-cent fares, and so on—and each registering apparatus is actuated by its own bell-pull mechanism, in the manner above described.

It will be noticed that the several bell-crank levers which act on the rod or wire are protected by plates *v*, which are provided with narrow slots *x*, just wide enough to admit the hook which the conductor uses for actuating the registering mechanism. The object of this arrangement is to prevent unauthorized persons from meddling with the registering apparatus.

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

1. A registering apparatus secured permanently in a car or other vehicle, in combination with a wire extending the entire length of the vehicle, and connected with the prime motor of the register, a bell-crank lever, $f f^0$, on the exterior of the car, a bell-crank lever, *k l*, in the interior of the car, and the plates *v*, having slots *x*, of a size sufficient only to admit of an operating-hook, all substantially as and for the purpose described.

2. In a fare-register for cars and other vehicles, a registering apparatus permanently secured in said vehicle, in combination with a rock-shaft, *a*, connected with the prime motor of the register, the levers *b*, *c*, and *d*, connected with said shaft, the rod or wire *e*, extending the entire length of the vehicle, the bell-crank lever $f f^0$, attached to the exterior of the car, and connected with the rod or wire, and having an opening to receive a hook for operating the latter, substantially as described.

3. The combination, with a registering apparatus secured in a car or other vehicle, and a wire extending the entire length of the latter, of the rock-shaft *a*, having the arms *b*, *c*, and *d*, the bell-crank lever $f f^0$, the rod *h*, and bell-crank lever $i\ i^0$, the said levers having openings for receiving hooks by which to operate them, substantially as described.

4. The combination, with the box D, wire *e*, having collar *m*, and extending the entire length of the car or vehicle, and the registering mechanism, with which said wire is connected, of the rock-shaft *j*, the lever *k*, the lever *l*, bearing against the collar *m* of the wire *e*, and the slotted plate *v*, for receiving a hook to operate the lever *k*, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 18th day of December, 1876.

WILLIAM H. HORNUM. [L. S.]

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.