J. B. GREENHUT.

Street Car Register.

No. 51,453. Patented Dec. 12, 1865.

Fig: 1.

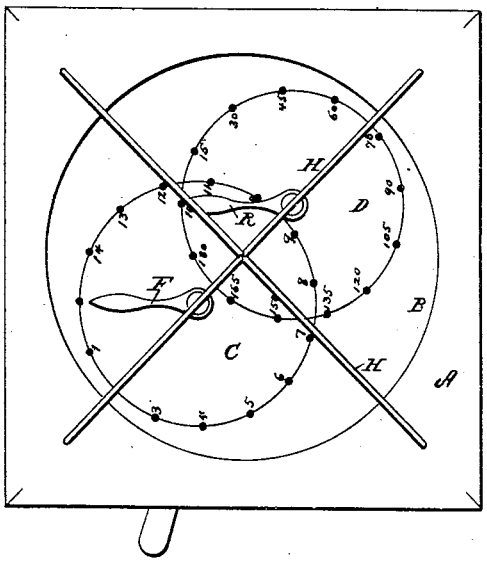


Fig: 2.

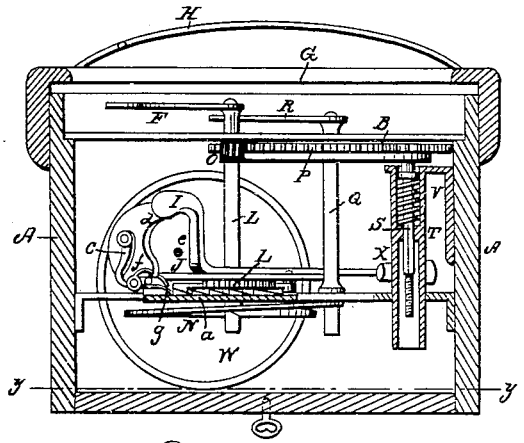
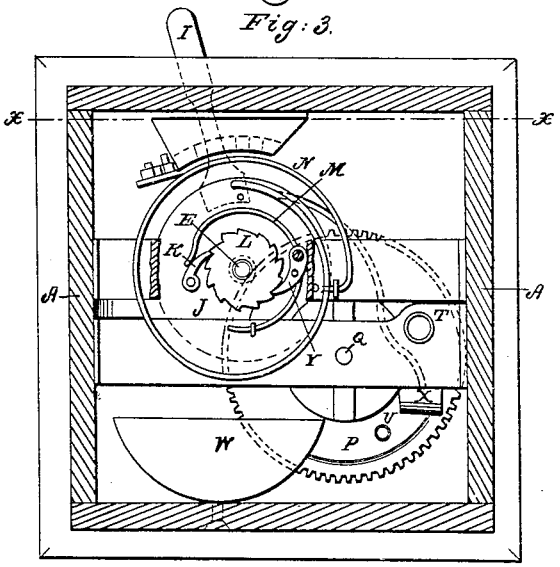


Fig: 3.



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UNITED STATES PATENT OFFICE.

JOSEPH B. GREENHUT, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN REGISTERS FOR STREET-CARS.

Specification forming part of Letters Patent No. **51,453**, dated December 12, 1865.

To all whom it may concern:

Be it known that I, JOSEPH B. GREENHUT, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Registers for Street-Cars; and I do hereby declare the following to be a full, clear, and exact description of the nature, construction, and operation thereof, reference being had to the accompanying drawings, which are made part of this specification, and in which—

Figure 1 is a front elevation of a register embodying my improvements. Fig. 2 is a section thereof in the plane indicated by the line *x x*, Fig. 3. Fig. 3 is a section of the same on the line *y y*, Fig. 2.

Similar letters of reference indicate corresponding parts in the several figures.

The subject of my said invention is a register to be used by car-conductors and others to keep tally of fares and other items of whose aggregate it may be desired to keep an accurate account.

In the device hereinafter described, a hand under the conductor's control counts the units on a dial, and the motion of the shaft of the unit-hand is transmitted to the shaft of another hand, keeping tally of more than units, through gearing, which reduces the motion of the first shaft to effect the requisite diminution in the motion of the last, and in this device provision is made for ringing a bell simultaneously with each count of the unit-hand, while a novel arrangement of devices prevents the bell sounding more than once for each tally.

In order that others skilled in the art to which my invention appertains may be enabled to fully understand and use the same, I will proceed to describe it in detail, with reference to the annexed drawings.

A represents the box or case containing the registering apparatus, and which, if used by a conductor, may be attached to a waist-belt. Within this box is a plate, B, on which are formed two dials, C D, or, perhaps more properly, two series of figures, one indicating units and the other designating larger numbers—say the addition in regular order of the sum total of the numbers marked on the first. These dials may be observed through the glass G, which is shielded by metal rods H H.

E is a shaft carrying the hand F, which points to the numbers on the dial C. This shaft is turned, so as to move the hand F, by means of a small handle or finger-piece, I, which protrudes through the side of the box A, in order that it may be moved by a tap of the finger from the conductor. The handle I is not connected directly to the shaft E, but to a disk, J, which is fitted loosely upon the shaft E, so as to turn independently; but the motion of the disk is transmitted to the said shaft through the medium of a pawl, K, and ratchet-wheel L, the former being pivoted to the disk and the latter keyed upon the shaft. The pawl K is pressed toward the ratchet L, and caused to engage with the teeth thereof by a spring, M, which is affixed to the disk J. The handle I plays in a slot in the side of the box, through which it protrudes, and when it has been pressed downward to give a partial, say, one-fifteenth of a complete, rotary movement to the shaft E it, (the handle,) together with the disk J, is returned to its normal position by a coiled spring, N, whose respective ends are fastened to the disk and a fixed part of the frame in which the shafts are journaled. During the movement of the disk produced by the spring N the spring M yields to the pressure of the pawl K, and the latter slides over the beveled side of the succeeding tooth of the ratchet to engage therewith without giving motion to the ratchet. Every time the handle I is depressed the consequent movement of the ratchet L and shaft E causes the hand F to count one on the dial C, and in this way the individual fares, so to speak, are registered.

A pinion, O, and cog-wheel P communicate motion from the shaft E to a shaft Q. In consequence of the gearing O P, the motion which the shaft receives for each movement of the ratchet L is diminished, relatively to that of the shaft E, in a ratio equal to that of the numbers on the dials C D, which may be, for instance, as one to fifteen, as represented. The shaft Q carries a hand, R, which points to the numbers on the dial D. It may be more explicit to state that while the hand F makes a complete circuit of its dial the hand R only moves from one graduation to the next on its dial to register the same number, and while the registering capacity of the dial C is fifteen that of the dial D is one hundred and

ninety-five. These numbers are specified to elucidate the description, but they are, of course, alterable.

The hand F may be made to complete a circuit of its dial any number of times; but, to necessitate the stopping of the hand R when the numbers on its dial are exhausted, and hence insure accuracy by enforcing attention at the appropriate time, I use a bolt or lock, S, which occupies a sleeve, T, and is, by a spring, V, thrown into a hole, U, in the wheel P, when the said hole is brought in line therewith. In this way the wheel P is locked, and the operation of the apparatus must necessarily be suspended until the bolt S is withdrawn from the hole in the wheel P. To effect this withdrawal of the bolt the person in charge of the apparatus has a key, threaded on the interior, so as to adapt it to be fastened on to the threaded end of the bolt S and release the wheel by withdrawing the bolt from the hole. By means of another key, while the bolt is yet withdrawn from the wheel, the latter is turned and the hands are set at the starting-point.

Y is a retaining-pawl engaging with the ratchet-wheel L.

It will be observed that in so much of the apparatus as has been described there is nothing to prevent the hammer X from accidentally striking the bell W twice while one fare is being recorded, for the hammer is attached to and moves with the disk J, and as the latter is independent of the ratchet L in its movement, the bell could be twice rung or struck by depressing the handle I, raising it partially to its normal position, and then forcing it down again; whereas, a full return movement of the handle I is necessary, in order to cause the pawl to engage with the succeeding tooth of the ratchet, which is necessary, in order to produce a further movement of the ratchet L. Such a result would confuse the conductor, as the numbers of strokes of the bell would not correspond with the numbers credited on the dial, which is, of course, desirable. I prevent this accidental double ringing of the bell by devices which are clearly represented in Fig. 2.

a is a stationary rack; *b* is a pawl; *c* is a claw, and *d* is a pivoted lever, all of which are attached to and move with the handle I. When the handle I is about completing the movement, which is imparted to the wheel L, the lever *d* strikes a projecting-pin, *e*, and throws the end of the claw *c* out of a notch in the end of the pawl *b*. The latter is then subjected to the action of a small spring, *f*, and is pressed against the rack *a*, so that the handle cannot be again depressed until it has been carried entirely back to its normal position, which is necessary, in order to move the pawl *b* out of contact with the rack, whose upper end is provided with a projection, *g*, against which the pawl bears when it reaches the top of the rack *a*, and by which it is thrown out of contact with the rack. The pawl, being thus moved by the projection, is caught by the claw which enters the notch in the pawl and holds it away from the rack while the handle I is descending. Hence it will be seen that the bell W cannot be rung unless the full down and up motions of the lever are made.

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

1. The combination of the handle I and disk J with the ratchet L, pawl K, shaft E, and hand F, arranged as described, for registering upon the dial C, in the manner explained.

2. In combination with the above, the arrangement of the gearing O P, shaft Q, and hand R, for registering upon the dial D, in the manner and for the purpose specified.

3. The combination of the locking-bolt S, spring V, and hole U, for preventing the movement of the hand R, when the latter has completed its movement upon its dial.

4. The combination of the rack *a*, pawl *b*, claw *c*, lever *d*, and pin *e*, with the hammer X, substantially as and for the object set forth.

JOSEPH B. GREENHUT.

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