W. W. BIERCE.

TICKET-REEL.

No. 189,991. Patented April 24, 1877.

Fig. 2.

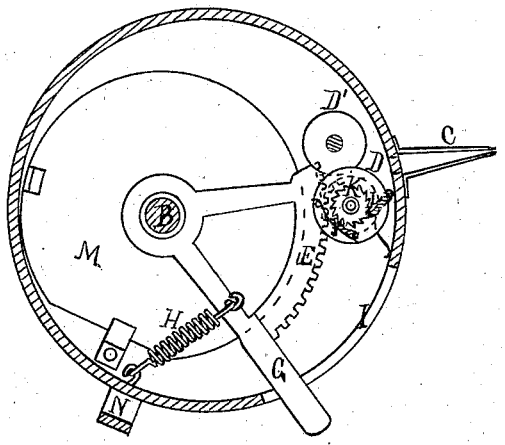


Fig. 3

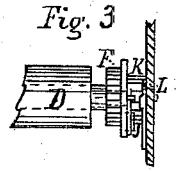
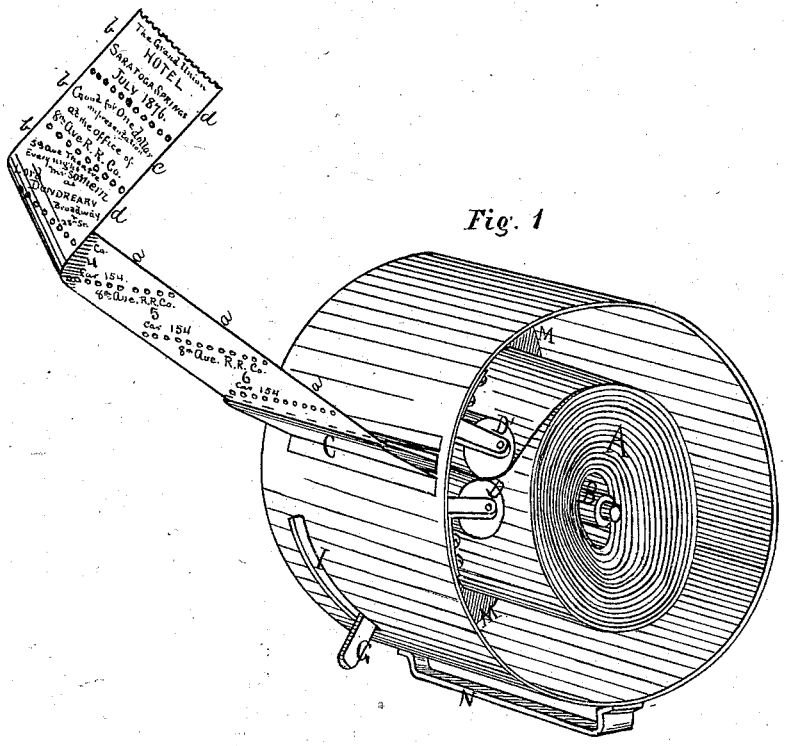


Fig. 1



Witnesses.

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UNITED STATES PATENT OFFICE.

WILLIAM W. BIERCE, OF MEMPHIS, TENNESSEE, ASSIGNOR OF ONE-HALF HIS RIGHT TO JOHN C. SPENCER, OF NEW YORK CITY.

IMPROVEMENT IN TICKET-REELS.

Specification forming part of Letters Patent No. **189,991**, dated April 24, 1877; application filed September 14, 1876.

To all whom it may concern:

Be it known that I, WILLIAM W. BIERCE, of Memphis, Shelby county, Tennessee, have invented a new and useful Improvement in Ribbon of Tickets and Box for Preventing Fraudulent Returns of Moneys Collected, of which the following is a specification:

The invention consists of a ribbon composed of several tickets, one or more, but not all, of which are redeemable, in combination with a box adapted to inclose the ribbon, and constructed and arranged to deliver the tickets one at a time.

The prominent features of both the ribbon and the box, and the mode of their combination and operation, are hereinafter fully described.

The object of the invention is to afford a simple and efficient method of protecting employers by compelling their employés to make correct returns of moneys collected by them, and is, therefore, especially adapted for use upon street-railway cars.

The ribbon of tickets may be of any suitable material, preferably of paper, and of such length and width, and divided into such number of tickets, as will best adapt it for the purpose for which it is to be used. The individual tickets of which the ribbon is made up may be engraved and printed to suit the convenience and taste of the user. For convenience and utility, when used by conductors of cars in the collection of fares, each ticket of the ribbon may be marked with the name of the road or line, with numbers denoting the sequence of the tickets from unity through the entire ribbon, and with numerals to designate the number of the car upon which the tickets are designed for use. These features, while desirable, are not, however, regarded as essential in the use of the ribbon, as herein described and claimed. The main and controlling feature of the ribbon, and that which gives it special utility for the purpose designed, is the redeemable character of some of the tickets of which it is composed; each ribbon having one or more, but not all, of its tickets redeemable—*i. e.*, a value is fixed upon them, which the receiver can obtain on presentation of the ticket.

The number of these redeemable tickets compared with the whole number which make up the entire ribbon, and their value, as well as the terms and manner of their redemption, are details to be determined by those issuing the tickets, and may be varied to suit the circumstances of special cases. For use upon street-railways the ribbon may conveniently contain five hundred tickets, of which from one to five may be designated as redeemable, at a value of from twenty-five cents to two dollars or upward, as in practice shall be found to give the best protection without drawing too heavily upon the funds of the proprietors.

The redeemable character of the tickets may be published by words to that effect upon the tickets themselves, (preferably upon the back thereof,) or by notices from the proprietors, and by marks upon the tickets indicating their character.

These tickets may be printed upon either or both of their sides with advertisements, notices, or other information of interest or importance.

The tickets should be partially separated from each other by perforations or indentations, so that they can be easily detached from the body of the ribbon.

A box adapted to receive the ribbon of tickets above described, and constructed and arranged to deliver one ticket at a time, is illustrated in the accompanying drawing, which forms a part of this specification.

In the drawing, Figure 1 is a perspective of the box, one end of which is removed to show the ribbon in place, several tickets of the ribbon being shown outside of the box. Fig. 2 is an end elevation of the interior of the box opposite the end shown in Fig. 1, the end wall of the box being removed. Fig. 3 is a side view of the end of the feed-roll D.

A represents the ribbon of tickets coiled around the central bar B; *a*, the face side of the tickets; *b*, the reverse or back side of the tickets; *c*, one of the redeemable tickets; *d d*, tickets with advertisements upon their reverse sides; C, mouth-piece of the box; D D′, feed-rollers; E, rack, which gears into the toothed wheel F on the feed-roll D; G, lever-

arm, which is attached to the rack E, and works in the slot I; H, spring attached to the rack E; J, pawl which operates with its ratchet K to prevent the forward revolution of the wheel F; L, pawl which operates with its ratchet K to prevent the backward revolution of the roll D; M, a shield separating the ribbon from the working mechanism of the box; N, a loop for the attachment of a carrying-strap.

The working mechanism of the box is located near the closed end, the other end only being removable. The mouth-piece C is directly in front of the feed-rolls, and is formed of two pieces of thin metal, which are attached to the body of the box at a slight distance apart, and gradually converge toward each other till their terminal edges almost touch. The body of the box between the plates is cut away, forming a free exit for the ribbon from the feed-rolls through the mouth-piece. The feed-rolls D D′ are cylinders of rubber or similar material, and are located longitudinally upon the interior of the cylindrical wall of the box, their edges being journaled in the end walls thereof. The roll D is revolved by the means hereinafter described, and the roll D′ by frictional contact with the roll D. The roll D, near its end, is provided with a toothed wheel, F, which is fitted loosely to the axis of the roll. Its revolution in the direction of the revolution of the roll D is prevented by the pawl J, which is attached to the wheel F, but which operates in the ratchet K, which is firmly attached to the axis of the roll, the wheel F being free to revolve in the opposite direction. There is also another pawl, L, which is attached to the wall of the box, and works in this same ratchet K, the object of which is to prevent the backward revolution of the roll D.

This construction is seen in Figs. 2 and 3 of the drawing.

The rack E is formed upon the segment of a wheel which rotates upon the central bar B, and gears into the toothed wheel F upon the axis of the feed-roll D. The spring H is attached to the wall of the box and to the rack, and by its contraction draws the rack backward to its farthest limit, and holds it there whenever the forward pressure is removed from the lever-arm G. The slot I, in which the lever-arm moves, should be of such length that when the lever-arm is moved forward through the entire length of the slot the feed-rolls will be revolved sufficiently to carry the ribbon forward the extent of a single ticket, and no more. The shield or partition M is located just behind the segmental rack, and is kept in place by attachments to the end wall of the box. One end of the coiled ribbon rests upon the opposite side of this partition. The removable end or cover of the box may be hinged to the cylindrical wall thereof, and should be provided with a lock and key or other means of closing it, so that the user can have no access to its contents.

The ribbon is formed into a coil, and placed in the box by slipping it over the central bar B, its free end being passed between the feed-rolls, and thence through the mouth-piece C, where it should be so adjusted that the first full movement of the rack will carry the end of the ribbon beyond the line of the mouth-piece just the extent of the first ticket, and no more.

The box with the ribbon of tickets securely inclosed is operated as follows: The normal position of the lever-arm is at the head of the slot I farthest from the mouth-piece. When the lever-arm is pushed forward to the opposite end of the slot, the rack E operates, by its geared connection with the wheel F, to revolve the feed-rolls D and D′, and carry the ribbon between the rolls and through the mouth-piece; and if the length of the slot and the width of the tickets are properly adjusted, the ribbon will be fed out beyond the line of the mouth-piece just the width of each ticket at each full forward movement of the lever-arm. As soon as the pressure upon the lever-arm is removed the lever-arm and the rack are returned to their normal position by the contraction of the spring H, the wheel F meanwhile revolving backward upon its axis, and thus offering no obstacle to the backward movement of the rack, while the roll D is held stationary by its pawl L. The ticket which has thus been projected from the mouth-piece is then torn off, and the operation repeated as often as desirable.

The value of this invention depends mainly upon the consideration that redeemable tickets of sufficient value can be issued to make it for the interest of each passenger to demand the ticket belonging to him in return for his fare, in order that he may share with others the opportunity of receiving a redeemable ticket; and as the conductor will be obliged, under the inducement which these redeemable tickets offer to passengers, to part with one ticket of the ribbon for each fare collected, it follows that his accountability to his employers can be readily determined.

What is claimed as new is—

The combination of a ribbon of tickets, one or more, but not all, of which are redeemable for a designated value, an inclosing-box for receiving such ribbon, and a set of intermittently-operating feed-rolls, for projecting the tickets one by one from the box, the parts being arranged to operate substantially as and for the purpose set forth.

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Witnesses:
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