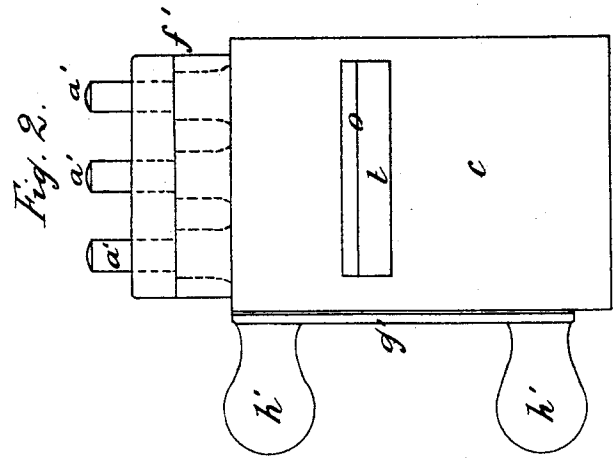
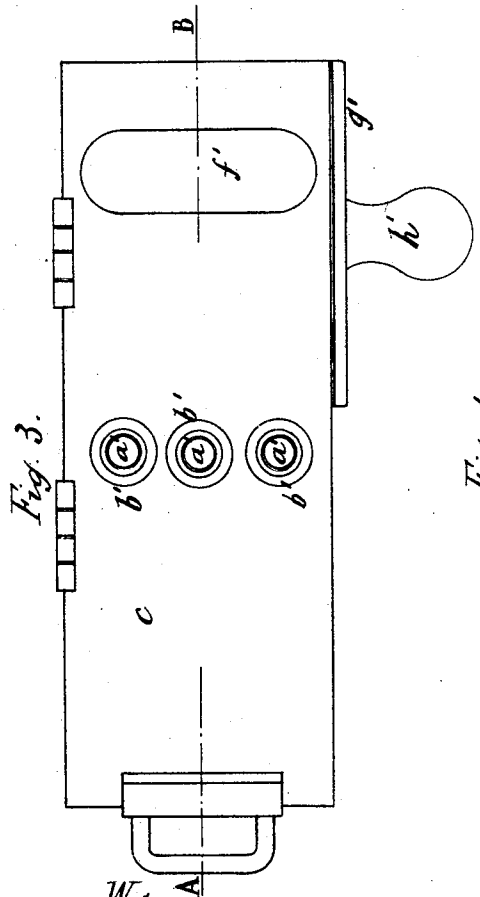
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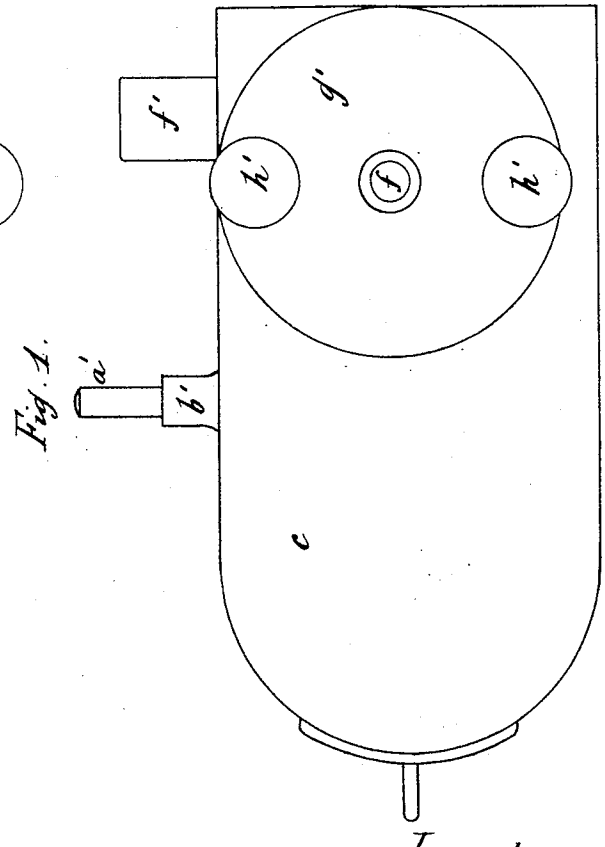
# W. M. RIDDELL & H. WICKENS.

## APPARATUS FOR CHECKING AND ASCERTAINING THE ISSUE OF TICKETS.

No. 308,705. Patented Dec. 2, 1884.




Witnesses.
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I. N. Kalb

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N. PETERS. Photo-Lithographer. Washington, D. C.

(No Model.) 2 Sheets—Sheet 2.

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*Fig. 4.*

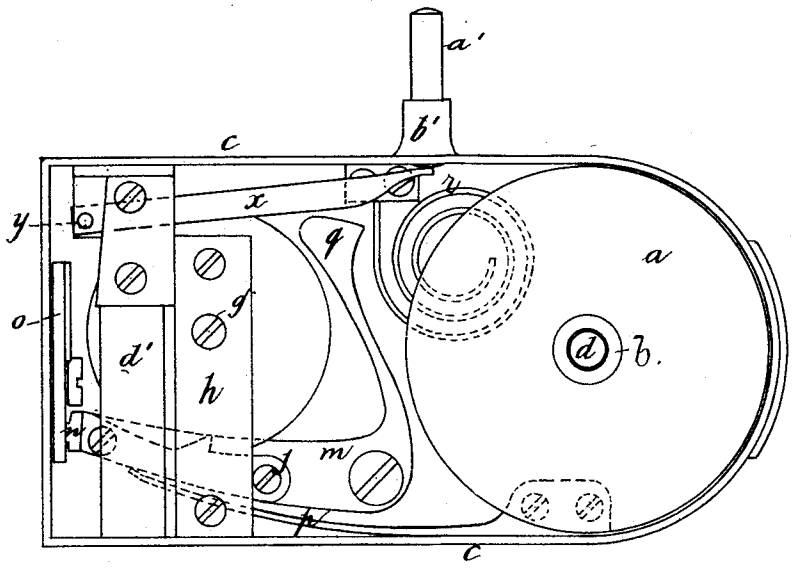
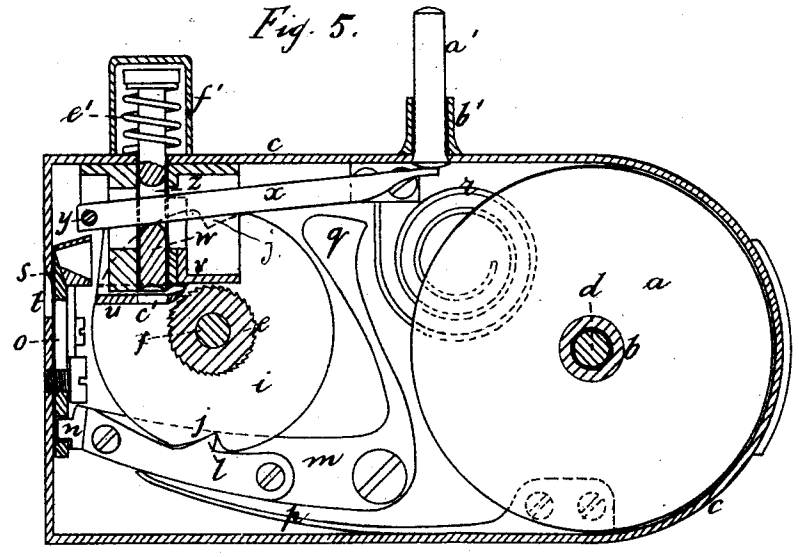



*Fig. 5.*




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# UNITED STATES PATENT OFFICE.

WILLIAM MOORE RIDDELL AND HENRY WICKENS, OF LONDON, ENGLAND, ASSIGNORS TO DAN BOYD AND THOMAS ROWAN, OF SAME PLACE.

## APPARATUS FOR CHECKING AND ASCERTAINING THE ISSUE OF TICKETS.

SPECIFICATION forming part of Letters Patent No. 308,705, dated December 2, 1884.

Application filed October 2, 1883. (No model.) Patented in England September 14, 1881, No. 3,963.

*To all whom it may concern:*

Be it known that we, WILLIAM MOORE RIDDELL and HENRY WICKENS, subjects of the Queen of Great Britain, residing at London, England, have invented new and useful Improvements in Apparatus for Checking and Ascertaining the Issue of Tickets, and for other Useful Purposes, (for which we have obtained a patent in Great Britain, No. 3,963, bearing date the 14th September, 1881,) of which the following is a specification.

In the drawings, Figure 1 represents a side elevation, Fig. 2, an end elevation, and Fig. 3 a plan, of an apparatus for checking and ascertaining the issue of tickets, and for other useful purposes, constructed according to our invention. Fig. 4 is a side elevation with the hinged door or flap removed to show the interior construction, and Fig. 5 is a section on line A B of Fig. 3.

The same letters in all the figures represent the same or similar parts.

The checks or passenger-tickets are printed upon a long strip of paper or other material with the required number of columns marked thereon, and sufficiently flexible to allow it to be rolled on a reel, *a*, over a tube, *b*. This strip should be of sufficient length to have on it the number of tickets required, and it is printed with marked divisions between each ticket, to indicate the various amount of fares on the journey. The tickets are also numbered consecutively. This reel *a* of tickets is placed at the back of an oblong or other conveniently-shaped box, *c*, in which is a door or flap of the length of the box, with suitable fastening. On the opposite side to the door a spindle, *d*, is fixed on the back plate of the box *c*, which spindle *d* is the length of the width of the reel *a*, and passes through the tube *b*, on which the tickets are wound. This spindle *d* must fit easily in the tube *b*, but not so loosely as to deliver the tickets faster than they are required. In front of this reel *a* is placed a serrated metal roller, *e*, which propels forward the tickets, the spindle *f* of which passes through a bearing, *g*, placed in a narrow plate or standard, *h*, which is fixed at the front of the apparatus and made fast by screws or any convenient means to the top and the bottom of the box *c*. This spindle *f* at its other extremity has also a bearing fixed in the back plate of the box, and through which plate it passes and projects a short distance on the outside, as shown at Fig. 1. This roller *e* must be the full width of the ticket required to be used, and on its end nearest the open or door side of the box it is fitted with a ratchet-wheel, and by means of which the rotation of the roller is effected but cannot be reversed. The opposite or back end of the roller is fitted with a disk, *i*, of metal of a greater diameter than the roller *e* itself. Two notches, *j j*, are cut in this disk opposite to each other on the circumference, in which a cam *l* falls, which cam *l* is attached to a lever, *m*, working on an axis at the back of the box in front of the reel *a*. At that end of this lever *m* which is farthest from the reel there is a bent hook, *n*, which moves freely in a slot cut in a movable knife, *o*, of a pair of parallel shears working at the end of the box opposite the reel *a*. This movable knife *o* is forced upward by the hook *n*, through the action of a spring, *p*, when the cam *l* enters the notch *j*, cut in the disk *i*. The same motion of the lever *m* also actuates a hammer, *q*, attached to the lever *m*, which strikes a bell or wire coil, *r*, fixed on the front of the interior of the box. The upper knife, *s*, of the shears is a fixture, and fitted to the front plate at the end of the box just over the slot *t*, through which the ticket passes for delivery to the conductor or operator.

From a little below the top surface of the serrated roller, and extending to the shears or cutters in the front of the apparatus, is placed a tray or shelf, *u*, for the tickets to pass over as they are propelled forward by the action of the roller *e*, and on each side of the shelf or plate *u* should be a guide or ledge, as indicated in dotted lines in Fig. 5, to keep the tickets in the proper or straight course. Above this tray *u* is fixed another plate, *v*, with a space between the two just sufficient to allow for the passage of the ticket, and this plate only extends to where the punches *w* are fixed. Attached to the top of the box are levers *x*, corre-

sponding in number to the punches *w*, which are required to mark on the ticket the amount paid. The fulcrum of each lever *x* is a pin, *y*, fixed in a boss of metal fastened to the top of the box *c*. The lever *x* passes through a slot, *z*, cut in the stem of the punch *w*, and then extends to the front of the wheel, where it meets the piece *a'* at a right angle, passing through the top of the box in a short guide-tube, *b'*, and forming a piston by means of which the punches *w* are depressed through corresponding orifices, *c'*, in the under guide-plate, by which means a piece of the ticket is cut or stamped out, showing by its position on the marked ticket the amount paid; and as a further check these pieces are projected into a case or reservoir, *d'*, from which they are removed to be counted, a separate reservoir being required for each punch. When the ticket is perforated, the punch returns to its original position by the action of a spiral spring, *e'*, which is wound round the top part of the stem of the punch *w*, which stem is made to project into a small tube or closed box, *f'*, fixed on the top plate of the apparatus.

Outside of the back plate of the box *c* the spindle *f* of the serrated roller *e* projects, on which spindle *f* is fitted a disk, *g'*, of metal, with two knobs or handles, *h' h'*, fixed at opposite sides of the circumference.

On the front of the machine, opposite the end of the guide-plate, and directly underneath the cutting-edge of the fixed blade of the shears, is the slot *t*, the full width of the ticket which is required to be propelled for delivery.

When the conductor or person in charge of the apparatus is informed by the passenger the distance he wishes to travel, he presses down a piston, *a'*, working a punch, *w*, corresponding to the fare or amount to be paid, and by the action of this punch a piece of the ticket is cut or punched out and falls into the receptacle or reservoir *d'* placed beneath it. This reservoir is marked by the same distinguishing number as the piston *a'*. Therefore the number of pieces contained in that reservoir represents the number of passengers who have paid for that portion of the journey. When the conductor has punched the ticket as described, he takes hold of the handles or knobs *h h*, fixed on the disk *g'*, of metal, at the back or side of the apparatus, and gives it a half-turn. This action causes the serrated roller *e* to revolve in the same degree, propels the strip of tickets forward until the cam *l*, which is fixed on the lever *m*, working the shears *o*, falls into the notch *j* cut in the metal disk *i* at the back part of the serrated roller *e*, which, by releasing the spring *p* under the hook *n*, which works the shears, brings the lower or movable part *o* of the shears rapidly upward and past the cutting-edge of the fixed knife *s*, placed above the ticket, by which means the ticket is cut off to be delivered to the passenger. The raising of this lever *m* also propels the hammer *q*, which strikes the belt or wire gong *r* and announces to the passenger the punching and delivery of the ticket. During this time another ticket has been propelled forward by the action of the serrated roller *e*, and is ready for the conductor to punch and deliver, and this operation can be repeated so long as the length of the strip of tickets wound on the reel *a* will allow.

By the action of this apparatus the passenger is made aware of the punching of his ticket by the bell or gong *r*. The amount received by the conductor is notified on the ticket by the punch *w*, and a visible indication is obtained by the consecutive numbers which are printed on the tickets. The distance traveled by the passenger is ascertainable by the pieces contained in the respective reservoirs *d'*, and also the amount paid to the conductor.

We do not claim any of the individual parts of the apparatus taken separately, but

We claim—

The described apparatus for checking and ascertaining the issue of tickets for different rates of fare, consisting of the reel *a*, the ticket-strip, its tube *b*, mounted on a spindle, *d*, serrated roller *e*, disk *i*, notched at its opposite sides, cam *l*, lever *m*, spring *p*, knives *o s*, tray or shelf *u*, plate *v*, the several pistons *a'*, one for each different rate of fare, the separate cases or compartments *d'*, levers *x* and punches *w*, hammer *q*, and the coil or sounder *r*, operating as set forth.

WILLIAM MOORE RIDDELL.
HENRY WICKENS.

Witnesses:
HENRY GREEN,
JOHN THOMAS HUMPHRIES.