

A. C. GOODELL, Jr.
Fare-Boxes.

No. 153,480.

Patented July 28, 1874.

Fig. 5.

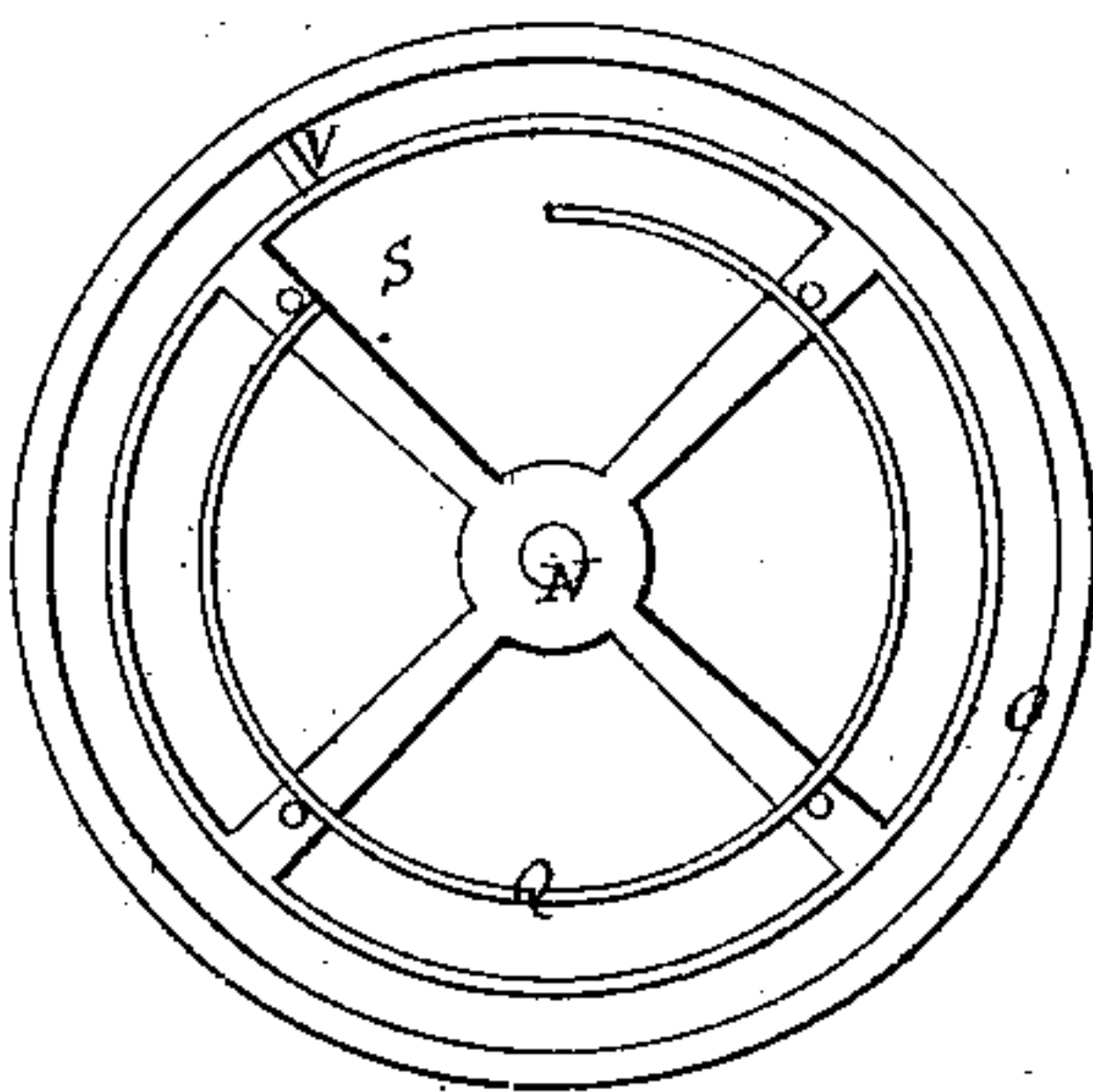


Fig. 3.

On line a.b. of Fig. 1.
Looking up.

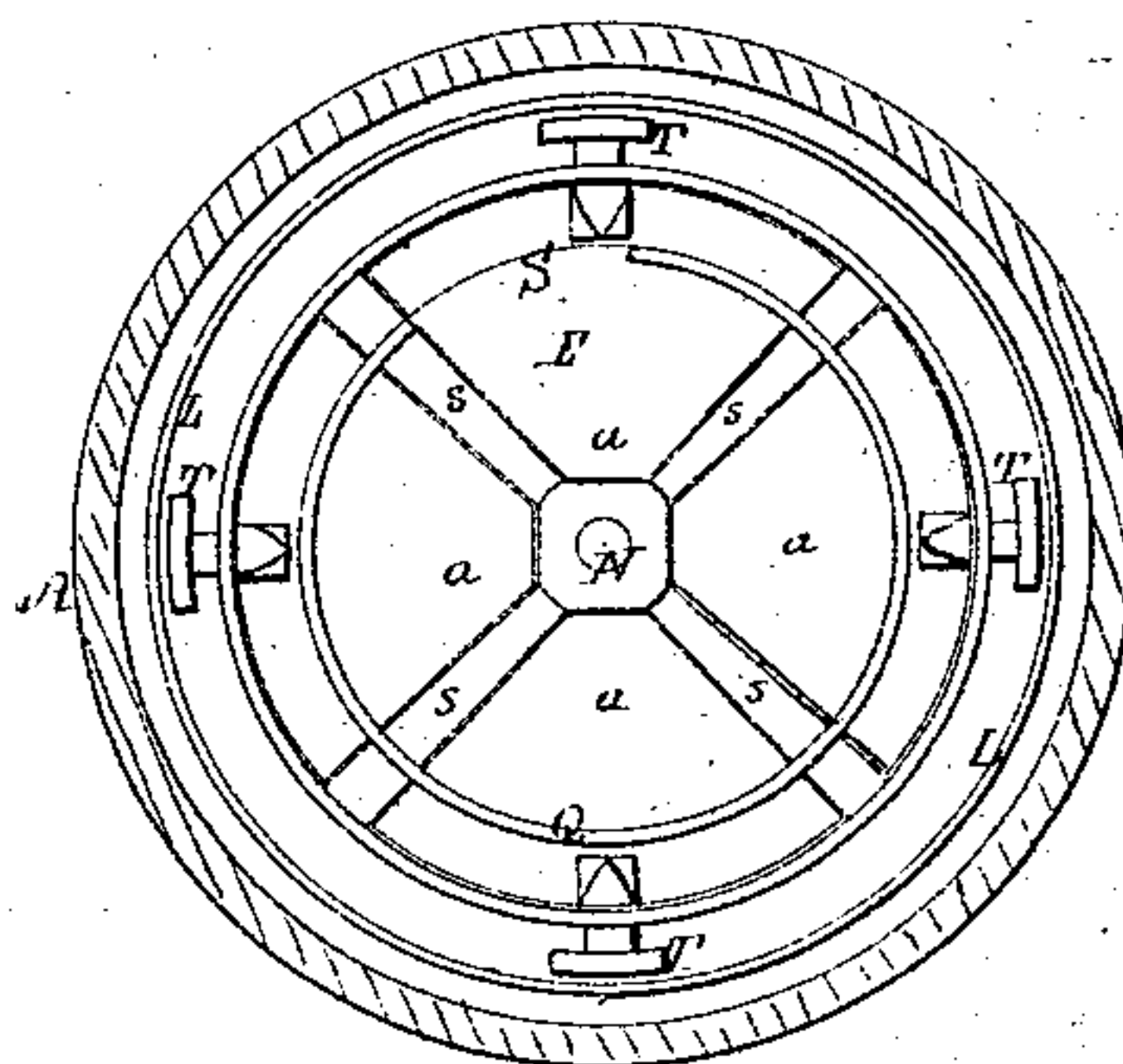


Fig. 2.

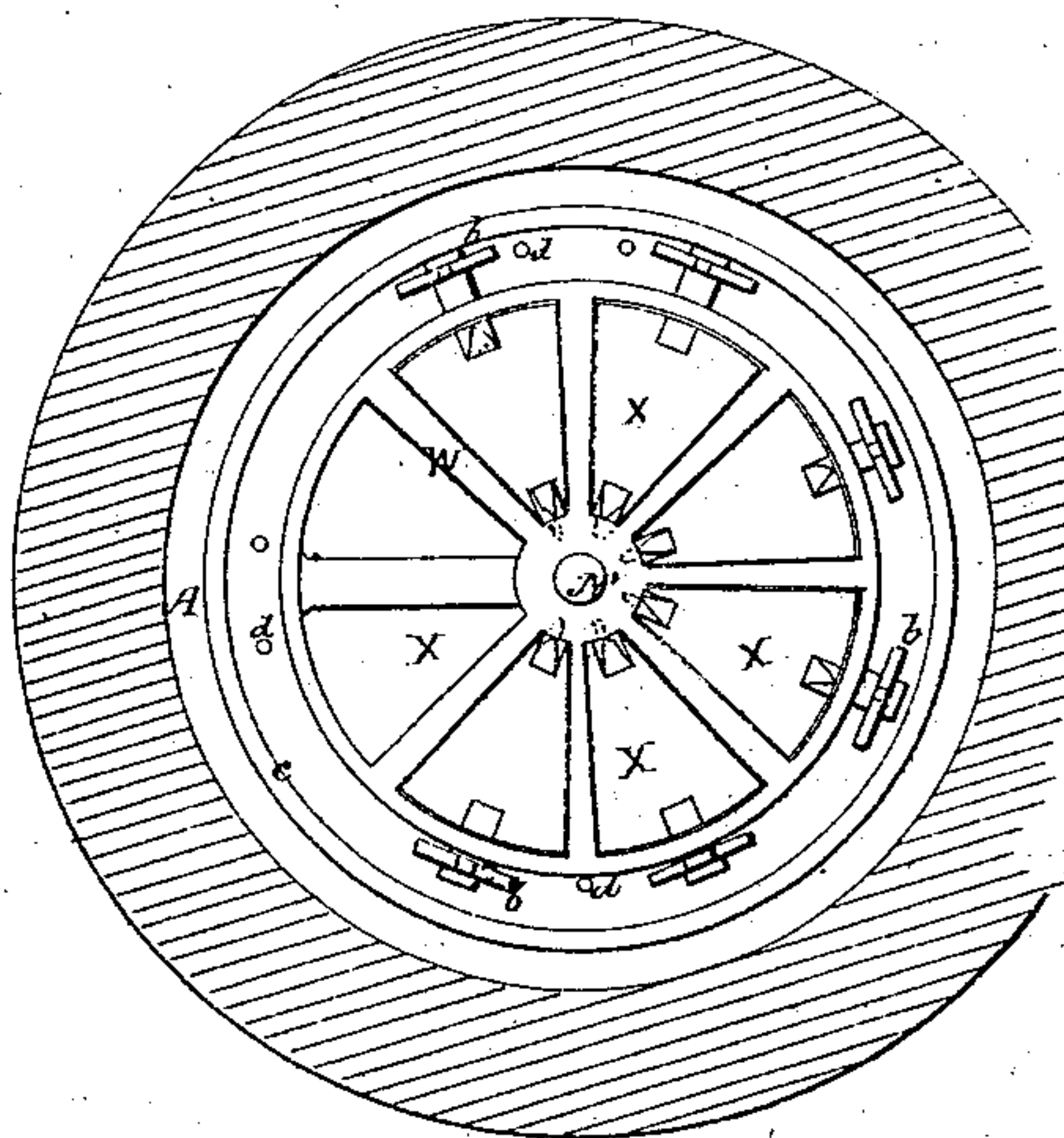


Fig. 1.

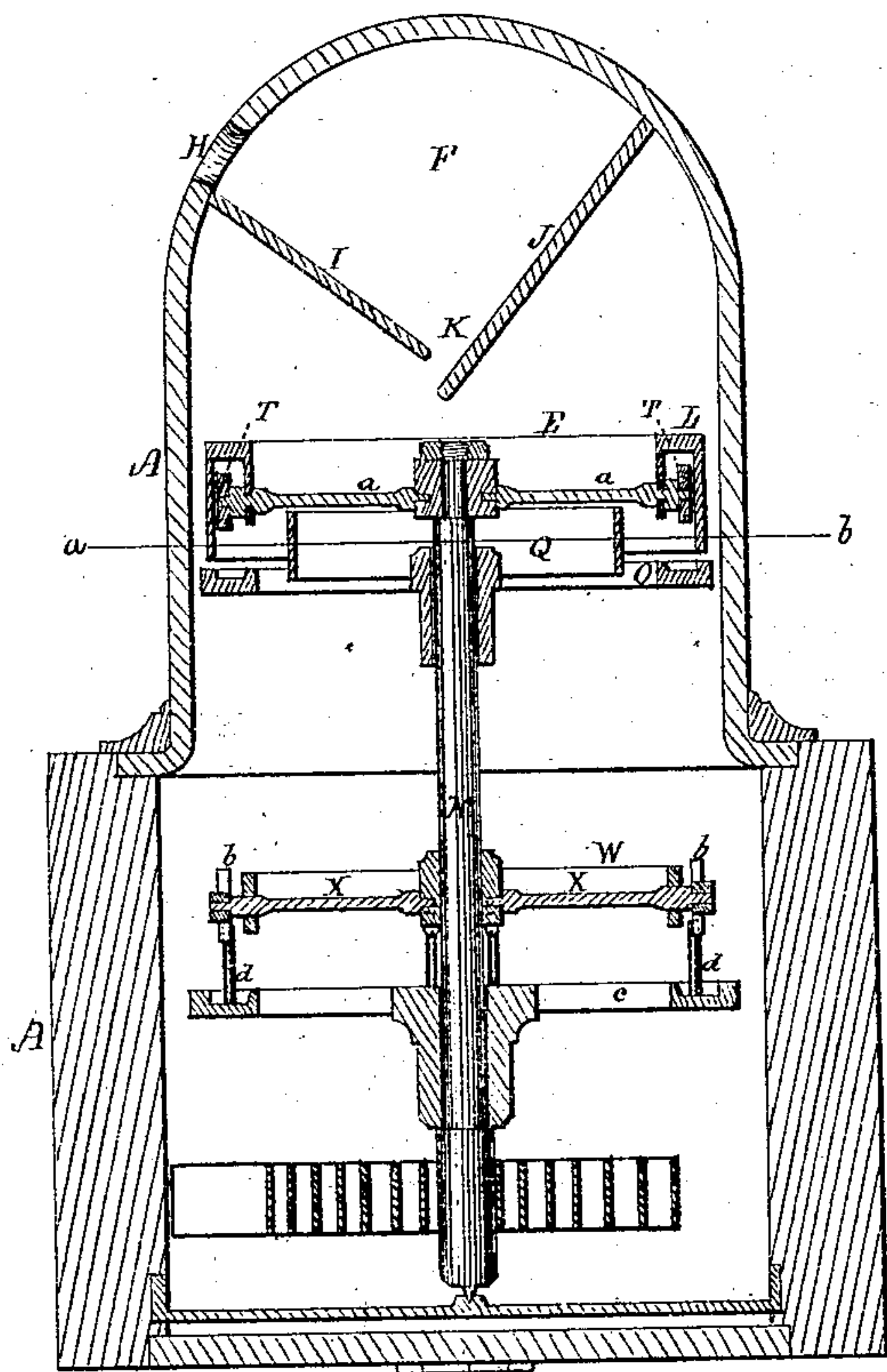


Fig. 4.

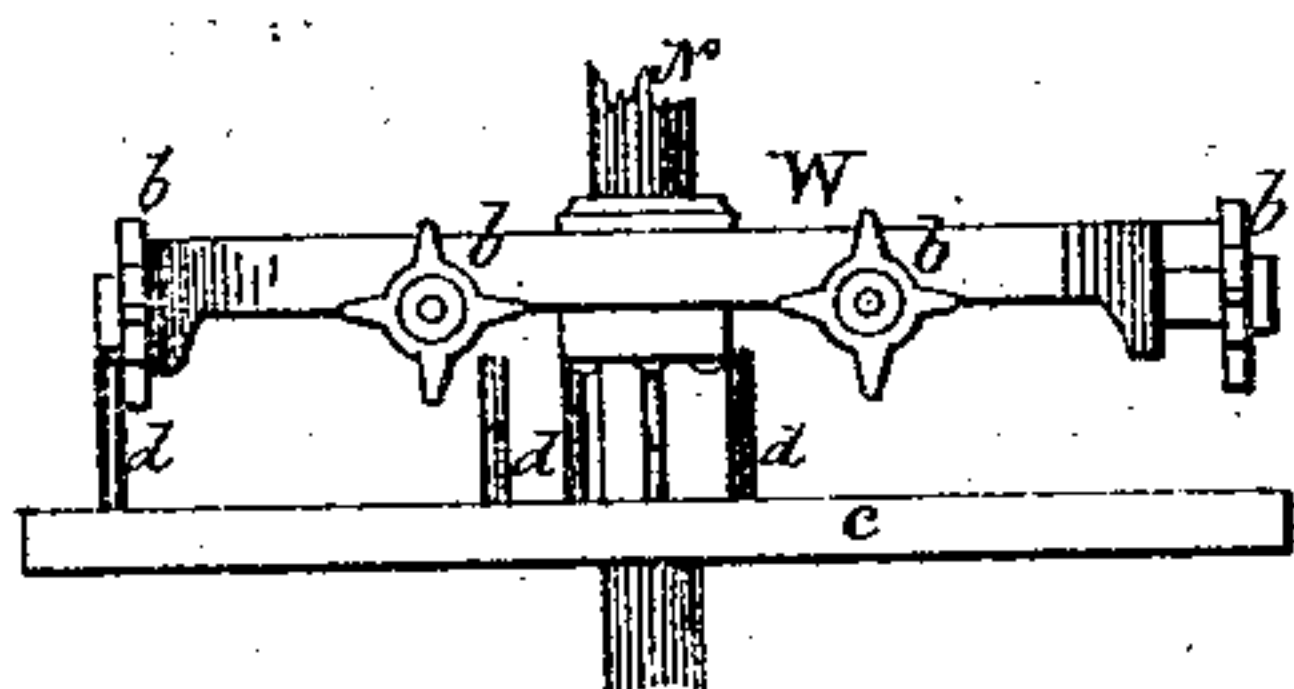
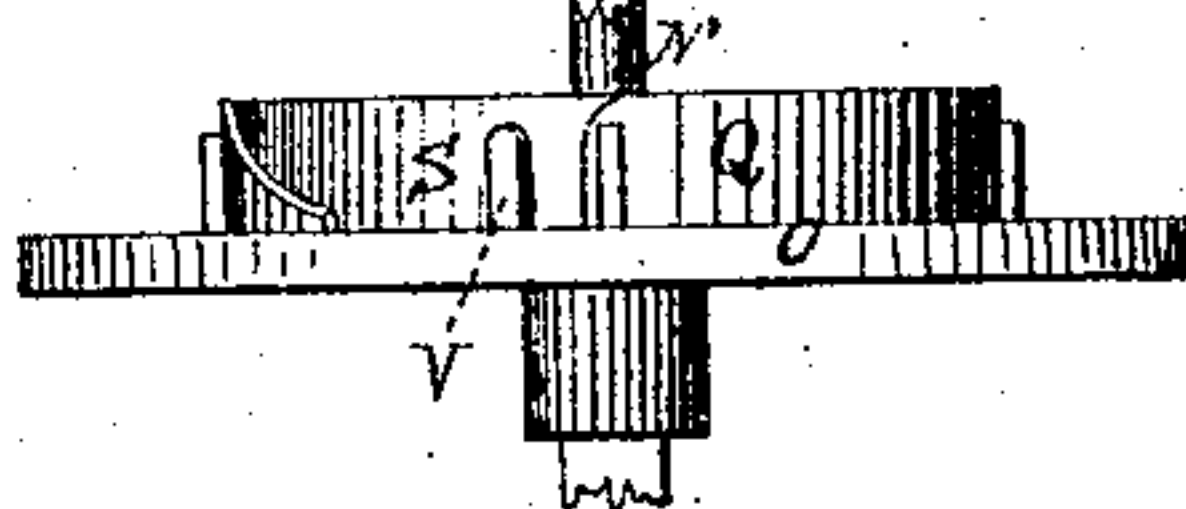


Fig. 6.



WITNESSES.
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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN FARE-BOXES.

Specification forming part of Letters Patent No. **153,480**, dated July 28, 1874; application filed May 19, 1874.

To all whom it may concern:

Be it known that I, ABNER C. GOODELL, Jr., of Salem, Essex county, Massachusetts, have invented certain Improvements in Fare-Boxes for Land Conveyances, of which the following is a specification:

Heretofore, in the construction of fare-boxes for railway-cars, omnibuses, and other land conveyances, a structure or box has been employed, divided by tight partitions into two chambers, the upper one being devoted to the purpose of receiving one or more fares and exposing them to the view of the driver and passengers until such time as the driver opens a trap in the floor or partition between the two chambers, and allows the fare or fares to fall through the aperture into the chamber or depository below, where they remain with others that accumulate until removed by the proper person.

In the practical operation of boxes of this character several objections have manifested themselves, which my present improvements are designed to overcome. For instance, if a number of fares are deposited in the upper compartment at one time, it is difficult, and at times impossible, for the driver to ascertain with certainty the exact amount paid, and it has often occurred that a number of persons dishonestly inclined enter a car or omnibus together and deposit their fares in a mass, omitting one or two. It being impossible for the driver to distinguish each fare, and having no control over the interior of the box, he is compelled to take the risk of being cheated.

In carrying my invention into practice, in one form among several in which it may be embodied, I employ an upright cylinder, preferably entirely of glass, and I dispose within this cylinder one or more concavous or recessed disks, mounted in a suitable manner upon a shaft, or otherwise pivoted upon an axis, in such manner as to revolve slowly in a horizontal plane, the bottom of these disks being formed with several apertures of sufficient size to allow a fare or several fares to pass through them, the apertures being covered by tilting or rotating vanes or their equivalents, so constructed and applied to the disk, and operating with the same and a se-

ries of fixed studs or their equivalents, that, as the disk rotates, the vanes automatically open and close the apertures in regular succession without aid from the driver—the fares being deposited upon the disk at such a period of time in advance of the opening of the vane upon which it rests as to be inspected by the driver and passengers before falling to the bottom of the cylinder.

The drawings accompanying this specification represent, in Figure 1, a vertical section of a fare-box constructed in accordance with the requirements of my invention. Figs. 2 and 3 are horizontal sections of the same. Fig. 4 is a side elevation of the lower or distributing disk. Fig. 5 is a plan of the devices for operating the vanes of the upper disk, Fig. 6 being a side elevation of the same.

In these drawings, A represents an upright cylindrical structure, composed of glass and open at bottom, such bottom opening being closed by a door, and being the place where the fares which accumulate in the lower part of the cylinder are removed. The upper part of the cylinder A terminates in a globular top or dome, F, in one side of which an orifice, H, is created, through which the fares of passengers are inserted. Within the upper part of the dome F are placed two sloping plates or deflectors, I and J, one of which, viz., I, is placed below and in horizontal parallelism with the longest plane of the orifice H, and so as to present a line at right angles, or nearly so, to the other plate, J, which is disposed in like manner upon the opposite side of the dome, and with its lower edge somewhat below that of the former, a narrow throat, K, intervening between the two, and the whole being so arranged that a fare, whether a ticket or piece of money, being inserted through the throat and dropped upon the plate I, slides down the latter until it reaches the opposite plate J, by which it is deflected through and upon a rotary disk placed below it.

This arrangement of the plates I and J is shown and explained in an application for a patent heretofore filed by myself, and requires no further explanation as to their character or uses; but I desire to say that I contem-

plate, under some circumstances, making them concave or trough-shaped to some extent, the better to deflect the fares toward the center of the disk below.

In order to retain or suspend a fare within the cylinder A for a short space of time, or one sufficiently long to enable the driver and the passengers, if they are so disposed, to ascertain that a fare has been paid by any person or persons, I dispose within the upper part of the dome F a horizontal rotary disk or changeable table, E, composed of an annular circum-scribing band, L, and a series of radial arms, s s, &c., and a series of vanes, to be hereinafter explained, the disk being of a diameter considerably less than that of the bore of the cylinder, and being mounted upon an upright shaft, N, placed axially within said cylinder, or otherwise pivoted within the latter in such manner as to rotate freely upon its axis. The upper support of the shaft N is, in the present instance, a horizontal open frame, O, which is affixed within the dome immediately below the disk E. The size or diameter of the disk E bears no close relation to that of the bore of the cylinder, as the only requisite in this respect is to provide a disk of sufficient size to receive fares and prevent them from dropping between it and the cylinder. Within the band L I dispose a series of horizontal sectoral vanes, a a, &c., pivoted centrally at their outer ends to the band, and at their inner ends to the hub of such band, in order that they may rotate upon their axes, and, when disposed in a common horizontal plane, present an unbroken surface, which entirely covers the area bounded by the band L, and prevents escape of fares through the disk or table, and, when in a vertical position, which they assume, one after the other, in regular succession, create an opening through which a fare or several fares fall to the lower part of the cylinder. The band L of the disk or table E rises to some distance above the axes of the vanes, in order to constitute an annular wall to seize and retain the fares as they are pushed through the orifice, and fall upon the vanes, as but for the presence of this inclosing wall many fares might drop between the disk and cylinder unnoticed by the driver. The disk may be of larger diameter and entirely cover the area of the cylinder; but there are many objections to this, and one object I have sought to attain is to obviate these objections by such a construction of parts as enables me to use a disk of any size and avoid the dividing of the cylinder into two chambers by a tight partition, as heretofore practiced. By my arrangement of the disk E and the plates I and J, fares are deflected upon the former with certainty, and the use of the plates I and J would permit me to dispense with the extra height of the band L. I decidedly prefer, however, to employ it. In order to compel these vanes to remain in a horizontal position until the turn of each comes to tilt into a vertical position, I dispose

below them a concentric annular ledge, Q, which is supported upon the frame O before named, a small portion of this ledge Q being cut away, as shown at S, to create a notch, which allows each vane as it reaches it to tilt and make a quarter-revolution on its axis. To tilt the vanes a from a horizontal to a vertical position, I apply to the outer extremity of the outer pivot or journal of each a bar or tripper, T, and I erect upon the frame R a post, V, so disposed, in advance of the notch of the ledge Q, that as each approaching tripper abuts against it such tripper is compelled to describe a quarter-revolution and assume an upright position, and, in so doing, effect a like movement of the vane and precipitate from the latter to the bottom of the cylinder any fare or fares which may be at the time upon it, the width and depth of the notch S permitting of this movement of the vane. Immediately after the vane reaches a vertical position, its lower part impinges against the succeeding side of the vane by the rotation of the band L, and is turned upon its axis a second quarter of a revolution, which returns to a horizontal plane common to the others, having been reversed in the act. The ledge Q is sufficiently close to the under side of the vanes to prevent them from leaving a horizontal position until they reach in succession the notch S. It will thus be seen that each vane in succession, as it passes the post V and notch S, is reversed in position upon its axis, and afterward, and while moving upon and retained in a horizontal position by the ledge Q, travels with the others through a circular path, the ledge Q also serving to prevent any depression or turning of the vanes by pressure from above. The post V is situated, preferably, opposite the orifice H; consequently, when a passenger passes a fare through such orifice, and deposits it upon the traveling disk or table E, it remains upon this table until such table has traveled through a half-circle, thus affording ample time for the driver and passengers to inspect it.

One important advantage of the above-described rotating table or disk with its changeable bottom is seen in the fact that as soon as one fare has been paid and dropped upon such bottom, this fare immediately travels along and out of the way of another which may be paid immediately after it, and as each fare before it can again reach the paying-orifice is precipitated through the table, no undue accumulation of fares can take place, and the driver is enabled to distinguish each individual one.

In order to provide all possible security against dishonest abstraction of fares from the lower part of the cylinder A, and to distribute equally over the floor of the latter such fares as may accumulate, I make use of a second revolving disk or table, W, mounted upon the shaft N, and having a series of vanes, X X, &c., pivoted within it, these vanes be-

ing so arranged as to open at various points during the revolution of the wheel W, and allow fares to drop from them into the lower part of the cylinder or receiver A.

In order to reverse the position of each vane X X, I affix to the outer end of the pivot of each a star trip-wheel, *b*, and I erect upon an annular frame, *c*, disposed below the vanes a series of upright pins, *d d*, &c., placed in pairs, and each pair situated at such a distance that each wheel that coincides with them is tilted by abutting against the first into an upright position to the extent of ninety degrees of a circle, and by the second a like distance to the extent of one hundred and eighty degrees of a circle, thus precipitating into the lower part of the cylinder A, and scattering equally over its surface or floor, such fare or fares as may have fallen upon it from the vane below.

As I desire the vanes X X to reverse at different points in the revolution of the band which supports them, I place the trip-wheels of one pair of vanes at a greater distance from the periphery of the band than those of another pair, and I likewise dispose the pairs of pins in such manner that one pair coincides with one pair of wheels, and another pair with another pair of wheels, and by this means distribute equally over the floor of the cylinder or receiver A B the fares dropped upon the vanes.

Various mechanical expedients other than those herein shown may be employed for effecting alternating reverses of the vanes; but I have adopted the tripper T and star-wheel *b*, as presenting one practical method by which these reverses may be brought about.

To obtain the requisite power for rotating the changeable floors, any suitable mechanism may be employed—a clock-movement, for instance—and I propose in some instances to apply the power of the car-axles to operate them by means of a suitable intermediate device.

I do not confine myself to the use of the upright shaft as a means of rotating the disks or tables, as a toothed rack may be applied to the periphery of either, and a pinion mounted upon a shaft engage such rack; nor do I confine myself to the precise mode herein explained of arranging and operating the vanes of the rotary disks, as it is evident that vari-

ous modifications may be made in this respect without departing from the main feature of my present invention, which embraces the construction and adaptation of a revolving table, whereby it opens at stated times, and to a greater or less extent, to allow of passage of fares through it.

The use of my invention lessens to a certain extent the labor of the drivers of horse-cars or omnibuses, as the final depositing of the fare is effected automatically by the rotation of the revolving table, and not, as at present, by the adjustment of a trap by hand, and the cash and tickets being thereby surely deposited below by a regular movement, the difficulty is avoided which sometimes happens in the counting of fares when they are allowed to accumulate by the negligence of the driver or otherwise.

If considered desirable, a stop-motion may be combined with the upper rotary table, by means of which the driver is enabled to stop the rotation of such table should he desire more time in which to inspect the fares than the movement of said table affords.

I claim—

1. The rotary band or wheel and series of tilting wings or doors, in combination with the ledge Q and tripper T and post V, substantially as shown and set forth.

2. The rotating distributing-wheel W, located in the lower part of the fare-box below the fare-receiving table, and provided with tilting wings or doors, operated at the times and in the manner specified, to distribute evenly over the bottom of the fare-box the fares dropped from the fare-receiving table.

3. In a fare-box, a continuously-rotating power-driven fare-receiving table, whose fare-receiving surface is made up of vanes or doors automatically operated to alternately open and close during the movement of the table, substantially as herein shown and set forth.

4. A ledge, Q, serving to hold the door in a horizontal position, and to prevent the turning of the doors by outside pressure, substantially as and for the purposes stated.

ABNER C. GOODELL, JR.

Witnesses:

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W. E. BOARDMAN.