

(No Model.)

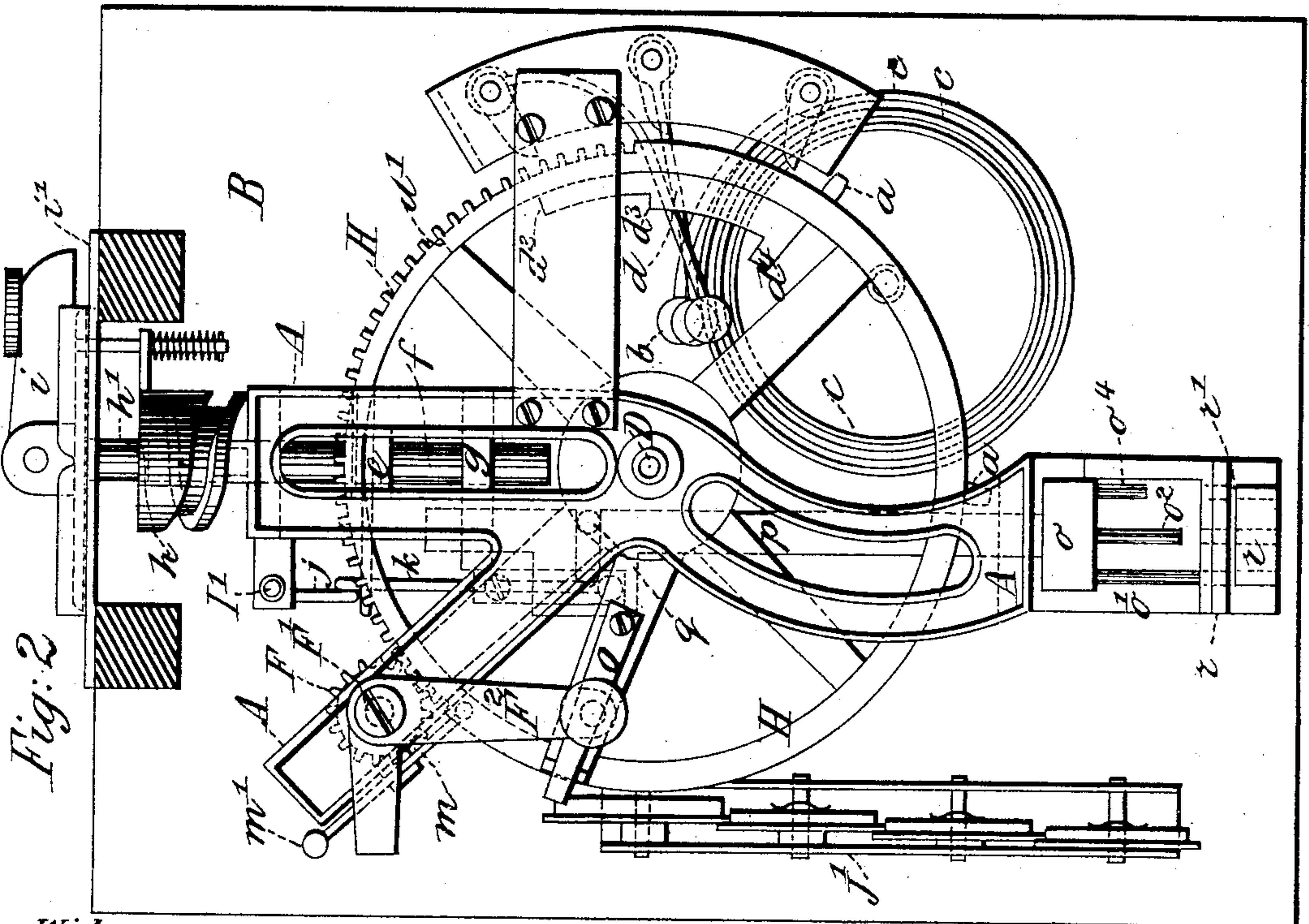
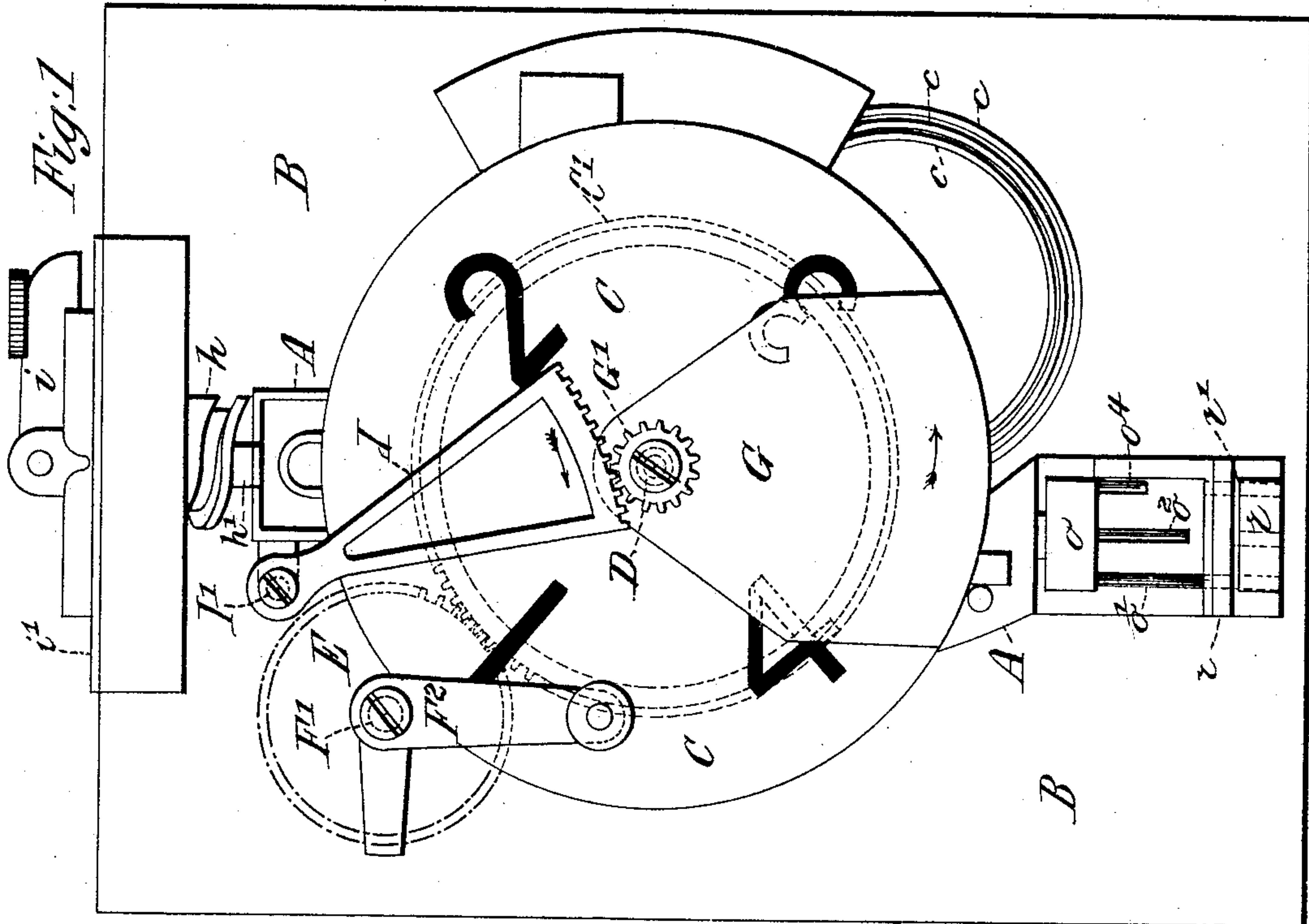
2 Sheets—Sheet 1.

J. N. MASKELYNE.

FARE REGISTER.

No. 259,565.

Patented June 13, 1882.



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FARE-REGISTER.

SPECIFICATION forming part of Letters Patent No. 259,565, dated June 13, 1882.

Application filed March 15, 1882. (No model.) Patented in England August 23, 1881, No. 3,677.

To all whom it may concern:

Be it known that I, JOHN NEVIL MASKELYNE, of the Egyptian Hall, Piccadilly, in the county of Middlesex, England, have invented certain Improvements in apparatus for registering the fares paid in omnibuses and other public conveyances and for marking the tickets issued, of which the following is a specification.

The object of this invention is to provide a compact and simple apparatus for registering the amounts of different fares (within reasonable limits) paid by passengers in omnibuses and other public conveyances, and for punching the tickets issued with the amount of the fare paid.

The apparatus is contained in a metal or wooden case, to be secured by straps to the person of the conductor, and consists of a pair of toothed wheels mounted loosely a short distance apart on an axle carried by a suitable frame. The wheels are actuated by pinions, which are caused to rotate by turning a handle on the pinion-shaft. The pinion-shaft also carries a rotating pawl to work the registering mechanism. The front wheel carries a dial, on which the various fares are displayed, the amount of each fare being shown at the proper moment at an opening in the case. The rear wheel is provided with pins or projections, which work gong mechanisms to denote audibly the amount of the fare paid. This wheel is also provided with means for working a punch to mark the tickets issued with the amount of the fare paid in addition to registering that amount. The wheel further actuates a sliding shutter to withdraw it at the proper moment from before the opening in the case, in order to expose to view the amount of fare which has been paid. The amount of rotation to be given to this wheel is regulated by an adjustable stop, the position of which, according to the fare to be paid, is readily set by the attendant.

In the accompanying drawings I have shown at Figure 1 a front view of my improved registering and ticket-marking apparatus removed from its case; Fig. 2, a similar view with the dial-plate and sliding shutter removed, and Fig. 3 a view of the apparatus with the front portion of the frame and the rear wheel re-

moved to show more clearly than in the other figures the adjustable stop and other details. Fig. 4 is a top view of the apparatus, and Fig. 5 a side view of the punching mechanism.

A is a metal frame, by which the working parts of the apparatus are carried, and which is secured to the back of the inclosing box or case, (not shown, but which for the present purposes may be represented by the slab B.)

C is a dial, which is secured to the front toothed wheel, C'. (Shown dotted in Fig. 1.) This wheel is mounted outside the frame A loosely on an axle, D, and it is caused to rotate through the pinion E by the handle F², fixed on the pinion-axle F'. The dial is rotated until the number representing the fare to be paid comes under a shutter, G, which is then withdrawn, as will be hereinafter explained, and the number is exposed to view through an opening made in the front of the case. The diameter of the wheel C' and of its pinion E in relation the one to the other will depend upon the number of fares for which the apparatus is to be made and the position of those fares on the dial, as will be readily understood by any competent mechanic.

The rear wheel, H, which is formed with teeth on a portion only of its periphery, and which may be termed the "actuating-wheel," is mounted loosely on the axle D, and is caused to rotate through a pinion, F, on the axle F' by the handle F². Into the periphery of this wheel H are fitted pins *a a*, which, as the wheel is rotated, strike against and trip the tails of a series of gong-striking hammers, *b b b*, suitably arranged for the purpose.

c c c are three gongs, secured to the back of the box B, each gong being intended to represent audibly one cent. The number of gongs may be increased, according to the number of fares for which the apparatus is made; or the three gongs or a less number may be struck twice or more times to make up the proper amount by increasing accordingly the number of pins *a*. I do not intend to claim any particular arrangement of gong-striking hammers, and any further description of the arrangement shown in Fig. 2 of the drawings will be therefore unnecessary.

To the side of the wheel H, I secure a curved

stop-plate, d , which is formed with steps d' d^2 d^3 d^4 on its inner periphery. Each step will represent an increase in the amount of the fare to be taken. Thus step d' will represent, say, one cent; d^2 , two cents; d^3 , three cents, and so on, and the wheel H will be allowed to turn until the step representing the particular fare to be paid comes in contact with an adjustable stop, e , which has been previously set for that fare by the conductor of the vehicle.

The stop e , which is clearly shown in Fig. 3, consists of a block of metal securely fixed to a rod, f , which is capable of sliding vertically in guides g , secured to the frame A. In the upper end of this rod f a nick is made, so as to leave a projection, f' , (or a pin may be inserted into the rod,) and this projection f' or pin takes into a groove in a snail-cam, h , Figs. 1 and 2. This snail-cam is keyed onto a vertical axle, h' , which projects through the top of the case, and is provided with a handle or pointer, i , by which it may be turned. On turning the snail-cam h by the handle or pointer i in one direction or the other the rod f , with the stop, e , will, by reason of the projection f' working in the groove, be raised or lowered to the position required to stop the rotation of the wheel H at the desired point.

Secured to the top of the case, under the handle or pointer i , is a dial, i' , Fig. 4, bearing figures corresponding to those on the dial C. By this dial i' the conductor can tell how far he has to turn the handle or pointer i , so as to set the adjustable stop e in the proper position for the particular fare about to be paid. For convenience of working, the handle or pointer i may be so arranged as to spring into notches or holes corresponding to the different fares, so that the conductor may tell by counting the notches or holes as he turns the pointer when the stop is in the proper position.

The shutter G is secured to a pinion, G' , which is mounted loosely on the axle D outside the dial. (See Fig. 1.)

In gear with the pinion G is a toothed sector, I, which is mounted on an axle, I' , carried by lugs projecting from the side of the frame A.

j is an arm pendent from and solid with the axle I' , and in contact with this arm is a spring-finger, k , which is attached to some convenient portion of the frame A. l is a slide carried by the stop e . One end of this slide l is formed with an eye, through which the spring-finger k passes, and the other end projects a short distance beyond the stop e .

As the wheel H rotates, the plate d , before it comes into contact with the stop e , strikes against this slide l and pushes it forward. This forward movement is communicated to the spring-finger k , which presses on the pendent arm j and causes it to rock the axle I' . This rocking motion is communicated to the sector I, which acts on the pinion G' and withdraws the shutter from the window or opening in the case, leaving the amount of the fare exposed to view.

A coiled spring on the axle I' , as well as the natural spring of the finger k , serves to bring the toothed sector and other parts back to their normal position, and the shutter drops by its own weight so soon as the pressure on the slide l is removed by reversing the direction of rotation of the wheel H.

A spring-catch, m , is provided to lock the wheel H in position, and this catch must be raised by pressing on the button m' before the wheel can be moved.

J, Fig. 3, is a counting mechanism of any convenient construction. In this case the wheel 1 is made to register cents, commencing at 0 up to 9, the wheels 2 3 4 representing respectively tens, hundreds, and thousands of cents. The numbers are engraved on the back of the wheels and show through openings made in the back of the box. The counting mechanism is actuated by means of a double rotating spring-pawl, n , mounted on the pinion-axle F' , and which takes into the teeth of the ratchet-wheel 1.

In order to register the number of passengers from whom fares have been taken, in addition to registering the amount of money taken, a second counting mechanism, J' , is provided. This mechanism I place at right angles to the rest of the apparatus, and it is actuated by a spring-pawl, O, carried by one of the arms of the wheel H. The counting mechanisms, for which I make no special claim, are secured to the case independently of the rest of the apparatus.

The working of the apparatus is as follows, namely: The conductor will ask the passenger the distance he is going to travel, and then will set the pointer i to the proper fare for that distance, say four cents. The moving of the pointer i turns the snail-cam h , which pushes down the stop e the required distance. The conductor then takes four half-turns with the handle F^2 , which, through the double spring-pawl, actuates the counting mechanism, and also, through the pinions, rotates the dial C and the wheel H until the step d^4 strikes against the stop e . During the movement of the wheel H the three gongs will be struck once and one gong twice by means of the pins a on the periphery of the wheel, making four sounds. As the step d^4 strikes against the slide l in the stop e the axle I' will be rocked, and with it the toothed sector I, which will withdraw the shutter G and expose to view at the window or opening in the case the amount, (four cents,) which by that time will have arrived in front of the window. When the amount has been thus marked the handle F^2 is turned back four half-turns, by which means the apparatus will be caused to assume its normal position.

The means which I employ for punching in a ticket a number of holes corresponding to the amount of the fare paid consist of a combination-punch, o , formed of small steel points o' o^2 o^3 o^4 of different lengths and in number corresponding to the different fares—say four—for

which the apparatus is made. This punch *o* is clearly shown in front view at Figs. 1, 2, and 3, and in side view at Fig. 5. The punch *o* is carried by the rod or bar *p*, which is cranked near its upper end, and which slides in suitable guides secured to the frame *A*. The movement of this punch is caused by the pin *q*, (shown dotted in Fig. 2,) inserted in the hub of the wheel *H*, and which enters the slot formed by the cranked part of the rod *p*. As the wheel *H* is rotated the points *o'* *o*² descend through holes formed in the counterparts *r r*, and perforate the ticket which is inserted in the slit *r'*. The points *o'* *o*² *o*³ *o*⁴, being of different lengths, will act in succession, according to the amount of rotation of the wheel *H* and the consequent depression given by the pin *q*. Thus, if the fare to be paid is two cents the points *o'* *o*² will come in action successively and make two holes in the ticket, while if four cents be the fare four points will be caused to act, each point representing an increase of a cent. The withdrawal of the points takes place when the wheel *H* is turned back by the handle *F*² to its normal position.

It will be evident that the registering apparatus may, if desired, be used without the punching mechanism.

Having now described my invention, I claim—

1. The combination of the dial *C*, wheels *C'* and *H*, pinions *E F*, handle *F*², spring-pawls *n* and *O*, registering mechanisms *J J'*, and gong

mechanism, all arranged and operating substantially as herein shown and described. 35

2. The combination of the wheel *H*, stop-plate *d*, adjustable stop *e*, snail-cam *h*, pointer *i*, and dial *i'*, all arranged and operating substantially as shown and described.

3. The combination of the wheel *H*, stop-plate *d*, adjustable stop *e*, slide *l*, arm *j*, spring *k*, toothed sector *I*, and shutter *G*, all arranged and operating substantially as herein shown and described. 40

4. The combination of the wheel *H*, pin *q*, cranked bar *p*, compound punch *o*, and counterparts *r r*, provided with a slit, *r'*, all arranged and operating substantially as herein shown and described. 45

5. The combination, in an apparatus for registering fares, of a punch block or carrier having attached to it two or more points or punches of different lengths, mechanism for operating such block or carrier, and a variable stop mechanism, whereby the movement of the said block or carrier may be regulated to produce the operation of one or more of said points or punches, substantially as and for the purpose herein set forth. 50 55

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