

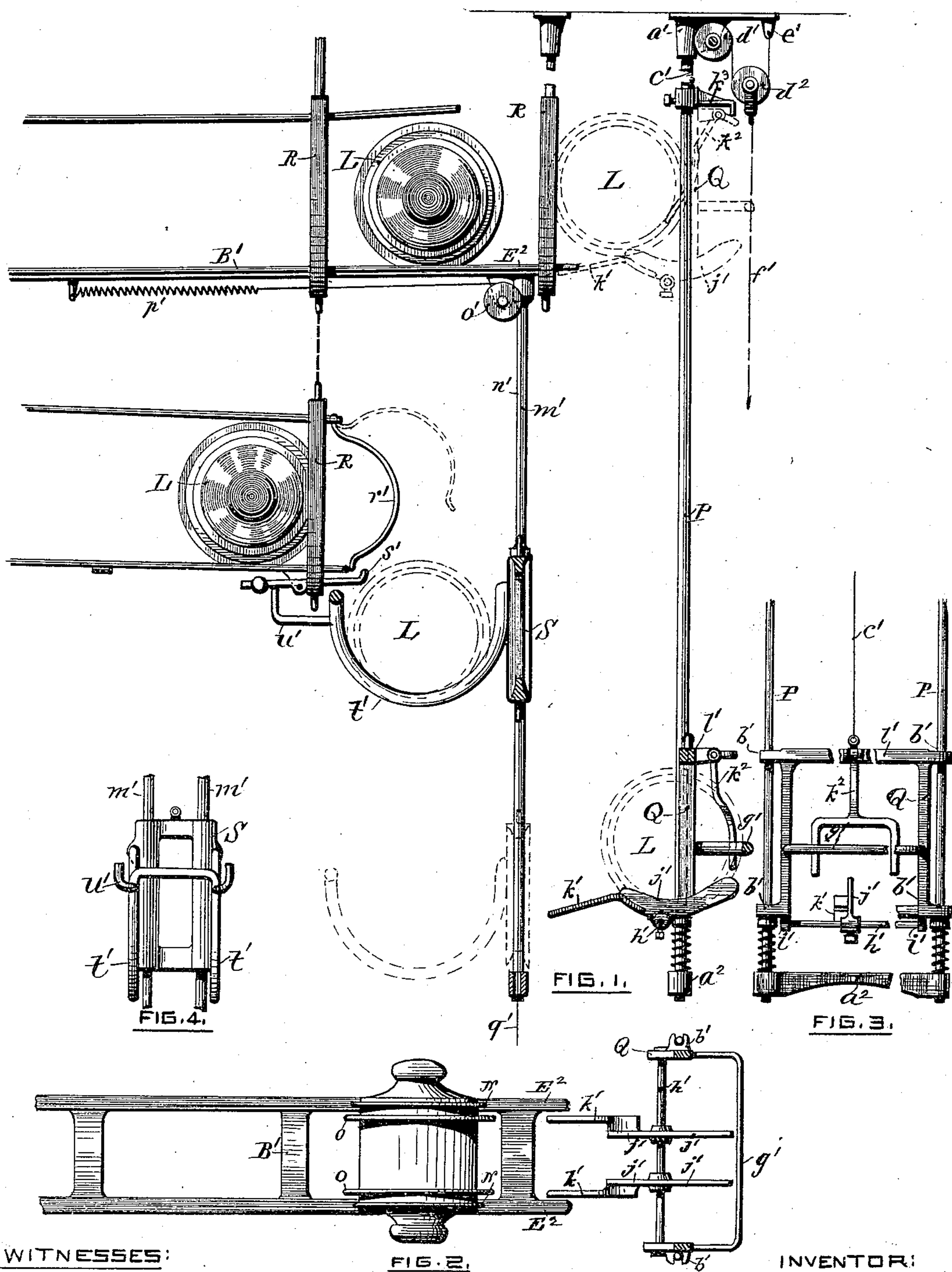
(No Model.)

2 Sheets—Sheet 1.

F. S. HARRINGTON.
CASH CARRIER AND RAILWAY.

No. 310,052.

Patented Dec. 30, 1884.



WITNESSES:

Chas. F. Schmedy
Israel Plummer

INVENTOR:

Frank S. Harrington
per S. Scholfield
Attorney

(No Model.)

2 Sheets—Sheet 2.

F. S. HARRINGTON.
CASH CARRIER AND RAILWAY.

No. 310,052.

Patented Dec. 30, 1884.

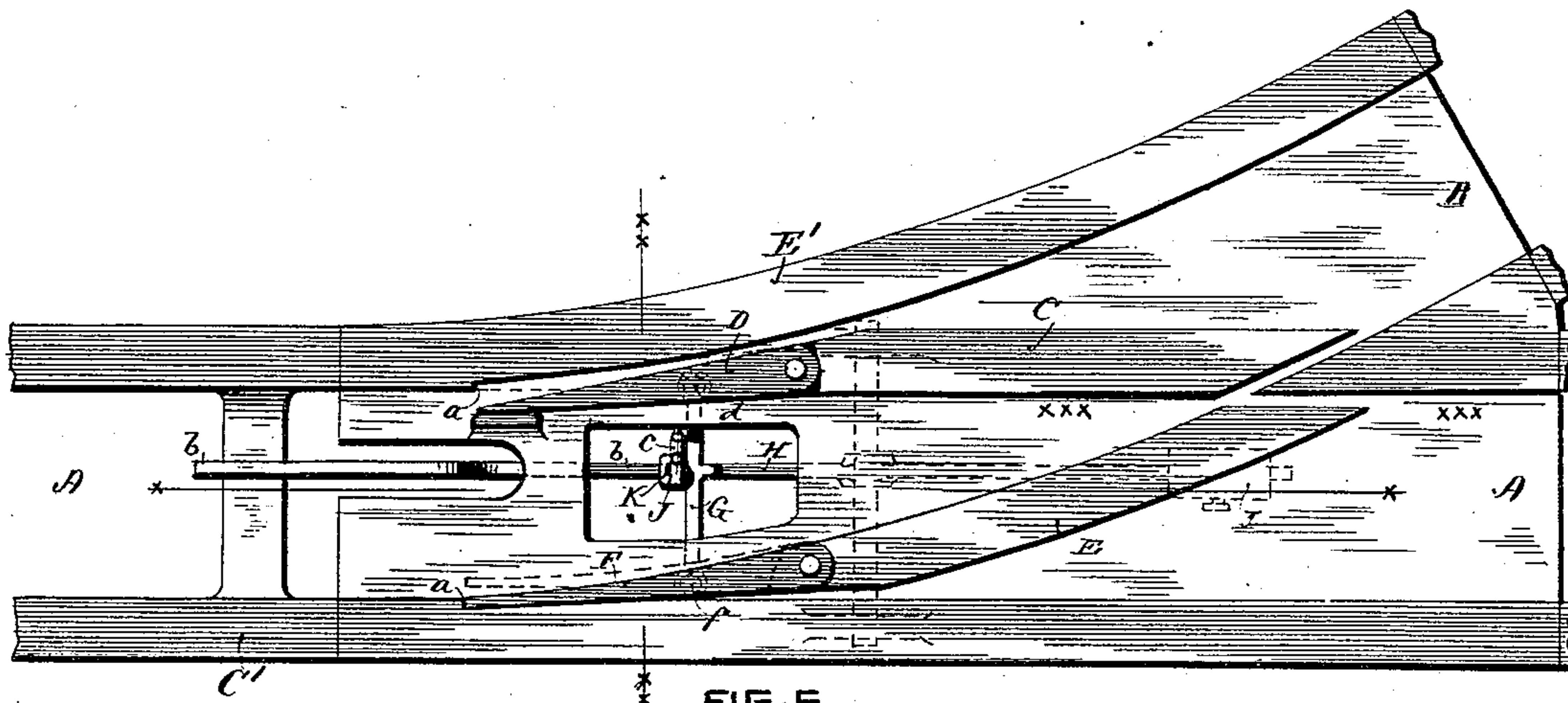


FIG. 5.

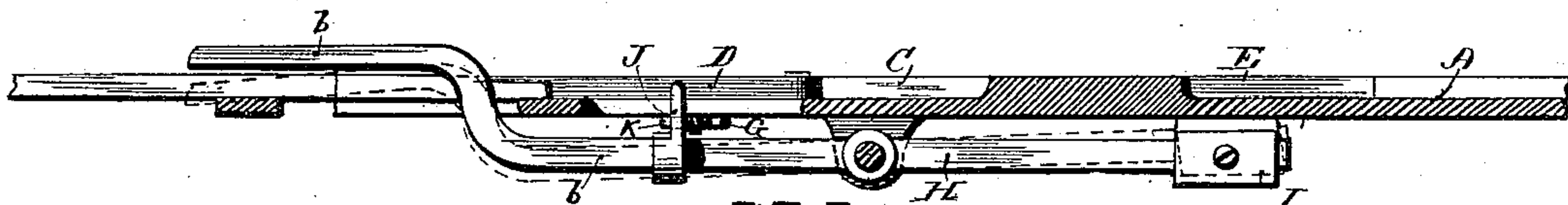


FIG. 6.

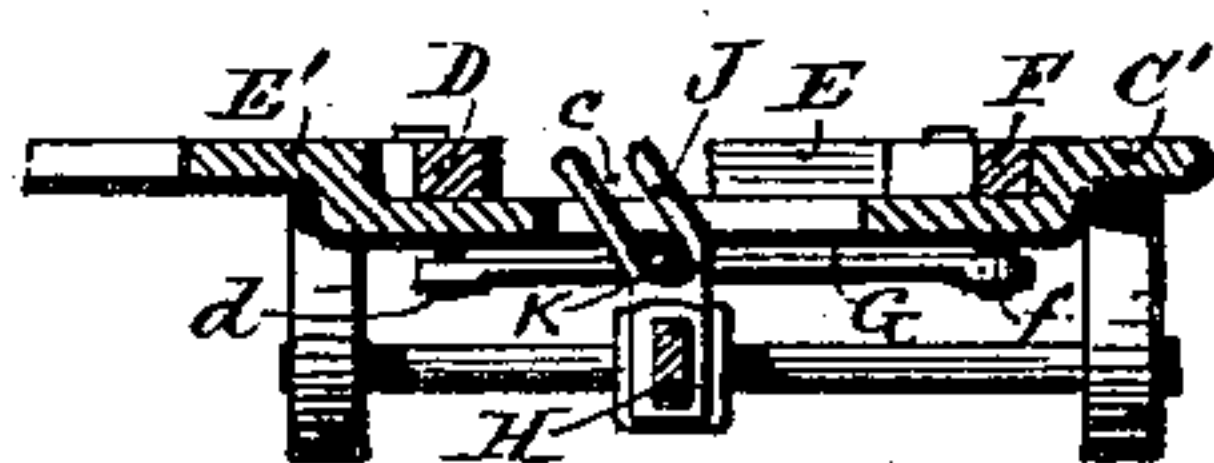


FIG. 7.

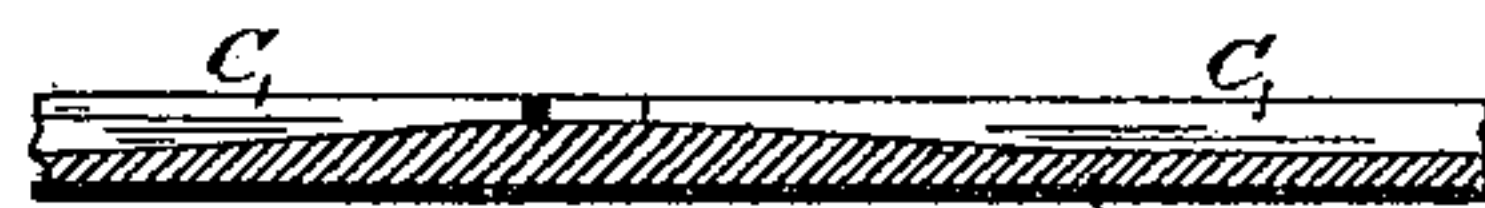


FIG. 8.

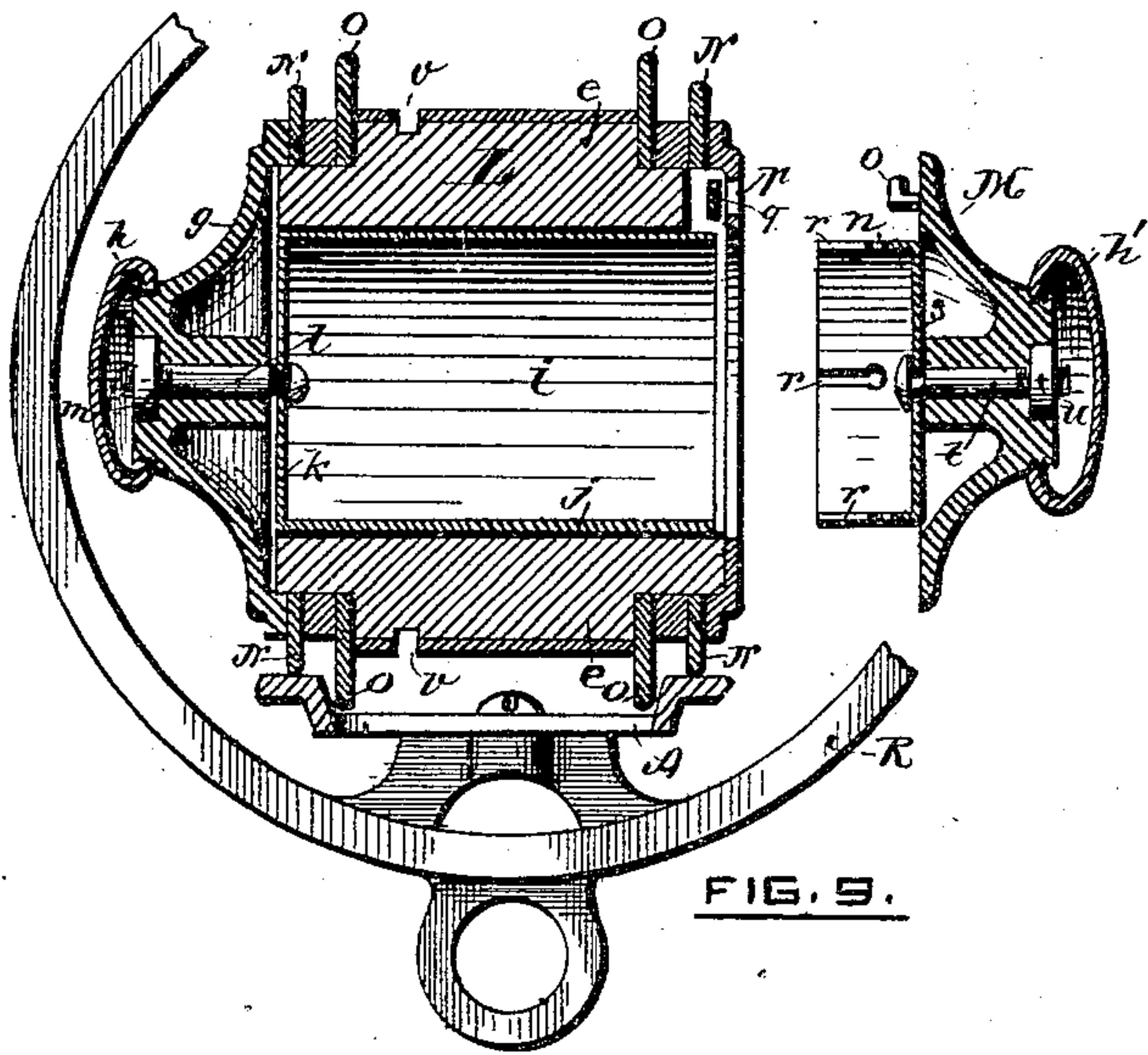


FIG. 9.

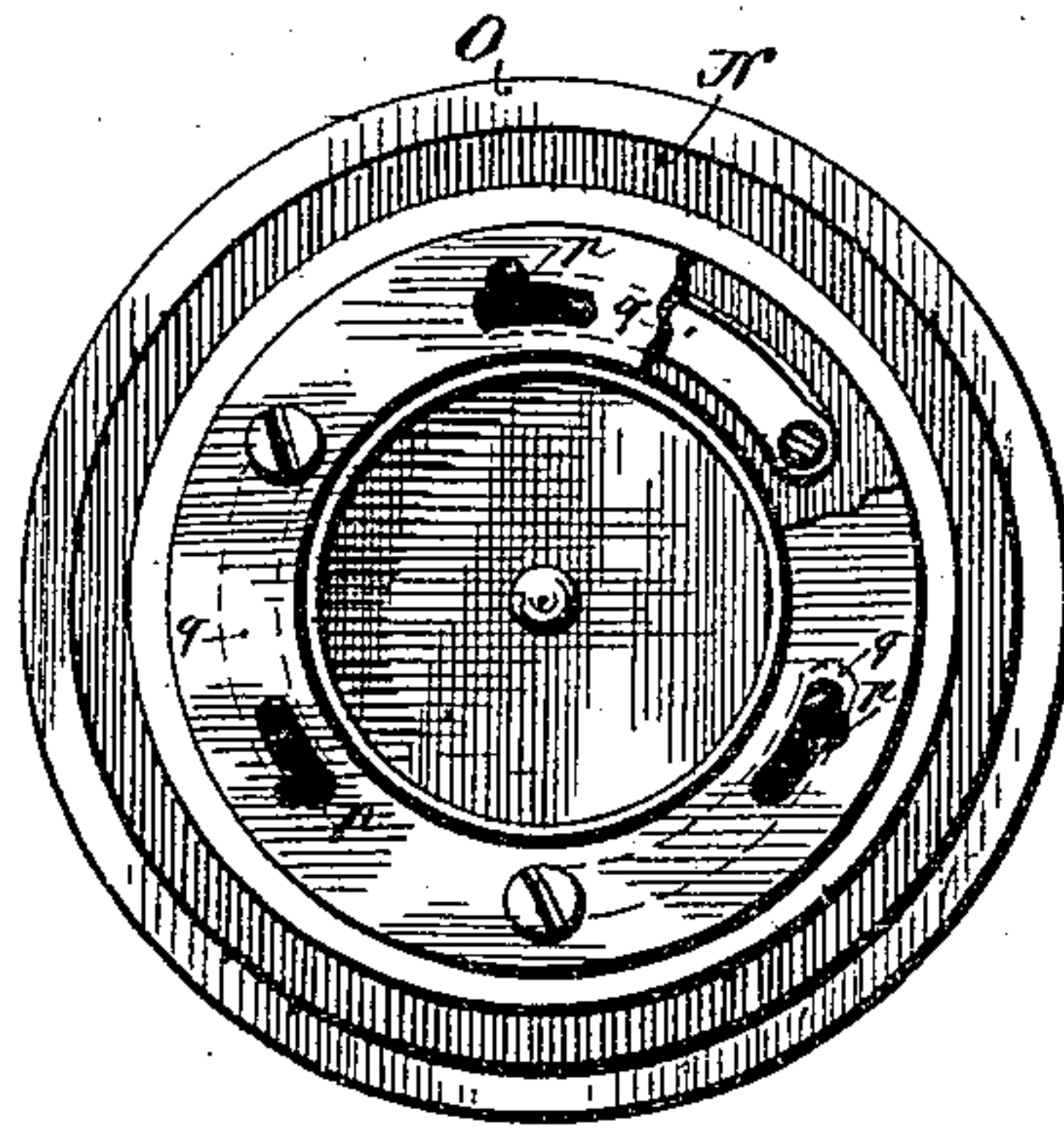


FIG. 10.

WITNESSES:

Chas. F. Schuch
Israel Thumner

INVENTOR:

Frank S. Harrington
per S. Scholfield
Attorney

UNITED STATES PATENT OFFICE.

FRANK S. HARRINGTON, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO HIMSELF, AND FRANK E. MORSE, OF NORTHBRIDGE, MASS.

CASH CARRIER AND RAILWAY.

SPECIFICATION forming part of Letters Patent No. 310,052, dated December 30, 1884.

Application filed August 16, 1884. (No model.)

To all whom it may concern:

Be it known that I, FRANK S. HARRINGTON, of Providence, in the State of Rhode Island, have invented an Improvement in
5 Cash Carriers and Railways, of which the following is a specification.

My invention relates to store-service systems in which cash or parcels are carried from one place to another by an inclined railway;
10 and it consists in the improved arrangement and means for operating the switches of the railway, in the improved construction of the cash or parcel carrier, and in the improved construction of the cash-carrier elevator and
15 the cash-carrier receiver, as hereinafter fully described.

Figure 1 is a side elevation of the cash-carrier elevator and the cash-carrier receiver. Fig. 2 is a plan view of the carriage of the
20 elevator. Fig. 3 is a broken front elevation of the same. Fig. 4 is an elevation of the receiving-carriage. Fig. 5 is a plan view of a section of the track, showing a switch. Fig. 6 is a longitudinal section taken in the line x
25 of Fig. 5. Fig. 7 is a transverse section taken in the line $x x$, Fig. 5. Fig. 8 is a section taken in the line $x x x$, Fig. 5. Fig. 9 is an axial section of the cash-carrier. Fig. 10 is an end view of the same with the cover removed, and a portion of the end parts broken
30 away to show one of the closing-springs.

In the accompanying drawings, A represents the main line of the railway, and B the side track which intersects the main line.

35 To the rail C of the main line A is pivoted the switch-rail D, and to the rail E of the side track, B, is pivoted the switch-rail F, the switch-rails D and F being connected with each other by means of the connecting-bar G,
40 which is pivoted to the under side of the rails D and F at the points d and f , thus causing the switch-rails to move together. The rail C' of the main line and the rail E' of the side track are each provided with a notch, a ,
45 adapted to receive the pointed end of the switch-rails D and F.

At the under side of the main-line track is pivoted the lever H, one end of which is curved upward above the track, and to the
50 opposite end of the lever is secured the adjustable weight I, which is made to counter-

balance the upwardly-curved arm b , and thus hold the same in an elevated position.

To the curved arm of the lever H is secured the cam J, provided with an inclined slot, c ,
55 and the connecting-bar G is provided with a projecting stud, K, adapted to enter the cam-slot c , so that an up and down movement of the arm b of the lever H will cause a corresponding lateral movement of the switch-rails
60 D and F.

My improved cash and parcel railway differs from all preceding inventions of this class in the relative arrangement and operation of the switches, which, in their normal position,
65 are open for the side tracks, and not for the main line, as heretofore, so that a carrier adapted for my improved system must be so constructed and arranged as to be capable of
70 closing the open switches to the side tracks when passing along the main line, and to avoid action upon the switch when passing from the main line to the side tracks, the normal position of the switch being such as to cause the
75 deflection of the carrier to the side. The carriers are therefore to be kept on the main line by closing the switches at the side tracks on their approach to the same.

The carrier L is formed of a hollow cylindrical shell, e , provided at one end with a tapering
80 metallic head, g , upon the outer end of which is secured the removable cap h . The cash-receiving chamber i is formed by a thin metal cylinder, j , having at the center of its closed end k an outwardly-projecting stud,
85 l , which serves to form a journal, upon which the cylinder j will turn freely within the outer shell, e .

The nut m , located at the outer end of the journal l , serves to prevent the removal of the
90 cash-containing cylinder j when the head M and cover n are removed from the shell and cylinder for the purpose of inserting or of removing the cash.

The tapering head M, also provided with a
95 removable cap, h' , is provided with an axial perforation, adapted to form a journal-bearing to the cover n of the cylinder j , and is also provided with three projecting hooks, o ,
100 which are adapted to enter the slot-openings $p p p$ in the open end of the hollow shell e , and immediately back of the openings p in the

end of the shell are placed the concealed springs q , as shown in Fig. 10.

The cover n , which is adapted to fit within the cavity of the cylinder j , is provided with the slot-openings r , which serve to allow the sides of the cover to spring outward, so as to closely fit the bore of the cylinder, and the head s of the cover n is provided with the journal t , which is loosely held in the axial bore of the head M . The loosely-held cover n is also secured to the head M by means of the nut u , over which is placed the removable cap h' .

The carrier L is also provided with the rings $N N$, which are preferably made of leather or of a non-metallic material, and adapted for running upon the surface of the track A , as shown in Fig. 9, and also with the larger rings $O O$, adapted to act as flanges, to prevent the carrier from leaving the track, and for guiding the same through the switches.

The exterior surface of the carrier, between the rings $O O$, is provided with a groove, v , adapted to receive the higher portion of the switch-lever H when the carrier has arrived at its proper point for leaving the main track.

The arrangement for receiving the cash-carriers from the lower inclined track, and for elevating and delivering them to the upper inclined track, is shown in Fig. 1, and in the detail views, 2, 3, and 4, in which $P P$ are the parallel guide-rods of the elevator, united at the upper ends by means of a tie-bar, a' , secured to the ceiling, and at their lower ends by means of the tie-bar, a'' , and upon the rods $P P$ is placed the sliding carriage Q , provided with opposite ears, $b' b'$, which are adapted to receive the rods P . A cord, c' , extends upward from the upper end of the carriage and passes over the fixed pulley d' , thence under the movable pulley d'' , and upward to the fixed eye e' , to which it is securely attached. From the movable pulley depends a cord, f' , to the lower end of which may be secured a ring, adapted to form a finger-piece for the convenient and rapid operation of the elevator.

The wire guard g' , which serves to guide the insertion of the carrier into the receiving-socket of the elevator, is attached to one side of the standards of the carriage Q , and to the fixed tie-rod h' , which is held in the ears i' , are secured the parallel socket-bars $j' j'$, which are made in hollowed form, adapted to fit the curve of the outer shell, e , of the carrier, and at the outer side of the bars $j' j'$ are attached the inclined guide-rails $K' K'$.

At the cross-bar l' of the elevator-carriage is pivoted the bell-crank lever K^2 , which is adapted to force the cash-carrier from its socket-rest in the elevator and onto the railway-track, for delivery at the desk of the cashier, a suitable stop, K^3 , being provided to cause the required movement of the lever K^2 upon the arrival of the elevator-carriage at the proper position for the discharge of the carrier.

The receiving and delivering tracks are suspended from the ceiling, and the carrier-re-

ceiving carriage S is arranged to slide upon parallel vertically-arranged rods $m' m'$, as in the elevator hereinbefore described, the carriage S being connected by means of a cord, n' , which passes from the upper end of the carriage over the fixed pulley o' to the spiral spring p' , a downwardly-extending cord, q' , serving to cause the proper downward movement of the carriage S upon the arrival thereon of a cash-carrier.

At the end of the delivering-track is arranged the gravitating gate r' , which is locked in its closed position by means of the weighted lever s' , pivoted at the under side of the track, the outer end of the lever being bent upward to form a hook adapted to engage with the lower end of the gate r' .

At one side of the receiving-carriage is secured the doubly-turned hook t' , one side of which is provided with the projecting upwardly-turned arm u' , which is adapted to engage with the weighted end of the lever s' , and thus to cause the unlocking of the gate, as shown in Fig. 1.

The money to be forwarded to the cashier is first introduced into the chamber i of the carrier and the removable head M secured to the outer case, e , the springs q operating to insure the release of the cylinder j from end-pressure, thus allowing the same to have an independent movement within the case e , so that the cylinder j may be heavily weighted at one side without interfering with the proper rapid movement of the carrier along the track. Upon first placing the hooks o of the removable head M in the slots p of the open end of the outer case the springs q will be forced back, and upon the proper locking of the hooks o in the slots p , by turning the head M in the required direction, the springs are to be allowed to impart a slight outward movement to the head M , thus releasing the heads of the cylinder j and its cover n from the end-pressure caused by the forcible insertion of the cover into the end of the cylinder when securing the attachment of the head M , and this combination of the reacting springs with the fastening-hooks of the head M constitutes an important feature of my improvement.

In forwarding the cash-carrier L to the cashier's desk from the counter of the salesman, the carrier is to be placed in the hollow socket formed by the bars $j' j'$, with the flanges $O O$ directly in range with the center line of the inclined tracks K' , the bell-crank lever K^2 being held in a backward position by the weight of the carrier, as shown in Fig. 1, in which the carrier is represented by dotted lines.

The carriage Q is elevated to the upper track, B' , by pulling down upon the pendent cord f' of the movable pulley d'' , and upon the arrival of the carriage at about the elevation desired the short arm of the lever K^2 will bring up against the fixed stop K^3 , and thereafter the continued upward movement of the carriage will cause the lever K^2 to force the carrier L from the socket $j' j'$, so that the flanges $O O$

will strike the inclined rails K' K', and cause the carrier to roll down the incline of the rails K' K' until the flange-rings N N strike the rails E² of the track B', along which and the connecting main line it will continuously roll to the cashier's desk without the employment of switches.

Upon the removal of the cash contents of the carrier-cylinder, and the refilling of the same with the required change for the customer, the carrier is to be placed upon the main track A, from which a desirable number of side tracks, B, are made to branch to various selling-counters of the store, a switch-section of the track being shown in Fig. 5, and in each of the carriers its proper point of delivery from the main line to a side track is indicated by the relative location of the groove *v* between the flanges O O of the carrier, and the corresponding location of the lever H between the rails C C' of the main line A. Thus, as the location of the groove *v* and lever H is changed laterally of the carrier and the track, the carrier may be made to pass from the main line to any designated side track of the system for delivery at the selling-counter.

Upon the arrival of the carrier at a switch, which in my improved system will be normally open to the side tracks and closed to the main line, as hereinbefore described, if the groove *v* of the carrier coincides with the vertical plane of the arm *b* of the lever H, so that the arm can enter the groove without obstruction, then the carrier will pass from the main line A to the side track, B, through the continuously-open switch; but in case the position of the groove *v* of any carrier does not coincide with the vertical plane of the arm *b* of the lever H, then the carrier will roll upon and depress the arm *b* of the lever, thus causing the switch to be opened to the main line, along which the carrier will continue its course until its arrival at a switch having an operating-lever, H, so set that the upwardly-curved arm *b* will coincide with the line of the groove *v*, at which point, with the switch unacted upon, the carrier will pass from the main line to its proper delivering side track, at the end of which is placed the gate *r'*, Fig. 1, which at the upward position of the carriage S will be unlocked, thus allowing the carrier to pass into the hollow of the hooks *t'*, as shown by the dotted lines, and upon the downward movement of the carriage S the gate *r'* will drop to the position shown by the full lines, and will then become locked by the hook of the counterbalanced lever *s'*, thus preventing a succeeding carrier from dropping from the end of the track to the floor while the carriage S is in its downward position, as shown by the dotted lines.

I am aware that it is not new to employ a bell-crank lever and stop, as described, for

forcing the carrier to the track from the elevator-carriage.

I claim as my invention—

1. In a cash or parcel railway system, the combination of the main track and the side tracks leading therefrom with a switch normally open to the side track and closed to the main line, substantially as described.

2. In a cash or parcel railway system, the combination of the main track and the side tracks leading therefrom with a switch normally open to the side track and closed to the main line, and a cash or parcel carrier provided with a circumferential groove adapted to receive a projecting portion of the switch-operating means, whereby the switch will be caused to remain open to the side track, substantially as and for the purpose set forth.

3. In combination with a cash or parcel railway system in which the switches are normally open to the side tracks and closed to the main line, a cash or parcel carrier and means for operating the switches for continuing the carrier upon the main line, substantially as described.

4. In a cash or parcel carrier, the combination of a cylindrical outer shell and a loosely-pivoted cash or parcel receiving cylinder with a locking-head for the outer shell of the carrier, and a loosely-pivoted end cover for the receiving-cylinder, substantially as described.

5. In a cylindrical cash or parcel carrier having a loosely-pivoted cash or parcel receiving cylinder, and a pivoted end cover for the same, the combination of the closing-head provided with the fastening-hooks, the slot-openings, and the reacting springs at the slot-openings, whereby after the forcible insertion of the hooks the closing-head will be thrown slightly outward to relieve the pivoted cylinder from endwise pressure, substantially as described.

6. In a cash or parcel railway system, the combination of a carrier-receiving carriage with a pivoted gravitating gate adapted to retain the incoming carriers upon the delivering side track of the railway, the gate-latch, and means for operating the same from the upward movement of the carriage to allow the carrier to pass from the end of the delivering side track to the carriage, substantially as described.

7. In a cash or parcel railway system, the combination of an elevator-carriage provided with the carrier-holding socket, the downwardly-inclined guide-bars, the carrier-forcing lever, and its fixed stop, with the end rails of a receiving-track of the railway, substantially as described.

FRANK S. HARRINGTON.

Witnesses:

SOCRATES SCHOLFIELD,
CHAS. F. SCHMELZ.