(No Model.) 2 Sheets—Sheet 1.

T. M. KENNEY.

CASH CARRIER.

No. 343,539. Patented June 8, 1886.

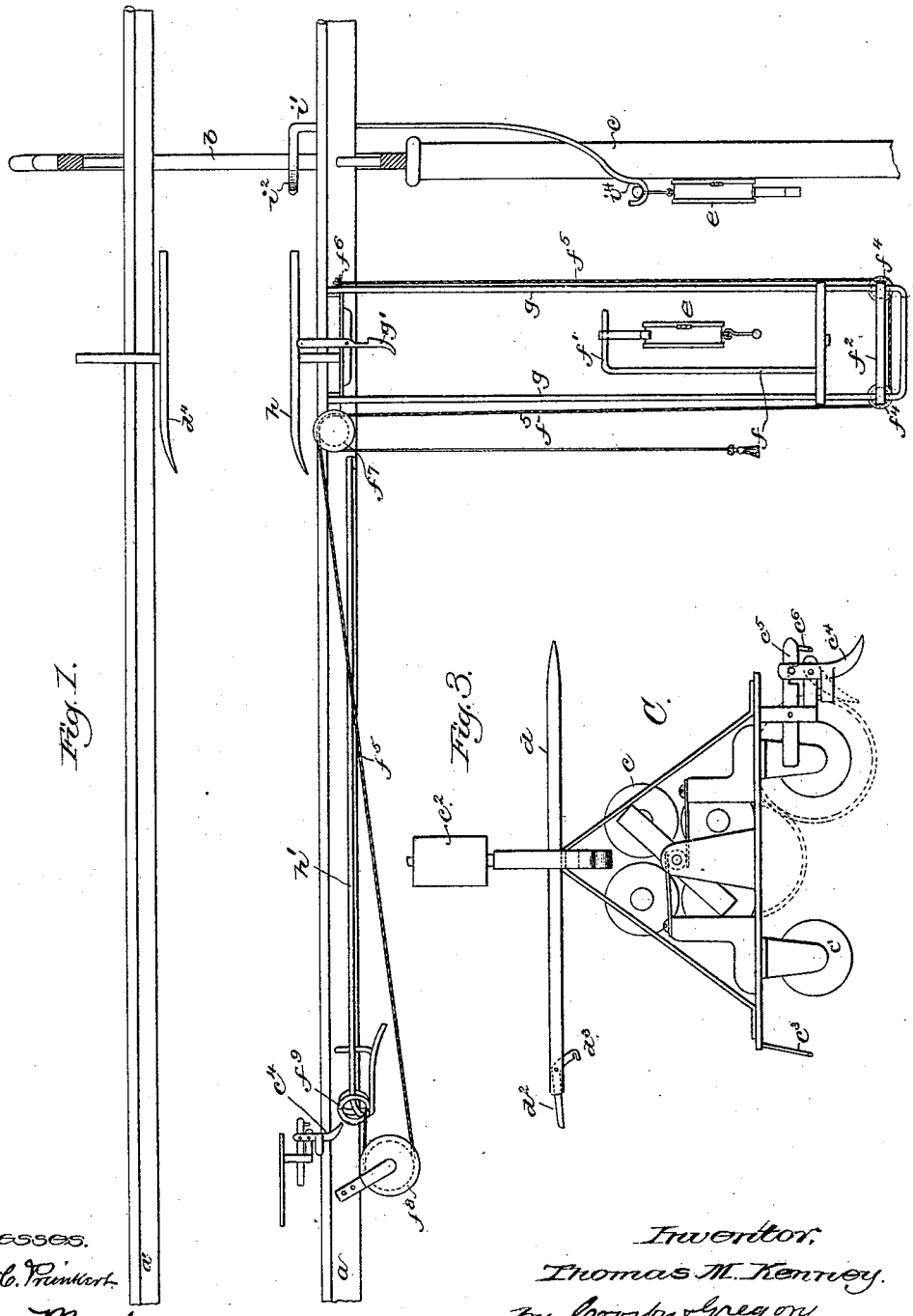

Fig. 1.

Fig. 3.

Witnesses.
John F. C. Frenkert.
Henry Marsh.

Inventor.
Thomas M. Kenney.
by Crosby & Gregory
attys.

(No Model.) 2 Sheets—Sheet 2.

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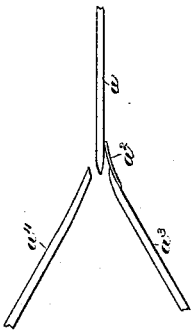
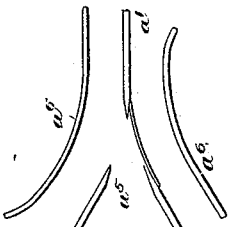


Fig. 4.



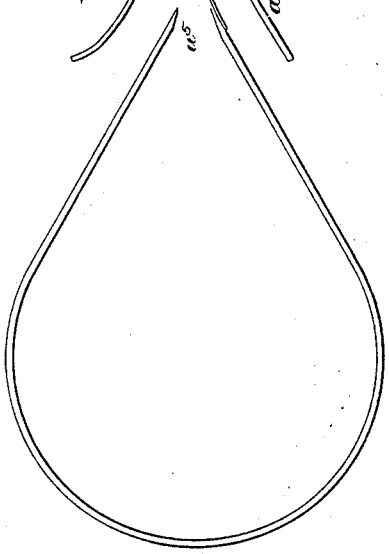


Fig. 5.

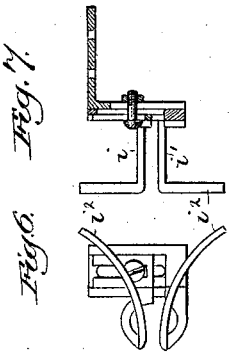


Fig. 1.

Fig. 2.

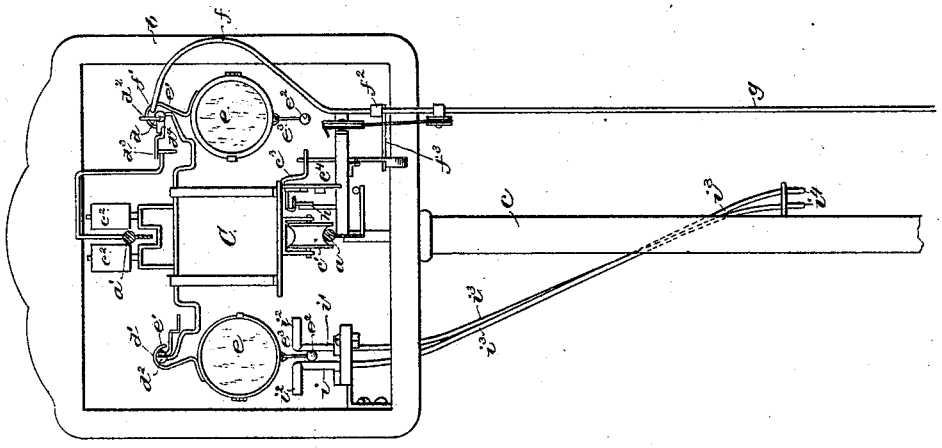


Fig. 3.

Witnesses.
John F. C. Printhert.
Henry Marsh.

Inventor.
Thomas M. Kenney,
by Crosby & Gregory attys.

UNITED STATES PATENT OFFICE.

THOMAS M. KENNEY, OF CAMBRIDGE, MASSACHUSETTS, ASSIGNOR TO THE KENNEY ELECTRICAL CASH CARRIER COMPANY.

CASH-CARRIER.

SPECIFICATION forming part of Letters Patent No. 343,539, dated June 8, 1886.

Application filed December 14, 1883. Serial No. 114,556. (No model.)

To all whom it may concern:

Be it known that I, THOMAS M. KENNEY, of Cambridge, county of Middlesex, State of Massachusetts, have invented an Improvement in Cash Systems, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention relates to a cash system or apparatus for taking money from attendants or clerks stationed at different parts of a store to the cashier's desk and returning the change from the cashier's desk to each of the clerks from whom the money was originally received.

The invention is embodied in an apparatus of that class in which a continuously-moving conveying device or car passes all or a considerable number of stations in the store on its way to and from the cashier's desk, the said conveying device or car collecting the cash-receptacles that are to be taken to the cashier's desk as it passes the different stations, and at the same time discharging the receptacles that are returning from the cashier's desk each at the proper station.

The invention consists in various details of construction and combinations of parts, whereby the receptacles or burdens to be conveyed are received and delivered at the proper points.

Figure 1 is a side elevation of a portion of the track and the apparatus at one of the clerks' stations; Fig. 2, an end elevation of the said apparatus, the track being shown in section; Fig. 3, a side elevation of the conveying device or car; Figs. 4 and 5, plan views of the upper and lower rail arranged to enable the conveying device to travel back and forth on a single line of track, and Figs. 6 and 7 plan and sectional views of the detacher by which the receptacles are removed from the conveying device.

The track upon which the conveying device travels, and which passes any desired number of stations to and from which the cash or other burdens or packages are to be carried, consists of rails *a a'*, shown in this instance as placed one above the other and supported in suitable frames, *b*, mounted on posts *c*, extending upward from the floor of the building; or, if desired, they may be hung or supported from the ceiling. The said rails are in this instance electrically insulated from one another, and form electrical conductors connected with opposite poles of a suitable battery or generator of electricity, the current from which is transmitted from the said rails to the actuating electro-magnets *c* of the carrying device or car C, which is thus caused to travel around the said track continuously. The car has flanged rollers *c'*, engaging the lower rail, and cylinders c^2, engaging the sides of upper rail, to guide the car with but little vibration or swaying. The said car C is shown in this instance as provided with two carriers, *d d'*, the former of which is used to convey the cash-receptacle *e* from the different stations to the main or cashier's station, and the latter to convey from the cashier's station to the different clerks' stations. The said carriers each consist of a long bar adapted to receive a large number of receptacles *e* upon it, and provided with a stopping device at the rear end, which is automatically operated to prevent the receptacles from sliding off at the rear end of the carrier, except at the proper times when it is desired to discharge them. The said stopping devices d^2 are pivoted on the carriers and provided with fingers d^3, engaged by an operating cam-bar, d^4, supported from the upper rail, *a'*, of the track, as best shown in Fig. 2, the said cam-bar causing the stop d^2 to be turned at right angles to the carrier and bar *d*, as shown in dotted lines, Fig. 3, while the car is passing the station, and the receptacles *e* being received on the said carrier, the said receptacles being provided with hooks *e'*, by means of which they are supported on the carriers. The receptacles *e* are transferred to the carriers *d* from a delivering device having a finger, *f'*, to receive the hook *e'* of the receptacle *e* and hold it in proper position for the carrier *d* to pass within the said hook, when the stopping device d^2 will engage the hook and push it off from the finger *i'* and permit it to drop, and remain hanging on the carrier, as will be understood by reference to Fig. 2. If the track were within reach of the attendant, the finger *f'* of the delivering device might be stationary; but as the track will usually be elevated at a considerable distance from the floor, the de-

livering devices f is provided with a carriage, f^2, traveling on vertical guides g from a position, as shown in Fig. 1, accessible to the attendant, to the proper position near the side of the track, as shown in Fig. 2, where the said delivering device is retained until the arrival of the car by a hook or a pawl, g', engaging a finger, f^3, extending from the carriage f^2. The said pawl is tripped by a projection, c^3, at the rear end of the car c, thus permitting the said carriage f^2 to descend after the car has passed and the receptacle e has been transferred to the carrier d. The stop d^2 is shown as operated by the cam-bar d^4 only while the car is passing one of the delivering devices, and if one or more receptacles e are already hanging upon the carrier the foremost one will engage the receptacle that is hanging on the finger f^2 and remove it therefrom to the carrier, the stop d^2 then preventing the receptacles already on the carrier from being pushed off. The fingers f may be long enough to hold any desired number of receptacles e. The carriage f^2 is provided with pulleys f^4, over which passes a cord, f^5, one end of which is attached at f^6 to the upper end of one of the guides g, while the said cord at the other side of the guides passes over a pulley, f^7, and may, if desired, hang down, as shown in dotted lines, in convenient position to be operated by the attendant, to raise the delivering device after a receptacle has been hung thereon. It is essential that the delivering device should be in proper position before the car C arrives, and in order to insure the proper timing or to prevent the receptacles from being raised while the car is passing, and thereby possibly striking or throwing off the receptacles already on the carrier, the said delivering device is raised automatically by the approaching car, the cord f^5 being extended along the track a, and passed over a pulley, f^8, where it is connected with an engaging device, f^9, shown as consisting of two rings intersecting one another at right angles and adapted to be engaged by a finger, c^4, pivoted at the under side of the car and held in position to engage the rings f^9 by a latch, c^5, as best shown in Fig. 3, the said latch being provided with a finger, c^6, which, after the car has drawn the cord f^5 a sufficient distance to raise the delivering device f until engaged by the hook g, is tripped by a cam-bar, h, at the side of the track, and the rings f^9 are guided by a guide, h', while the carriage drops back by gravity. Thus it is only necessary to place a receptacle on the finger f', after which the car C, in its continuous movement, first engages one of the rings f^9, raises the said receptacle until it is caught by the hook g', when the catch c^5 will be raised and the finger c^4 released and permitted to turn back, as shown in dotted lines, Fig. 3, thereby disengaging the rings f^9. The stop d^2 will at this time be raised, and it or a receptacle already hanging on the carrier d will push the hook e' off from the finger f' and cause it to drop upon the carrier d, after which the finger c will trip the hook g', permitting the delivering device f to drop to its normal position. The finger f' may be of sufficient length to receive any desired number of receptacles e, all of which will be thus transferred to the carrier d as the car passes. The same operation will be repeated as the car passes each station, and it will thus from time to time pick up all the receptacles, and in passing the cashier's desk the said receptacles will all be removed over the rear end of the carrier by any suitable hopper or guide placed in their path, there being no cam-bar d^4 at this point to raise the stop d^2. A number of receptacles will thus be left at the cashier's station at each passage of the car, and their contents may be examined and the proper change made while the car is making its next passage around the building, after which the receptacles e are conveyed to their respective stations and discharged, each at the proper station, in the following manner, they being returned by the carrier d' at the opposite side of the car from the one, d, by which they were taken to the cashier's desk.

The construction of the carrier d' and manner of transferring the receptacles e thereto at the cashier's station are the same as already described in connection with the carrier d, the receptacles being all hung on a rod or guide near the track and corresponding to the finger f' of the delivery device, and the stop d^2 being raised by a cam in passing the said rod.

The carriers are each provided with a distinguishing detaching device, shown as a small ball, e^2, hanging from its under side, the said balls being of different sizes for the carriers of the different stations, those corresponding to the stations first passed by the car on its way from the cashier's station being largest and those of each succeeding station being smaller than those of the station next preceding.

The receptacles are hung by the cashier on the delivering device in order of the stations, so that those having the largest ball, or belonging to the nearest station, would be placed at the rearmost end of the carrier. Each station is provided with a detacher, (best shown in Figs. 2, 6, and 7,) consisting of a pair of posts, $i\ i'$, made adjustable toward and from one another, and set sufficiently near together to prevent the balls of the receptacles belonging to the corresponding stations from passing through, but permitting the smaller balls of the receptacles belonging to succeeding stations to pass through. The uprights i' are provided with flaring projections i^2, which will engage the stems e', by which the balls e^2 are suspended, and guide the said balls to the space between the uprights $i\ i'$. Thus when the car passes a given station the balls of all receptacles belonging to that station, if any happen to be on the carrier, will be engaged by the said posts, which will retain the receptacle while the car passes on, removing the

carrier from beneath it. The receptacle thus detached will drop by its own weight, and suitable guides, i^3, are provided for engaging the stem e^3 between the ball and the receptacle, and thus guiding the latter down until it finally comes to rest with the ball in the hook-shaped ends i^4 of the said guide, from which it may be easily removed by the attendant. The track a a' may follow any desired direction through the building, the car always passing over it in one direction; or, if desired, a single line of track may be employed, over which the car will pass back and forth in both directions, in which case a loop will be formed at the end of the track, as shown in Figs. 4 and 5, the said loop being provided with an automatic switch, (shown as a spring, a^2,) which will engage the flange of the rollers c', causing them to always pass onto the side a^3 of the loop, the said spring, however, opening to permit the flanges to pass on their return from the side a^4 of the loop. The upper rail, a, is provided with a similar spring-switch, a^5, for the rollers c^2, engaging the sides of the said rail a', and guides a^6 are placed at either side of the said switch, to assist in guiding the said rollers. Where a continuous track is employed, and the cars only pass in one direction, it is obvious that two or more cars may be employed when the track is so long that the interval between two successive passages of a single car would be too great; but except for very long tracks the car may be run with such speed that the interval will be no greater than required for making the proper transfer in the contents of the receptacles.

It will be seen that all the apparatus at the different stations is supported from the rails a a', and various modifications may be made in the details of construction of the apparatus without departing from the invention.

I claim—

1. The conveying device and carrier thereon provided with a stopping device, combined with actuating mechanism for said stopping device, whereby it is maintained in position to engage receptacles when being applied to the carrier, but permits the receptacles to be discharged at the proper time, substantially as described.

2. The conveying device or car and delivering device having an up-and-down movement, combined with a device for retaining the said delivering device in its upper position, and a releasing device operated by the said car in passing, substantially as described.

3. The conveying device or car, combined with a delivering device having an up-and-down movement, and operating mechanism therefor actuated by the said car, whereby the said delivering device and receptacle thereon are automatically raised as the car approaches, substantially as described.

4. The conveying device or car and receptacles carried thereby provided with distinguishing detaching devices, combined with detachers at different stations, each co-operating with the receptacles belonging to the corresponding station, and guides for directing the said receptacles when detached, substantially as described.

5. The continuously-moving car provided with a receiving and discharging carrier, the former picking up receptacles as it passes each station, and the latter delivering at each station the receptacles belonging thereto, substantially as described.

6. The track and car moving thereon, combined with the guide and carriage movable thereon upward and downward toward and from the track, the cord to actuate the said carriage, and devices whereby the said cord is connected with and disconnected from the said car at the proper times in its movement past the station, substantially as described.

7. The receptacles e, provided with balls, combined with the adjustable uprights i i', for engaging the said balls and detaching the receptacles from the carrier, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOMAS M. KENNEY.

Witnesses:
JOS. P. LIVERMORE,
B. J. NOYES.