

(No Model.)

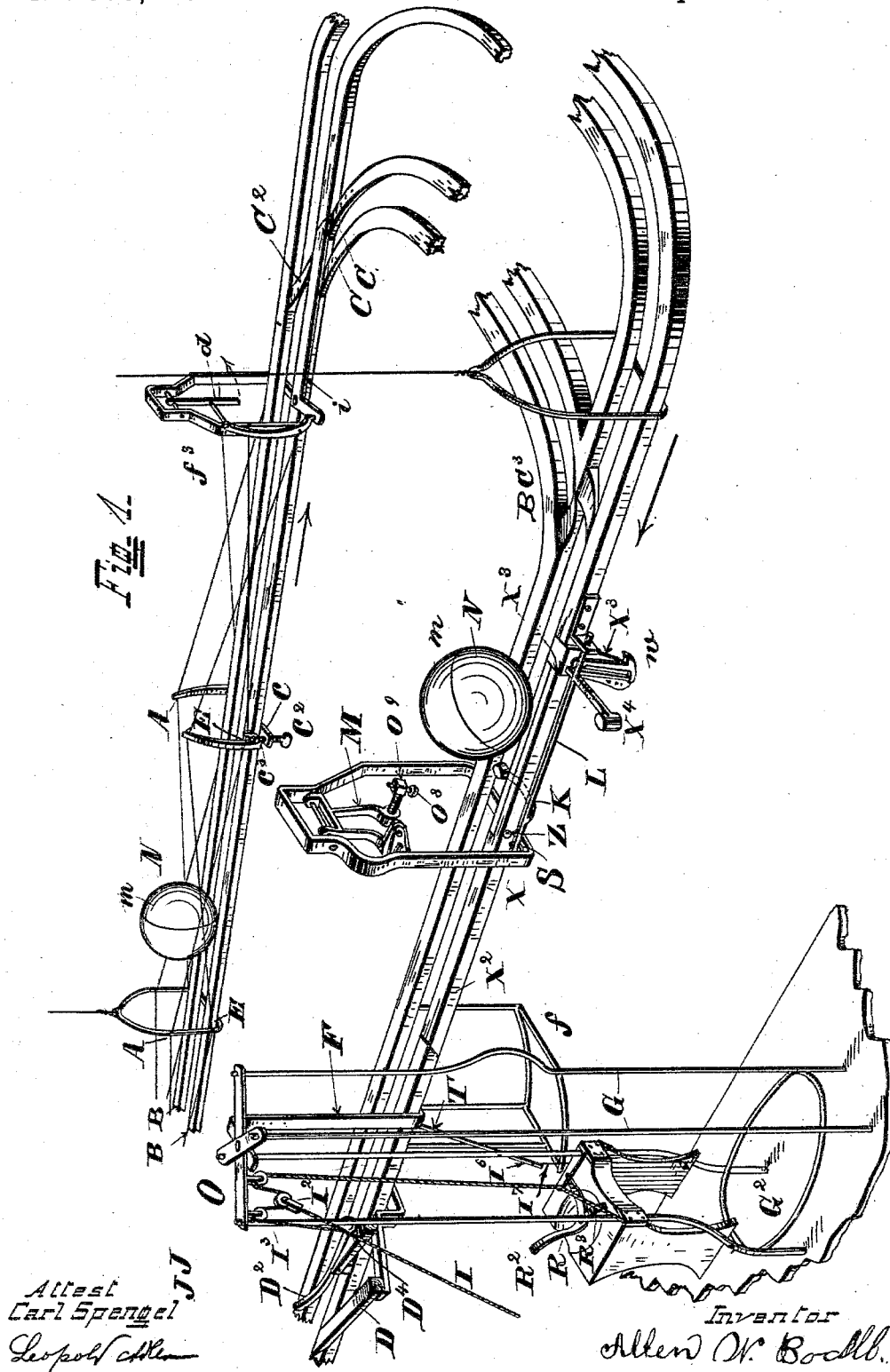
2 Sheets—Sheet 1.

A. W. BODELL.

AUTOMATIC CASH CARRIER.

No. 305,886.

Patented Sept. 30, 1884.



(No Model.)

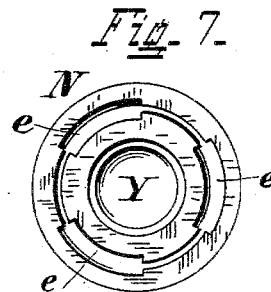
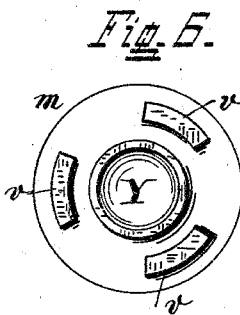
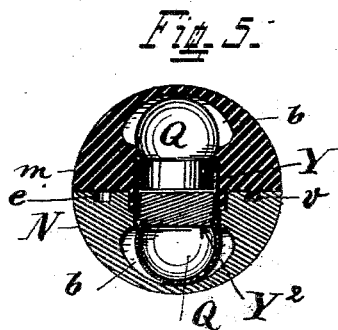
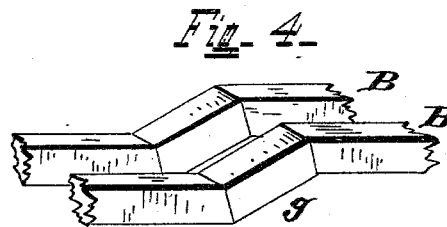
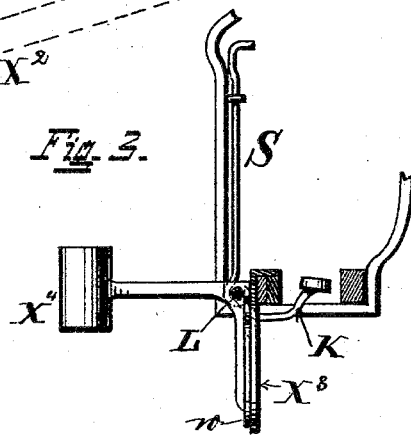
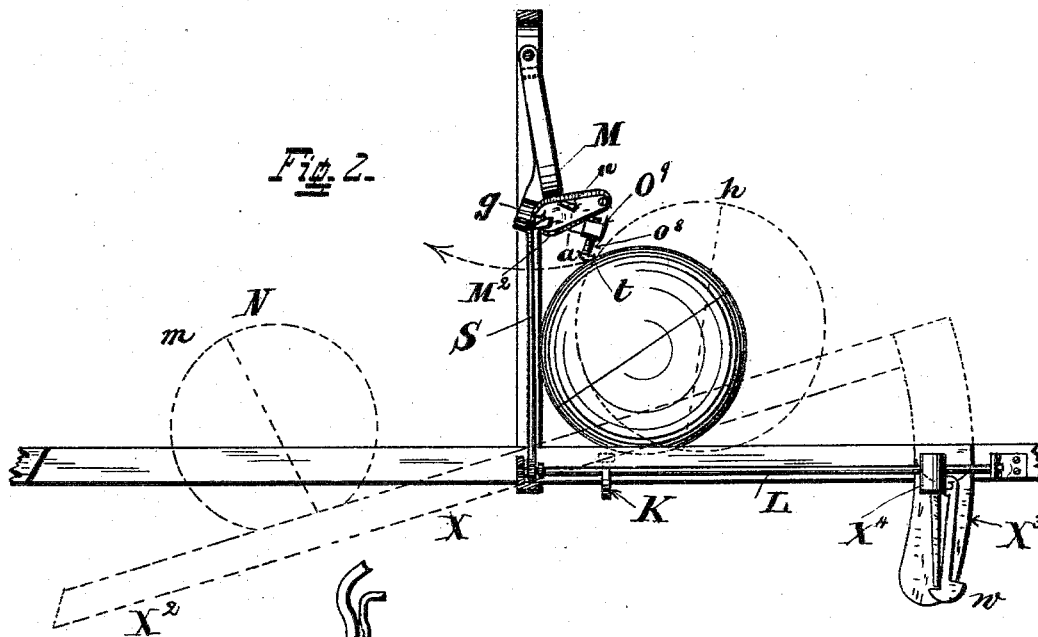
2 Sheets—Sheet 2.

A. W. BODELL.

AUTOMATIC CASH CARRIER.

No. 305,886.

Patented Sept. 30, 1884.



Attest
Carl Spengel
Georg Adlen

Inventor
Allen W. Bodell.

UNITED STATES PATENT OFFICE.

ALLEN W. BODELL, OF CINCINNATI, OHIO.

AUTOMATIC CASH-CARRIER.

SPECIFICATION forming part of Letters Patent No. 305,886, dated September 30, 1884.

Application filed March 17, 1884. (No model.)

To all whom it may concern:

Be it known that I, ALLEN W. BODELL, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Automatic Cash-Carriers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters marked thereon.

Figure 1 is a perspective view, partly cut away. Fig. 2 is a side view of the tilting section and the swinging trigger M. Fig. 3 is an end view of the same. Fig. 4 is a modification of the way B B. Fig. 5 is a cross-section of the carrier *m* N. Fig. 6 is a view of the plane of the hemisphere N. Fig. 7 is a view of the plane of the hemisphere *m*.

My invention relates to one circular incline way connecting the cashier's desk with stations of salesmen, and stations of salesmen with cashier's desk, and rolling carriers to move thereon in one way by the force of gravity; in means for the suspending-wires to straighten said way; in means for branching off and sending carriers to and from cashier nearer than by the way B B; in means for giving carriers force while operating the tilting-triggers, and travel otherwise than by a gradual incline; in means by which the carriers may be delivered from the elevator with some force and be conducted upon the way B B; in means by which the larger carriers may be sent over the tilting sections, and through the triggers intended for smaller carriers, without being discharged into the receiver; in means for deadening the noise of said way; in means by which the carriers may be opened and closed and kept from opening while going over said way; and in means for preventing the cash from rattling and working between the ball of the walls of said spheres.

J J is the location of the cashier's desk.

B B is a circular incline way, on which carriers travel in one way and carry cash to and from cashier in place of the two opposite inclined ways, and connects the cashier's desk with salesmen's stations and salesmen's stations with cashier's desk. Said way rests in stirrups, being secured to the ceiling by means of

light wires. Wires crossing each other and passing through holes from A to E and from E to A through posts secured to the side of the way B, and forming what might be called a "truss." Frequently at E a lug, *c*, secured to the way B, a screw, *c*², goes through a hole into a lug, *c*², which hooks over the wire at E by turning the screw for raising or lowering, as may be required, for straightening the way B, and by which means the wires are tightened. The way B B will be elevated out of reach of salesmen, and the carriers which are to travel thereon are raised by an elevator, not upon an upper way one above the other, as in my former Patent No. 278,767, granted to me by the United States, but upon the same way on which it returns when sent from cashier, and in front of the tilting section, which is used for the returning of the carrier into the receiver.

Where a station is required, I fasten a post, F, to the side of the way B, from which I run four vertical rods, G G, secured far enough apart to admit the receiver part G² of the elevator. Two of the rods are run through holes in the floor of the elevator, so as to conduct the elevator to the switch D, when a carrier is to be sent over the way B to cashier. Said receiver and operator are separated by a floor. The upper part is used as the elevator, while the lower part is used as the receiver for all incoming carriers when returned by the cashier. Receiver is not secured to the elevator, as in my former patent, above stated, but remains at the end of the shaft formed by the rods G G, while the elevator is raised by means of a salesman drawing on a cord, I, secured to a sheave, I², running over another cord, I³, while the ends are run in opposite directions over pulleys, the one end being secured to the elevator, while the other is secured to the cord I some distance below the sheave I². The salesman, drawing the cord I down, operates also the cord I³, secured to the cord I, and brings the elevator to ascend along the vertical rods G G until the end R² of the lifting-lever R, pivoted to the lower side of the floor of said elevator, engages with the side switch, D. This brings the end of the lever R³ up and forward and forces the carrier onto the side switch, D. After the elevator descends

of its own weight the lifting-lever R^3 drops back in position again. The elevator does not deliver the carrier direct upon the way B, but upon the side switch, D, which is secured to the side of the way B, and in front of the delivering-section, as seen in Fig. 1. A tilting rod, D^2 , is pivoted to the side of switch D nearest the way B. As the carrier passes over the way D it rolls upon the rod D^2 . The weight of the carrier bringing it down, the end D^3 being long enough so as to reach upon the opposite rail, B, conducts the carriers with ease onto the way B with no click whatever. A counterbalance-weight secured to the end of the rod D^4 brings it out of the way for all rolling carriers which may pass on way B. After the carrier has been delivered upon the way B it proceeds along until it reaches the cashier's desk, which is located at the end of the way B B. The cashier then takes cash from it and returns it with change, if any, by placing it upon the elevated end B, as seen in Fig. 1. The carrier then descends down the incline and passes over all the tilting sections and opens none but the one from which it was sent. The tilting section X, being a section of one of the rails B, pivoted at Z to the way B at Z, and wherever inserted at salesmen's stations, serves in tilting as the carrier rolls onto the end X^2 , and turns the carrier to the side of way B, or drops upon the wire platform $f f$, to prevent the tilting section from dropping down and discharging the carrier into the receiver. A curved end of the rod L engages itself with a latch, W, pivotally hung upon a stop, X^3 , of the tilting section X. A trigger, K, is secured to the rod L, and when acted upon by the rolling carrier disengages the curved end of the rod L and the latch W, pivoted to the stop X^3 of the tilting section X, which allows the weight of the carrier to force it down. After the carrier drops off of the tilting sections a counterbalance-weight at X^4 brings it back and locks it in position again. Parallel rod L rests in the opening of the vertical rod S, while the other end rests upon the swinging lift q , secured to the side of the swinging trigger M, as seen in Fig. 2.

The object of the vertical rod S is to operate the trigger K at the same time the carrier operates the trigger M. A carrier proceeds along the way B, comes in contact with the swinging trigger M, and forces this in the direction as represented in dotted lines, Fig. 2. This forces the hooked end of the vertical rod S over the end of the swinging lift q ; or, in other words, it forces the swinging lift q through in under the hooked end of the vertical rod S. Said swinging lift q has its end resting upon a lug, M^2 , of the swinging trigger M. As the trigger M is shoving the swinging lift q through in under the hooked end of the rod S, it begins to ascend at the same time it brings the rod L and the trigger K upward. The trigger K is stopped in its course by coming up against the lower side of the carrier m

N. The rod S, still ascending, causes the curved end of the rod L to disengage with the latch W, pivoted to the side X^3 of the tilting section X, and allows said section to tilt and discharge the carrier, as above stated. After the carrier has passed from in under the trigger M it swings back, the rebound being sufficient to admit of the swinging lift q to drop behind the hook of the vertical rod S, which again locks it in position. The same operation can be performed from the side of the carrier m N. In that the carriers may follow one after the other in going over one way to and from cashier, it is evident the largest carriers must pass over the tilting sections and through the triggers intended for smaller carriers without being discharged into the receiver at salesmen's stations.

To prevent the tilting sections from dropping and discharging the carrier, the trigger K must be operated before it comes in contact with the carrier m N, an opening, a , is made in the swinging lift q , through which the hooked end of the vertical rod S drops or is forced back by the ear n on the swinging lift q before the carrier comes in contact with the trigger K.

To operate the trigger K before it comes in contact with the carrier, a piece, O^9 , is turned in a thread cut at right angles to the swinging trigger M. Another screw, O^8 , is turned in a thread cut at right angles to the piece O^9 . O^8 is set down so as to come in contact with the carrier m N near its horizontal center, or t , as seen in Fig. 2.

Whenever a carrier is to operate the trigger K, a carrier of smaller size will be used for that station, or the screw will be set up near the piece O^9 . This will allow it to come in contact with the carrier nearer its vertical center, or at h , as seen in Fig. 2. This will allow the carrier to come in contact with the trigger K, which will disengage the tilting section and discharge the carrier into the receiver. The carrier does not drop direct from the tilting section into the receiver, but upon a platform, as described in the patent above stated; also the gate T, which is somewhat different from the one spoken of in the patent stated, will also drop across the face of the platform $f f$, which prevents the carrier from dropping upon the floor or counter, while the elevator and receiver (provided the receiver should be secured to the elevator or delivering a carrier upon the way B) in place of raising the gate by means of the cord, as described in my former patent, the light wire rod secured to the gate of the end I^6 , while the other end is bent around one of the rods G, the elevator returning of its own weight, after delivering a carrier, and the weight of it resting upon the wire at the end of I^7 , as seen in Fig. 1 at O, brings the gate out of position, and the carrier then passes through the opening which is formed by bending one or more of the rods G near the platform $f f$. It is then conducted to the receiver by the rods G, which

form a shaft for the conducting of the carrier from the platform *ff* to the receiver. When the carrier passes into the receiver, it drops upon a slanting wire bottom secured to the ends of the rod *G G*, or, if preferred, secured to the elevator, as in my former patent, in which it remains until again used by salesman.

C C represent a way branching off from the way *B B*, and joins it again farther down the incline at *C B*, as seen in the perspective, or Fig. 1. The object of such a way is to give all salesmen located between the cashier's desk and wherever the way *C C* branches off from the way *B B* a chance to send cash to cashier nearer than to send around the way *B B*, and all salesmen located between the cashier's desk and where the way *C C* joins again the way *B B* at *C B* a chance to have change returned sooner than if sent *via B B*, and at the same time serves salesmen that cannot be reached by the way *B B*. When a carrier is to switch off from the way *B B* onto the way *C C*, it comes in contact with a trigger swung from a post, *f*², which is fastened to the side of the way *B B*, as seen in the perspective view. The curved end of trigger *d* works in an opening in a rod, *r*, pivoted to a post, *f*², while the other end works in an opening of the switch-hinge *i*. When the carrier proceeds along the way and if of sufficient size it will strike the trigger *d* and force it in direction indicated in dotted lines, as seen in perspective view. The curved end of the trigger *d*, working in the opening of the pivoted rod *f*, causes it to swing and bring the ends in the position as represented in dotted lines. Said rod working in the switch-hinge *i*, which is secured to the way *B*, brings it onto the way *C*. The carrier being unsupported on that side starts in that direction, while the rail *B* and the extension of the way *C* on the other side forces the carriers on the way *C*. After the carrier enters the way *C C* the trigger *d*, of its own weight, drops onto center of gravity, which brings the switch-rod back onto the way *B*, and serves as a part of the rail *B* for all carriers that are to go thereon. The carrier, after passing onto the way *C C*, will again enter the way *B* at *B C*³, and then on to cashier, as represented in Fig. 1. Cashier takes cash from it and returns it with change, if any, by placing it upon the elevated end *B*. If the incline of the way *C C* should be too great and give the carrier too much force to be delivered direct upon the way *B*, a shaft may be erected upon the way *B* and the way *C* deliver the carrier through the shaft upon a platform and then upon the way *B*. In giving carriers force to travel over the way otherwise than by a gradual incline, an offset, *g*, is placed near the trigger *M*, which gives the carrier sufficient force before reaching the *M K* triggers to carry it through said triggers, and over the way from station to station until it reaches its destination.

The carrier consists of two hollow hemispheres, *m N*. The hemisphere *m* has opening *eee* leading from the plane which separates

the two hemispheres into an internal annular triangular groove or dovetail groove, and the hemisphere *N* on its plane being provided with lugs *v v v* at such points from the center as to enter the openings *eee* on the hemisphere *m*, while bringing the spheres to juncture. When the planes of the hemispheres meet the lugs *v v v* will have entered the openings *eee*, and by turning one upon the other the lugs *v v v* on hemisphere *N* will enter the triangular groove on hemisphere *m* which locks one upon the other. In practice, however, a countersunk screw may be used in place of the lugs *v v v* by inserting the screw part into the hemisphere *N* and inserting the head part into the hemisphere *m* in place of the lugs *v v v*.

The carrier, when in constant use, becomes worn in the interlocking part, and frequently opens while going over the way to and from cashier by sinking the screw into the hemisphere *N*, it takes up the wear between the head of the screw and the wall of the triangular groove in hemisphere *m*. Each hemisphere is provided with a cup, *Q*, preferably made of rubber, a dug-out, *b*, in each hemisphere to admit of the cup *Q* flattening back when the spheres are brought to a juncture. To keep the cash from rattling and working between the rubber cup and the walls of said hemisphere, and also from being pressed against the walls of said hemisphere by the cup as the spheres are unlocked and separated, the plate *Y*, having a dovetail button, *Y*², is secured to the cup by inserting the button *Y*² into the mouth of the cup *Q*. Said plate stands parallel to the plane of said hemisphere, which keeps the cash from rattling and working between the cup and the wall of said hemispheres while going over the way to and from the cashier, the rubber cup resting against the wall of said hemisphere and rubber washers placed between the rails of the way *B B* and the stirrups on which said way rests for the deadening of the noise made by the carrier in transit.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a cash-carrier for stores, the one circular incline way *B B* and the rolling cash-carrier *m N* to travel on one way, as and for the purpose specified.

2. The circular inclined way *B B*, and applied from cashier's desk to salesmen's stations, and from salesmen's stations to cashier's desk, in combination with the way *C C* and the hollow rolling carrier *m N*, and adapted to receive and carry cash on said way, as and for the purpose specified.

3. The truss-wires *A E* and the lugs and screw *c c*² *c*³, as and for the purpose specified.

4. The elevator-box being provided with a floor having a lifting-lever, *R*, and a cord, *I*, and a sheave, *I*², and a cord, *I*³, operating as and for the purpose specified.

5. The way *B B*, having a side switch, *D*, and the rod *D*², as and for the purpose specified.

6. In combination with the one way B B and the branch way C C, and the rods G G, for the operating of said elevator and conducting of said carrier, and the operating of the gate T.
5 the light wire rod I', as and for the purpose specified.
7. The swinging trigger M, the swinging lip g, the vertical rod S, the rod L, the trigger K, the tilting section X, the latch W, and the
10 counterbalance-weight, as and for the purpose specified.
8. The way B B and C C, the trigger d, the rod r, and the switch-hinge i, as and for the purpose specified.
- 15 9. The swinging trigger M, the screw O^s, to

operate upon the carrier m N at its horizontal or vertical center, so as to operate the trigger K, as and for the purpose specified.

10. The carrier m N, provided with the internal annular triangular groove, the openings 20 e e e, and the lugs or screw v v v, the dug-out b, the rubber cup Q, plate Y, and dovetail button Y², as and for the purpose specified.

11. An offset, g, placed near the trigger M to give carriers force, as and for the purpose 25 specified.

ALLEN W. BODELL.

Witnesses:

L. S. COTTON,
JACOB NINE.