

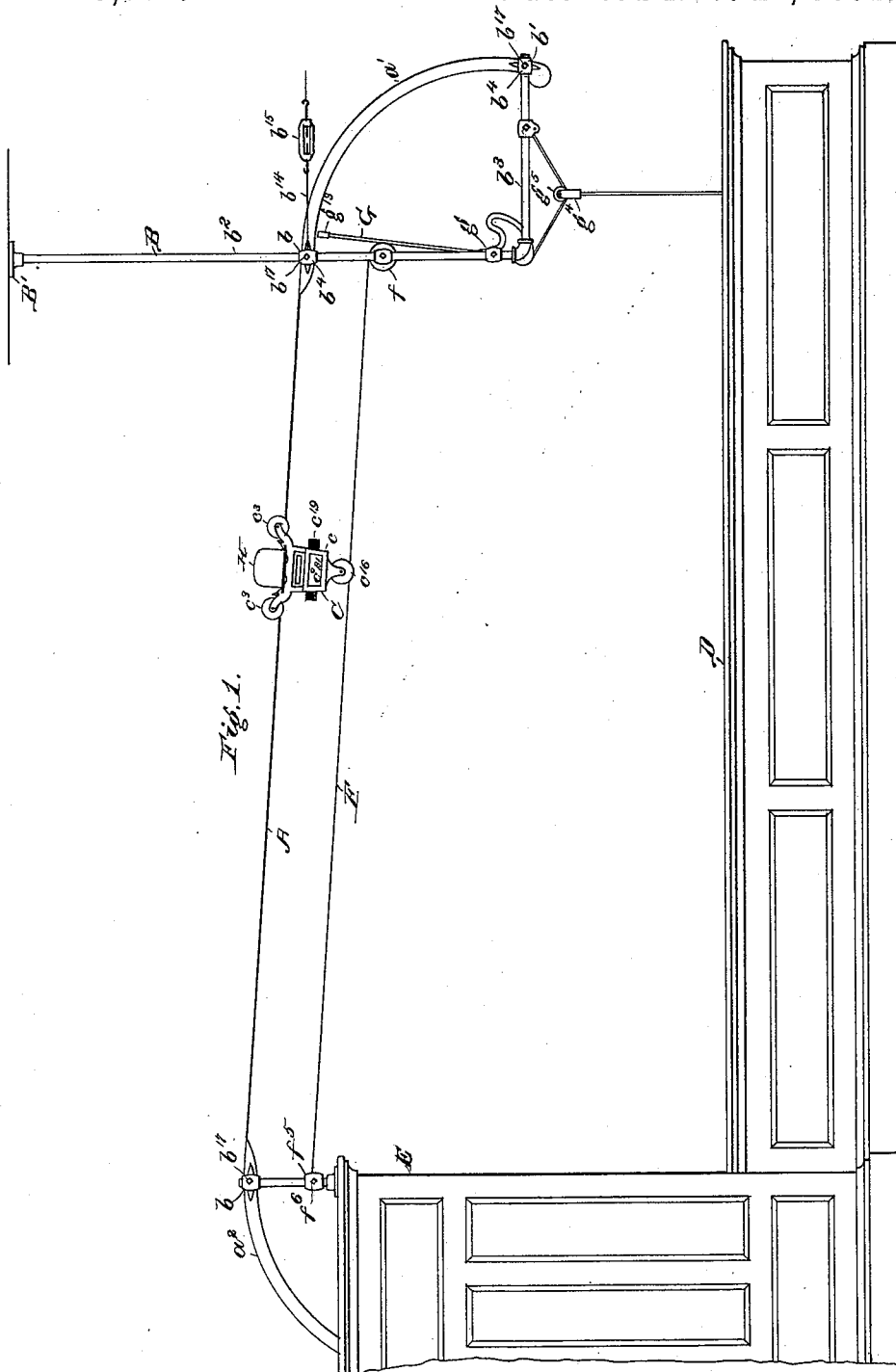
(No Model.)

2 Sheets—Sheet 1.

H. L. LOVEJOY.
CASH CARRYING APPARATUS.

No. 463,684.

Patented Nov. 24, 1891.



Witnesses—

Heikley Hyde.

Myrtie C. Brall.

INVENTOR—

Henry L. Lovejoy,
By Albert M. Moore,
His Attorney.

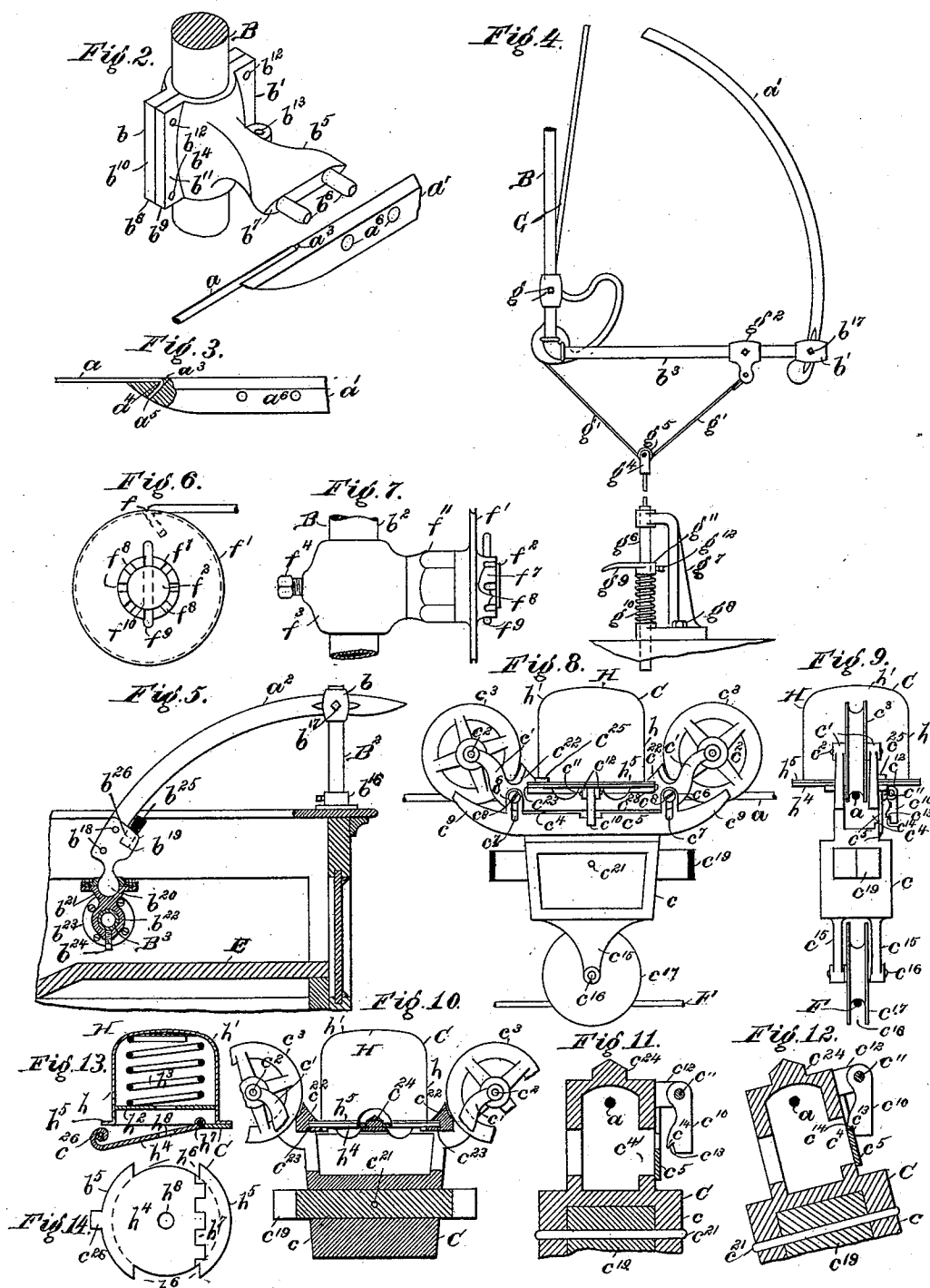
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UNITED STATES PATENT OFFICE.

HENRY L. LOVEJOY, OF LOWELL, MASSACHUSETTS, ASSIGNOR TO JOSEPH S. LUDLAM, OF SAME PLACE.

CASH-CARRYING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 463,684, dated November 24, 1891.

Application filed December 26, 1889. Serial No. 334,931. (No model.)

To all whom it may concern:

Be it known that I, HENRY L. LOVEJOY, a subject of Victoria, Queen of the United Kingdom of Great Britain and Ireland, residing at Lowell, in the county of Middlesex and Commonwealth of Massachusetts, have invented a certain new and useful Improvement in Cash and Parcel Carrying Apparatus, of which the following is a specification.

My invention relates to cash and parcel carrying apparatus; and it consists in means, hereinafter described and claimed, for preventing the lateral swaying of the carrier, for preventing the carrier from being accidentally detached from the way, for preventing the noise and shock of the carrier in stopping and starting, for securing the cash-receptacle to the carrier concentrically therewith, for tightening the guide-wire, for securing the wire of the way to the end sections of the way, and in the devices and combinations hereinafter described and claimed.

In the accompanying drawings, on two sheets, Figure 1 is a front elevation of my improved apparatus arranged above the counter and cashier's desk in a store; Fig. 2, an isometric view of a part of the hanger, one of the brackets which connects the hanger and the end section of the way, a part of the end section, and a part of the wire of the way; Fig. 3, a front elevation of a portion of the arc or end section of the way and an adjacent part of the wire of the way, said end section being partly in section to show the means of attaching the wire to the end section; Fig. 4, a front elevation of a part of the hanger and arc, the propelling-lever, the treadle, and means of connecting said treadle and said lever; Fig. 5, an inside elevation of a portion of one side of the cashier's desk, showing the means of securing an end section to said desk, a part of the front and table of said desk and of the attaching means being in vertical section; Fig. 6, a rear elevation of the guide-wire tightener; Fig. 7, a side elevation of the same and of its supporting-bracket and a part of the hanger adjacent to said bracket; Fig. 8, a side elevation of the carrier and its latch and of a portion of the track-wire and guide-wire; Fig. 9, an end view of what is shown in Fig. 8; Fig. 10, a central vertical

longitudinal section of the body of the carrier, omitting the guide wheel, and showing in elevation the supporting-wheels and the cash-receptacle, a portion of said receptacle being broken out to show the guide-pin; Figs. 11 and 12, vertical transverse sections of Fig. 10, the carrier being represented as in an upright position in Fig. 11 and inclined or tipped in Fig. 12, the figures showing the latch-retainer in two positions; Fig. 13, a central vertical section of the cash-receptacle on the line 13 13 in Fig. 14; Fig. 14, a plan of the cash-receptacle.

The way A consists of a stretched wire a , connected at one or both ends to a rigid metallic arc or curved bar $a' a^2$, substantially as shown in Letters Patent No. 382,889, granted to me May 15, 1888, except that the wire, instead of being laid in grooves in the curved outer surface of said arc throughout the length of the arc, is laid in a short groove a^3 in the upper end of the arc and the extreme end of the wire a is bent into a hook a^4 , as shown in Fig. 3, and inserted in a hole a^5 , which is preferably inclined downward toward the upper end of the arc. It has been found that a wire so bent and hooked into the arc or end section can be stretched sufficiently without drawing out of said arc. The arc a' is supported by brackets $b b'$, (see Fig. 2,) secured to the hanger B, said hanger being a bent rod or pipe secured to a plate B' attached to the ceiling in the usual manner, and said arc being attached near its upper end by the bracket b to the vertical part b^2 of said hanger and near its lower end by the bracket b' to the outer end of the horizontal arm b^3 of said hanger. The brackets $b b'$ are substantially alike, each consisting of a sleeve b^4 , surrounding and fitting said hanger B and provided with a laterally-extending arm b^5 , the outer end of which is divided and reduced to form one or more studs b^6 (two being shown in Fig. 2) and a shoulder b^7 , against which the side of the arc $a' a^2$ rests, the studs b^6 being driven through holes a^6 in said arc and headed. Using a plurality of studs on the same bracket at each end of the arc prevents the arc from turning on the studs, and the broad bearings of the shoulders b^7 prevents a lateral movement of the arc. The sleeve b^4 may be divided

into halves b^8 b^9 by a plane in the axis of said sleeve and at an angle with the axis of the arm b^5 , each half being provided with flanges b^{10} b^{11} to enable said halves to be secured to each other by screws b^{12} , as shown in Fig. 2, so that the brackets may be attached to the hanger or removed therefrom when the latter is in position. The bracket may also be provided with an eye b^{13} to receive one end of a guy b^{14} , provided with a turn-buckle or wire-stretcher b^{15} , the other end of said guide being secured to the wall in the usual manner, as shown in Fig. 1. In Fig. 1 the straight main portion a of the way is represented as inclined downward from the cashier's desk E to the salesman's station at the end of the counter D; but said portion a may be horizontal and connected at each end to sections precisely alike and like the curved end section a' , above described, except that these sections would necessarily be right-handed and left-handed. The end section a^2 at the cashier's desk E is represented in Figs. 1 and 5 as a downward curve from the wire a , and is supported at its upper end by a bracket b , above described, said bracket in this instance embracing a vertical post B^2 , which is held upright by a vertically-hollow stand b^{16} , secured on the top of the front of said desk, a set-screw turning in said stand and thrusting against said post B^2 to prevent said post being accidentally raised out of said stand. All the brackets above named are held in their proper position by set-screws b^{17} , turning in their sleeves and thrusting against the parts which support them. The lower end of the arc a^2 is secured, as by rivets b^{18} , to a piece b^{19} , carrying a ball b^{20} , which turns in a socket b^{21} of the usual construction, except that at its lower part it is provided with a sleeve b^{22} to receive a horizontal rod or pipe B^3 , supported in brackets b^{23} , secured on the sides of the desk E, the ball-and-socket joints being arranged at convenient intervals and secured by set-screws b^{24} , turning in said sleeve and thrusting against said pipe B^3 , and the stands b^{16} and posts B^2 being subsequently adjusted laterally to bring the arc a' of each way into the same vertical plane with the wire a of the way. The propelling-lever G is pivoted at g on the hanger B, substantially as shown in said Letters Patent, and may be operated by substantially the means therein shown and described; but I have herein shown a means of operating said lever by foot-power. (See Fig. 4.) A cord g' is attached at one end to said lever below the fulcrum g thereof and at the other end to an eye-bracket g^2 , secured to the horizontal part b^3 of said hanger, and on this cord rests a grooved pulley g^3 , journaled in the block g^4 , which is connected to a vertical rod g^5 , sliding in a floor-bracket g^7 , secured by bolts g^8 to the floor of the store or apartment where the apparatus is used. A treadle g^9 is secured to the rod g^5 above the spiral spring g^{10} , the latter being arranged around said rod and compressed between said treadle and the bottom

part of said floor-bracket g^7 , said treadle being adjustable on said rod by means of a sleeve g^{11} , with which said treadle is provided and which surrounds said rod, and a set-screw g^{12} , turning in said sleeve g^{11} radially and thrusting against said rod g^5 , to enable the tension of said spring to be varied. By placing the foot on the treadle g^9 , the rod g^5 and pulley are depressed, drawing down the cord and drawing the end of the shorter arm of the lever G toward the lower end of the adjacent arc a' and causing the long arm of said lever to sweep along under said arc a' .

The carrier C, Figs. 8 to 12, consists of a comparatively heavy body c , provided at each end with a pair of arms c' , and between each pair on a horizontal arbor c^2 turns a grooved supporting-wheel c^3 , which rests upon the way in the usual manner. One side of the carrier C is provided with a slot c^4 , which reaches from end to end of said carrier and nearly to the opposite side of said carrier and upward to a line above the lower parts of the wheels c^3 , said slot having a sufficient opening vertically to admit the arm of any of the brackets b b' and to allow the carrier to pass all said brackets without striking the same, said brackets being all on the same side of the track. A gravity-latch c^5 is arranged normally to cover the open side of the slot c^4 , as shown in Figs. 8, 9, 11, and 12, said latch being preferably a piece of sheet metal provided with ears c^6 , having vertical slots c^7 , through which cap-screws c^8 are driven horizontally into the carrier-body c , said slots c^7 being long enough to allow the latch c^5 to be raised sufficiently to admit the wire into the slot c^4 . The latch is upwardly curved or inclined at each end at c^9 and rises high enough to allow it to strike and be raised by the arms of the brackets b b' . To prevent the latch being accidentally raised by the swinging of the carrier laterally in such a manner as to bring the slot c^4 on the upper side of the carrier, I use a gravity-catch c^{10} , pivoted at its upper end at c^{11} in ears c^{12} , projecting from said carrier above said slot c^4 and swinging freely, but held in a vertical position normally by its own weight and normally out of contact with the latch when the carrier is in its proper upright position. (Shown in Fig. 11.) The inner side of the catch c^{10} near its lower end, is provided with a notch c^{13} , the upper side of which c^{14} , when the carrier swings into the position shown in Fig. 12 in such a manner as to raise the slotted side of the carrier by the gravity of said catch, swings over the top of said latch and prevents the rising of the same, and thereby prevents the carrier from accidentally getting off from the way. When the carrier swings in the other direction, so as to bring its slotted side downward, there is no danger of the latch rising and no harm would be done by its rising. The opening of the slot c^4 is too small to allow the carrier to be removed laterally from either arc by accident or design.

To prevent the swaying of the carrier I provide said carrier with a pair of downwardly-extending arms c^{15} , secured to the body of the carrier below the same, and between these arms on a horizontal transverse arbor c^{16} turns a guide-wheel c^{17} , the periphery of which is deeply grooved at c^{18} to receive a guide-wire F, (see Figs. 1 and 9,) said guide-wire being extended below the wire portion a of the way and parallel therewith in such a manner as to bottom in said groove c^{18} and to hold said carrier in a longitudinally-vertical position. The end of the guide-wire F at the desk end may be secured in any convenient manner, but preferably to a sleeve or collar f^5 , surrounding and adjustable on the post B^2 , said sleeve being held on said post by a set-screw f^6 , which turns in said sleeve f^5 and thrusts against said post B^2 to enable said end of said guide-wire to be raised and lowered. The other end of said guide-wire is hooked at f , as shown in Fig. 6, and inserted in a hole in the periphery of the tension-wheel f' just as the ends of the wire a are secured to the end sections, said wheel being a wheel having a grooved narrow face not much wider than the guide-wire (it may be slightly narrower) to allow the guide-wheel c^{17} to pass over it readily. The tension-wheel f' turns upon a stud f^2 , supported on and preferably formed in one piece with a sleeve f^3 , which surrounds the vertical part b^2 of the hanger B, and is adjustably held thereon by a set-screw f^4 , which turns radially in said sleeve and thrusts against said part b^2 to enable the height of said tension-wheel and of the adjacent portion of the guide-wire to be adjusted to the groove c^{18} of the guide-wheel. The tension-wheel f' is provided with a hub f^7 , having radial notches f^8 , and after the tension-wheel is turned sufficiently to strain the guide-wire said tension-wheel is prevented from turning back and allowing the guide-wire to slacken by a pin f^9 inserted in a notch f^8 and in a hole f^{10} , (shown by dotted lines in Fig. 6,) which hole passes diametrically through said stud f^2 . The tension-wheel may be returned to strain the guide-wire by a wrench applied to the hub of said wheel, which is square or many-sided, at f^{11} .

To lessen the noise and shock caused by the carrier striking the propelling-lever and in stopping at the cashier's desk, I use a buffer c^{19} , inserted in a recess or slot, extending through the body c of the carrier C from end to end, said buffer reaching beyond the carrier-body at each end thereof, and being provided at each end with a V-shaped notch to receive the upper end of the propelling-lever G at one end of the line and to cause the carrier to be guided in the vertical plane through which said lever moves, said upper end of said lever being also preferably provided with a buffer g^{13} or sleeve of rubber surrounding the upper end of said lever, and at the other end of the line to receive a buffer or stop b^{25} , secured in a hole (indicated by dotted lines

in Fig. 5) b^{26} in the piece b^{19} and projecting from said piece. The buffer c^{19} is retained in its place by a pin c^{21} , which passes transversely through the body c of said carrier, and through said buffer about midway between the ends of said buffer.

The cash-receptacle H (see Figs. 8 to 10, 13, and 14) consists of an inverted cup h , cylindrical in horizontal cross-section and provided with a closed rounded upper end h' , a follower h^2 , the same being a disk or washer of sheet metal arranged concentrically with said cup within the same, a spring h^3 , represented as a spiral spring, secured at one end to said washer and at the other end to the inside of the closed end of said cup, to press said washer toward the open end of said cup and hold any money placed therein between said washer or follower and the cover h^4 , if cover it may be called, and to prevent said money rattling about in said cash-receptacle. The open end of the cup proper is provided with a laterally-extending flange h^5 , having two breaks or openings h^6 on opposite sides from each other of said cup, the cover h^4 and the ledge h^7 to which it is hinged at h^7 , being in plan of the same outline as the plan of the bottom of said cup, and said ledge being secured to the bottom of said cup by solder or otherwise. The top of the body c of the carrier is provided with two upward projections c^{22} at a sufficient distance apart to admit the cylindrical portion of the cash-receptacle H, and these projections are provided with curved grooves c^{23} in their adjacent faces, to receive and fit the flanges h^5 of the cash-receptacle. The top of the body c of the carrier is provided with a centering-pin c^{24} , adapted to enter and fit loosely a central round hole h^8 in the center of the cover h^4 . The cup h being held with its open end up and money or other things being placed in the open end of the cup h upon the follower h^2 , the cover is closed, the cup inverted and placed upon the body of the carrier with the hole h^8 in the cover over the pin c^{24} , and the flange h^5 extending laterally over the body c of the carrier the cash-receptacle is turned on the pin c^{24} as a center until said flanges are in the grooves. The cash-receptacle is prevented from turning far enough to let the flanges pass through and out of the grooves c^{23} by a stop which may also hold the cover in a closed position when the cash-receptacle is removed from the body of the carrier. Any radial projection or thickening of a portion of the flange of the cup or cover which makes such portion too thick to enter the groove c^{23} will serve as such a stop. In Figs. 8 and 9 the stop c^{25} is a thickening of one of the flanges of the cup formed by turning up the end of said flange or by soldering thereon a thin piece of metal, as sheet metal. In Figs. 13 and 14 the stop is a clip c^{26} or projection of the flange of the cover, rolled or bent up, as shown, to spring in over the flange of the cup when the cover is closed, and preventing the accidental open-

ing of the cover, said clip, when the cash-receptacle is closed, striking over one of the projections c^{22} and preventing the further turning of said receptacle.

5 I claim as my invention—

1. The combination of the line or way, the carrier-frame having a lateral slot to receive said way, a gravity-latch arranged on said carrier-frame above said slot and normally
10 covering the lateral opening of said slot, and a gravity-catch pivoted on said carrier-frame and arranged to swing over said latch when said carrier-frame sways in such a manner as
15 to elevate the slotted side thereof and to prevent the raising of said latch, as and for the purpose specified.

2. The combination of the way, the guide-wire having a hooked end, the grooved tension-wheel arranged between the ends of the
20 traveled portion of said way and having a face of about the width of said wire, and a hole to receive the hooked end of said wire, and having a hub provided with notches, a
25 stud on which said wheel turns, provided with a hole, and a pin inserted in one of said notches and in the hole in said stud to prevent said wheel being turned by the tension of said wire and to allow a grooved wheel
30 running on said wire to pass said tension-wheel, as and for the purpose specified.

3. The combination of the way, the guide-wire having a hooked end, the grooved tension-wheel arranged between the ends of the
35 traveled portion of said way and having a hole in its face to receive the hooked end of said wire, and the face of said tension-wheel being narrow enough to allow a grooved wheel running on said wire to run past said tension-wheel and having a hub provided with
40 notches, a stud on which said wheel turns provided with a hole, and a pin inserted in one of said notches and in the hole in said stud, a part of said hub being many-sided to be engaged by a wrench, as and for the purpose
45 specified.

4. The combination of the hanger, the arc supported thereby, the lever pivoted on said hanger, a cord connecting said lever below the fulcrum thereof to said hanger, a pulley-
50 block arranged on said cord between its ends, a treadle, and a rod connecting said treadle and said pulley-block, whereby the depression of said treadle will operate said lever, as and for the purpose specified.

5. The combination of the carrier body provided on the top thereof with upward projections having grooves and with a centering-pin, and the cash-receptacle provided with
60 flanges adapted to enter said grooves and with a hole adapted to receive and fit said centering-pin, as and for the purpose specified.

6. The combination of the wireway, a vertical post capable of turning about its axis, the arc supported at its upper end upon said
65 vertical post, a horizontal rod, and a piece sliding on said rod and connected to said arc by a ball-and-socket joint, as and for the purpose specified.

7. The combination of the wireway, a vertical post capable of turning about its axis, the arc supported at its upper end upon said
70 vertical post, a horizontal rod, and a piece sliding on said rod and connected to said arc by a ball-and-socket joint, a bracket surrounding the lower portion of said post, and set-
75 screws turning in said sliding piece and said bracket and thrusting against said horizontal rod and said post, respectively, as and for the purpose specified.

8. The combination of the way having an
80 arc-shaped end section, a hanger supporting said arc, a lever pivoted on said hanger and adapted to propel a carrier along said arc, a cord secured at one end to said lever and at the other end to said hanger, a pulley-block
85 resting on said cord between its ends, a rod secured to said block, and a treadle secured to said rod, whereby depressing said treadle will operate said lever, as and for the purpose specified.

9. The combination of the way having an arc-shaped end section, a hanger supporting
90 said arc, a lever pivoted on said hanger and adapted to propel a carrier along said arc, a cord secured at one end to said lever and at the other end to said hanger, a pulley-block resting on said cord between its ends, a rod
95 secured to said block, a treadle secured to said rod, and a spring to restore said treadle to position, as and for the purpose specified.

10. The combination of the way having an arc-shaped end section, a hanger supporting
100 said arc, a lever pivoted on said hanger and adapted to propel a carrier along said arc, a cord secured at one end to said lever and at the other end to said hanger, a pulley-block resting on said cord between its ends, a rod
105 secured to said block, a treadle secured to said rod, a floor-bracket in which said rod slides, and a spring compressed between said treadle and said floor-bracket, as and for the purpose specified.

In witness whereof I have signed this specification, in the presence of two attesting
110 witnesses, this 9th day of December, A. D. 1889.

HENRY L. LOVEJOY.

Witnesses:

ALBERT M. MOORE,
MYRTIE C. BEALS.