

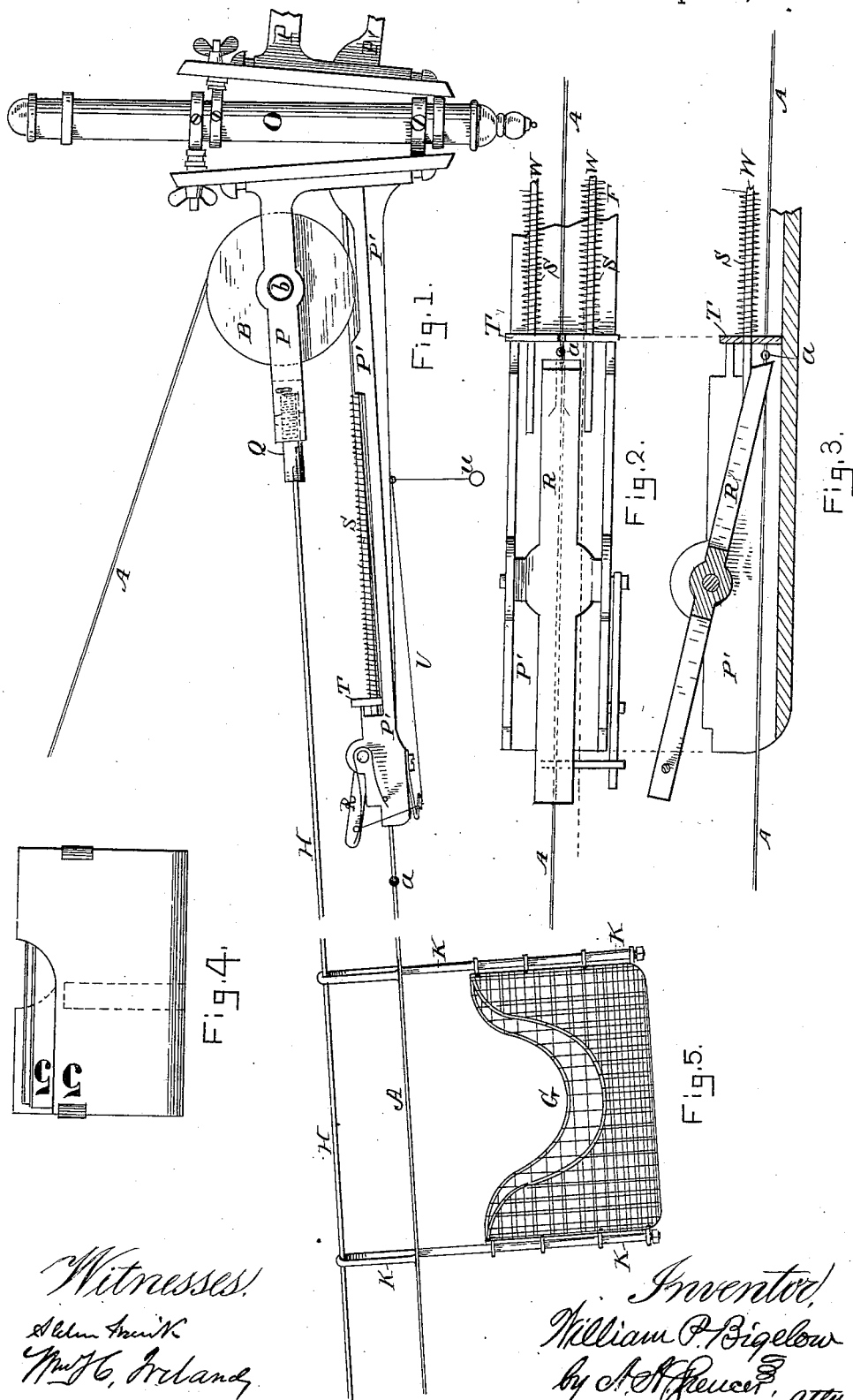
(No Model.)

2 Sheets—Sheet 1.

W. P. BIGELOW.
CASH AND PARCEL CARRIER.

No. 304,491.

Patented Sept. 2, 1884.



Witnesses:
John Smith
John G. Ireland

Invented
William P. Bigelow
by A. H. French, atty

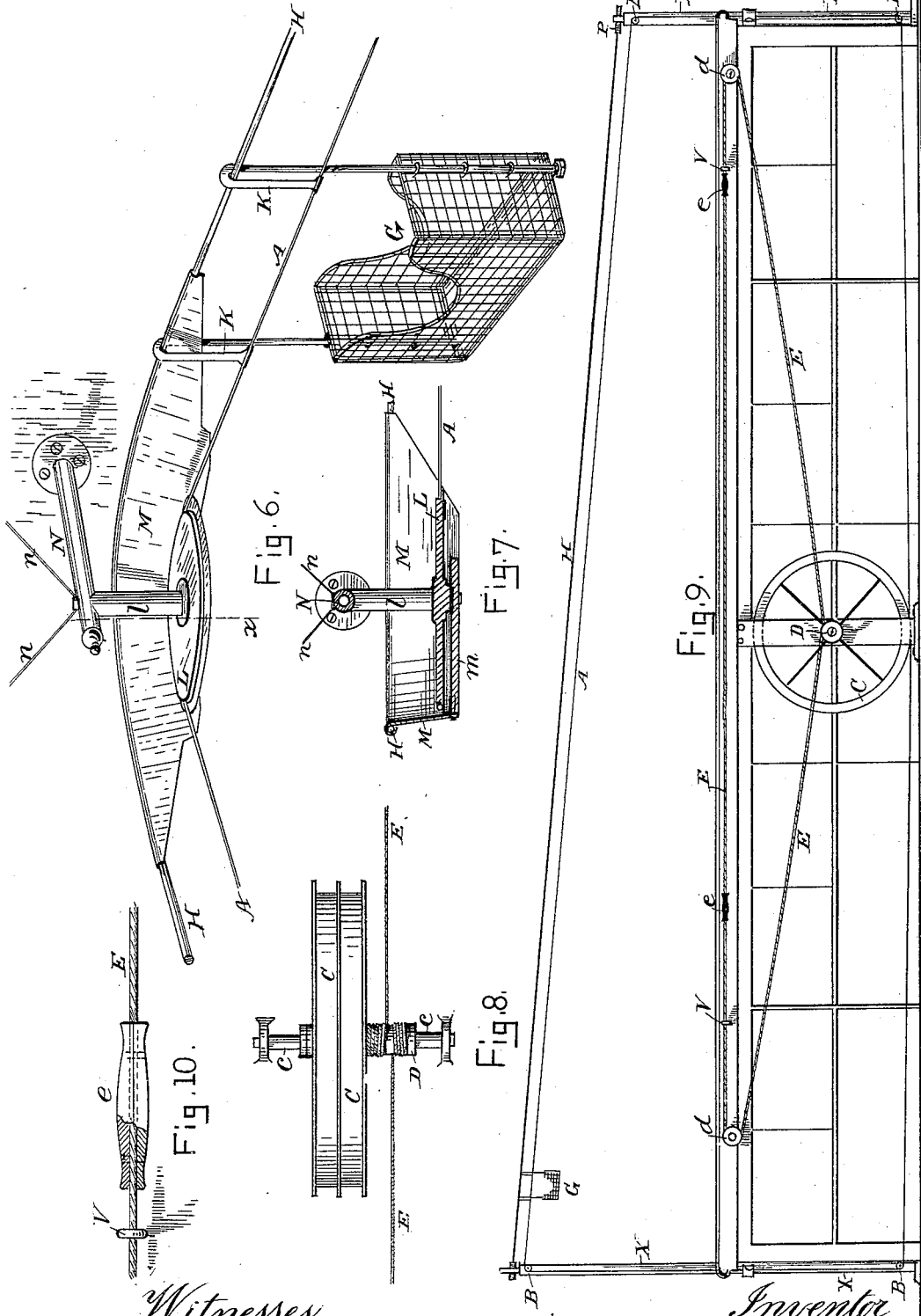
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Inventor
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UNITED STATES PATENT OFFICE.

WILLIAM P. BIGELOW, OF NATICK, MASSACHUSETTS.

CASH AND PARCEL CARRIER.

SPECIFICATION forming part of Letters Patent No. 304,491, dated September 2, 1884.

Application filed June 23, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM P. BIGELOW, a citizen of the United States, residing at Natick, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Cash and Parcel Carriers; and I do hereby declare that the same are fully described in the following specification and illustrated in the accompanying drawings.

This invention is in the nature of an improvement upon that embraced in my Letters Patent No. 299,332, dated May 27, 1884, for cash and parcel carriers.

In my former invention the cash basket or parcel was carried forward and back on an endless traveling belt supported on rotating wheels, and driven at rapid speed by a hand-rope and multiplying-wheels. In my improved apparatus I do not use an endless belt, though I still employ many of the features shown in my former patent. I have supplemented them by the improvements hereinafter described and claimed.

My invention consists in an improved non-endless reciprocating driving or traveling belt.

Another important feature of my present improvement is the combination of a single supporting-way with a non-endless reciprocating driving or traveling belt. The single supporting-way is arranged in the line of movement of the driving-belt to support the basket and keep the belt from undue sagging without excessive tension upon it.

The other features of novelty consist in an improved carrier, catch, and brake-spring to govern the carrier, in certain supporting and connecting devices, and in means of changing the direction of movement. I find it of material advantage to run the carrying-belt obliquely up to the cashier's station, so that the return is effected in part by gravity, and no device for lowering the basket from the wire is required, since it runs down within easy reach of the salesman along an extended counter.

In the drawings, Figure 1 is a side elevation of the bracket and suitable supports for the belt and wire. Fig. 2 is a plan showing the brake-springs and catch-lever. Fig. 3 is a vertical longitudinal section of the same.

Fig. 4 represents the salesman's book and its case. Fig. 5 is the open-work basket in position for use. Fig. 6 is a perspective view of the devices employed for changing the direction of movement, and Fig. 7 a vertical section of the same. Fig. 8 shows the driving-wheel and drum. Fig. 9 represents an arrangement of the driving apparatus below the counter. Fig. 10 shows the adjustable handle for the hand-rope.

A is a non-endless reciprocating driving or traveling belt, preferably of fine flexible braided wire, mounted on grooved pulleys B.

C is the driving-wheel, having the multiplying-drum D and a non-endless reciprocating hand-rope, E, or equivalent devices for driving the belt at accelerated speed. This hand-rope passes around the small grooved wheels *d*.

F is a brake-spring, so arranged as to be compressed or put to tension when the basket G is forwarded to the central station, and by its reaction to aid in returning the basket to the starting-point. This return movement is facilitated by having the belt run obliquely downward from the cashier's station, the deflection being, for the best results, from ten to twenty degrees from the horizon.

H is the supporting wire or way for the belt and basket on the journey from the salesman's station to the cashier's desk and return. I preferably make this way of a single bright wire of suitable size, about No. 16, stretched taut in the line of movement of the belt A, and substantially supported at each end on brackets I or otherwise. I could, however, make it of any suitable material.

K K represent hooks, links, or other swiveled connections, extending by preference from each end of the basket G upwardly over the supporting-way H, to slide thereon and down on the other side to engage with the belt A, so as to receive motion from it. I prefer not to include the carrier in the non-endless belt. The swivel and double-connection cause a very steady movement without chatter or excessive swaying of the basket. Where the course is of moderate length and unobstructed in a straight line, no intermediate supports are required. Where a change of di-

recession becomes necessary or desirable, I arrange the parts as shown in Figs. 6 and 7. The traveling belt A passes around a deeply-grooved pulley, L, mounted on a suitable bearing, *l*, so that the belt may continue moving, but at any desired angle to its former direction. The supporting-way H is correspondingly deflected, and is soldered to the upper side of a curved guide, M, shaped to adjust itself to an arc of the wheel L, and the hooks K K extend over and slide upon the upper side of this curved piece, so that at the turn and elsewhere the belt and its supporting-way may run parallel and the way be drawn taut at each side of its intermediate support.

The grooved wheel L and guide M may be held in position by braces N, of gas-pipe, extending from the wall or ceiling, or by brackets secured to a post or column. Stay-wires *n* may be furnished, if desired. The lower flange of the wheel L is extended radially far enough to keep the belt A from displacement when slack. The hooks K may, at their upper ends, turn outwardly to engage with the belt A, or may be soldered thereto when the belt is of braided or other wire; the connection must be such as will easily pass the groove-wheel L. The curved guide M is pointed at its ends to more readily enter between the parts of the hooks K. I prefer to make this guide of a strip of steel erected at the edge of a metallic segment, *m*, formed in one with or secured to the bearing on which the wheel L turns.

The basket G is by preference of woven wire or other light open-work material, so as to pass through the air rapidly without resistance. The sides are made low and the swivel-hooks placed at opposite corners, for convenience in removing the book and case 55, in which the salesman's check and the cash are placed for transmission. The suspended basket brings the book and contents within reach of the cashier, and returns the book to the salesman, bringing it low enough to be removed without drawing the basket down from the belt. This saves two movements of the salesman every time he sends and receives money, and thus economizes time and labor.

The several lines to the different counters will radiate from the cashier's station, and may have a common support from a rigid standard or arm, C, with a swinging bracket, P, for each line, as shown in Fig. 1. This bracket furnishes a bearing, *b*, for the pulley B, which carries the belt A, and also provides a point of attachment and substantial tightening means for the supporting-wire H in exact line with the belt.

The preferred tightening device is, as shown, a bolt, Q, screwed into the end of the bracket P, and having an axial perforation to receive the wire H, the end of which is bent aside; or a collar or washer is provided for the point of the bolt to press against without twisting the wire. Equivalent means may be provided at the head end of the bolt without the wire passing through it. The belt-carrying pulley B at

the outer end of the line is similarly mounted, and the supporting-wire similarly tightened. The bracket P has also an arm, P', which carries a brake-spring, S, to stop the basket without shock, and a spring-catch, R, to hold it until the cashier has examined the book and made the change. The bracket and the arm are by preference duplicated—that is, made double—to receive between their two parts the wheel B, and the belt A, spring S, and catch R. Two springs give the best results, each having a wire, W, through it axially to hold it in working position. The belt A runs between the two springs S, and has fixed upon it a small button or enlargement, *a*, which strikes against the face of a yielding plate, T, at the outer end of the brake-springs. This plate is slotted or perforated to admit the belt, and slides on the wires W as far as the springs S yield, permitting the button *a* to be engaged and detained by the spring-catch R. This catch is preferably a lever pivoted about centrally, and provided with a spring, *r*, about as shown in Figs. 1 and 2. Its free end is furnished with a cord, U, passing through eyes and terminating in a ball, *u*, which the cashier pulls on to release the catch. The reaction of the brake-spring then starts the basket on its return trip, the inclination of the line tends to keep it moving by gravity, and the salesman can readily and quickly move it to his station.

I design to use the brake-springs S as stops for the return movement, also, by applying another plate, T, to the other end of the springs S, and providing another button, *a*, on the belt, at a point where it will strike the duplicate plate and check the movement at the proper time, or when the basket has reached the outer terminus. I have also applied the stop to the hand-rope E, as indicated in Figs. 9 and 10. This rope passes through screw-eyes V, with which the handles *e* come in contact, to check the movement at the proper time. The handles are in halves, compressed upon the rope by the screws which unite them, and are readily adjusted to the desired positions.

In the drawings of my former patent I represented the carrying-belt with its supporting and driving wheels above the counter, and the bearing for the hand-rope pulley as mounted upon the counter. By my present improvements, where the location permits, I prefer to place the driving-wheel C out of sight, under the counter or in the basement, and run the belt A thence around the small grooved wheels B, and up vertically through hollow standards X, if preferred, at each end to other wheels B, at the height desired for the movements of the basket, and just beneath the supporting-wire H, as indicated in Fig. 9. This figure also shows the hand-rope E, placed horizontally just below the level of the counter, supported on grooved wheels *d*, and wound, at its ends, in opposite directions around the axle D of the driving-wheel, to multiply the speed. This leaves the entire top of the counter free for

the display of the goods, conceals the driving mechanism, and constitutes the most unobtrusive of cash-carriers, enabling the salesman, by a horizontal pull behind the counter, to send the cash to the desk and return the change quickly and noiselessly, while facing and serving another customer. The capacity of the whole apparatus may be doubled by employing another belt and duplicate supports, the driving-belts passing in opposite directions around the driving-wheel, so that while one basket moves toward the desk, the other one, on the parallel belt, is returning. One hand-rope actuates both belts.

In my improved apparatus I do not use an endless driving-belt. My improved driving or traveling belt is so arranged that beyond the portion that runs from the desk to the salesman's station I prolong each end sufficiently to provide for a reciprocating movement, and to pass several times around the wheel C in opposite directions. The slack of the belt can thus be taken up from either end without readjustment of the bearings or the employment of any additional devices. This is a most important feature of my improved system.

It is necessary that the handles or stoppers on the hand-rope be so placed with reference to the stops or screw-eyes that when the handle comes in contact with the stop and the movement is checked, the carrier will have traveled the desired distances, and the stop on the driving-belt have come in contact with the catch and brake-spring. It is thus seen that the position of all the parts are relative to each other, and that this relative position must be accurately kept. Their action must be conjoint, as should the driving-belt slip an inch the button or ball on it would not connect with the catch. By using the improved reciprocating driving and hand belts, as described, I am enabled to stop the carrier positively in any position with no danger that either belt will slip or lose its position.

To prevent the parts of the belt rubbing upon each other, I coil each end in a separate groove in the periphery of the wheel C, as indicated in Fig. 8. The same figure shows the double bearings *e e* for the driving-wheel C and for the multiplying wheel or drum D, giving them support from each side and relieving the strain. It also illustrates the plan I adopt of winding the ends of the hand-rope E in opposite directions around the elongated drum D, instead of making it endless and running in a grooved pulley, as illustrated in my former patent.

I claim as my invention—

1. The reciprocating driving-belt and driving-wheel, as described, in combination with a single way stretched in the line of the driving-belt, and the carrier supported on said way and driven by said belt, all arranged and operated substantially as set forth.

2. The reciprocating driving-belt, driving-wheel, and multiplying-wheel, with its hand-rope, in combination with a single inclined

way, and the carrier sliding thereon and actuated by said belt, all arranged and operated substantially as set forth.

3. A reciprocating driving-belt and carrier arranged to slide upon a single supporting-way, in combination with supporting and driving wheels and with the intermediate curved support, M, for the single way, and flanged wheel L for the driving-belt, substantially as set forth.

4. The driving-wheel C, multiplying wheel or drum D, and hand-rope E, located in and below the counter, so as to be concealed thereby, in combination with the reciprocating carrying-belt arranged and located so as to propel the carrier on a fixed way above the counter between the cashier's and the salesman's station, substantially as set forth.

5. In a store-service system, the belt A and the hand-rope E, in combination with the driving-wheel C, having two peripheral grooves, each to receive one end of the driving-belt coiled therein, and also having the drum D, around which both ends of the hand-rope are coiled in opposite directions, all arranged and operated substantially as set forth.

6. In a store-service system, a driving-belt provided with a button or ball, in combination with brake-springs adapted to automatically stop the belt and a catch to detain it, said spring serving, when the catch is released, to start the basket toward the salesman's station, substantially as set forth.

7. In a store-service system, the intermediate support, M, for the wire H, in combination with the flanged wheel L, supporting the belt A, substantially as set forth.

8. In a store-service system, the basket G, suspended from its support by swivel-hooks K K, for the purpose set forth.

9. In a store-service system, a driving-wheel having two peripheral grooves, each arranged to receive one end of the driving-belt coiled therein, in combination with accelerating means, substantially as described.

10. In a store-service system, the catch R, provided with a spring, *r*, and cord U, in combination with an enlargement on the driving-belt, substantially as described.

11. In a store-service system, the spring S, provided with a yielding plate, in combination with an enlargement on the driving-belt to stop the belt and start it again in the opposite direction, substantially as described.

12. In a store-service system, a hand-rope provided with handles or stops, in combination with a positively-fixed check, whereby the movement of the hand-rope is governed, substantially as described.

13. In a store-service system, a hand-rope provided with stops and positively-fixed checks, in combination with a driving-belt having an enlargement thereon to operate with a catch, all arranged relatively to each other to act conjointly, substantially as described.

14. In a store-service apparatus, a non-endless reciprocating driving-belt, in combination

with a driving-wheel adapted to receive both ends of said belt coiled thereon, substantially as described.

15 15. In a store-service system, a reciprocating driving-belt, in combination with a driving-wheel provided with an accelerating-spring, and means of actuating said wheel, substantially as set forth.

16. In a store-service system, a reciprocating driving-belt and driving-wheel, in combi-

nation with means of actuating said belt, whereby the driving-belt can be arrested in its motion at any desired point, substantially as described.

In testimony whereof I hereto affix my signature in presence of two witnesses.

WILLIAM P. BIGELOW.

Witnesses:

A. H. SPENCER,

E. A. PHELPS.