

H. H. HAYDEN.

PARCEL CARRYING APPARATUS FOR STORES.

No. 301,121.

Patented July 1, 1884.

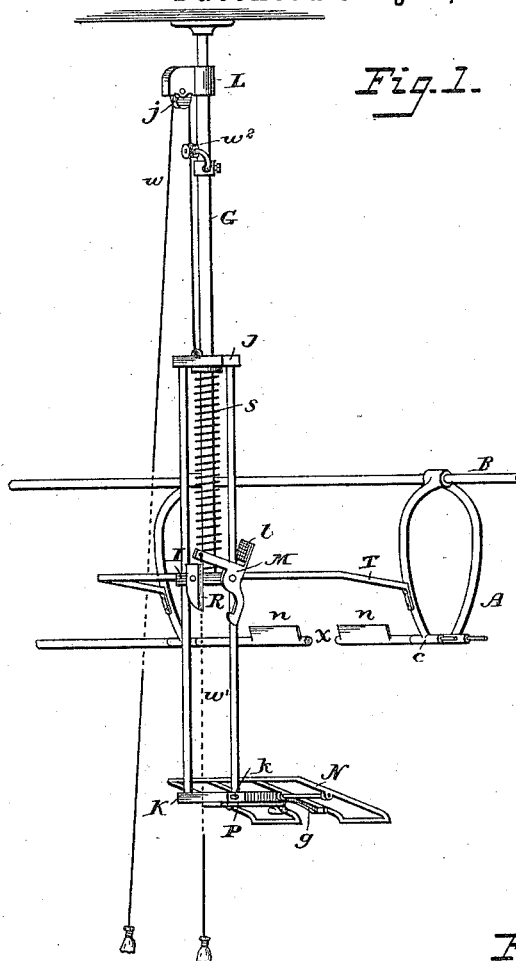
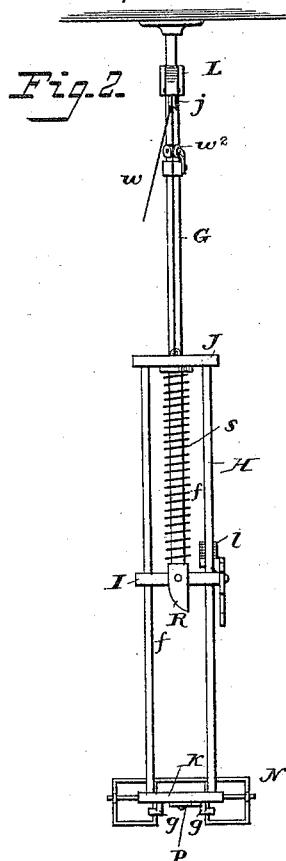
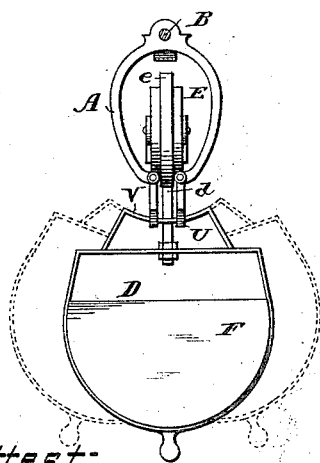
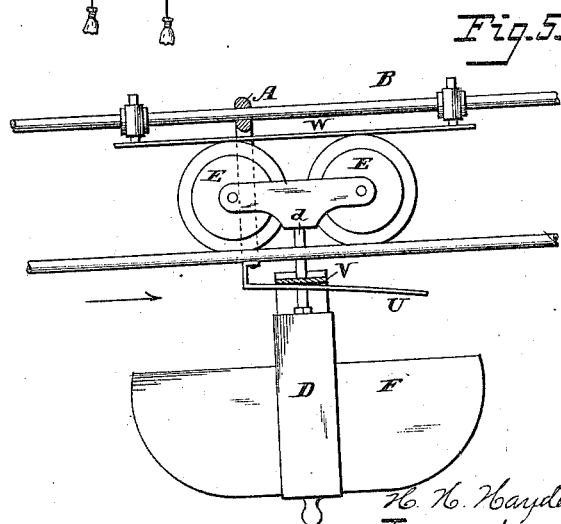


Fig. 7.



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(No Model.)

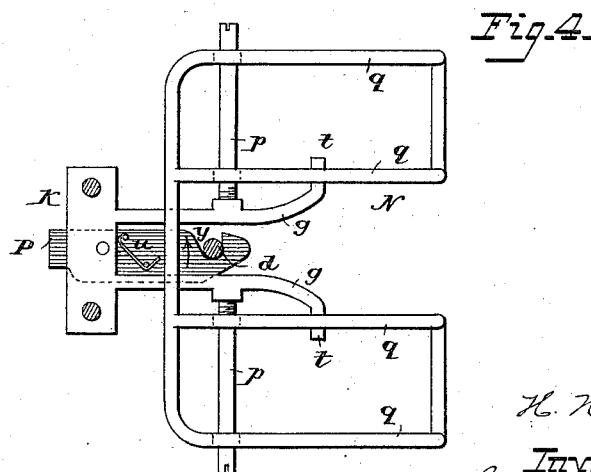
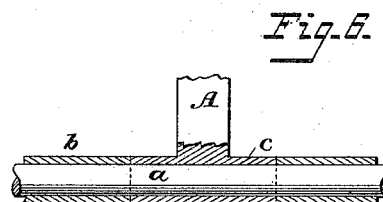
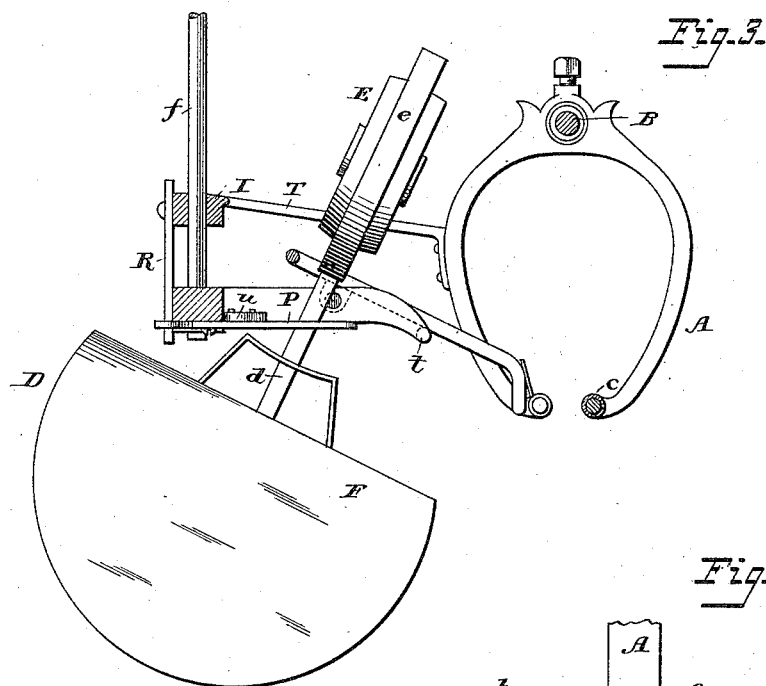
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UNITED STATES PATENT OFFICE.

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PARCEL-CARRYING APPARATUS FOR STORES.

SPECIFICATION forming part of Letters Patent No. 301,121, dated July 1, 1884.

Application filed May 2, 1884. (No model.)

To all whom it may concern:

Be it known that I, HARRIS H. HAYDEN, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Parcel-Carrier Apparatus for Stores, of which the following is a specification.

My invention relates to that class of store-service apparatus in which the carriers must be raised to elevated tracks and properly placed thereon; and my invention consists in certain elevating means, fully described hereinafter, whereby the carriers may be raised and put in place without the slightest danger of being prematurely discharged from their position upon the elevator.

My invention further consists in improved means for arresting the carriers at their stations, and in an improved mode of constructing the track and connecting it to its supports.

In the drawings, Figure 1 is a perspective view showing part of a track and elevating apparatus. Fig. 2 is a back view of the elevator. Fig. 3 is an enlarged side view of part of the apparatus. Fig. 4 is a plan of Fig. 3. Fig. 5 is a view showing the stop devices. Fig. 6 is a sectional view showing the manner of making and securing the track. Fig. 7 is a cross-section of the track with a carrier thereon, looking in the direction of the arrow, Fig. 5.

The way consists of stiff wires or rods *a* and inclosing sleeves or tubes *b*, of metal, paper, wood, or other hard and rigid material, and the supports for the way are brackets or yokes *A*, of any suitable shape, each of which has a cylindrical projection, *c*, corresponding in diameter to that of the tube *b*, and perforated for the passage of the rod *a*. In putting these parts together the rod *a* is passed through the projection *c*, and the sleeves *b* are brought to abut against the ends of said projection, thereby securing a practically continuous track of uniform diameter, as well as a strong and durable connection between the supporting-bracket and the track. In order to secure greater rigidity, the rods *a* may be threaded at the ends and screwed into threaded sockets in the projections *c*. (See dotted lines, Fig. 6.) This kind of track may be used whether the way is

to be single or double. In the latter case a yoke-like support, *A*, such as illustrated in the drawings, is employed, the projections *c* being at the lower separated ends, and the rods *a* extending through the projections, so as to break joints within the sleeves at some distance from the yokes. The yokes are provided with perforated lugs or offsets, through which extends the supporting-rod *B*, and the whole structure is suspended from the ceiling or is otherwise suitably supported, either in an inclined or horizontal position, according to the method of driving the carriers.

In the construction illustrated in the drawings each carrier *D* is provided with a frame, in which turn two wheels, *E*, with central flanges, *e*, so as to afford side treads which rest upon the parallel rails of the track, a pendent stem, *d*, of the frame extending downward between the rails, and being connected to or supporting a basket or receptacle, *F*. To place these receptacles upon the track it is necessary to divide the receiving-rail to form a passage, *x*, through which the stems *d* can be introduced into the space between the rails, as shown in my Patent No. 272,686. To lift the carriers and to automatically place them upon the tracks when the latter are at too great a height to permit this operation to be performed by hand, I make use of an elevating apparatus, one form of which is shown in the drawings, and will now be described. In the said apparatus there is a fixed guide, *G*, and a frame, *H*, which slides vertically upon said guide, the former being suspended from the ceiling or otherwise secured in a vertical position, and consisting in the present instance of a rod carrying at the lower end a cross-plate, *I*, through which slide the parallel rods *f f* of the frame *H*, consisting of said rods, a cross-bar, *J*, and a cross-plate, *K*, from the latter of which extend two arms, *g g*. A pulley, *j*, is carried by a bracket, *L*, secured adjustably to the rod *G*, and a cord, *W*, passes over this pulley and is connected to the frame *H*, which may thus be elevated until a pin, *k*, at the side of the cross-bar *K* engages with the shoulder of an L-shaped catch, *M*, pivoted to the cross-bar *I*, when the frame *H* will be locked in its elevated position. By pulling upon a cord, *w*, the catch is swung to re-

lease the frame H, which then descends by its weight, guided by the rod G, a spring, S, between the plates I J reducing the shock as the motion of the frame is arrested, and a shoe, 5 *l*, upon an arm of the catch M being brought against one of the rods *f*, so as to create a frictional resistance to the descent of the frame proportioned to the strength of the pull upon the cord *w'*; or friction-rollers *w''* may be set 10 on the rod G by means of a collar and arranged to inclose the cord *w'*, and jointedly hung to the collar, so as to permit the cord to run freely when the elevator is going up, but to pinch it when it drops, and thus prevent the elevator 15 from dropping too suddenly.

Upon pivots or journals *p*, one extending outwardly from the end of each arm *g*, swings a U-shaped frame, N, the outer ends of the limbs of which are bent downward, as shown, 20 the parts all being arranged so that when the frame H is brought to the limit of its upward movement the bent ends of the frame N will make contact with wings *n*, projecting at an angle from the track at opposite sides of the passage *x*, the frame being thereby tilted 25 to the position shown in Fig. 3, the tilting motion being limited by lugs *t t* on the ends of the arms *g g*.

To the plate K is pivoted a latch, P, the 30 outer end of which projects slightly beyond the plate, while the inner end is beveled, and has a notch, *y*, adapted to receive the stem *d* of the carrier when the latter is passed between the arms *g*, a spring, *u*, tending to throw the 35 catch in the direction of its arrow, so that the carrier is held securely, with its stem in the notch and with its wheels resting upon the bars *q* of the frame N, and cannot be detached by any jolting or agitation of the elevator- 40 frame.

Upon the plate I is a stop consisting of a plate, R, having an inclined edge, with which the outer end of the catch P is brought in contact as the end of the frame N is brought 45 against the wings *n*. The said inclined edge swings back the catch as the frame H reaches its upper position, so that the stem *d* escapes from the notch *y*, and the carrier will slide by gravity down the inclined frame N to its position upon the track, the stem *d* passing 50 through the space *x*, when, if the track is inclined, the carrier will move by force of gravity to the desk. The catch M and plate R are relatively so arranged that the said catch will 55 engage with the pin *k* and lock the frame in its elevated position before the latch P is thrown back, so that it would be impossible for the carrier to be discharged until all the parts are in position to direct it properly onto the 60 track.

To prevent the swinging of the track or of the elevator from carrying the parts from their proper relative positions, arms or braces T are extended from the plate I or other fixed parts 65 of the structure to the adjacent yokes A.

By means of the elevator thus constructed,

I am enabled to lift the carriers and deposit them in proper position upon highly-elevated tracks without the slightest danger of the carriers being disconnected from the elevating 70 device and with absolute certainty of the operation of the transferring appliances between the elevator and the track.

I do not limit myself to the precise construction of the frame and guide, nor to the 75 forms of the catch devices described, or to the use of a tilting frame, N, as other catches or detents may be employed with like effect, while the frame N may in some instances be secured in a fixed position upon the elevator. 80

It has been found difficult in this class of apparatus, where the carriers are sometimes heavily laden, to arrest them suddenly without destructive effect either upon the carriers 85 or the track, the arresting devices being generally of such a character as to wedge the carriers against the track, or cause them to rebound by the resistance of a spring-buffer or fixed stop. To overcome these objections I employ arresting devices so constructed as to 90 lift the carriers from the track, thereby arresting them suddenly without the shock that would otherwise result.

One form of elevating-stop is illustrated in Fig. 5, and consists of parallel inclined fingers 95 U, each supported below one of the rails of the track in such a position that a cross piece or bar, V, on some part of the carrier will be carried by the momentum of the carrier against and slide up upon the fingers until the wheels E of the carrier are free from 100 contact with the track. Such lifting-stops may of course be arranged at the sides of the track or above the same in any position; but they are preferably placed beneath the track, 105 as their contact with the carrier is then more certain should the carrier swing to one side from its usual vertical position.

It will of course be apparent that the relative lengths or positions of the stops U and 110 cross-pieces V on different carriers will be graduated so that carriers may pass all stops except those at the stations where they are to be arrested.

In order to aid in arresting the carrier without a shock, and also to arrest the rotation of the wheels when the same are elevated from the track, a strip or plate, W, preferably of spring metal, is suspended beneath the connecting-rod B in such position that the wheels 120 may make contact with this strip as the carrier is lifted.

To insure contact of each carrier with its stop, even when the carrier is oscillating, I curve the cross-piece V, with which the fingers 125 U U engage, so that it will coincide with the same circle as that in which the carrier swings on the track, as shown in Fig. 7.

Without limiting myself to the precise construction and arrangement of parts shown, I 130 claim—

1. A track for store-service apparatus, con-

sisting of central rods and surrounding sleeves of rigid material, substantially as set forth.

2. The combination of a track consisting of a central rod and surrounding sleeves of rigid material, and the bracket or support provided with projections equal in diameter to the sleeves abutting against the same and constituting a part of the track, and with a central opening adapted to receive the central rod, substantially as specified.

3. The combination of the bracket or support A, having a projection, c, the central threaded opening, the rod screwing into said opening, and a surrounding sleeve abutting against the projection, substantially as set forth.

4. An elevator for store-service carriers, consisting of a vertical guide and frame sliding upon the said guide, a frame secured to the slide and adapted to support the carrier, and a latch adapted to hold the carrier upon said frame until the latter is in a position to direct the carrier onto the track, substantially as specified.

5. The combination, in the elevator of a store-service apparatus, of a vertically-sliding frame, a movable frame secured thereto, a catch for holding the carrier upon said movable frame, and devices, substantially as described, constituting means for automatically disconnecting said catch from the carrier when the movable frame is in its proper position, substantially as set forth.

6. The combination, in an elevator for a store-service apparatus, of a vertically-sliding frame adapted to receive and hold the carrier, and provided with a catch, devices, substantially as described, constituting means for releasing said catch when the frame is in an elevated position, and a detent or catch arranged to secure and hold the sliding frame before the carrier-catch is unlocked, substantially as set forth.

7. The combination, with the sliding frame of an elevator, of a pivoted frame adapted to hold the carrier, and an automatic catch for retaining the carrier upon said frame, substantially as described.

8. The combination, with the sliding eleva-

tor-frame, of a catch for automatically locking the same in its elevated position, and means, substantially as described, for operating the said catch from the counter, substantially as set forth.

9. The combination, with a sliding elevator-frame and catch, of a brake to retard the descent of the frame, substantially as specified.

10. The combination, with a sliding elevator-frame and catch, of a brake carried by the catch, substantially as specified.

11. The combination of the sliding elevator-frame, the catch adapted to hold the carrier thereon, and stop upon the frame-guide, arranged to make contact with the catch as the frame reaches its elevated position.

12. The combination, with the sliding frame, catches P and M, of a stop, R, arranged to operate the catch P after the catch M has locked the frame, substantially as set forth.

13. The combination, with the double track of a store-service apparatus, having a passage in one of the ways, of an elevator provided with appliances, substantially as described, for retaining the carrier and for releasing the same and for directing it to said passage, substantially as set forth.

14. The combination, with the rail of a store-service apparatus, of an inclined stop arranged to be struck by the carrier and to lift the latter from the track, substantially as specified.

15. The combination, with the track and lifting-stop, of a friction-plate, substantially as described.

16. The combination, with the tracks of a store-service apparatus, of an elevator constructed, substantially as described, to hold a wheeled carrier and to raise the same to the side of the track and transfer it laterally to the track, substantially as described.

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

HARRIS H. HAYDEN.

Witnesses:

WM. TRUSLOW,
CHAS. RUSHBROOK.