

No. 677,424.

Patented July 2, 1901.

G. A. OWEN.

TRANSMISSION SYSTEM FOR MAIL OR OTHER SERVICE.

(Application filed Oct. 15, 1898.)

(No Model.)

4 Sheets—Sheet 1.

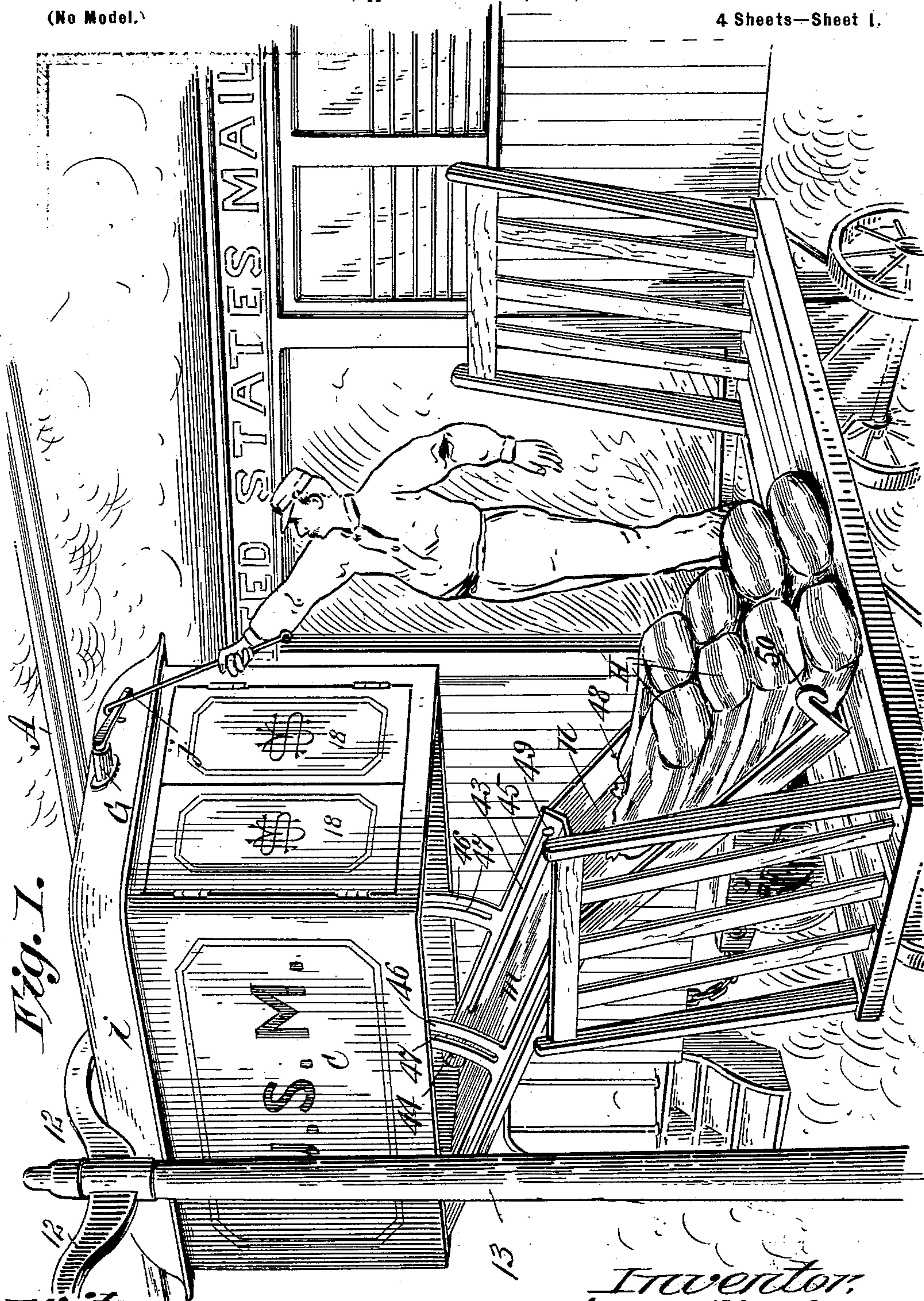


Fig. 1.

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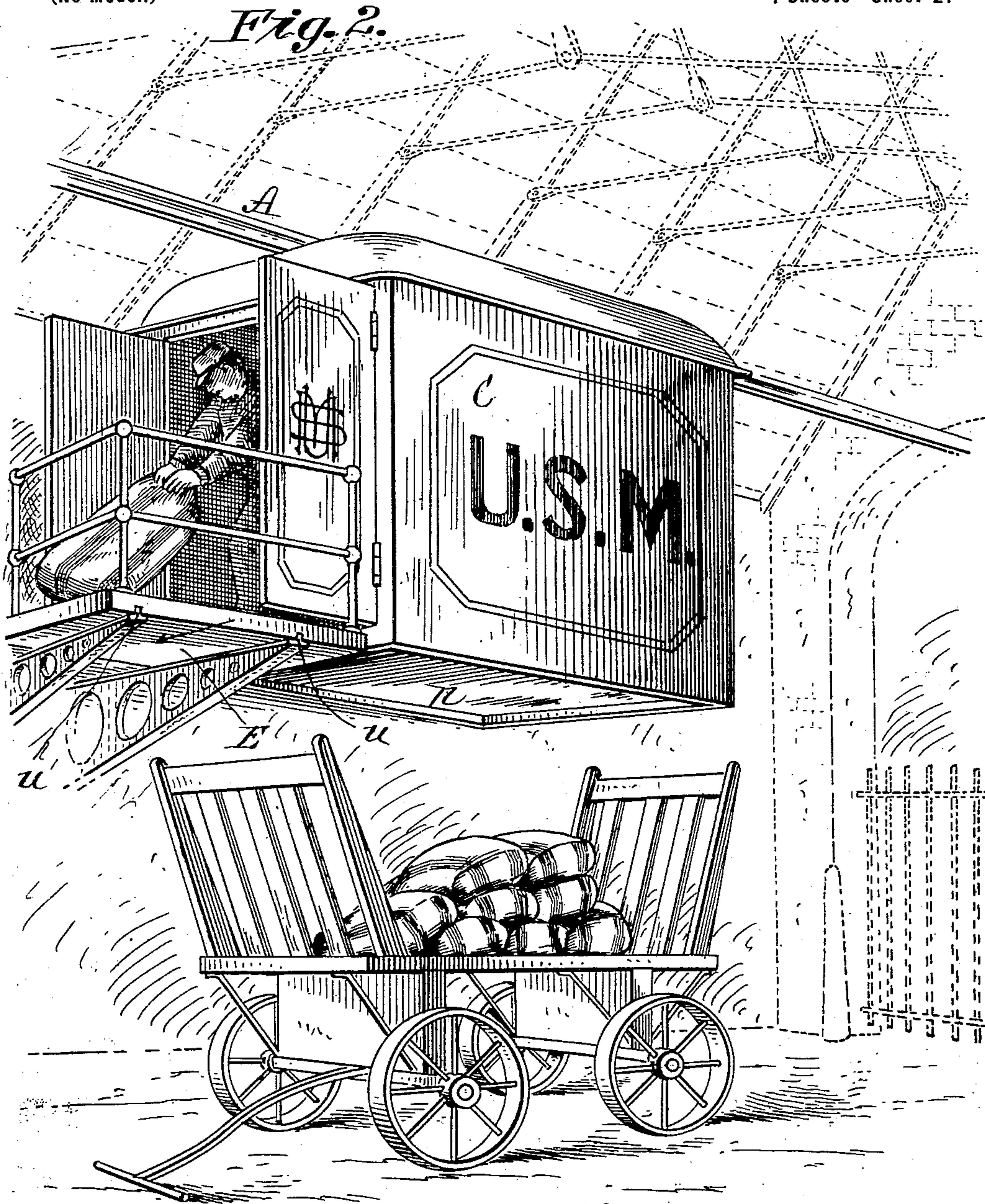
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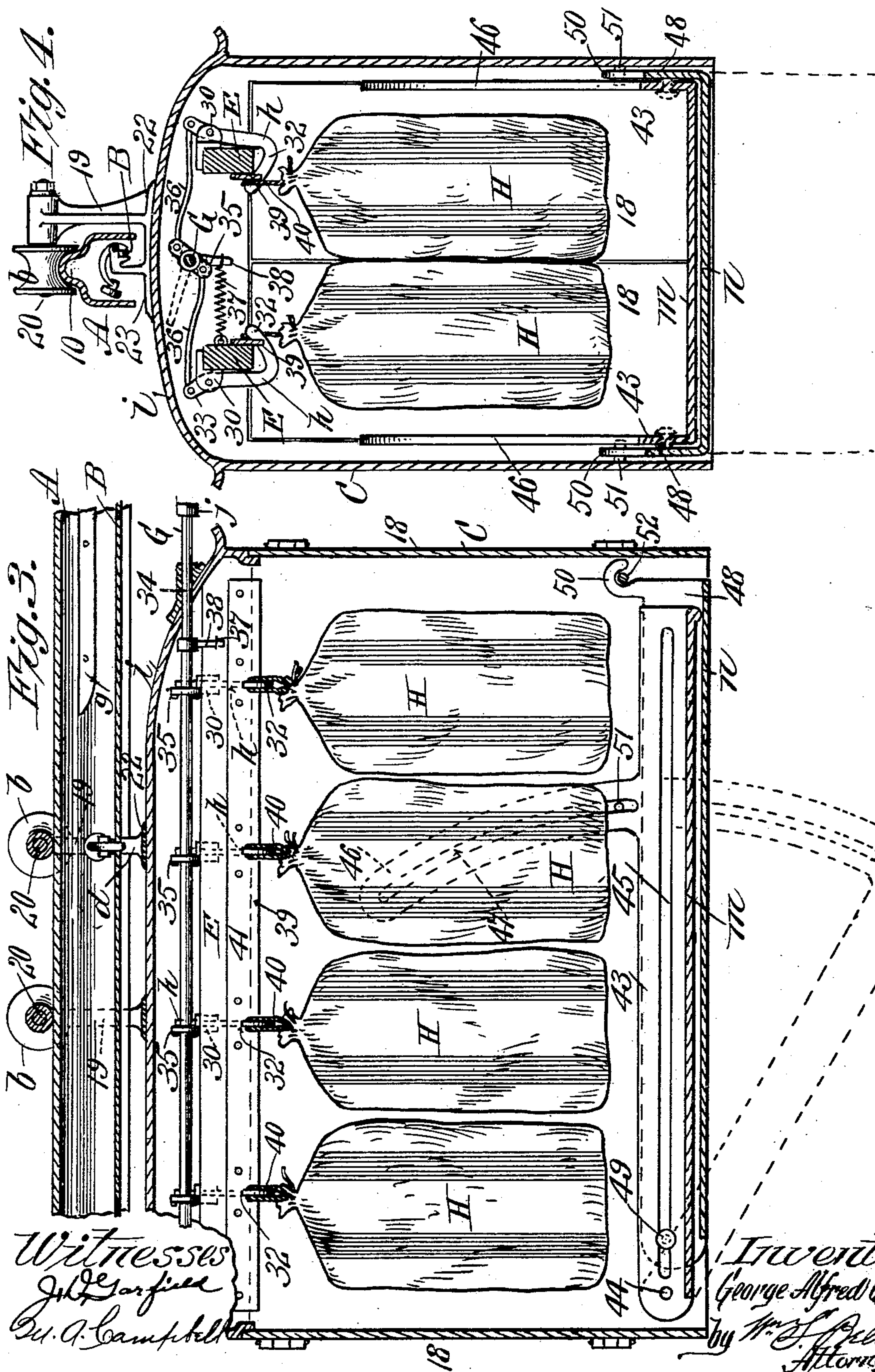
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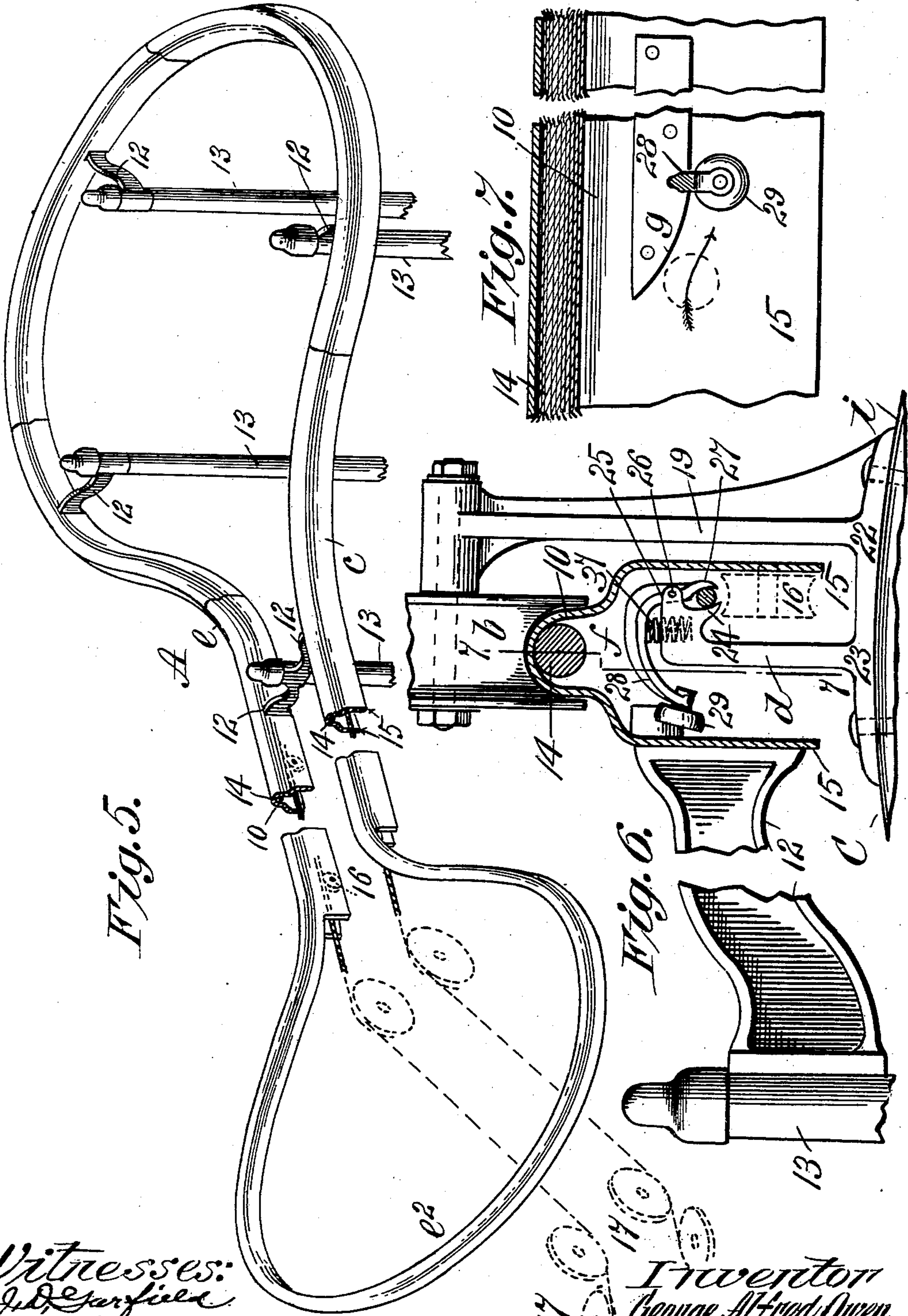
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UNITED STATES PATENT OFFICE.

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TRANSMISSION SYSTEM FOR MAIL OR OTHER SERVICE.

SPECIFICATION forming part of Letters Patent No. 677,424, dated July 2, 1901.

Application filed October 15, 1898. Serial No. 693,615. (No model.)

To all whom it may concern:

Be it known that I, GEORGE ALFRED OWEN, a citizen of the United States of America, and a resident of Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Transmission Systems for Mail or other Service, of which the following is a full, clear, and exact description.

10 This invention relates to improved means for the distribution and transmission by the employment of elevated conveyers of receptacles containing assorted mail, whereby, for instance, the mail-matter placed in pouches
15 or sacks at the post-office may be quickly and systematically conveyed from the post-office to railway-stations or post-stations or sub-post-offices in the city or its environments and for the transmission of other matter from
20 the railway-stations, post-stations, or sub-post-offices to the central post-office.

The invention more particularly relates to the conveyers or cars to be cable-propelled or otherwise run on an overhead trackway,
25 both as to the combination of the conveyer and appliances thereof with the trackway and cable and conjunctive appliances, and the combination of parts comprised in the construction of the conveyer, and all substantially as will hereinafter fully appear, and be set forth in the claims.

Reference is to be had to the accompanying drawings, in which this invention is illustrated, and in which—

35 Figure 1 is a perspective view showing the conveyer as having been run to a railway-station and illustrating the unloading or mail-discharging action. Fig. 2 is a perspective view representing the conveyer as stopped
40 within the post-office for being loaded. Fig. 3 is a longitudinal sectional view through the conveyer and the trackway, showing the cable and gripping device. Fig. 4 is a vertical cross-sectional view of the same. Fig. 5 is a
45 perspective view, somewhat in the nature of a diagram, illustrating the course and belt-like form of the trackway and the relation thereto of the conveyer-propelling cable. Fig. 6 is a cross-sectional view and partial
50 elevation, on a larger scale, of the trackway and its support and the appliances provided at the top of the conveyer whereby the lat-

ter is sustained from the trackway and is gripped or connected with and disconnected from the cable. Fig. 7 is a longitudinal sectional view of parts in detail as taken on the line 7 7, Fig. 6.

Similar characters of reference indicate corresponding parts in all of the views.

In the drawings, A represents the trackway, consisting of a succession of inverted-U-shaped lengths or sections downwardly opening, the upper intermediate portion 10 of each section being contracted, as shown, and these sections are supported by bracket-
60 arms 12 12, laterally extended from the upper ends of posts 13, provided at suitable intervals. The U-shaped track may have the cord or cable 14 provided as an additional strengthening and sustaining element directly under and within its bowed intermediate upper portion.

B represents the cable, having its position within and between the opposite depending and more widely separated portions 15 15 of the supporting-track, sheaves or rollers 16 being provided at suitable intervals on which the cable is run.

In Fig. 5 the trackway shown is of belt form—that is, having an outgoing course *c* and a return course *e*—and at its initial end has the joining-loop *e*², and 17 17 represent guide-sheaves for the cable, provided and arranged adjacent a power-station in a manner not unlike that commonly practiced in cable systems of various kinds.

C represents the conveyer in the form of a rectangular car having the roof or deck *i* and doors 18 in its opposite end. The car is provided with the uprights or standards 19 19, having at their upper ends the transverse shafts or studs 20, on which are journaled the concave-rimmed rollers *b*, which have running supports on and along the top of the trackway. One of the said standards has its base member 22 inwardly extended, as indicated at 23, and provided with the upstanding bracket *d*, constructed with the jaw 24 and the lug 25, in which latter is pivoted at 26 the angular lever *f*, one member 27 below the pivot constituting the movable gripping-jaw, which coacts with the fixed jaw 24 to grip the cable, while the other arm 28 of the lever is extended toward the opposite depending

side member 15 of the track from that at which the cable is located and carries the roller 29.

Within the track, at or adjacent such places as it is desired that the conveyer shall be stopped, inclines *g* are provided on the inner side of the depending portion of the track, on which as the roller comes in proximity thereto the latter runs and by which the lever is bodily swung to ungrip the cable.

The conveyer has provided longitudinally within its upper part the horizontal beams *E E*, provided in series and at intervals with the ear-lugs 30, in which are intermediately pivoted the levers *h*, having the downwardly and inwardly extending hook members 32 and the upwardly-extending arms 33.

G represents a centrally-arranged longitudinal shaft extending from end to end of the conveyer above and midway between the same beams, the same being supported for a rocking motion in journals 34 therefor. This shaft has a series of oppositely-extending lever-arms 35 35, to the extremities of which are secured the connecting-rod 36 36 and which are also pivoted to the upper extremities 33 of the hook-levers *h*.

The shaft *G* at its one end, which extends through the end of the roof or deck of the conveyer, is provided with the lever-arm *j* for imparting a rocking motion in one direction manually or by the use of a hook-rod from the exterior of the conveyer in the manner represented in Fig. 1. The spring 37, applied between the radial arm 38, extended from the shaft, and one of the beams *E*, exerts the retracting force on the shaft to restore it to its normal position when the force applied in the opposite direction through the aforesaid lever *j* is released. The inner vertical face of each beam, as shown, has as a part thereof or affixed thereto the downwardly-extending flange 39, (the same being indicated in the drawings as constituted by an edgewise part of a metallic plate 41, secured on the face of the beam and depending therebelow.) This plate is edgewise slotted for the disposition therewithin of the extremities of the hook members 32 of the levers *h h* when the latter and the rock-shaft are in their normal positions, as shown in the drawings. The said hook members of the levers constitute supports for the loops or eyes 40 of the sacks *H* or other receptacles for mail-matter or other contents, and the loops are supported over the ends of the hooks 32, which protrude beyond the faces of the said metallic plate 41, said loops resting against the faces of said plate, so that when the shaft *G* is rocked and the hooks swung outwardly the said plates 41 serve to crowd and cast off the loops of the sacks from their engagement with the hooks, whereupon the sacks fall from their elevated support.

The base of the conveyer is of peculiar and novel construction to be now described: Said

base is in part composed of the floor-like section *m*, having at each longitudinal edge the upstanding cheeks or flanges 43 43, each having a pivotal connection at 44 with the side walls of the conveyer, near one end thereof, and each of these cheeks or flanges has the longitudinal slot 45 extending nearly from end to end of the flanges, but terminating within the ends thereof, as shown in Fig. 3. Each flange 43 is also provided with the further upwardly-extending integrally-formed bar 46, having the arc-formed slot 47, generated from the pivotal point 44 and terminating within the ends of the bar substantially as shown, engaging within which are limiting studs or abutments 51, that are provided to extend inwardly a short way beyond the inner sides of the conveyer. The said base of the conveyer is furthermore composed of the second floor-like section *n*, underlying the first-named base-section *m* and likewise having upstanding longitudinal cheeks or flanges 48 outside of those 43, said cheeks 48 being provided with the headed studs 49, which protrude through and have sliding engagement in and along the aforementioned longitudinal slots 45 of the upstanding flange-like parts of the said base-section *m*. The said vertical flanges 48 48 are provided at their ends opposite from the location of the pivot 44 with the hooks 50 for engagement with the inwardly-projecting short studs 52, provided at the inner side walls of the conveyer, near the lower corners thereof.

Assuming, for instance, that the conveyer being first in the post-office receives, supported therein in the manner shown in Figs. 1, 3, and 4, the sacks of outgoing mail-matter to be sent to a distant destination, the base is closed, and the conveyer is then gripped to the cable and run to the railway-station and stopped. The base composed of the described horizontal floor-like portions *m* and *n* is then swung upwardly to raise the hooks 50, provided on the part *n*, above the supporting-studs 52, and the said part *n* is then slid slightly longitudinally inwardly, the length of the slot 45 beyond the stud 49 permitting, and thereupon both of the said sections *n* and *m* are free to be swung into a downwardly-inclined position from the points 44 of permanent support, and the section *n* has a longitudinally-sliding projection beyond and as a continuation of the section *m* to constitute a guide-chute or skids down which the sacks when disengaged from their hook-supports are led onto a truck which may be readily at hand or to other available receiver for the same, the discharge of the pouches onto and down the extensible skids being accomplished by the mere swinging of the rock-shaft lever *j*.

The extensible and contractible or telescopic sectional base of the conveyer may, as obvious, be easily and quickly restored to its shortened or telescope position and then up-

wardly swung and sustained within and to constitute the closure at the base of the conveyer.

Of course in lieu of conveying the mail-matter to a railway-station and there discharging it, as herein mentioned, the mail-matter may be conveyed from a main post-office of a city to a sub-post-office and there delivered of its contents, and instead of proceeding therefrom empty it may receive matter to be transmitted from the substation to another substation in conjunction with which this system is arranged to operate or to the main office; and again, instead of conveying mail-matter from the main post-office to sub-post-offices, as last above mentioned, the conveyer may be stopped within a post-station, such as fully illustrated, described, and claimed in an application for Letters Patent of the United States filed by me of even date herewith and bearing the Serial No. 693,614; and I may furthermore employ the cable and trackway, in combination with the gripping devices provided on the conveyer, substantially as herein described, and shown in the accompanying drawings, as the means for the propulsion of the particular kind of conveyer set forth in the specification in my other application for patent filed as aforesaid.

In Fig. 2 of the drawings the conveyer is shown as stationary, while remaining in its supporting engagement on the trackway adjacent an elevated platform or section E of an overhead gallery. This platform or section is shown as having a position as intercepting the course of travel of the conveyer and enables the mail-clerk or employee to conveniently place the pouches upon the supports therefor within the conveyer, and it is to be understood that after the conveyer has received its contents for transmission the said elevated platform or section E is moved transversely out of the way of the conveyer, said section being movably supported, as shown at *u u*, to slide on the ways or supports therefor.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a mail-service or other transmission system, the combination with an overhead trackway, of inverted-U form provided there-within with sheaves 16 and a cable running thereon, and provided at a suitable point or points along its length with the inclined parts *g*, of a conveyer having at its top the uprights 19 carrying the rollers *b* which run on the top of the trackway and having the upright *d* formed with the jaw 24, the lever *f* pivoted to the upright, one member 27 of which constitutes the movable jaw coacting in proximity to the jaw 24, the other member of said lever being provided with the roller 29, and the spring 31, all substantially as described and shown.

2. In a mail-service system, the combination with a trackway and elevated supports

therefor, of a conveyer having a running support on the trackway and means for causing its propulsion thereon, a beam or bar supported within an upper part of the conveyer, hook-like supports for mail-receptacles provided on said beam adapted to receive the engagement therewith of loops or eyes provided on said receptacles, and means operated from the exterior of the conveyer, for causing the disengagement of said receptacles from their supports, for the purpose set forth.

3. In a mail-service system, the combination with an elevated trackway, of a conveyer having a dependent running support on and along said way, and means for causing its propulsion, hook-like supports for mail-receptacles provided within the upper portion of said conveyer and adapted to receive the engagement therewith of the loops or eyes provided on said receptacles, said conveyer also having a base normally horizontally supported and adapted to be swung downwardly relative to the lower portion of the conveyer, and means adapted to be operated from the exterior of the conveyer for disengaging the said receptacles from their support, for the purpose set forth.

4. In a mail-service system, a conveyer having a beam within the upper part thereof provided with a series of hook-levers pivotally mounted thereon, the hook members thereof being in proximity to a lower edge portion of the beam, a rock-shaft having radial arms and connecting-rods between said arms and members of said hook-levers, and means for rocking said shaft, substantially as and for the purpose set forth.

5. In a mail-service system, a conveyer having supported therewithin a series of elevated pivoted hook-levers, and a fixed part as the one 39 beyond and adjacent which the hook extremities of said levers protrude, and means for causing the swinging movement of the hook-levers whereby their extremities retreat from their extensions beyond said part 39, for the purpose of casting off the receptacles suspended thereon, substantially as set forth.

6. In a mail-service system, a conveyer having beams *E E* ranging opposite each other and having the hook-levers *h h* pivoted thereon, flanges or plates extending below the edges of the beams through and beyond which the hooked extremities of the levers protrude, a rock-shaft ranged between said beams and having the oppositely-extending arms 35, 35, and the arm 38 with the retracting-spring 37 applied thereto, the connecting-rod 36, 36, uniting said arms 35 and the members of the hook-levers opposite the hooked ends thereof and an operating-lever *j* provided on said shaft, substantially as and for the purposes set forth.

7. In a mail-service system, a conveyer having therewithin supports for mail-receptacles, and means for causing the disengagement of said receptacles from said supports, and provided at its lower portion with a closing floor-

like section, one end of which is pivotally connected to the conveyer and having means provided at its other end for detachably supporting it in its horizontal, and closing positions, and adapted on detachment, to permit the downswinging of said closing section, substantially as described.

8. In a mail-service system, a conveyer having therewithin supports for mail-receptacles, and means for causing at pleasure the disengagement of said receptacles from the supports, said conveyer being provided at its lower portion with a closing floor-like section provided with upstanding side flanges having the further upwardly-extended bars with the arc-formed slots, pivots for connecting in portions of the opposite flanges to the opposite walls of the conveyer at one end thereof, opposite studs inwardly projected from the side walls of the conveyer engaging through the said arc slots and detachable means for supporting said section in its horizontal closing position, detachable to permit the downswinging of said section, substantially as described.

9. In a mail-service system, a conveyer having therewithin supports for mail-receptacles, and having at its lower portion the floor-like section *m* with the upstanding longitudinally-slotted side flanges having the further upwardly-extending opposing portions 46 with the arc-formed slots 47 and having at the ends of said flanges pivotal supports within the sides of the conveyer, and a second section *n* also provided with upstanding side flanges arranged alongside the side flanges of the first-named section, provided with the studs 49 engaged in the longitudinal slots of said first

flanges, provided with the end hooks 50, the studs 52 to be engaged by said hooks and the studs 51 provided on the walls of the conveyer for engaging said arc slots, all substantially as and for the purposes set forth.

10. In a mail-service system, an overhead trackway, and a conveyer having a running support thereon, means for the propulsion of the conveyer along the trackway, the longitudinally-ranging beams *E E* supported within the upper portion of the conveyer having the ear-lugs 30, 30, in series thereon, the hook-formed levers *h* pivotally mounted in said ear-lugs, the plates 41 having their lower edges extended below the beams, through and beyond which the hook extremities of said levers protrude, forming supports for mail-receptacles, the rock-shaft *G* extending between said beams and having their oppositely-extending lever-arms 35, 35, the rods 36, 36, connecting said arms 35 with the hook-levers, an operating-lever for said rock-shaft and a retracting-spring for said shaft, the floor-like section *m* having the upstanding longitudinal slotted side flanges, and the pivots 44 connecting the ends of said flanges to one end of the lower portion of the conveyer, the upwardly-extending bars continuing beyond said side flanges, the second floor-like section *n* having the studs 49 in supporting and sliding engagement with said slotted flanges and provided with the end hooks 50, and the studs 52 and 51, all substantially as and for the purposes set forth.

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