

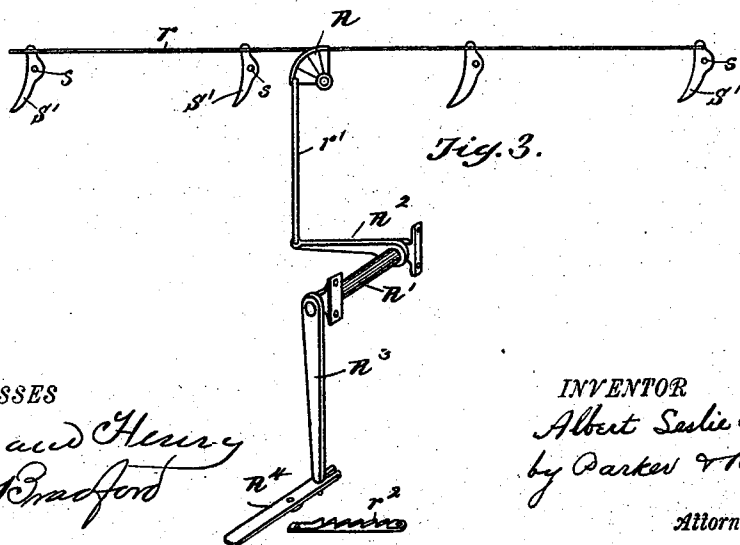
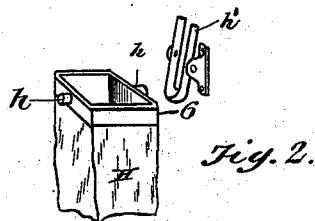
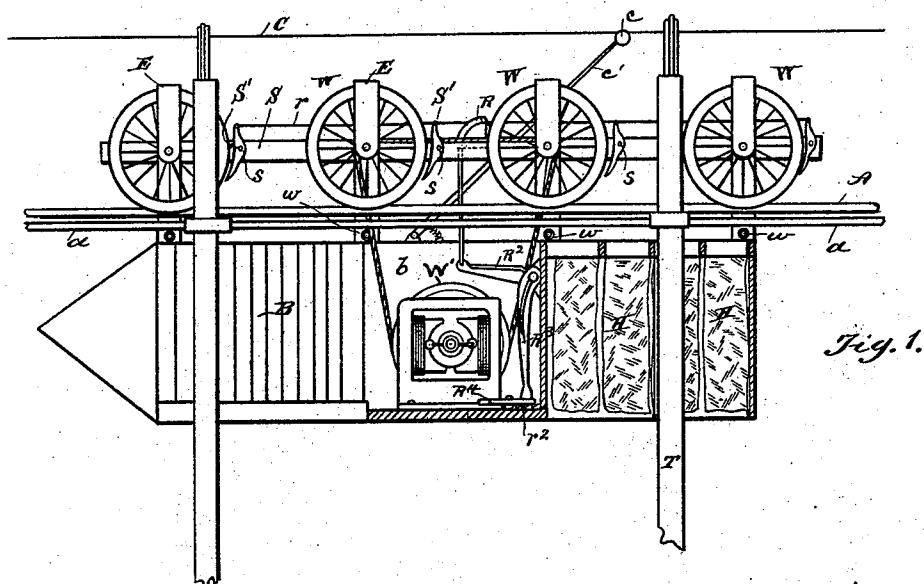
(No Model.)

3 Sheets—Sheet 1.

A. L. WIDDIS.
ELEVATED RAILWAY CAR.

No. 528,407.

Patented Oct. 30, 1894.



WITNESSES

D. Sanford Henry
D. W. Bradford

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Albert Leslie Widdis
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Attorneys.

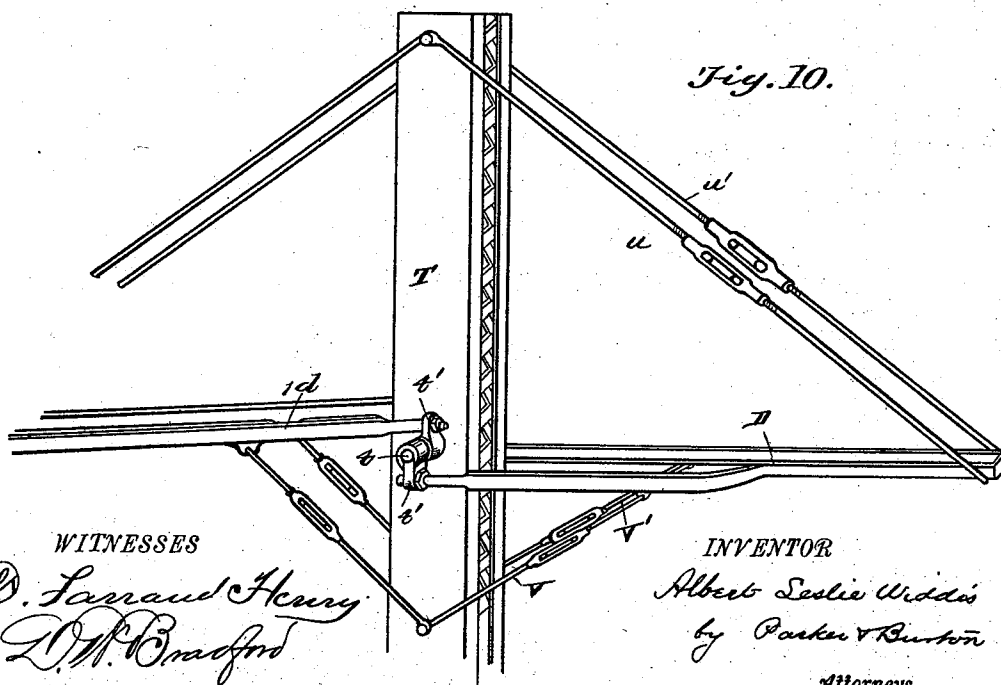
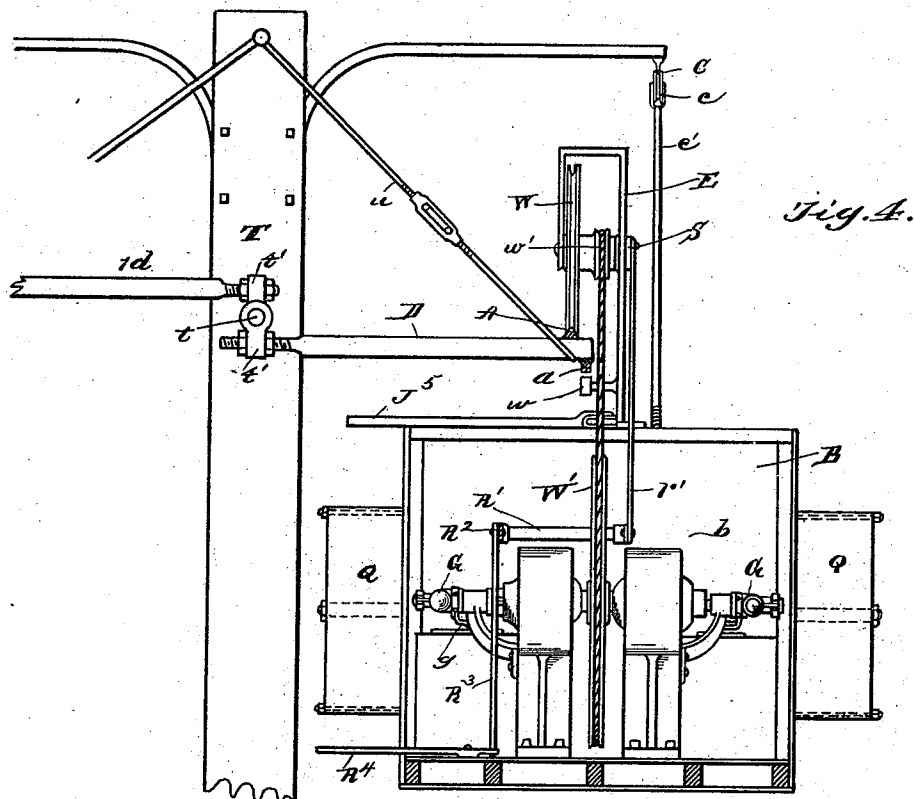
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3 Sheets—Sheet 2.

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Fig. 6.

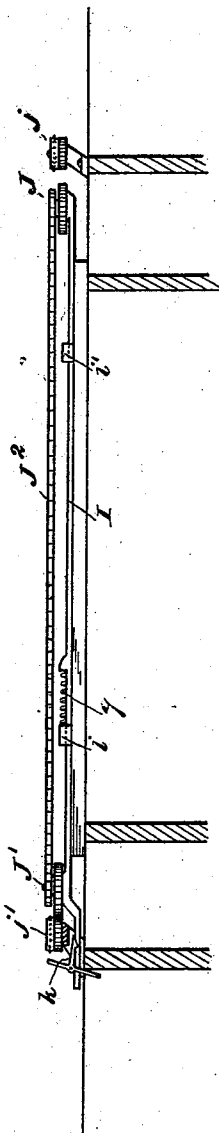


Fig. 5.

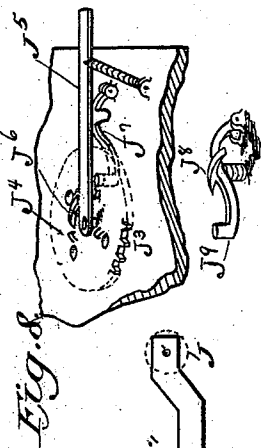
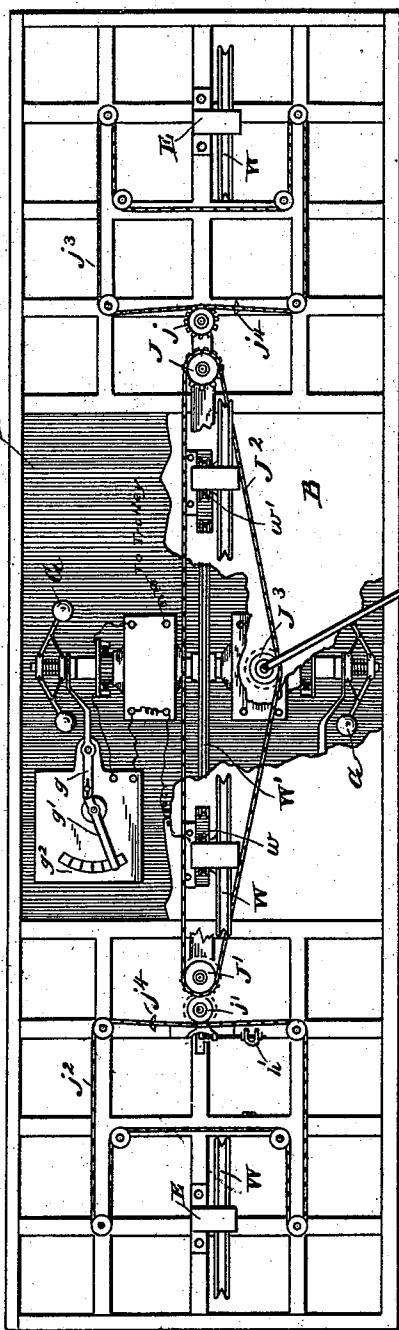
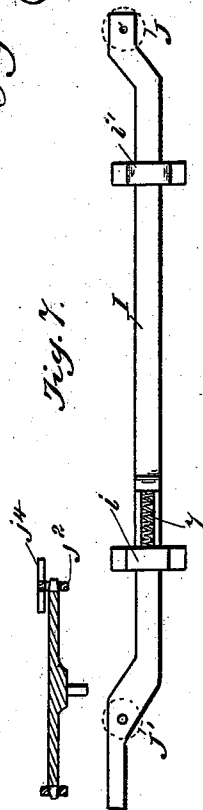


Fig. 8.

Fig. 7.



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UNITED STATES PATENT OFFICE.

ALBERT LESLIE WIDDIS, OF DETROIT, MICHIGAN.

ELEVATED-RAILWAY CAR.

SPECIFICATION forming part of Letters Patent No. 528,407, dated October 30, 1894.

Application filed April 8, 1893. Serial No. 469,519. (No model.)

To all whom it may concern:

Be it known that I, ALBERT L. WIDDIS, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Electric Elevated-Railway Cars; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to elevated railway cars, and has for its object improvements in an elevated railway car and the appurtenances belonging thereto, which are especially designed to permit rapid transmission of parcels, especially mail parcels, across the country.

In carrying out this invention, I employ a track which is elevated, and properly supported on posts. The track is a one rail track, and on it run the car wheels of a suspended carriage. The carriage is divided into compartments, one of which contains the motor, and the others of which are suitably disposed to contain a number of mail bags or similar packages which are to be dropped at proper stations as the car travels across the country. There are suitable attachments to cause the mail bags or parcels to drop automatically.

Other features of construction and novelty will be referred to hereinafter, and specified in the claims.

In the drawings, Figure 1 shows a side elevation of the car, the track and supporting posts. Fig. 2 shows a detail of the means by which the bag or parcel is supported. Fig. 3 is a detail of the brake. Fig. 4 is a cross section on an enlarged scale through the middle of the car shown in Fig. 1. Fig. 5 is a plan of the car some of the middle parts being broken away. Fig. 6 shows a shifting device connected with the automatic dropping apparatus. Fig. 7 is a plan of the bar of the same shifting device. Fig. 8 shows in detail, on an enlarged scale, the arm by means of which the unloading of parcels is effected.

A indicates the track rail, which is supported at suitable intervals by arms D that extend out from a main supporting post T. The arms D also support a guard rail α , which

is beneath the main rail and at one side thereof.

W W indicates the running wheels of the car, and of these running wheels there are preferably four grooved wheels, the two middle wheels being arranged as drivers and connected with the motor mechanism. These wheels are journaled in hangers E, which support the car B. The hangers E also carry guard wheels w , and these guard wheels w are normally carried below and just out of contact with the guard rail α , being so arranged that any swaying motion of the car body brings the guard wheel w and the guard rail α into contact.

In the middle of the car B is a compartment b , in which is located a suitable motor, preferably an electric motor, which receives its force from the line wire C through a trolley c and a trolley pole c' . On each end of the axle of the motor is a set of governor balls G, and one of these governors actuates a lever g , which, in turn, throws a switch arm g' across the contact pieces g^2 of a rheostat, and thus acts to increase or diminish the amount of electric energy admitted to the coils surrounding the various parts of the motor.

In front and at the rear of the carriage are compartments divided into sections, and in each section is a receptacle for the load to be carried. The receptacle is preferably in the shape of a bag having a square or rectangular mouth opening, around which is an inclosing ring δ , by which it is held suspended in the frame work of its section. On opposite sides of the inclosing ring are two lugs h h , and on the side of the framework of the compartment in which the bag is received is a swinging stirrup h' . When the stirrup h' is vertical and the bag h is dropped into its compartment, one of the lugs h will rest in the bottom of the stirrup h' ; but, when the bottom of the stirrup h' is pushed outward away from the bag, the bag h will drop and the releasing device which produces this movement is as follows:

On the top of the car is a bar I, held under straps i and i' , and capable of movement endwise under the straps for a short distance. On each end of the bar I is a sprocket wheel J J', and, rising from the top of the car on posts which are in line with the axis of the

bar I, are two sprocket wheels j, j' . Each of the sprocket wheels just described has connected with it a pinion. The pinions belonging to the sprocket wheel J can be brought into engagement with the pinion connected with the sprocket wheel j ; and, by shifting the bar, the two pinions last mentioned can be thrown out of engagement, as is indicated in Fig. 6 and the pinion connected with the sprocket wheel J' can be brought into engagement with the pinion connected with the sprocket wheel j' . However, only one set of pinions can engage at a time. When the bar is shifted in one direction, the pinion at the end of the bar engages with the pinion on the post that is nearest to it. The pinion at the other end of the bar has been moved away from the pinion on the post at that end, and those two pinions are out of engagement.

The wheels J and J' are belted by a sprocket chain J^2 , which passes around a third sprocket wheel J^3 , on the upper side of which are ratchet teeth J^4 . On the shaft of the sprocket wheel J^3 is a ratchet arm J^5 , to which is connected a pawl J^6 , which engages with the ratchet teeth J^4 . To the frame-work, near the wheel J^3 , is hinged a pawl J^7 , over which the ratchet arm J^5 reciprocates. The pawl J^7 is provided on either side with an oblique guide J^8 , and terminates at its engaging end with the pin J^9 , adapted to engage with any one of the several holes in the wheel J^3 . The sprocket wheels j, j' each actuate endless chains j^2, j'^2 . There is one of these chains at each end of the car.

The chain j^2 is arranged to engage with all the receptacles in the several compartments at the end of the car on which it is located, and has upon it a lug j^4 which will successively release each of the receptacles from its compartments by engaging with and pushing the end of the stirrup h' out of engagement with the lug h . When all of the bags at one end of the car have been released, the bar I is automatically shifted; the pinions of the sprocket wheels j and J are brought into engagement, and the bags at the second end of the car dropped successively. The chain j'^2 is actuated by its sprocket wheel j' . This in turn receives its motion from the inter-meshing pinions, one of which is on the same shaft with the sprocket wheel j' , and the other of which is on the same shaft with the sprocket wheel J'. The wheel J' and the pinion connected with it are actuated by the chain J^2 which receives its motion from the wheel J^3 , and this is actuated intermittently by the ratchet arm J^5 . The ratchet arm J^5 is actuated in one direction by the opposing force of a fixed object located beside the track, which engages with the end of the ratchet arm J^5 and holds it while the car moves forward, the holding engagement continuing until the arm has swung backward and inward far enough to pass the obstacle.

The shifting of the bar I is caused by mechanism which is shown in Figs. 6 and 7. The

end of the bar I extends beyond the shaft of the sprocket wheel j' , and engages with a catch k . The catch k rocks on the same shaft as the stirrup h' , and when the stirrup h' is swung to release the last one of the bags from its section, the catch k rocks with it and is disengaged from the bar I, and the bar I is immediately shifted endwise through the resilient force of a spring 7 which had been held in a state of tension by the interlocking of the bar and catch k .

The car is propelled by the driving wheel W' on the motor, around which passes an endless belt that leads over the small driving pulleys w' on the axles of the two middle wheels W.

The front and rear end of the car are preferably coned or pyramidal in shape, and on each side of the body of the car is a wing Q. These wings are arranged to be adjusted so that their angle or obliquity to the plane of the track may be regulated at will, the object being to produce an air pressure either up or down, as may be desired, to regulate the traction weight of the car on the rails.

The brake which I employ is shown in detail in Fig. 3, and in elevation in Fig. 4. A side elevation is also seen in Fig. 1. The brake is arranged to be automatically thrown into engagement with the wheels W as the car approaches a station at which it is to stop. S indicates a side bar connecting the axles of the wheels, and to this side bar the brakes S' are secured by pins s, and the brakes are connected by a reach rod r. The reach rod r is reciprocated by means of a bell crank lever R, a link r' , a rock shaft R', rock arms R^2, R^3 , and lever R^4 . The free end of the lever R^4 extends horizontally out at the side of the car, and engages with an obstruction placed near the track and at the proper place. The inner end of the lever R^4 engages with the rock arm R^3 by means of a sliding joint. The toothed rack r^2 holds the arm of the lever R^4 after it has been pushed backward by the obstacle against which it strikes.

The track employed by me is a double track, one track being used for cars going in one direction, and a second track being used by cars going in the opposite direction.

What I claim is—

1. In combination with a car adapted to travel on an elevated railway, a series of compartments, mail bags adapted to fill said compartments, and means for successively dropping the bags out of said compartments, substantially as described.

2. In a car adapted for use on an elevated railway, a series of bottomless compartments, receptacles adapted to be carried therein, and means adapted to be actuated from outside the car to drop receptacles out of said compartments, substantially as described.

3. In a car adapted to travel on an elevated railway, a series of bottomless compartments,

receptacles adapted to be carried therein and means adapted to be actuated from outside the car for dropping the receptacles successively, substantially as described.

5 4. In combination with an elevated railway car, a compartment provided with a holding frame and a holding stirrup, a bag provided with a mouth ring having a lug thereon adapted to engage in said stirrup, substantially as described.

10 5. In an elevated railway car, a series of compartments without bottoms, provided with holding frames at their upper ends, swinging stirrups adapted to engage with lugs on the holding rings of bags, and means for swinging the stirrups out of engagement and dropping the bag, substantially as described.

15 6. In an elevated railway car, the combination of a central motor compartment, storage compartments at the ends, receptacles adapted to be secured in said storage compartments, traveling chains adapted to disengage the receptacles from the storage compartments, a lever adapted to be actuated from outside the car and to actuate said traveling chains, a shifting mechanism adapted to transfer the actuating engagement of the lever from the traveling chain in one storage
20 25 30 compartment to the traveling chain in the

storage compartment at the opposite end of the car, substantially as described.

7. As a means for automatically unloading the compartments of a railway car, an endless chain adapted to engage with and release successively the packages stored in said car, a shifting bar supporting an endless sprocket chain, which is adapted to actuate the releasing chain, and a ratchet arm adapted to engage with obstacles external to the car and actuate the shifting sprocket chain, substantially as described.

8. As a means for automatically unloading the compartments of a railroad car, an endless chain adapted to engage with and release successively the packages stored in said car, a shifting bar supporting an endless sprocket chain and pinion, adapted to actuate the releasing chain, a ratchet wheel and ratchet arm adapted to engage with obstacles external to the car and to actuate said sprocket chain and through it actuate said releasing chain, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

ALBERT LESLIE WIDDIS.

Witnesses:

CHARLES F. BURTON,
EFFIE I. CROFT.