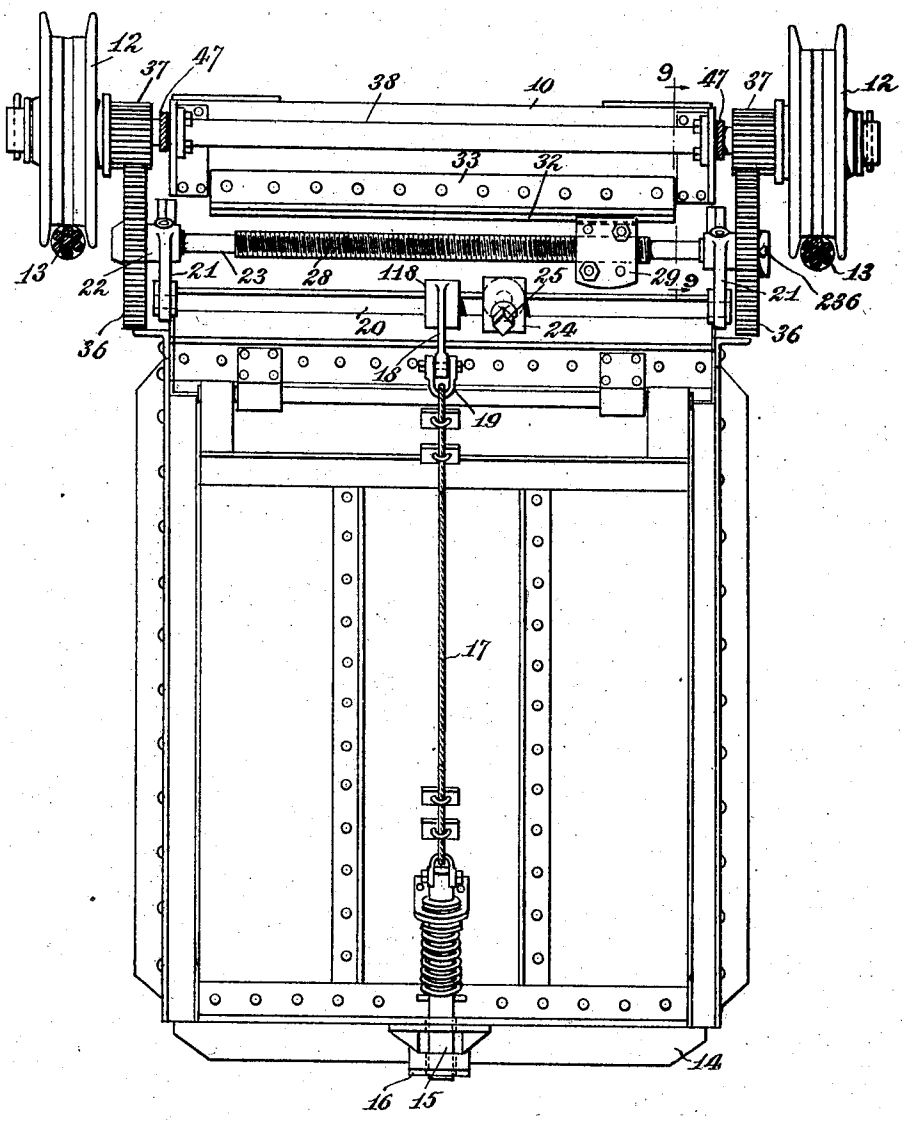
Sept. 20, 1927. 1,643,214

G. M. KILCARR

AERIAL TRAMWAY

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Fig. 1.



WITNESSES

William P. Goebel.

J. L. McAuliffe

INVENTOR

Gilbert M. Kilcarr

BY Munn & Co

ATTORNEYS

Sept. 20, 1927. 1,643,214

G. M. KILCARR

AERIAL TRAMWAY

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Fig. 3.

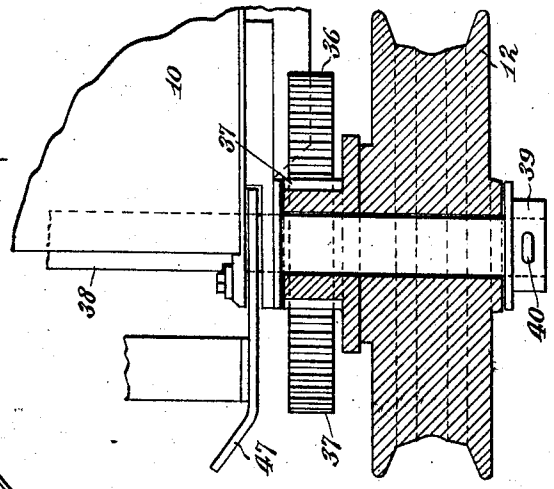


Fig. 2.

WITNESSES

Wm. F. Goebel.

L. L. McCulloch

INVENTOR

Gilbert M. Kilcarr

BY Munn & Co

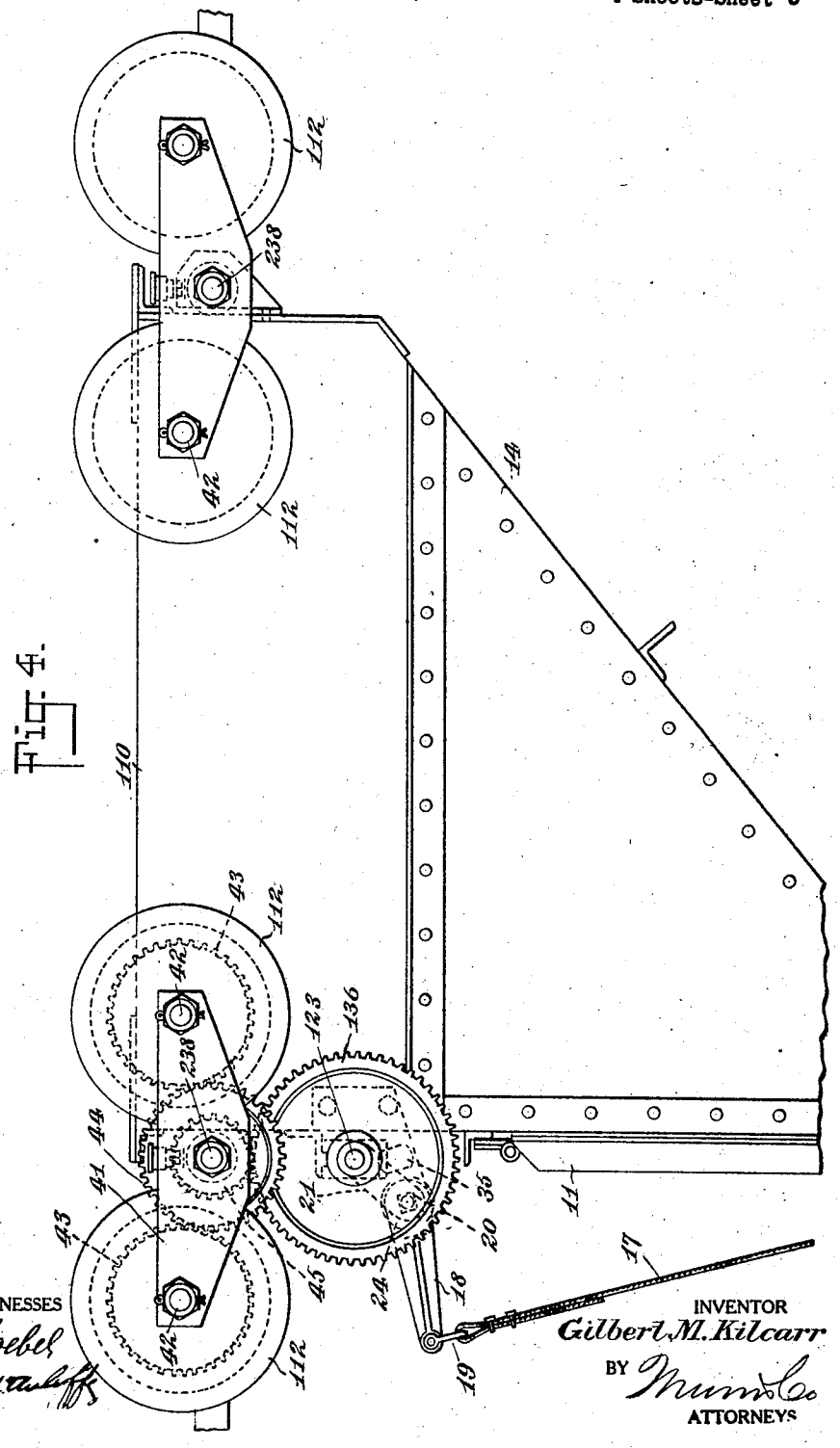
ATTORNEYS

Sept. 20, 1927. 1,643,214

G. M. KILCARR

AERIAL TRAMWAY

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WITNESSES

Wm. P. Goebel

J. L. Mauloff

INVENTOR

Gilbert M. Kilcarr

BY Munn & Co

ATTORNEYS

Sept. 20, 1927. 1,643,214

G. M. KILCARR

AERIAL TRAMWAY

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Fig. 5.

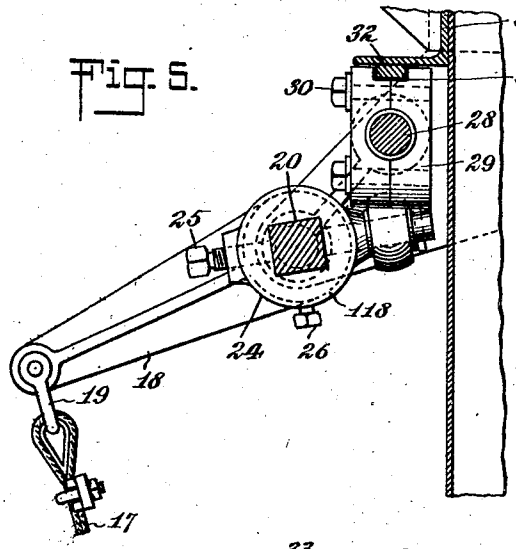


Fig. 6.

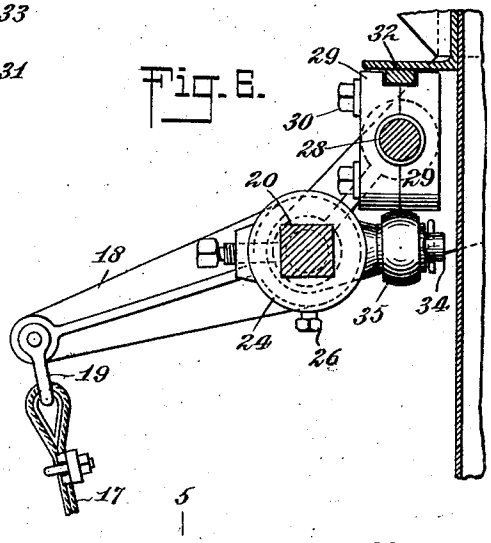


Fig. 7

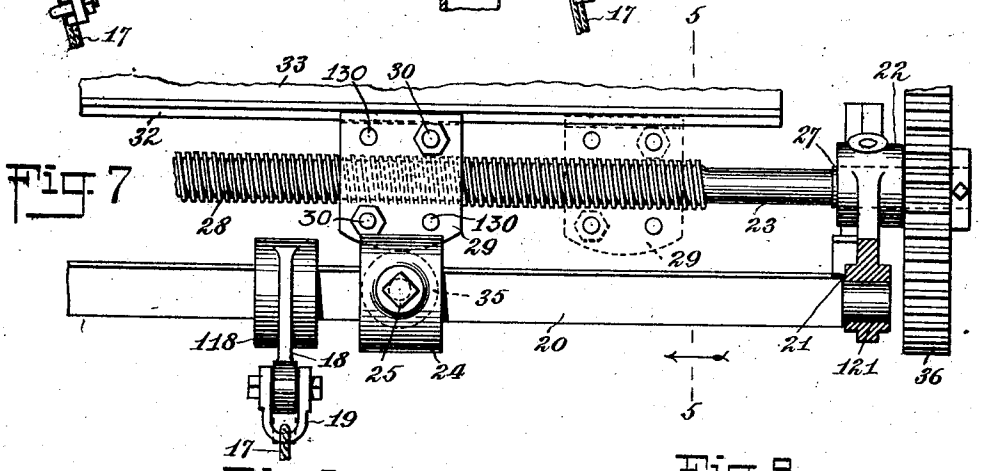


Fig. 8.

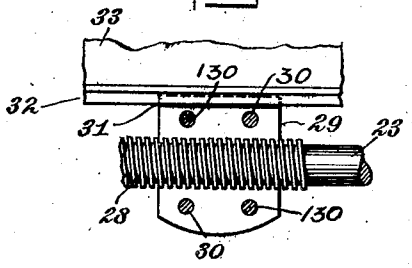
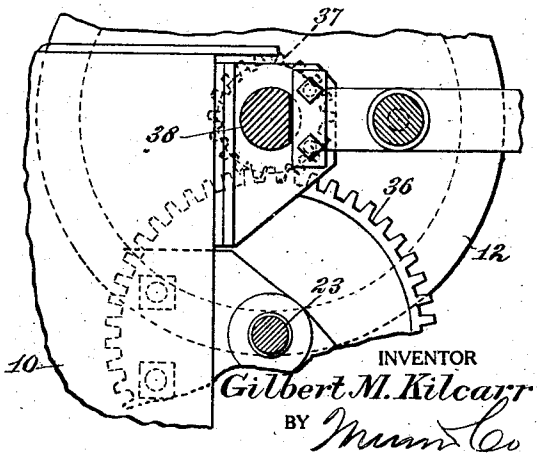


Fig. 9.



WITNESSES

William P. Goebel

J. L. Wiedenhoff

INVENTOR

Gilbert M. Kilcarr

BY Munn & Co

ATTORNEYS

Patented Sept. 20, 1927. 1,643,214

UNITED STATES PATENT OFFICE.

GILBERT M. KILCARR, OF NEW YORK, N. Y., ASSIGNOR TO INTERSTATE EQUIPMENT CORPORATION, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

AERIAL TRAMWAY.

Application filed January 18, 1926. Serial No. 82,049.

My invention relates to an aerial tramway for handling and conveying loose bulky material from a fixed loading point to a desired discharging point.

More particularly the invention relates to a tramway employing a conveyor car or cars travelling on a trackway and having a door controlled by a latch. Latch releasing means generally employed includes a latch trip which is variously positioned on the track, the position of the trip along the track determining the point of dumping.

The general object of my invention is to provide latch-tripping means to eliminate the necessity of a trip element disposed along the track and to embody the tripping means solely in the conveyor car.

An important object also of the invention is to provide a tripping means including an element having travelling movement on the car and a coacting element, the one element being adapted to be variously positioned so that a predetermined travel of the travelling element will determine the point of dumping.

The invention also has for its object to provide a latch tripping means for tramway cars reflecting practical considerations with respect to simplicity and the accuracy and precision of operation.

The nature of my invention and its distinguishing features and advantages will clearly appear as the description proceeds.

Reference is to be had to the accompanying drawings forming a part of this specification, it being understood that the drawings are merely illustrative of one example of the invention.

Figure 1 is a front elevation of a tramway car provided with my improved latch-tripping means;

Figure 2 is a side elevation;

Figure 3 is a detail in sectional plan view at the right-hand end of one of the car axles;

Figure 4 is a side elevation of a car modified in particulars hereinafter referred to;

Figure 5 is a detail in vertical section on the line 5—5, Figure 7, with the co-engaging trip means in the positions before being tripped;

Figure 6 is a view similar to Figure 5 showing the co-engaging tripping elements in the positions they assume when the latch is being tripped;

Figure 7 is a detail in front elevation of the tripping means, indicating two positions of the travelling tripping element;

Figure 8 is a vertical section taken through the travelling tripping element to illustrate the form thereof which is that of a split nut;

Figure 9 is a vertical section on the line 9—9, Figure 1.

In carrying out my invention in accordance with the illustrated example, a conveyor car 10 is provided having a hinged door 11 and is equipped with running wheels 12 adapted to travel along the trackway consisting in the illustrated example of track cables 13. Numeral 15 indicates a latch at the front of the car mounted in the usual manner and engaging the extension 16 on the front of the car near the bottom 14. The numeral 17 indicates the cable attached at its lower end to the door latch 15 and secured at its upper end to a vertically rockable arm 18, connection with the arm 18 being effected by a clevis-like device 19 in the illustrated example.

The arm 18 is on a transverse rock shaft 20, the ends of which are turnably supported in bearings 121 on arms 21 formed on hubs 22 in which a shaft 23 turns.

On the rock shaft 20 in addition to the arm 18 is a trip element 24 shiftable laterally along said shaft and held in any given predetermined position by a set screw 25. It will be observed from Figure 1, for example, that the trip element 24 is at one side of the arm 18 to which the cable 17 is attached for tripping the latch 15. The element 24 may be adjusted anywhere along the bar 20. In Figure 1, the arm 18 is shown in a central position on the bar 20 but said arm 18, see Figures 5 and 6, is adapted to be adjusted longitudinally of the bar 20, that is to say, transversely of the car because the hub 118 of arm 18 is secured by a set screw 26 (see Figures 5 and 6) in any given desired position along the length of the bar 20, that is to say, said hub 118 is variously positionable transversely of the car 10 and the trip element 24 may be shifted accordingly.

For the major portion the shaft 23 is threaded as at 28. On the threaded portion of the shaft 23 is a traveller 29 in the form of a split nut, the side sections of which are held by bolts 30 and pins 130 into threaded engagement with the screw threads 28.

The split nut 29 presents a groove 31 (Figures 5 and 6) for engagement of said split nut with a rib 32 on the under side of cross bar 33 on the car 10, whereby said split nut is held against turning and is constrained to travel longitudinally of the threads 28 of shaft 23 by the turning of said shaft.

If a very wide range of movement is desired for the split nut 29 before it engages the trip element 24, then said trip element may be shifted to the left of the hub 118 by first sliding the element 24 from the bar 20 by the removal of certain elements at the right of said bar, Figures 1 and 7, as hereinafter referred to.

Rigid with the trip element 24 is an arm 34 having a round contact member 35 in the same vertical plane with the traveller 29.

In order to turn the shaft 23, said shaft has driven gears 36 which are in mesh with broad pinions 37 on the axle 38 and turning with one pair of running wheels 12, said running wheels travelling on the cables 13. Thus, with the travel of the car 10 along the track cables 13, one set of car wheels 12 in turning will cause a similar turning of pinions 37 which in turn drive the gear wheels 36 and thereby turn the shaft 23. With the turning of the shaft 23 the traveller 29 is caused to traverse said shaft 23 until said traveller 29 engages the contact member 35 on the trip element 24 to depress said contact member 35 and the arm 34. With the depression of the arm 34 the shaft 20 will through the trip element 24 be given a rocking movement in a direction to lift the arm 18, thereby exerting an upward pull on the latch cable 17 and the latch 15 will be withdrawn from engagement with the attachment 16 and thus the door will be permitted to open for dumping the load at the point predetermined by the position of the trip element 24 and its contact member 35.

When it is desired to shift the trip element 24 from the position shown in Figure 1 at the right of the hub 118 to a position at the left of said hub, the running wheel 12 at the right, Figure 1, and the adjacent pinion 37 and its engaged gear wheel 36 are slipped from their positions. The wheel 12 is held on the shaft 38 by a cap 39 and cotter pin 40, and the hub of gear wheel 36 is held by a set screw 236, the arrangement permitting the ready removal of the parts referred to for slipping the trip element 24 and the hub 118 from the rock shaft 20 for transposing the relative position of said trip element and said hub. The hub 118 may be so positioned as to give the cable 17 an inclination, the inclining of the cable 17 not preventing its function in pulling the latch 15.

In the form shown in Figures 1 and 2, it will be observed that the axles 38 and 138 of the car 10 have single wheels 12 at each end of the axles, that is to say, two pairs of running wheels are provided on the car.

In the form shown in Figure 4, the axles 238 of the car 110 have secured thereto side truck plates 41 on each end of which plates are turnably supported axles 42 mounting the running wheels 112. Thus, each end of the car 110 has two pairs of axles 42 and thus the carriage is equipped with four pairs of running wheels 112. To each wheel 112 is fastened a gear 43, each gear meshing with a gear wheel 44 on axle 238. To gear wheel 44 is fastened a pinion 45 in mesh with a gear wheel 136 on the shaft 123 corresponding with the shaft 23, whereby said shaft 123 will be driven by turning of the car wheels 112 and their gears 43.

The numeral 47 indicates the car bail to which the haul rope 48 is attached. Any suitable provision may be made at the opposite end of the car for connection of the haul rope 48, the connecting means not forming part of the present invention. Similarly, the numeral 49 indicates an oil tank held by a strap 50 and bar washer 51 the same not forming part of the present invention.

I would state furthermore that while the illustrated example constitutes a practical embodiment of my invention, I do not limit myself strictly to the exact details herein illustrated, since, manifestly, the same can be considerably varied without departure from the spirit of the invention as defined in the appended claims.

Hacing thus described my invention, I claim:

1. In an aerial tramway car having a door, and latch means for said door, a transversely travelling tripping element on the car and a second element connected to said latch means adapted to be engaged by said tripping element and adapted furthermore to be variously positioned to effect engagement of the said travelling tripping element upon a predetermined travel thereof.

2. In an aerial tramway car having a door, and latch means on the car for controlling the door, an element adapted to be variously positioned transversely of the car and held in a given position, a transverse shaft having threads, means to drive said shaft with the turning of the running wheels of the car, and a traveller in threaded engagement with said shaft and adapted upon a predetermined travel thereof to engage said first-mentioned element; together with means to cause the latch to be tripped by engagement of said elements one with the other.

3. In a tramway car having running wheels, a transverse shaft adapted to be driven with the turning of the running wheels, a traveller adapted to traverse said shaft when said shaft is driven, a rock shaft,

a hinged door on said car, a latch for said door, means to release said latch by the rocking of said rock shaft, and an element on the rock shaft adjustable to various positions along said shaft, said adjustable elemen adapted to be engaged by said traveller for rocking said rock shaft and releasing the latch.

4. In an aerial tramway car of the class described having a door, a latch for said door, latch-releasing means adapted to exert a pull on the latch, an element with which said latch-pulling means is connected, a rock shaft along which said element is adjustable, and tripping means adapted to cause rocking of said shaft, said tripping means including an element on the rock shaft and variously adjustable along the same, a driven shaft, a traveller adapted to traverse said driven shaft when the latter is driven for engaging the second-mentioned element, and means to drive said driven shaft with the turning of the car wheels.

5. In an aerial tramway car of the class described, having a door, a latch for said door, latch-releasing means adapted to exert a pull on the latch, an element with which said latch-pulling means is connected, a rock shaft along which said element is adjustable, tripping means to rock said shaft, said means including a second element on the rock shaft and variously positionable along the same, a traveller adapted to move transversely of the car, a laterally disposed contact member on said second element adapted to be engaged by said traveller, and means to cause said traveller to be actuated by the travel of the car.

GILBERT M. KILCARR.