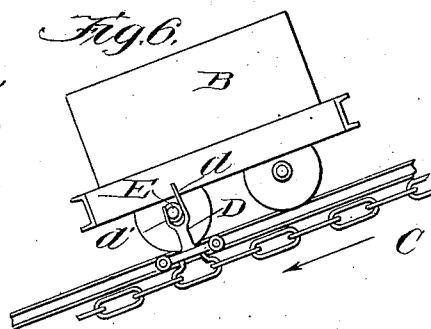
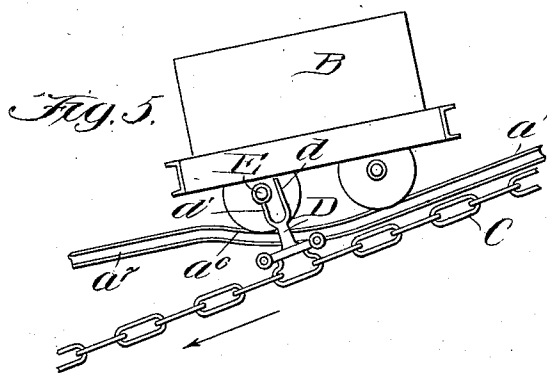
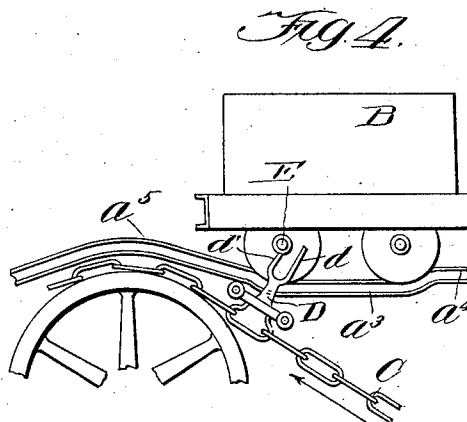
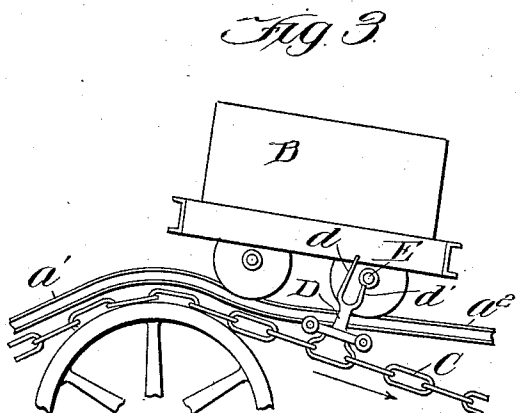
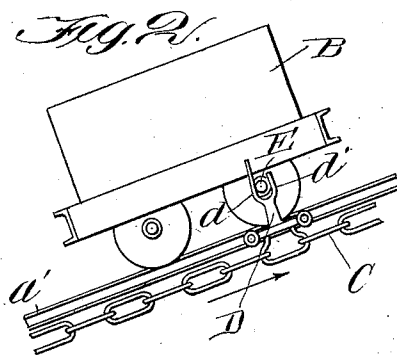
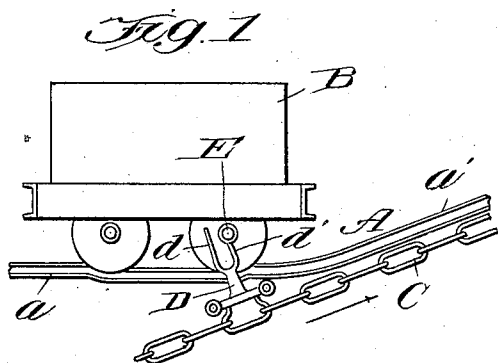


No. 865,849.

PATENTED SEPT. 10, 1907.

R. ARDELL.
DEVICE FOR HAULING CARS.
APPLICATION FILED MAR. 28, 1907.



Witnesses:

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UNITED STATES PATENT OFFICE.

ROBERT ARDELL, OF STOCKHOLM, SWEDEN.

DEVICE FOR HAULING CARS.

No. 865,849.

Specification of Letters Patent.

Patented Sept. 10, 1907.

March 28, 1907. Serial No. 365,211.

To all whom it may concern:

Be it known that I, ROBERT ARDELL, a citizen of the United States, residing at Stockholm, Sweden, have invented a certain new and useful Improvement in Devices for Hauling Cars, and declare the following to be a full, clear, and exact description of the same, 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.

My invention relates particularly to railways wherein the cars are operated by means of an endless movable chain or cable, and it has for its object to provide an arrangement wherein a car may be readily picked up and be caused to travel at the same rate as the chain or cable without danger of accidentally releasing the car.

A further object of my invention is to provide a novel form of gripping device for use in systems of the character described.

Specifically stated, my invention consists in the use of one or more forks rigidly connected to the hauling chain or cable and so arranging the track so that a car may be readily engaged by the fork at one point and be released therefrom after the car has been brought to its destination. The forks used have preferably a long prong and a shorter prong, the short prong being in front of the long one so that, as the fork approaches the car, the shorter prong may pass beneath a projection thereon, while the other prong engages the projection and causes the car to move with the cable. A short movement of the car from its initial position brings the projection beneath the upper end of the short prong so that the car is positively locked to the cable and is held against independent movement in either direction until its destination is reached, at which point an automatic release is effected. By this arrangement all necessity for pivoted engaging devices on the cable is avoided, and the cooperating stops which it is necessary to employ in connection with such pivoted devices, in order to prevent the backward movement of the car, is entirely done away with.

The various features of novelty which characterize my invention will be hereinafter pointed out with particularity in the claims; but for a full understanding of my invention in its various aspects, reference is to be had to the following detailed description taken in connection with the accompanying drawing, wherein:

Figure 1 shows a part of a system arranged in accordance with a preferred form of my invention, a car being in position to be engaged by a fork on the cable; Fig. 2 shows the same car being carried up an incline; Fig. 3 shows the car about to be disengaged from the fork at a point which the car is adapted to be brought

to rest; Fig. 4 is a view similar to Fig. 1 showing a different configuration of track at the starting point; Fig. 5 is a view similar to Fig. 3, showing, however, a different configuration of track at the destination; and Fig. 6 is a view similar to Fig. 2, the car being indicated as traveling down the incline instead of ascending it as in Fig. 2.

Referring to the drawing, A indicates a track upon which a car B is adapted to travel, C is a chain or cable which may be of any usual type, preferably in the form of an endless traveling member. The chain or cable runs parallel with the track, except at the starting and destination points, and is provided with forks D which are adapted to engage with a projection on the car to cause the car to be positively carried with the chain or cable.

The member D is made in the form of a two-pronged fork, the prong d being longer than the prong d' . This fork is adapted to engage with any suitable projection on the car. Instead of employing a separate member for this projection the fork may be so proportioned as to engage directly with one of the car axles E. The fork may be secured to the cable in any suitable way so that when the cable is taut the fork will project rigidly therefrom.

In order to effect the engagement and disengagement of the fork with the car at the proper times and prevent disengagement at other times, the cable and the track are so related to each other that between the starting and stopping points the cable runs parallel with the track and at such distance therefrom that the fork is positively held in engagement with the axle or other projection; while at the starting and stopping points the track and cable are caused to diverge sufficiently to permit the fork to be drawn out of engagement with the projection on the car. Any suitable arrangement may be employed for effecting these results; thus, for example, the track may be curved at the starting and stopping points. In Fig. 1 I have shown an arrangement wherein a car is to be picked up at the foot of an incline and carried up the incline. The stretch of track a at the foot of the incline a' is at such an angle that when the fork approaches, the short prong passes freely beneath the front axle of the car, while the longer prong strikes against the rear side of the axle and compels the car to move with the cable. As the car is carried upon the incline the axle gradually descends between the prongs of the fork so that, while on the incline, the car is positively held against movement in either direction independently of the cable. It will be seen that the car may be moved down the incline in the same manner, as indicated in Fig. 5.

In Fig. 3 I have shown a convenient way of effecting a disengagement between the fork and the car when the car reaches its destination. Thus the track a^2 at the top of the incline is arranged at such an angle that after the

car leaves the incline the fork is gradually drawn downward until both prongs are carried below the axle, after which, of course, the fork continues its movement without the car.

5 In Fig. 4 there is shown an arrangement of track whereby a car may conveniently be brought to the proper starting point and there be engaged by a fork without requiring any attention on the part of the operator. Thus the section of track a^3 between the sections a^4 and a^5 is depressed and is of such length that
10 when a car is pushed in position it automatically stops in proper position to be picked up.

In Fig. 6 I have shown a still further arrangement whereby a car may be released from the chain or cable
15 at the foot of an incline. The section of track a^6 immediately adjacent the foot of the incline may be horizontal, while the following section a^7 is either horizontal or downwardly inclined. The release is effected upon the section a^7 and, if the section a^7 is downwardly inclined,
20 the car may then continue by gravity to some other point.

While I have described in detail a preferred arrangement for carrying out my invention, I do not desire to be limited to the particular details of construction
25 shown, since in its broader aspects my invention may be carried out in various other forms, as will be evident

from the definitions of my invention comprised in the appended claims.

Having now fully described my invention, what I claim as new and desire to secure by Letter Patent is: 30

1. In a car haul, the combination with a moving cable, a fork rigidly connected to the cable, and a track, the cable and track being so arranged relatively to each other that the fork is caused to assume different positions relatively to the track at different points along the track. 35

2. As an article of manufacture, a cable having projecting therefrom a rigid fork the prongs of which extend laterally from the cable at separated points lengthwise of the cable.

3. As a new article of manufacture, a chain or cable 40 having projecting therefrom a rigid fork, one of the prongs of which is longer than the other.

4. In a car-haul, the combination with an endless chain or cable, of a rigid fork projecting therefrom, a track, a car adapted to travel along said track, and a projection on 45 the car adapted to be received between the prongs of the fork, said track and cable being arranged parallel with each other, except at the starting and stopping points for the car at which latter point the track and cable diverge.

In testimony whereof, I sign this specification in the 50 presence of two witnesses.

ROBERT ARDELL.

Witnesses:

CARL FRIBERG,
HJALMAR JETTERSTROM.