

J. ROWNEY.
 MINE CAR HAULING DEVICE.
 APPLICATION FILED JULY 28, 1908.

Patented Nov. 3, 1908.
 2 SHEETS—SHEET 1.

903,006.

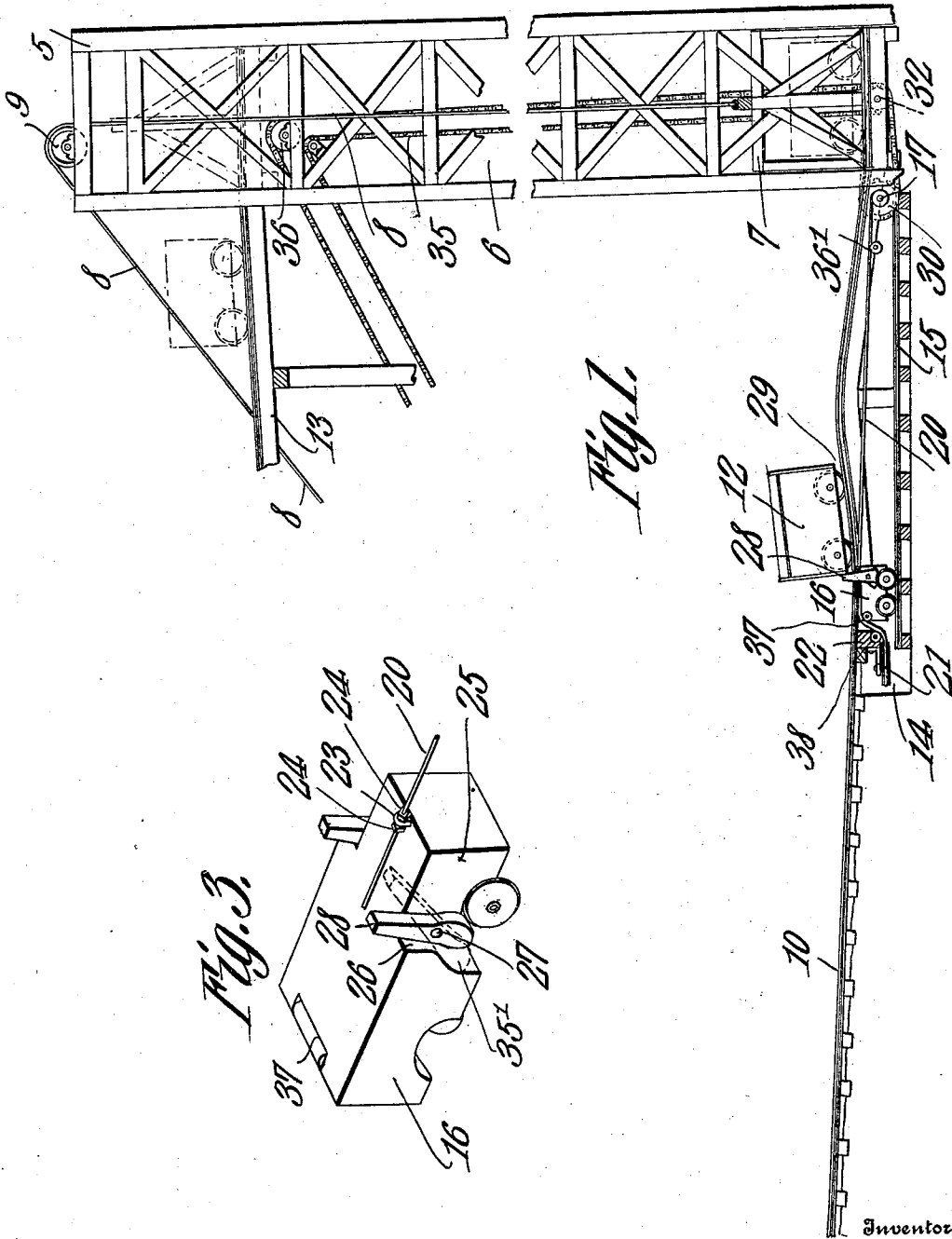


Fig. 1.

Fig. 2.

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Witnesses

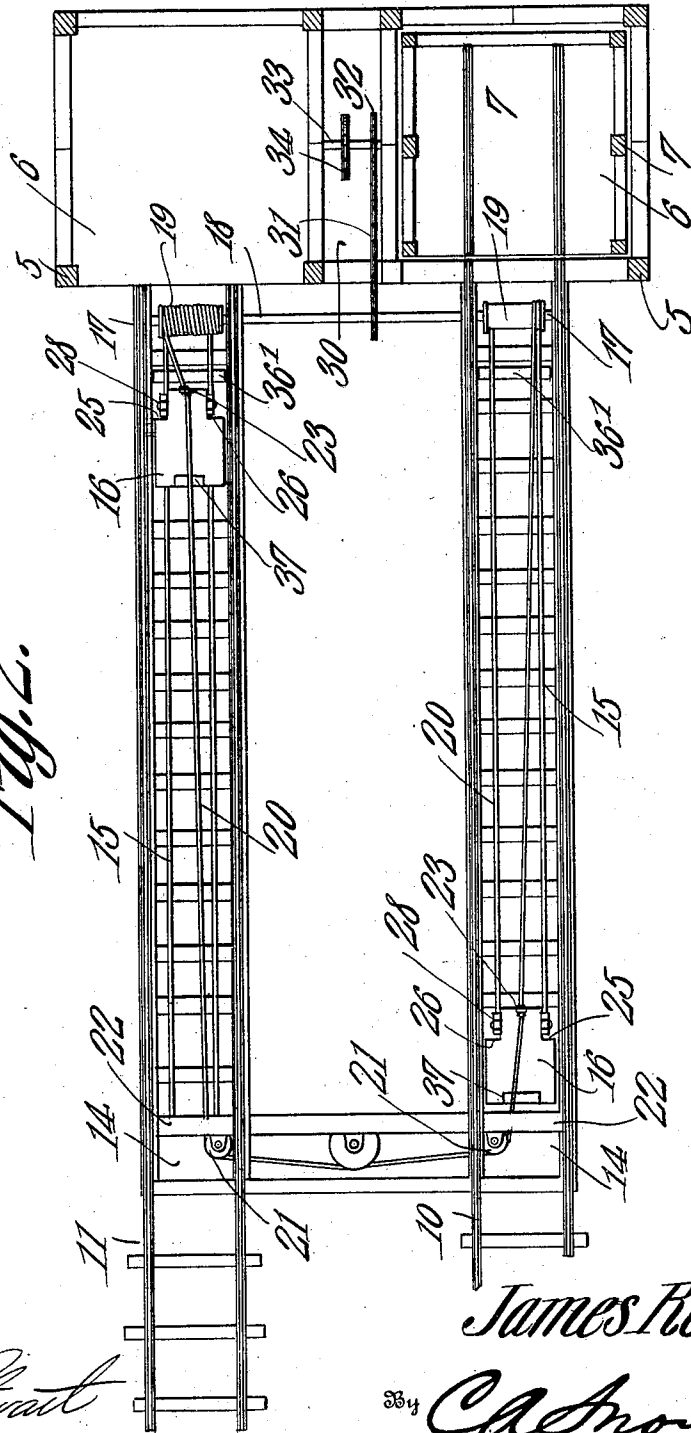
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 L. M. Moxer

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Fig. 2.



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UNITED STATES PATENT OFFICE.

JAMES ROWNEY, OF EAST ST. LOUIS, ILLINOIS, ASSIGNOR OF ONE-HALF TO WILLIAM EPPMEYER, OF EAST ST. LOUIS, ILLINOIS.

MINE-CAR-HAULING DEVICE.

No. 903,006.

Specification of Letters Patent.

Patented Nov. 3, 1908.

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To all whom it may concern:

Be it known that I, JAMES ROWNEY, a citizen of the United States, residing at East St. Louis, in the county of St. Clair and State of Illinois, have invented a new and useful Mine-Car-Hauling Device, of which the following is a specification.

This invention relates to loading and unloading apparatus and more particularly to improved means for hauling coal from a mine to the mine cage to be delivered to the tippie.

The object of the invention is to provide a hauling truck mounted for travel in a pit at the base of the elevator shaft and arranged to automatically engage the cars and haul the same to the mine cage.

A still further object of the invention is generally to improve this class of devices so as to increase their utility, durability and efficiency.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions and minor details of construction may be resorted to within the scope of the appended claims.

In the accompanying drawings forming a part of this specification: Figure 1 is a side elevation of a mine car hauling apparatus constructed in accordance with my invention. Fig. 2 is a top plan view partly in section of the same. Fig. 3 is a perspective view of the hauling truck.

Similar numerals of reference indicate corresponding parts in all of the figures of the drawings.

The device includes a vertically disposed frame 5 having spaced shafts 6 in which are mounted for vertical movement suitable cages 7, the latter being moved to raised and lowered position by means of cables 8, one end of each of which is attached to the top of the adjacent cage, while the other end thereof extends over a sheave or pulley 9 and is operatively connected with an engine or other suitable source of power.

Disposed at the front of the frame 5 and preferably inclined in the direction of the base of said frame are spaced tracks 10 and 11 on which are mounted for travel suitable cars 12, which latter convey the coal from the mine to the cages 7 to be elevated to the platform 13 for delivery to the tippie.

Disposed beneath the tracks at the base of the frame 5 is a pit 14 on the floor of which

are laid suitable auxiliary tracks 15, disposed in vertical alinement with the adjacent main tracks and arranged for the travel of a hauling truck or barney 16.

Journalled in suitable bearings 17 in the forward end of the pit 14 is a transverse shaft 18, to the opposite ends of which are rigidly secured suitable drums 19. Fastened to the drums 19 are the adjacent ends of a cable or conveyer 20, the intermediate portion of which travels over suitable sheaves or pulleys 21 journalled on a cross tie or beam 22 at the rear end of the pit. The cable 20 passes through an eye or staple 23 secured to the forward end of each hauling truck, there being clamping nuts 24 disposed on opposite sides of the staple 22 and arranged to bear against the same for preventing longitudinal movement of the truck on the cable 20.

The opposite longitudinal edges of each truck are cut away at 25 to produce stop shoulders 26, and pivotally mounted at 27 on the cut away portions of the truck are gravity actuated pawls 28, the upper ends of which extend in the path of movement of the cars 12 and engage the rear end of the latter as said cars travel in the direction of the frame 5.

The tracks 10 and 11 above the pit 14 are inclined upwardly at 29 so as to check the speed of the cars 12, as the latter travel down the inclined track.

Secured to the shaft 18 is a sprocket wheel 30, which latter is connected through the medium of a sprocket chain 31 with a similar sprocket wheel 32 mounted on a stub shaft 33 at the base of the frame 5. Secured to the stub shaft 33 in spaced relation to the sprocket wheel 32 is a similar sprocket wheel 34 which engages a sprocket chain 35, the latter passing over suitable sprocket wheels 36 journalled on the upper portion of the frame from whence it is extended to the drum of an engine or other suitable source of power. It will thus be seen that as the shaft 18 is rotated the opposite ends of the cable 20 will be alternately wound upon and unwound from the drums 19 so as to cause the hauling trucks 16 to move back and forth on the auxiliary tracks 15.

In operation, a car from the mine traveling over either main track in the direction of the frame 5 will engage and move the pawls 28 to the dotted line position shown in Fig. 3 of the drawings, so as to permit the passage

of said car to the incline 29, the weight of the lower end of the pawl automatically returning the latter to vertical position as soon as the car passes over the same. With the car in the position shown in Fig. 1 of the drawings, the operator throws the controlling clutch of the engine so as to impart movement through the medium of the sprocket chain 35 and shaft 18 to the conveyer 20 which moves the truck 16 in the direction of the frame 5 and causes the pawl 28 to bear against the rear end of the car and moves the latter beyond the apex of the inclined portion 29, when said car will travel by gravity down the incline and onto the adjacent cage from whence it will be elevated by the cable 8 to the platform 13 and thence travel down the track on said platform to the tippie. As one cage ascends, the other descends so as to be in position to receive a car from the other main track thus permitting the continuous operation of the machine.

Attention is here called to the fact that the shoulder 35' by engagement with the weighted end of the pawl serves to limit the forward tilting movement of the latter, while the shoulder 26 by engagement with said pawl serves to limit the rearward movement thereof, the shoulder 35' being inclined rearwardly to permit free swinging movement of said pawl as the car 12 passes over the hauling truck.

Suitable idle rollers 36' are preferably journaled in the pit near the shaft 18 for guiding the cable 20 to the drums 19, there being idle rollers 37 journaled on the hauling truck and similar rollers 38 journaled on the transverse bar 22 for guiding the cable to the pulleys 21.

It will thus be seen that the hauling trucks reciprocate alternately on the tracks 15 so that when one truck is delivering a car to the adjacent cage, the other truck is in the position to engage another car and deliver the same to the mating cage.

From the foregoing description it is thought that the construction and operation of the device will be readily understood by those skilled in the art and further description thereof is deemed unnecessary.

Having thus described the invention what is claimed is:

1. In a car haul, an elevator including a cage, a track inclined in the direction of the base of the elevator shaft, and a hauling truck mounted for travel beneath the inclined track and adapted to engage and deliver the cars on said track to the cage.

2. In a car haul, an elevator including a plurality of cages, spaced tracks inclined in the direction of the base of the elevator, and hauling trucks mounted for travel beneath said tracks and provided with means adapted to engage and deliver the cars on said tracks alternately to the cages.

3. In a car haul, an elevator including a

plurality of vertically movable cages, spaced tracks inclined in the direction of the base of the elevator, auxiliary tracks disposed beneath the main tracks, and hauling cars mounted for travel on the auxiliary tracks and provided with gravity actuated pawls adapted to engage the cars on the main tracks and deliver the same alternately to the cages.

4. In a car haul, an elevator including a plurality of vertically movable cages, spaced tracks inclined in the direction of the base of the elevator, there being a pit disposed beneath the main tracks at the base of said elevator, auxiliary tracks disposed within the pit, and hauling cars mounted for travel on the auxiliary tracks and provided with gravity actuated pawls arranged to engage the cars on the main track and deliver the same alternately to the cages.

5. In a car haul, an elevator including a plurality of vertically movable cages, spaced tracks extending in the direction of the base of the elevator car and each provided with an inclined portion for checking the movement of the cars, auxiliary tracks disposed beneath the main tracks at the inclined portion of the latter, and hauling cars mounted for travel on the auxiliary tracks and provided with means for engagement with the cars on the main tracks when the latter arrive at the inclined portions of said main tracks.

6. In a car haul, an elevator including a vertically movable cage, a track extending in the direction of the base of the elevator and provided with an inclined portion, and a hauling truck arranged for travel beneath the main track and provided with means for automatically engaging the car when the latter reaches the inclined portion of the main track, thereby to deliver said car to the cage.

7. In a car haul, an elevator including a vertically movable cage, a track extending in the direction of the base of the elevator and provided with an inclined portion, a hauling car mounted for travel beneath the track, and gravity actuated pawls arranged to engage the car as the latter reaches the inclined portion of the track and deliver the car to the cage.

8. In a car haul, a frame including spaced shafts, a cage mounted for vertical movement in each shaft, a track leading to the base of each shaft, an operating shaft extending transversely of said tracks and arranged beneath the same, drums secured to the shaft, a cable having its intermediate portion passing over guide pulleys and its opposite ends secured to the drums, a hauling car attached to each leg of the cable and adapted to engage the cars for moving the latter alternately to the cages, and means for rotating the operating shaft.

9. In a car haul, a supporting frame having spaced shafts, a cage mounted for verti-

cal movement in each shaft, spaced tracks extended in the direction of the base of the frame, there being a pit arranged beneath said tracks adjacent said frame, an operating shaft journaled in the pit beneath the main tracks, auxiliary tracks arranged within the pit, hauling cars mounted for travel on the auxiliary tracks and provided with pawls adapted to engage the cars on the main tracks for delivering the latter to the cages, drums secured to the operating shaft, a cable secured to the drums and operatively connected with the hauling cars for actuating the latter, and means for rotating the operating shaft.

10. In a car haul, an elevator having a cage mounted for vertical movement therein,

a track extending in the direction of the base of the elevator and provided with an inclined portion, a hauling truck mounted for travel beneath the main track and provided with cut away portions defining stop shoulders, pawls pivotally mounted on the cut away portions of the truck and adapted to engage the car for delivering the latter to the cage, and means for operating the hauling car.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JAMES ROWNEY.

Witnesses:

WALTER T. PFEFFER,
R. W. CUSHMAN.