P. J. FICKINGER.

MULE OR PUSHER CAR.

APPLICATION FILED SEPT. 25, 1915.

1,162,760. Patented Dec. 7, 1915.

FIG. 1

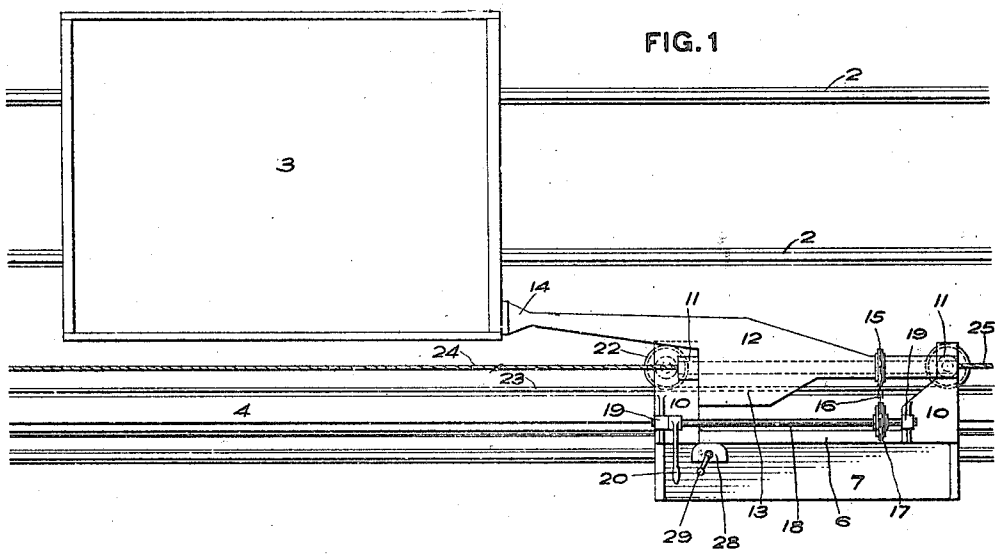
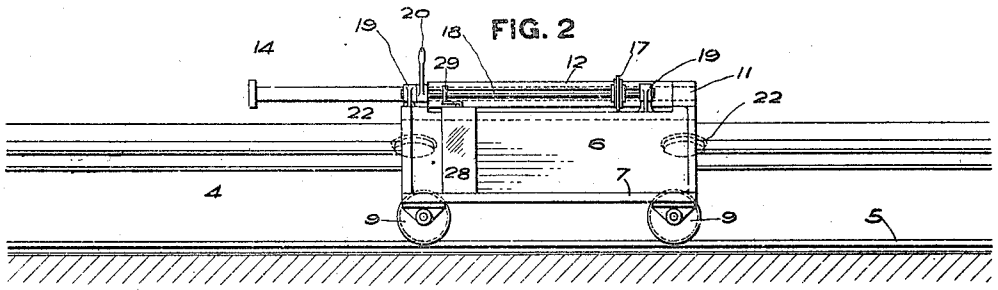


FIG. 2



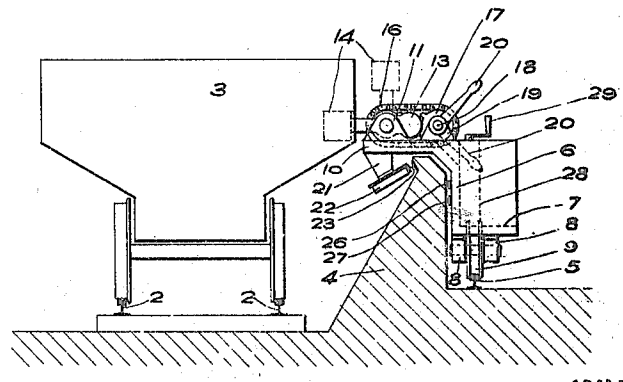


FIG. 3

WITNESSES

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MULE OR PUSHER-CAR.

1,162,760. Specification of Letters Patent. Patented Dec. 7, 1915.

Application filed September 25, 1915. Serial No. 52,563.

To all whom it may concern:

Be it known that I, PRESLY J. FICKINGER, a citizen of the United States, and resident of Conneaut, in the county of Ashtabula and State of Ohio, have invented certain new and useful Improvements in Mules or Pusher-Cars, of which the following is a specification.

My invention relates to mules or pusher cars used in moving cars on a railway track, one object of the invention being the provision of a mule of novel construction adapted for use in moving a car or train of cars from one point to another on a track which is inclined, but may be level, and arranged to pass or be passed by the car or train of cars without engagement therewith in moving the mule or in moving the cars into position for the cars to be operatively engaged by the mule; and the invention consists in certain novel features of construction and combinations and arrangements of parts to be more fully described hereinafter and to be pointed out in the appended claims.

Referring now to the drawings forming part of this specification, Figure 1 is a plan showing the mule or pusher car, as arranged on its track alongside a railway track for use in shifting cars from one point to another on said railway track. Fig. 2 is a side elevation of the apparatus of the mule or pusher car shown in Fig. 1. Fig. 3 is an end elevation of the apparatus shown in Figs. 1 and 2.

In the accompanying drawings, the numeral 2 designates the track rails of a car track on which cars 3 are moved into position upon a car dumper to be inverted and thereby emptied. On one side of the wall 4, which extends alongside the track formed by the rails 2, 2, parallel with the rails 2, 2 is a single rail 5 forming a parallel track for the mule or pusher car.

The mule comprises a frame 6 having a platform 7 on which the operator stands and rides with the mule, when the mule is traveling on the rail 5 in pushing the cars 3 and in returning into position to engage another car or train of cars, and secured to the frame 6 in bearings 8 beneath the platform 7, are flanged wheels 9 by which the mule is supported upon the mule track-rail 5. The extension or top portion 10 of the frame 6 projects sidewise above and across the top of the wall 4 located between the car track formed by the single rail 5.

Pivotally secured in bearings 11, 11, on the upper surface of the frame extension 10 is a swinging or rocking pusher arm 12, this arm being provided with an extension 13 forming a counterbalance weight for the front or car engaging end 14 of the arm 12.

A sprocket wheel 15 on the rear end of the pusher arm 11 is connected by an endless sprocket chain 16 with a sprocket wheel 17 on the horizontal rocking shaft 18, which is mounted in bearings 19, 19 on the extension 10 of the frame 6. A hand lever 20 provides means for the operator, while stationed on the platform 7, to rock the shaft 18 and swing the end 14 of the pusher arm 12 into operative position, shown in full lines in Figs. 1 and 3, and to move the arm into its inoperative position shown by dotted lines in Fig. 3.

Projecting from the lower side of the extension 9 of the frame 6 are angular bracket bearings 21 (see Fig. 3) and rotatably secured on each bracket bearing 21 is a flanged wheel 22, the axes of these wheels extending at an oblique angle to the vertical. The tread of each of the wheels 22 engages with the guide rail 23 which is secured on the upper end of the wall 4, these wheels 22 assisting in maintaining the mule in position on the track rail 5 when the mule is in motion.

The weight of the mule is distributed to give the mule a tendency to overturn sidewise from left to right in Fig. 3 and this tendency to overturn is offset and such turning movement is prevented by engagement of the wheels 22 with the guide rail 23.

The mule is connected to one end of a haulage rope 24 which extends lengthwise alongside the track rails 2 and is connected at its other end to the rope drum of a haulage mechanism and a tail rope 25 connected by one end to the rear end of the mule, after passing around a rope sheave, (not shown) extends backwardly and is connected by its other end to the rope drum of the haulage mechanism so when the winding drum is rotated to pull on the haulage rope 24, the mule is moved along the track (from right to left in Fig. 1) and when the end 14 of the arm 12 is rocked or turned into position to engage the end of a car 3 on the track rails 2, the mule will move such car on the

track. When the haulage mechanism is reversed the tail rope 25 will pull the mule backwardly or from left to right in Fig. 1.

The drum of the haulage mechanism is driven by an electric motor and the electric terminals or feed wires of this motor are connected to horizontal electric conductor bars 26 and 27 which are secured to the face of the wall 4 near its upper end.

Contact shoes are provided on the frame 6 of the mule to operatively engage with the conductor bars 26, 27, and these contact shoes are connected by wires to the electric controller 28, which is mounted on the platform 7 of the mule and is provided with an operating handle 29 by which the controller is manipulated.

In the operation of the mule forming this invention, the controller handle 29 is turned by the operator stationed upon the platform 7, to move the controller into position to supply current to the electric motor driving the rope drum and causing the rope drum to rotate. The rope drum through the tail rope 25 causes the mule to move backwardly into position to engage the rear end of a car 3 on the track rails 2, 2, or engage the rear end of the last car in a train of cars on the track formed by the rails 2. The pusher arm operating handle 20 is then thrown from the dotted position into the full line position shown in Fig. 3, this movement swinging the rocking pusher arm 12 to move the car engaging end 14 of this arm from the position shown in dotted lines into that shown in full lines in Fig. 3. The controller is then set to cause the motor to turn the winding drum so as to pull and cause the mule to move from right to left in Fig. 1. The end 14 of the pusher arm 12 then engages with and moves the car 3 or a train of cars 3 along the track formed by the rails 2, 2, and pushes the car or cars into or upon the car dumper. Ordinarily the car dumper is elevated to provide the clearance or head room necessary for dumping the cars into bins or receptacles beneath the car dumper, so that the track formed by the rails 2, 2, leading to the car dumper ordinarily is inclined. The apparatus, however, will operate equally well on a level track. While the mule is pushing a car or plurality of cars into position on the car dumper to be dumped, another loaded car or series of cars will be placed on the track 2 in position to be engaged later by the pusher arm of the mule. After pushing a car 3 upon the car dumper, the mule is moved backwardly into position to enable its engaging another car. At the beginning of the backward movement of the mule, the operator, by means of the hand lever 20, moves the swinging pusher arm 12 to bring the pushing end 14 of the arm into its inoperation position (shown dotted in Fig. 3). When in this position the arm of the mule will clear the side of the car or train of cars standing on the track 2 so that the mule can be moved to the rear end of such car or train of cars into position for the arm 12 to again be swung into car engaging position.

The advantages of my invention will be apparent to those skilled in the art. The apparatus is simple and is easily kept in repair. With mules constructed in accordance with my invention the operator rides on the mule and is always close to the car being pushed in a position to quickly see the necessity for stopping and simultaneously to stop the pushing movement of the mule at any time, instead of being located at a remote point where the conditions for observing cannot be so readily seen, or necessity for stopping the mule so quickly realized.

By providing the counter-balanced rocking pusher arm the necessary strength of the parts is secured without undue increase in the power required to swing the arm, so that the arm may be operated manually. The mule is located on a track out of the path of the cars on the track leading to the car dumper. By means of my improved apparatus the necessity of having a pit or depressed track between the rails of the car track and of using a "ground hog" in handling and placing cars on a car dumper is avoided and overcome.

Modifications in the construction and arrangement of the parts may be made without departing from my invention as defined in the appended claims. While the apparatus is shown as applied for use on a car dumper, obviously it is adapted for other uses.

I claim:—

1. A mule or pusher car comprising a frame having track wheels and having means whereby the mule is moved on the track therefor, an operating platform on said frame, a rocking arm pivoted on the frame and arranged to move into and out of engagement with a car positioned at one side of the mule, and means whereby said rocking arm is swung into and out of car engaging position by an operator on said platform.

2. A mule or pusher car comprising a frame having track wheels and having means whereby the mule is moved on the track therefor, a rocking arm pivoted on the frame and arranged to move into and out of engagement with a car positioned at one side of the mule, a shaft on said frame having a handle, and means connecting the shaft and rocking arm to thereby move the arm into and out of car engaging position when the shaft is rocked by said handle.

3. A mule or pusher car comprising a frame having track wheels and guide wheels by which the mule is maintained in upright

position, a platform on the side of said frame, a horizontal rocking arm pivoted on the frame arranged to move into and out of engagement with a car positioned at one side of the mule, and means for swinging said rocking arm into and out of car engaging position by an operator on said platform.

4. A mule or pusher car comprising a frame having track wheels and having means whereby the mule is moved on the track therefor, a platform above said track wheels, a lengthwise horizontal rocking arm pivoted on the frame and having an overhanging end arranged to move into and out of engagement with a car positioned at one side of the mule, and means for swinging said rocking arm into and out of car engaging position by an operator on said platform.

5. A mule or pusher car comprising a frame having track wheels and having means whereby the mule is moved on the track therefor, a platform above said track wheels, a counterbalanced rocking arm pivoted on the frame having an end arranged to move into and out of engagement with a car positioned at one side of the mule, and means for swinging the rocking arm into and out of car engaging position by an operator on said platform.

6. A mule or pusher car comprising a frame having track wheels and having means whereby the mule is moved on the track therefor, a platform on one side of said frame, a rocking arm pivoted on the frame having an end arrangement to move into and out of engagement with the end of a car positioned at one side of the mule, an electric controller on the frame for regulating the movement of the mule on its track, and means for swinging said pivoted arm into and out of car engaging position, said controller and arm swinging means being manipulated manually from said platform.

7. A mule or pusher car comprising a frame having a platform, a rocking arm pivoted on the frame, means for moving the frame, and means for swinging said rocking arm, said frame and arm moving means being regulated and controlled by an operator stationed on said platform.

In testimony whereof I have hereunto set my hand.

PRESLY J. FICKINGER.