

J. McEVoy.
 APPARATUS FOR HANDLING MINE CARS.
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978,321.

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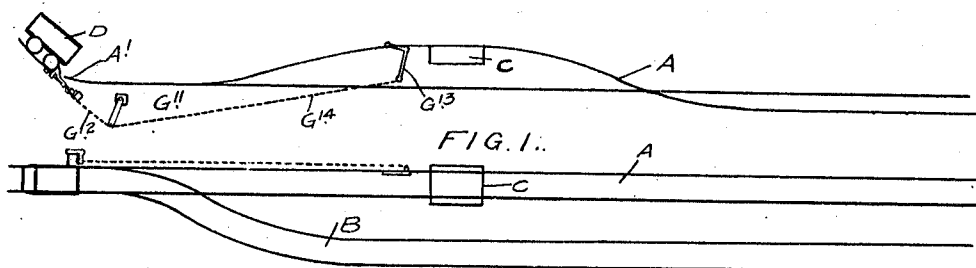


FIG. 2.

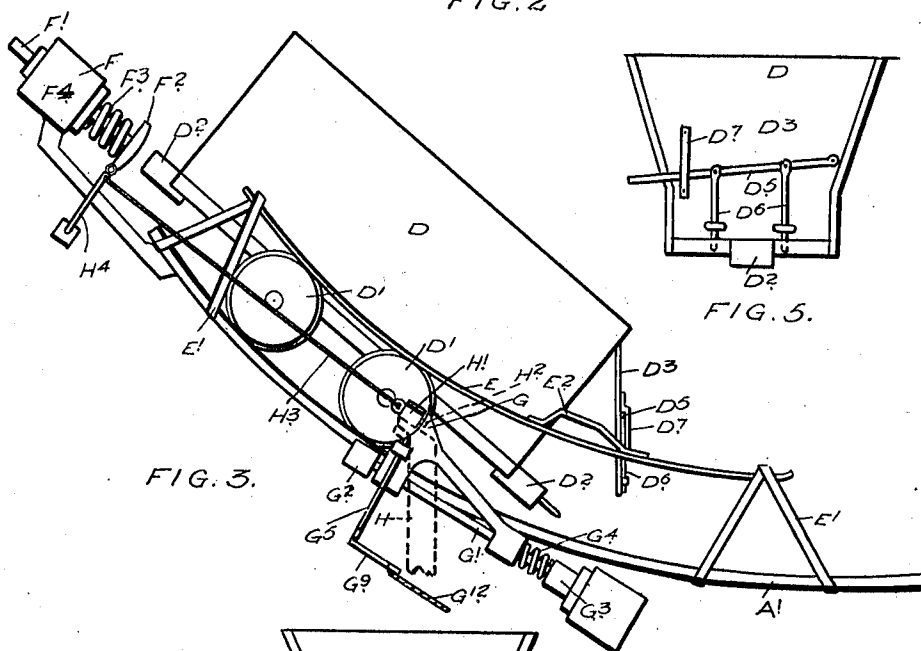


FIG. 3.

FIG. 5.

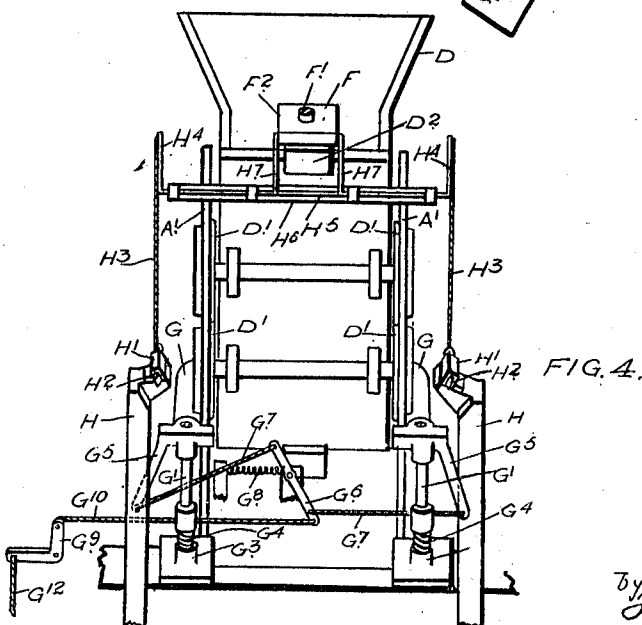


FIG. 4.

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APPARATUS FOR HANDLING MINE-CARS.

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To all whom it may concern:

Be it known that I, JAMES McEVOY, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements in an Apparatus for Handling Mine-Cars, of which the following is the specification.

My invention relates to improvements in an apparatus for handling mine cars, and the object of the invention is to devise a simple means, whereby a mine car may be automatically dumped when it has reached the limit of its movement up the kick back.

A further object is to provide means whereby when the car following passes off the weighing scales it will release the car on the kick back automatically.

A still further object is to dispense with any power other than gravity to effect the end desired.

My invention consists of a track having an upwardly curved end and provided with a curved guide rail supported on suitable standards above the level thereof and having an inclined projection located thereon, a spring bumper located at the upper end of the curved portion of the track, swinging spring stops suitably supported on each side of the curved portion of the track and designed to be brought in contact with the wheels by the connections attached to the bumper and operated when the bumper is struck by the car and an end door for the car provided with a closing plunger and lever designed to co-act with the inclined projection on the curved side rail, the parts being arranged and constructed as hereinafter more particularly explained.

Figure 1, is an elevation of a track provided with my improvements. Fig. 2, is a plan view of the track. Fig. 3, is an enlarged view of the curved end of the track showing my improvements. Fig. 4, is an end view of the car and track and mechanism co-acting with the car. Fig. 5, is an end view of the door or flap end of the car.

In the drawings like letters of reference indicate corresponding parts in each figure.

A is the main track having the curved upwardly extending end A' forming what is technically known as the kick back.

B is a switch track extending from a point in proximity to the kick back.

C is a weighing scales located at the top of the grade on the main track A (see Fig. 1).

D is the mine car, which is shown on the track A at the kick back portion, which is curved upwardly as shown.

D' are the wheels of the car.

E is a rail curved concentrically to the kick back portion of the track and supported on suitable end standards E' at one side of the track and in proximity thereto.

D² are the couplers of the car.

F is a spring bumper of any suitable construction and comprising a plunger F' having a head F², a spring F³ encircling the plunger and a socket F⁴ into which the plunger extends.

D³ is the door or flap at the end of the car, which is swung at the top on the end of the car.

D⁵ is a lever and D⁶ are plungers connected to the lever and fitting into sockets in the end beam of the car. When the door or flap is closed the end of the lever projects beyond the side of the car and said lever is retained in place by means of a strap D⁷. As the car passes up the kick back the lever D⁵ comes in contact with the inclined projection E² on the rail E and thereby raises the plungers and the door opens of its own gravity and the contents of the car are discharged therefrom gradually as the car proceeds up the kick back. When the car has reached the position for discharge it is necessary to lock the wheels and prevent the car descending before the contents are discharged and for this purpose I provide shoes G located one on each side of the track and swung on rods G' held in suitable bearings G² and G³.

G⁴ is a spiral spring encircling the rod G' and having a normal tendency to force the shoes inwardly to engage with the wheel. Each shoe G has an arm G⁵ attached thereto.

G⁶ is a lever fulcrumed between the tracks and having the opposite ends thereof connected by a wire cord G⁷ to the arms G⁵. A spring G⁸ connected to one end of the lever normally holds the lever G⁶ and the arms G⁵ in the position shown in Fig. 4, and also the bell crank G⁹ connected by the wire cord G¹⁰ to the lever G⁶ and the arm G¹¹ (see Fig. 1) to the bell crank G⁹ by the wire cord G¹² and the bell crank G¹³ connected to the arm G¹¹ by the wire cord G¹⁴ all as shown and described.

H are standards located on each side of the track and carrying the sockets H' and spring latches H². The latches H² are con-

nected by a cord H^3 to the bell cranks H^4 of the bell crank spindle H^5 journaled in suitable bearings H^6 and by arms H^7 to the bumper head F^2 .

5 The car after being weighed on the weigh scales C on the main track A has a wheel engage with the bell crank G^{13} , thereby pulling on the arms G^5 by the connection hereinbefore described and swinging the shoes G located against the wheels of the
10 previous car now on the kick back outwardly, so that they are engaged by the latches H^2 . The car now on the kick back is freed and may pass down on to the switch rail B and the car following hereinbefore mentioned of its own gravity will now pass
15 on to the kick back and in doing so the lever D^5 will engage with the raised projection E^2 on the said rail E and open the door and allow of the contents to be deposited. At practically the same time the car comes in contact with the bumper head F^2 and pulls the latches H^2 free from engagement with the shoes G by means of the cord H^3
20 and connections. The shoes are now thrown by the springs G^4 into contact with the wheels and hold the car in position while the contents are being dumped.

Although I have described in this specification the apparatus in detail by which the end, which I desire is accomplished, it will, of course, be understood that various alterations or modifications may be made in my invention without departing from the spirit
30 of my invention.

What I claim as my invention is:

1. In an apparatus for handling mine cars, the combination with the main track having a raised portion and a depressed
40 portion and the upwardly curved end forming the kick back, and the switch track, of a stop designed to hold the car on the kick back and means operated by the wheel of that car on the main raised portion of the
45 track as it passes toward the kick back for releasing the stop and the car on the kick back as and for the purpose specified.

2. In an apparatus for handling mine cars, the combination with the main track having a raised portion and a depressed portion and the upwardly curved end forming the kick back, and the switch track, of shoe stops designed to engage with the wheels of the car to hold the car on the kick back, and
50 means operated by the wheels of that car on the main raised portion of the track as it passes toward the kick back for releasing the stop and the car on the kick back as and for the purpose specified.

3. The combination with the main track having a raised portion and a depressed portion and the upwardly curved end forming the kick back, and the switch track, of shoes swung on rods located in proximity to
65 the track and journaled in suitable bearings,

a spring on the rod connected to the shoe and to the bearing and means connected to the shoe and operated by the wheels of the car on the raised portion of the main track for throwing the shoe out as the car on the
70 main portion passes toward the kick back as and for the purpose specified.

4. The combination with the main track having a raised portion and a depressed portion and the upwardly curved end forming the kick back, and the switch track, of shoes swung on rods located in proximity to the track and journaled in suitable bearings, a spring on the rod connected to the shoe and to the bearing, arms connected to the shoes,
80 a lever suitably fulcrumed between the tracks, wire connections to the ends of the lever and the arms, a bell crank on the side of the track, a connection from one end of the lever to the bell crank, a bell crank located in proximity to the track and the raised portion thereof designed to be operated by the wheels of the car as it passes toward the kick back and a connection between the bell crank on the raised portion of the main
90 track and the bell crank at the kick back as and for the purpose specified.

5. The combination with the main track having a raised portion and a depressed portion and the upwardly curved end forming the kick back, and the switch track, of shoes swung on rods located in proximity to the track and journaled in suitable bearings, a spring on the rod connected to the shoes and to the bearing, means connected to the shoes and operated by the wheels of the car on the raised portion of the main track for throwing the shoes out as the car on the main portion passes toward the kick back, and means for holding the shoes clear of the wheels of the car when they are thrown back and releasing means for such means as and for the purpose specified.

6. The combination with the main track having a raised portion and a depressed portion and the upwardly curved end forming the kick back, and the switch track, of shoes swung on rods located in proximity to the track and journaled in suitable bearings, a spring on the rod connected to the shoes and to the bearing, means connected to the shoes and operated by the wheels of the car on the raised portion of the main track for throwing the shoes out as the car on the main portion passes toward the kick back, standards located in proximity to the track and provided with spring latches for engaging with the shoes to hold them out of the path of the wheels and means for withdrawing such latches as and for the purpose specified.

7. The combination with the main track having a raised portion and a depressed portion and the upwardly curved end forming the kick back, and the switch track, of shoes swung on rods located in proximity to the
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track and journaled in suitable bearings, a
spring on the rod connected to the shoes and
to the bearing, means connected to the shoes
and operated by the wheels of the car on the
5 raised portion of the main track for throw-
ing the shoes out as the car on the main por-
tion passes toward the kick back, standards
located in proximity to the track and pro-
vided with spring latches for engaging with
10 the shoes to hold them out of the path of the

wheels, a spring bumper at the upper end of
the kick back, a crank rod pivotally con-
nected to the bumper and cords extending
from the crank ends to the latch as and for
the purpose specified.

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Witnesses:

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