Feb. 26, 1924. 1,484,764

J. B. DODD

ACTUATING MECHANISM FOR COAL DUMP CARS

Filed June 1, 1923 3 Sheets-Sheet 1

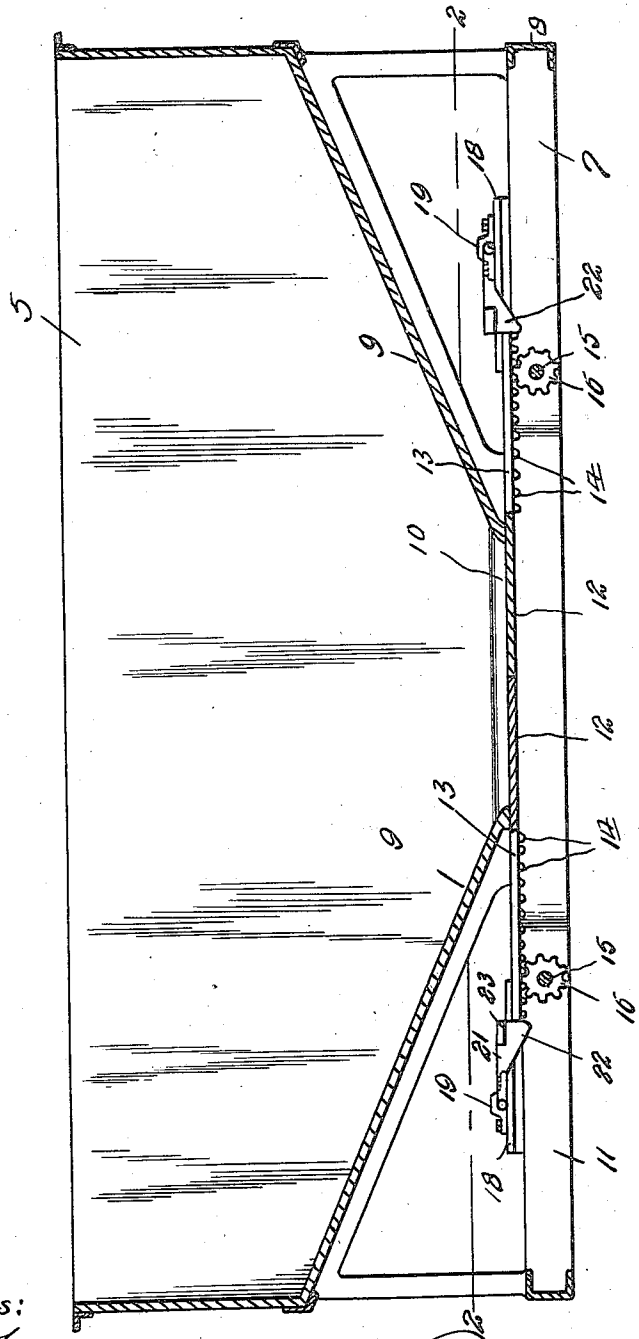


Fig. 1.

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ACTUATING MECHANISM FOR COAL DUMP CARS

Filed June 1, 1923 3 Sheets-Sheet 2

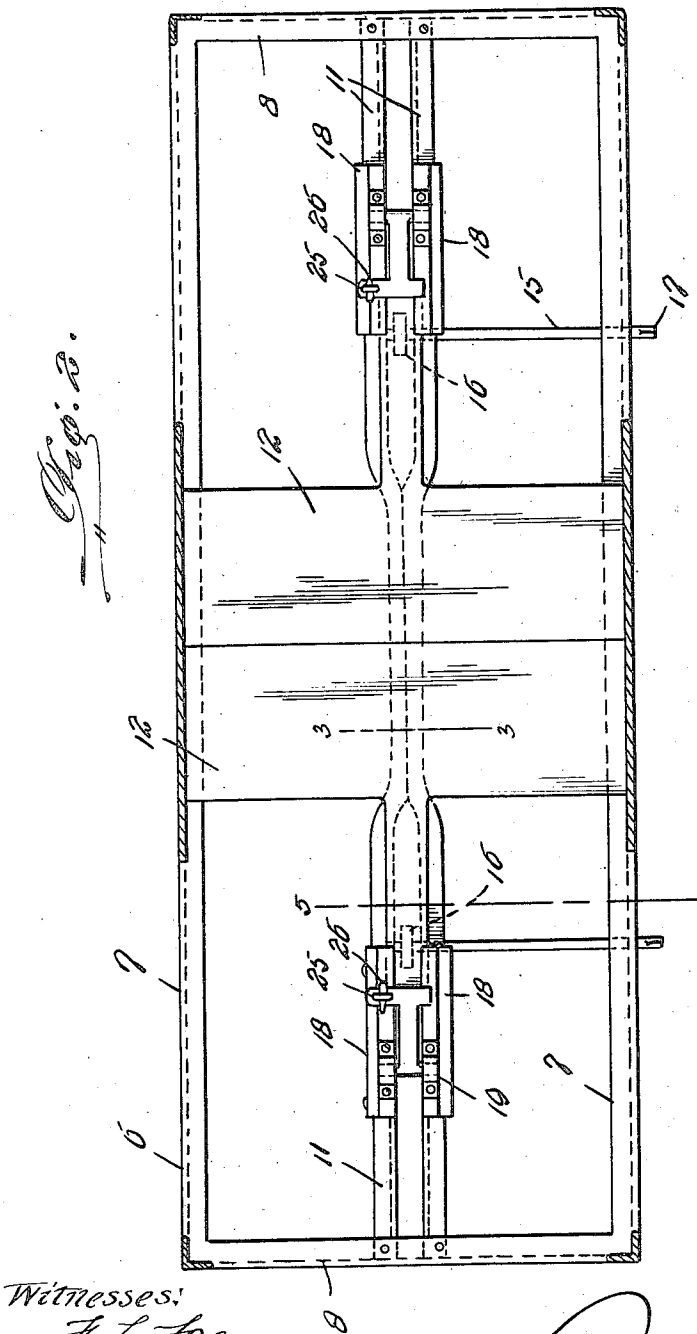


Fig. 2.

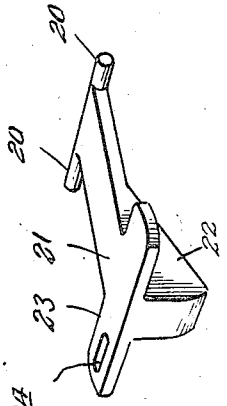


Fig. 3.

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ACTUATING MECHANISM FOR COAL DUMP CARS

Filed June 1, 1923 3 Sheets-Sheet 3

Fig. 4.

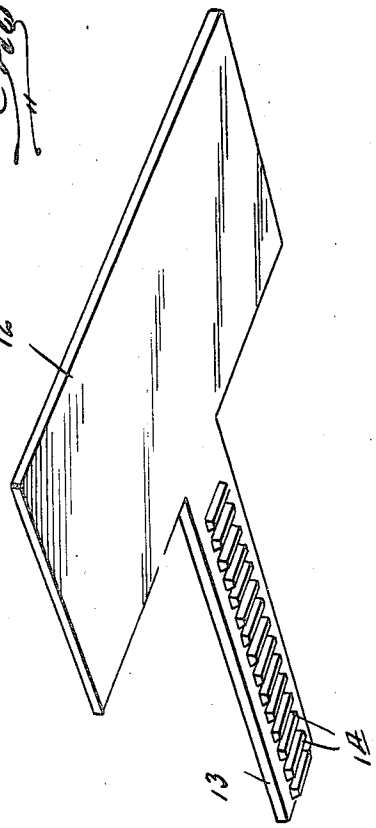


Fig. 5.

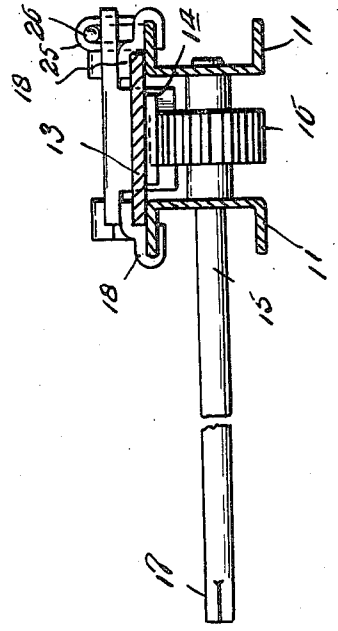
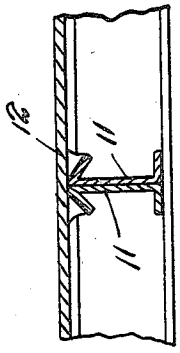


Fig. 3.



Witnesses:
F. L. Fox.
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Patented Feb. 26, 1924. 1,484,764

UNITED STATES PATENT OFFICE.

JONATHAN B. DODD, OF CUMBERLAND, MARYLAND.

ACTUATING MECHANISM FOR COAL DUMP CARS.

Application filed June 1, 1923. Serial No. 642,869.

To all whom it may concern:

Be it known that JONATHAN B. DODD, a citizen of the United States, residing at Cumberland, in the county of Allegany and State of Maryland, has invented certain new and useful Improvements in an Actuating Mechanism for Coal Dump Cars, of which the following is a specification.

In carrying out the present invention, it is my purpose to provide an improved locking and actuating mechanism for the usual longitudinal sliding type of doors now found in coal dump cars.

In coal cars provided with sliding doors it now very often happens that when these cars are filled and the same are being coupled or uncoupled, these doors will slide to a slightly open position due to the impact of the cars with each other for consequently permitting the coal therein to escape which results in considerable loss.

It is, therefore, an object of this invention to provide a mechanism whereby these doors may be locked in a closed position, as well as a means for opening the same after the lock has been released for consequently permitting the dumping of the coal.

A further object of this invention is the provision of such a mechanism that is extremely simple of construction, and of such a nature as to be readily installed upon coal cars now in use.

The nature and advantages of the invention will be better understood when the following detailed description is read in connection with the accompanying drawings, the invention residing in the construction, combination, and arrangement of parts as claimed.

In the drawings forming part of this application, like numerals of reference indicate similar parts in the several views, and wherein:

Figure 1 is a detailed longitudinal cross-section through a coal car equipped with my improved sliding doors together with a locking and actuating mechanism for the same.

Figure 2 is a longitudinal transverse cross-section taken substantially upon the line 2—2 of Figure 1.

Figure 3 is a detailed cross-section upon the line 3—3 of Figure 2.

Figure 4 is an under perspective of the type of the door elements employed by me.

Figure 5 is a detailed transverse cross-section taken upon the line 5—5 of Figure 2, and

Figure 6 is an enlarged perspective of one of the door locking elements employed in conjunction with this invention.

With reference to the drawings, and particularly to Figure 1, 5 indicates a coal car hopper, and 6 the supporting frame therefor embodying the usual side channel bars 7 and end connecting bars 8. As is, of course, well understood, this type of coal car hopper has an inclined bottom wall 9 formed with a central outlet opening 10.

My invention per se embodies the provision of a pair of parallel longitudinally extending channel bars 11 that are secured at their opposite ends to the end bars 8 of the said frame 6, and are spaced a slight distance apart between the edges of said opening 10 and the front and rear ends of the car. As more clearly shown in Figures 2 and 3, the portions of these bars 11 that are directly beneath the said opening 10 are bent inwardly for close contact with each other and have their upper flange portions inclined downwardly whereby the coal passing through the opening 10 will be prevented from accumulating upon these bars which consequently prevent the proper closing of the doors.

Beneath the said opening 10 in the hopper 5 and slidable upon the longitudinal bars 7—7 of the car frame 6 are longitudinally sliding doors 12—12. Each of these doors, as well as the locking mechanism and actuating means therefor, is identical in construction and a description of one will suffice for both. These doors 12 are each formed centrally with a laterally extending plate-like arm 13 upon the under surface of which there is formed rack teeth 14, it being noted from a consideration of Figures 4 and 5 that these teeth 14 are of a length lesser than the width of the said arm 13 for permitting the marginal edges of the arm to rest upon the said longitudinal bars 11.

Journaled through openings within the bars 11 at a point inwardly of the free ends of the arms 13 of each door member 12, when the same is in its closed position, Figures 1 and 2, is a shaft 15 that has keyed thereon, a relatively wide spur gear 16, at a point between the bars 11. One end of this shaft extends outwardly through an opening within one of the longitudinal bars 7 of

the car frame and is squared at 17 for the reception of a handle whereby when the shaft is rotated in opposite directions its complementary door 12 will be consequently opened or closed.

Upon said bars 11 at the ends of each of the door arms 13 are guide plates 18 beneath which the marginal edges of the door arms 13 slide. These guide plates 18 carry bearings 19 into which engage lateral pintles 20 of a swinging latch 21. The front end of this latch 21 is equipped with a pendant head 22 that is adapted to engage behind the end of the arm 13 of the respective door member 12 when the same has been moved to a closed position for consequently maintaining the same closed and thereby preventing the jarring of the door to an open position when the cars are being coupled or uncoupled. The free end of each of the latches is formed with a cross plate 23, one end of which is formed with a slot 24 for engagement over an eye member 25 carried by the adjacent guide plate 18 when the latch is dropped whereby a pin 26 may be engaged therethrough for maintaining this latch plate in operative position.

Considering the doors to be in a closed locked position and it is desired to open the same, the operator merely removes the pins 26 from the eye members 25 and raises the latch elements 21 and then applies his handle to the squared end of one of the shafts 15 and rotates the same in a certain direction for consequently moving that particular door to an open position. After one door has been opened the handle is removed from that shaft and then positioned upon the other shaft whereby the same may be rotated for consequently opening the other door.

In view of the above description, when considered in conjunction with the accompanying drawings, numerous advantages of a car door mechanism of this character will be at once apparent to those skilled in the art, and even though I have herein set forth the most practical embodiment of my invention, it is, nevertheless, to be understood that minor changes may be made therein without departing from the spirit and scope of the invention as shown.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is:

1. The combination with a dumping coal car wherein the same is provided with the usual outlet opening, longitudinally extending supporting bars between the usual end bars of the car frame, a pair of door elements slidable upon said bars and adapted for closing said car door opening, extensions formed upon opposite transverse edges of said doors, rack teeth formed upon the under side of said extensions, spur gears journaled between said longitudinal supporting bars in mesh with the teeth of said door extensions, means for rotating said spur gears, and means for engaging the ends of said extensions when the doors are closed for maintaining the same in a closed position.

2. The combination with a dumping coal car wherein the same is provided with the usual outlet opening, longitudinally extending supporting bars between the usual end bars of the car frame, a pair of door elements slidable upon said bars and adapted for closing said car door opening, extensions formed upon opposite transverse edges of said doors, rack teeth formed upon the under side of said extensions, spur gears journaled between said longitudinal supporting bars in mesh with the teeth of said door extensions, means for rotating said spur gears, means for engaging the ends of said extensions when the doors are closed for maintaining the same in a closed position, and means for permitting said other means to be maintained in an operative position.

In testimony whereof I affix my signature.

JONATHAN B. DODD.