July 28, 1931. J. S. CURZON 1,816,279

DUMP CAR

Filed July 10, 1930 2 Sheets-Sheet 1

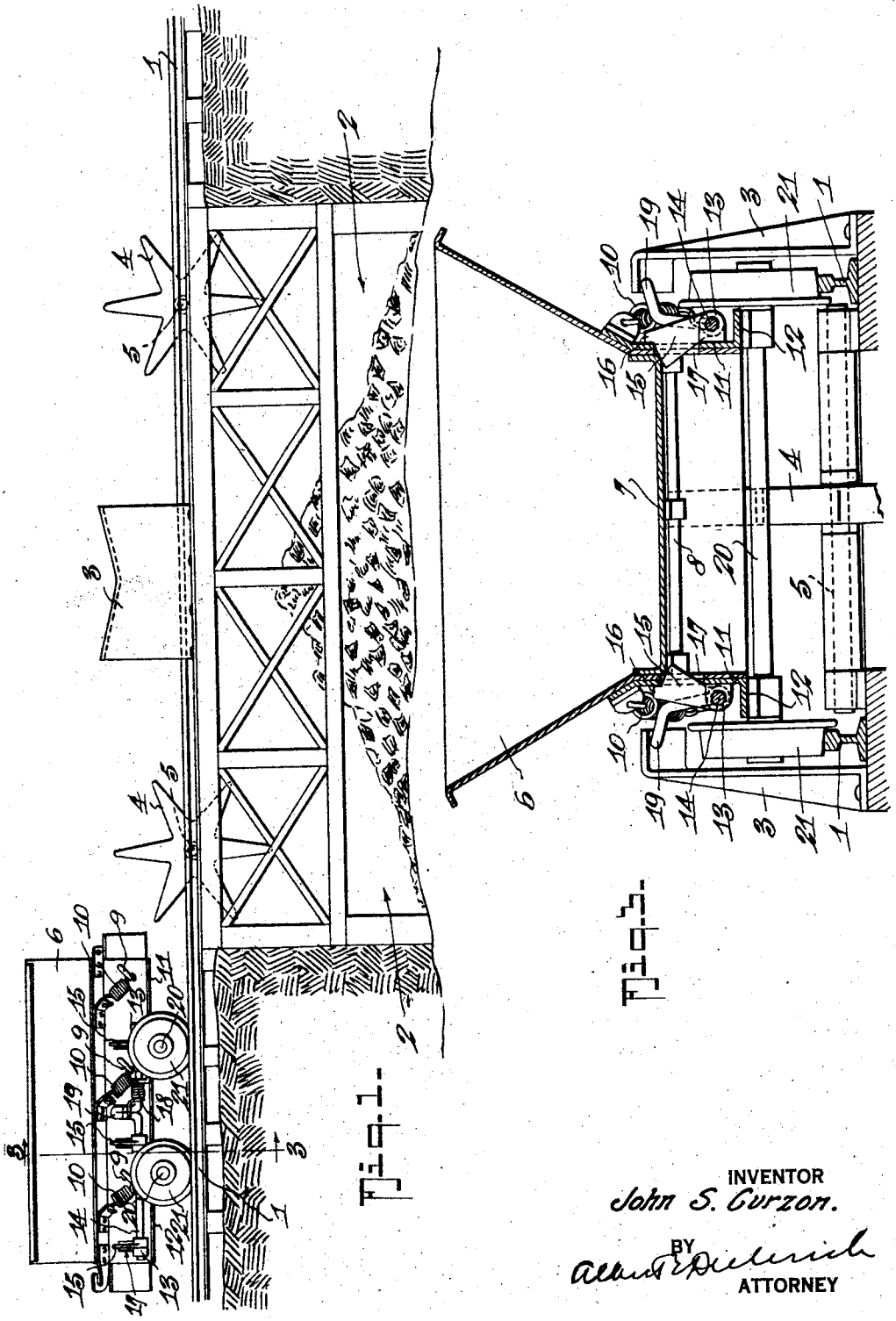


Fig. 1.

Fig. 4.

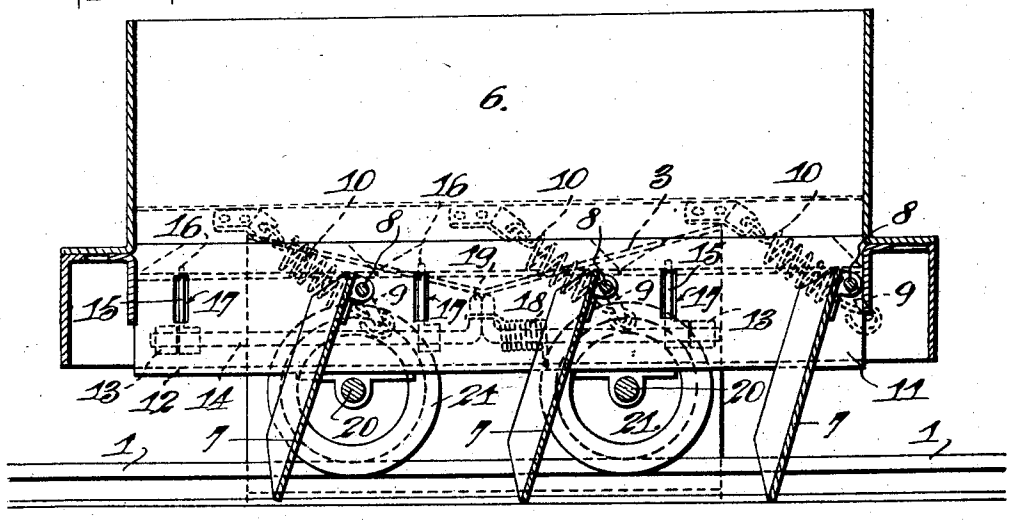
INVENTOR
John S. Curzon.
BY
Albert G. Dieterich
ATTORNEY

July 28, 1931. J. S. CURZON 1,816,279

DUMP CAR

Filed July 10, 1930 2 Sheets-Sheet 2

Fig. 1.



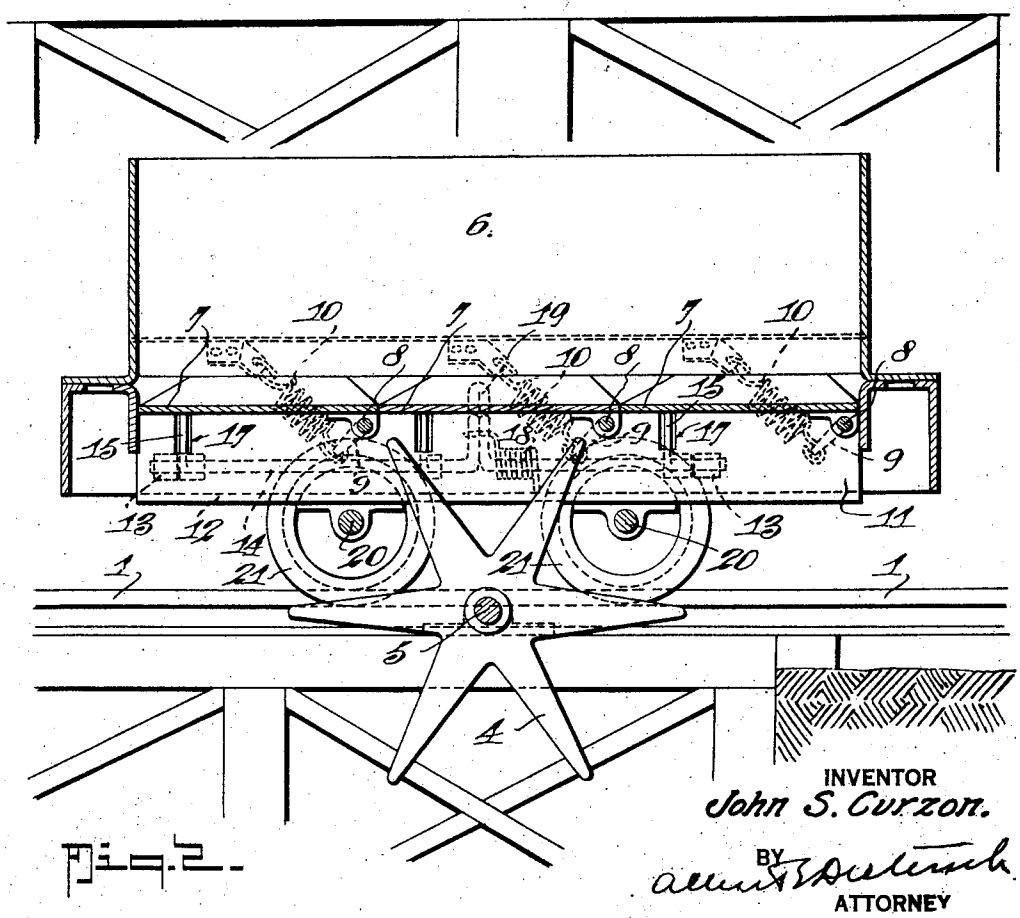


Fig. 2.

INVENTOR
John S. Curzon.
BY
ATTORNEY

Patented July 28, 1931 1,816,279

UNITED STATES PATENT OFFICE

JOHN S. CURZON, OF SALT LAKE CITY, UTAH, ASSIGNOR TO JOSEPH KASTLIC, OF HELPER, UTAH

DUMP CAR

Application filed July 10, 1930. Serial No. 467,089.

My invention relates to certain new and useful improvements in mine cars of the automatic dump bottom type (see Letters Patents to McCrary No. 1,647,876, Mahan No. 1,718,165, Crawford No. 1,091,466 and Lewis No. 390,867). In all of those cars which have heretofore come to my attention, the dump bottoms have been located below the axle level of the cars with the result that insufficient roadway clearance is provided for, often resulting in derailment and consequent delays.

Further, with the doors located below the axle level, rollers to protect the haulage ropes cannot be large enough to afford adequate protection.

One of the objects of my invention is to overcome the insufficiencies of the heretofore known cars, and to provide a car whose drop bottom doors are located in a plane when closed well over the axle level.

Further, it is an object of the invention to provide a dump car and mechanism for operating to release and again close the bottom doors regardless of whether the car is travelling along the right of way in one direction or the opposite.

Further, it is an object to provide a door closer located between the rails along the right of way which will operate notwithstanding that it must project above the plane of travel of the car axles, and the closer operating to close the doors regardless of the direction of approach of the car.

Other objects will in part be obvious and in part will be pointed out hereinafter.

To the attainment of the aforesaid objects and ends, the invention still further resides in the novel details of construction, combination and arrangement of parts, all of which will be first fully described in the following detailed description, then be particularly pointed out in the appended claims, reference being had to the accompanying drawings, in which:—

Figure 1 is a side elevation of a portion of a right-of-way with one of my cars ready to cross over the dumping pit.

Figure 2 is a vertical longitudinal section of the same with the car passing over the door closing star wheel.

Figure 3 is a detail cross section on the line 3—3 of Figure 1.

Figure 4 is a vertical longitudinal section of one of my cars showing the bottom doors in the dumping position.

In the drawings, in which like numerals of reference indicate like parts in all of the figures, 1 represents the trackway, 2 the dumping pit, 3 the door releasing cam tracks, 4 the door closing star wheel whose shaft 5 is mounted in the plane of the rails and between the rails.

The car 6 which embodies my invention has a bottom made up of a series of doors 7 secured to carrying shafts 8 that are mounted in suitable bearings in the skirt 11 of the body of the car and have cranks 9 to which counterbalancing springs 10 are attached. The skirt 11 of the car body has an outwardly projecting horizontal flange 12 that serves as a protection for the bearings 13 in which the latch shafts 14 are mounted, the latch shafts carrying latching arms 15 having stops 16, the arms 15 operating in the slots 17 of the skirt 11. The shafts 14 are provided with latching springs 18 that continuously tend to move the arms 15 to the latching position with the stops 16 against the skirt of the car.

The latch shafts 14 are provided with releasing cam arms 19 that are adapted to be engaged by the stationary door releasing cam tracks 3 that are located along the right of way at the dumping pit 2.

It will be seen, from the foregoing description, that regardless of the direction in which my car is travelling as soon as the cams 3 engage the releasing arms 19 they will rock the shafts 14 to such positions as will withdraw the arms 15 from beneath the car bottoms 7 and permit the weight of the material within the car to lower the bottoms and dump. As the emptied car passes from the pit it will ride over the star wheel 4, the points of which wheel engaging the bottoms 7 insure their positioning in a horizontal plane so that the latch arms 15 may snap into latching position with respect thereto.

By providing the star wheel door closer 4 it will be seen that the axles 20 of the car wheels 21 will ride between the projections of the star wheel and thus clear the same.

The door releasing cam tracks 3 may be made with double inclines so as to operate regardless of the direction in which the car is approaching the pit and two star wheels 4 may be provided one at each side or approach to the pit, as indicated in the drawings. The car approaching the pit rides over the first star wheel without effect, then is dumped at the pit and then rides over the second star wheel which closes the doors and permits the latching action to take place.

From the foregoing description taken in connection with the accompanying drawings, it is thought the complete construction, operation and advantages of my invention will be clear. Attention is called to the fact that in mine cars some of the contents of the cars spill and it not infrequently happens that the material soon accumulates along the right of way until it reaches a level above that of the track rails. Where dump cars have their bottoms located below the axles this piling of debris along the right of way often causes the cars to be derailed with resulting tie-up and delay. By my construction this derailing and delay is avoided.

What I claim is:

1. In dump cars, a body having a skirt, wheels and axles over which said body is mounted, drop bottom pivoted doors mounted in the skirt above the level of the axles, latches mounted on the outside of said skirt for holding said doors closed, said skirt having slots through which portions of said latches project, means to release said latches at a given place along the right of way, means continuously tending to return said latches to the latching position, and means located between the rails at another place along the right of way for closing said doors.

2. In dump cars, a body having a skirt, wheels and axles over which said body is mounted, drop bottom pivoted doors mounted in the skirt above the level of the axles, latches holding said doors closed, means to release said latches at a given place along the right of way, means continuously tending to return said latches to the latching position, and means located between the rails at another place along the right of way for closing said doors, said closing means comprising a star wheel rotatably mounted on an axle which is located below the level of the plane of the car wheel axles and having its points projecting above the plane of the car wheel axles.

3. In dump cars, a body having a skirt, wheels and axles over which said body is mounted, drop bottom pivoted doors mounted in the skirt above the level of the axles, latches mounted on the outside of said skirt for holding said doors closed, said skirt having slots through which portions of said latches project, means to release said latches at a given place along the right of way, means continuously tending to return said latches to the latching position, and means located between the rails at another place along the right of way for closing said doors, said skirt having a flange located below said latches and located below said continuously tending means to protect same from roadway obstructions.

4. In dump cars, a body having a skirt, wheels and axles over which said body is mounted, drop bottom pivoted doors mounted in the skirt above the level of the axles, latches mounted on the outside of said skirt for holding said doors closed, said skirt having slots through which portions of said latches project, means to release said latches at a given place along the right of way, means continuously tending to return said latches to the latching position, and means located between the rails at another place along the right of way for closing said doors, and means to counterbalance said doors.

5. In dump cars, a body having a skirt, wheels and axles over which said body is mounted, drop bottom pivoted doors mounted in the skirt above the level of the axles, latches holding said doors closed, means to release said latches at a given place along the right of way, means continuously tending to return said latches to the latching position, and means located between the rails at another place along the right of way for closing said doors, said closing means comprising a star wheel rotatably mounted on an axle which is located below the level of the plane of the car wheel axles and having its points projecting above the plane of the car wheel axles, and means to counterbalance said doors.

6. In dump cars, a body having a skirt, wheels and axles over which said body is mounted, drop bottom pivoted doors mounted in the skirt above the level of the axles, latches mounted on the outside of said skirt for holding said doors closed, said skirt having slots through which portions of said latches project, means to release said latches at a given place along the right of way, means continuously tending to return said latches to the latching position, and means located between the rails at another place along the right of way for closing said doors, said skirt having a flange located below said latches and located below said continuously tending means to protect same from roadway obstructions, and means to counterbalance said doors.

JOHN S. CURZON.