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MINE CAR TOPPING GATE

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4 Claims. (Cl. 105—379)

1. This invention relates to mine cars of the type used for carrying coal, ore and the like from the mining operation to the shaft, and in particular to a plurality of hinged upwardly extended gates positioned on the upper edges of the ends and side walls of a mine car for retaining the topping coal on the mine car.

The purpose of this invention is to provide means for adding additional height to the side walls and ends of a mine car for retaining topping coal on the car and preventing waste due to the loss of the topping coal in shipping the car from the mining operation to the shaft.

In the conventional method of loading mine cars it is necessary to fill the car with topping coal or ore to points substantially six inches above the top of the car and some of this coal is lost in shipping the car from the mining operation to the shaft. For this reason, where the company requires six inches of topping at the shaft it is necessary for the miner to load from ten to twelve inches of topping coal at the operation point. With this thought in mind this invention contemplates the use of hinged gates on the sides and ends of a mine car and means for temporarily holding the gates in upwardly extended positions whereby the topping coal is retained in position upon the mine car as the car travels from the mining operation to the shaft.

The object of this invention is, therefore, to provide means for extending the height of the side walls and ends of a mining car so that topping coal may be retained thereon.

Another object of the invention is to provide means for attaching hinged extensions to the upper edges of side walls and ends of a mine car that may be mounted on cars now in use.

A further object of the invention is to provide a mine car having upwardly extended gates hinged to the sides and ends in which the gates are of a comparatively simple and economical construction.

With these and other objects and advantages in view the invention embodies longitudinally disposed panels hinged to the top edges of the side walls of a mine car, a similar panel hinged to the rear end of the car and a panel hinged by a continuous rod or bolt to the forward end of the car and the ends of each of the panels are provided with straps having hubs on extended ends thereof whereby pins secured to the side panels by chains may be inserted through the hubs of the straps for holding the panels or gates in upright positions, and also in downwardly folded positions. Other features and advantages of the invention will appear from the following description taken in connection with the drawings wherein:

Figure 1 is a side elevational view of a mine car showing the topping gates of this invention in upwardly extended positions on the upper edge of the car.

Figure 2 is an end elevational view looking toward the front of the mine car also showing the topping gates extended upwardly and with the lower part of the car broken away.

Figure 3 is a plan view of the mine car shown in Figure 1 illustrating the relative positions of the upwardly extended gates.

Figure 4 is a detail showing a rear elevational view of the upper end of the mine car with the gate on the rear end wall of the car extended upwardly.

Figure 5 is a detail showing an elevational view of one corner of the mine car with the gates secured in downwardly disposed positions.

Referring now to the drawings wherein like reference characters denote corresponding parts of the mine car attachment of this invention includes topping gates 10 and 11 positioned on side walls 12 and 13 of a mine car 14, an end gate 15 positioned on an end wall 16 of the car and a front gate 17 hinged to the upper edge of the front wall 18 by straps 19 and 20 mounted on the gate 17 and straps 21, 22 and 23 mounted on the end wall 16 and with the straps hingedly connected by a bolt or rod 24 extended through eyes in the ends of the straps, as shown in Figure 2.

The rod 24 is also held in bearings 25 and 26 on the end wall of the car. By this means the front gate 17 may be positively held above the ends of doors in the front of the car and when the gates are dropped to the lower position the front gate 17 is not secured to the gates at the sides as it is desired to have the front gate free to swing when the car is emptied.

The side gates 10 and 11 and also the back gate 15 are hinged to the upper edges of the side walls and rear end of the car by strap hinges 27 the mounting plates of which are secured on the upper edges of the side walls and ends and the straps 28, of which extend upwardly reinforcing the panels or gates, as shown by the dotted line in Figure 4. It will be understood that hinges of any suitable type may be used.

The side gate 10 is provided with straps 30 and 31 and the gate 11 is provided with similar straps 32 and 33 whereby hubs, as indicated by the numeral 34 on the ends of the straps are positioned to coact with corresponding hubs 35 on the ends of straps 36 and 37 on the front gate 17 and 38
and 36 on the rear gate 16 so that the pins 40 having eyes 41 on the upper ends and secured to the side panels or gates by chains 42 may extend through the hub for holding the gate in upwardly extended positions or in lower positions as may be desired.

With the parts arranged in this manner and with the lower edges of the panels notched to clear bolt heads and other obstructions on the upper surfaces of the edges of the side walls and ends of the mine car the panels are adapted to being moved or folded downwardly to positions on the sides of the members upon which they are mounted whereby the pins 40 may extend through the hubs 34 and 35 to secure the parts in the downwarly extended position, and when it is desired to use the tops from the gates the parts are extended upwardly as shown in the drawing whereby the pins 40 also extend through the hubs 34 and 35, as shown. By this means the same pins hold the plates or panels in upwardly extended positions or in positions where the parts are nested against the outer surfaces of the side walls and ends. It is preferred to omit the pin in the front gate 17 with the gate folded downwardly so that the front gate may swing outwardly to facilitate dumping or emptying the mine car.

It will be understood that modifications may be made in the design and arrangement of the parts without departing from the spirit of the invention.

What is claimed is:

1. A mine car comprising a frame having side and end walls, gates, but hinges having hinge plates pivotally connected with pins positioned on one side of said sides secured to the upper edges of said side walls and to the upper edge of one of said end walls, and another of said hinge plates being secured to edges of said gates whereby the gates, selectively extend upwardly from the upper edges of the side and end walls or nest against the outer surfaces of said walls, straps having hubs on extended ends thereof positioned on the ends of the said gates, and pins flexibly connected to the said side walls and positioned to extend through the hubs of the straps for retaining the said gates in upwardly extended positions and also in downwardly folded positions.

2. A mine car comprising a frame having side and end walls, gates, but hinges having hinge plates pivotally connected with pins positioned on one side of said sides secured to the upper edges of said side walls and to the upper edge of one of said end walls, and another of said hinge plates being secured to edges of said gates whereby the gates, selectively extend upwardly from the upper edges of the side and end walls or nest against the outer surfaces of said walls, straps having hubs on extended ends thereof positioned on the ends of the said gates, and pins flexibly connected to the said side walls and positioned to extend through the hubs of the straps for retaining the said gates in upwardly extended positions and also in downwardly folded positions.

3. In a mine car, the combination which comprises a frame having side and end walls, longitudinally disposed panels positioned on the said side walls of the car body, and transversely disposed panels positioned on the end wall at the rear end of the car body, hinges extended across the panels and secured to the upper edges of the side walls and rear end of the car body for hingedly connecting the said panels to the side walls and end of the car body, a panel extended upwardly from the upper edge of the said front wall being aligned and positioned in abutting relation to prevent lateral play of the panel in the upper edge of the front wall, a rod extended through the hubs of the straps of the front wall and panel on the front wall providing a hinge, and straps having hubs on extended ends thereof extended from the ends of the panels and positioned with hubs of the side panels aligned with hubs of the panels on the end wall, pins extended through the hubs of the straps, and chains connecting the pins to the panels.

4. In a mine car, the combination which comprises a car body having side and end walls, longitudinally disposed panels positioned on the said side walls of the car body, transversely disposed panel positioned on the end wall at the rear end of the car body, hinges extended across the panels and secured to the upper edges of the side walls and rear end of the car body for hingedly connecting the said panels to the side walls and end of the car body, a panel extended upwardly from the upper edge of the front wall or the car body, straps having hubs on the lower ends mounted on the panel extended upwardly from the front wall of the car body, straps having hubs on the upper ends mounted on the panel extended upwardly from the front wall of the car body, straps having hubs on extended ends thereof extended from the ends of the panels and positioned with hubs of the side panels aligned with hubs of the panels on the end wall, pins extended through the hubs of the straps, and chains connecting the pins to the panels.

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