(No Model.) 2 Sheets—Sheet 1.

J. PARKER.

MECHANISM FOR AUTOMATICALLY OPERATING END GATES OF CARS.

No. 456,904. Patented July 28, 1891.

Fig 1.

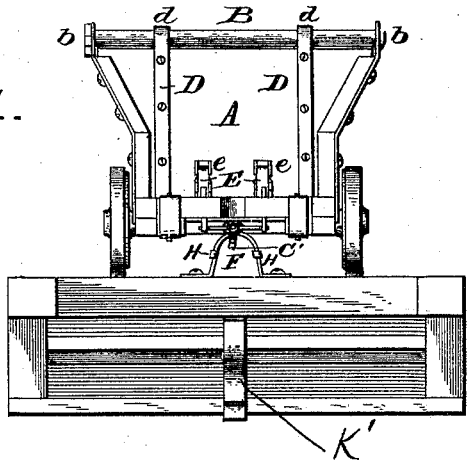


Fig 3.

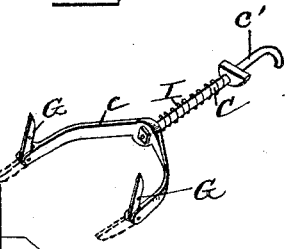


Fig 2.

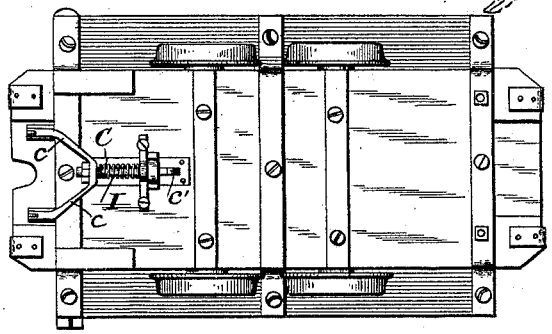


Fig 4

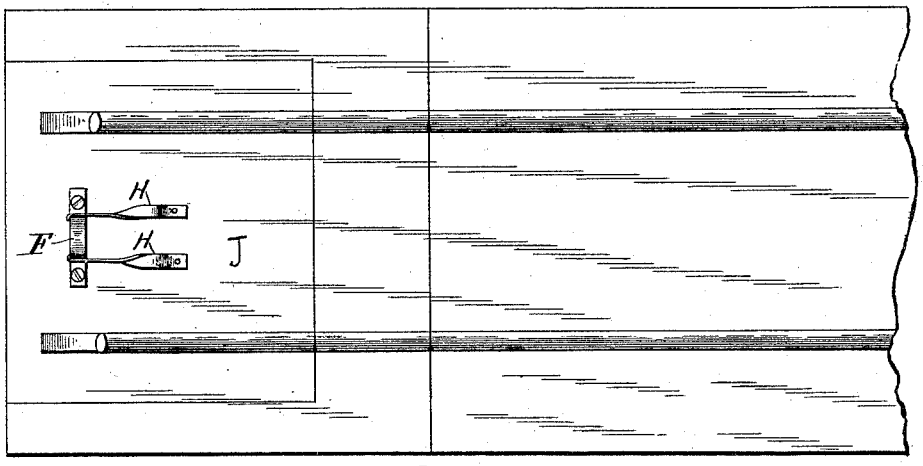
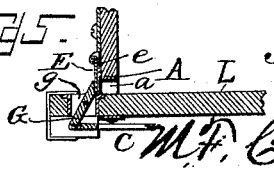


Fig 5.



WITNESSES

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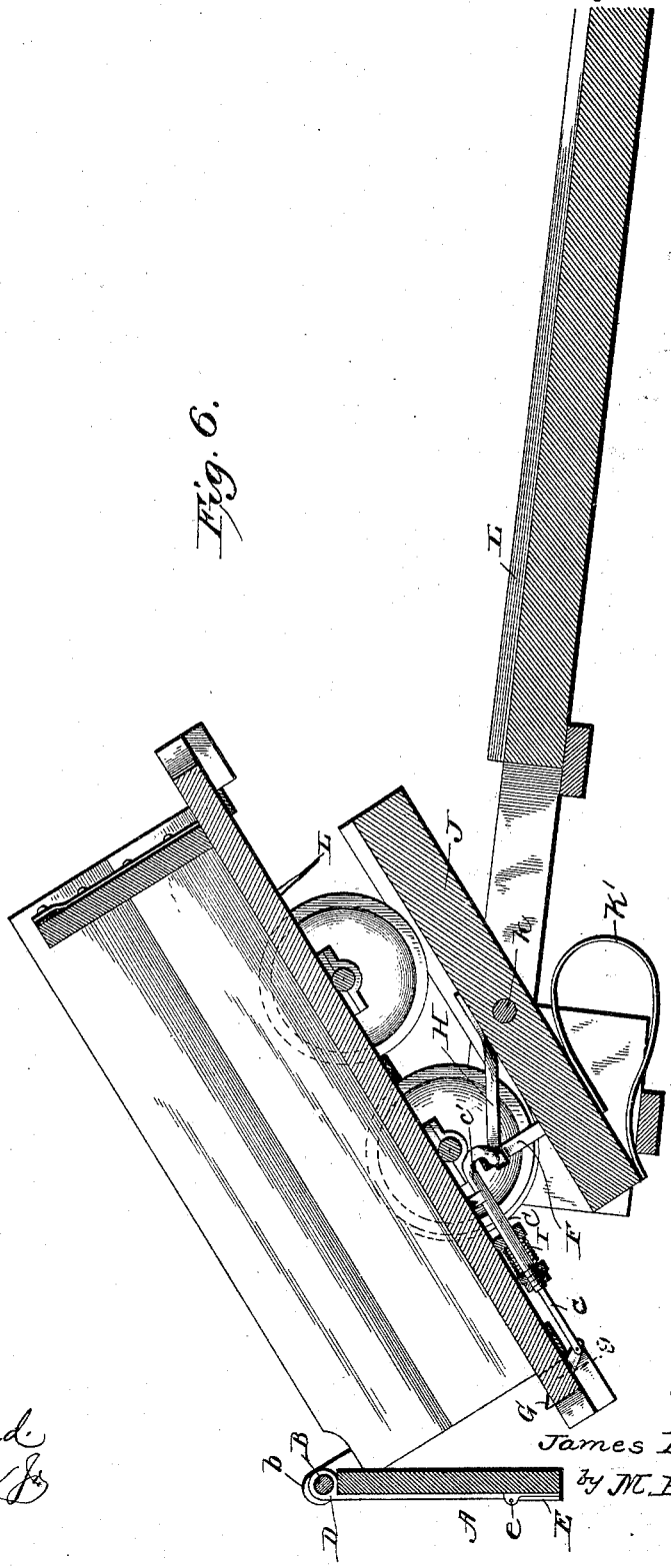
(No Model.) 2 Sheets—Sheet 2.

J. PARKER.

MECHANISM FOR AUTOMATICALLY OPERATING END GATES OF CARS.

No. 456,904. Patented July 28, 1891.

Fig. 6.



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UNITED STATES PATENT OFFICE.

JAMES PARKER, OF PHILIPSBURG, PENNSYLVANIA, ASSIGNOR OF FIVE-EIGHTHS TO H. L. CARLISLE, F. H. WHITE, AND WM. S. RHOADS, ALL OF SAME PLACE.

MECHANISM FOR AUTOMATICALLY OPERATING END-GATES OF CARS.

SPECIFICATION forming part of Letters Patent No. 456,904, dated July 28, 1891.

Application filed April 25, 1891. Serial No. 390,450. (No model.)

To all whom it may concern:

Be it known that I, JAMES PARKER, a citizen of the United States, residing at Philipsburg, in the county of Centre and State of Pennsylvania, have invented certain new and useful Improvements in a Mechanism for Opening and Closing Automatically the End-Gates of Mining-Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a mechanism for opening and closing automatically the end-gates of mining-cars in which a staple-shaped iron located in the car-tipple operates in conjunction with the mechanism for locking and unlocking the end-gate; and the object of my invention is to provide a means for opening and locking the end-gates of mining-cars automatically, or without the aid of any person, when the same is being dumped. I attain this object by certain construction, combination, and arrangement of parts fully described in this specification, and illustrated in the accompanying drawings, in which—

Figure 1 is an end view of the car upon the tipple, with the end-gate in its normal position upon the car. Fig. 2 is a view of the car in a position to illustrate the mechanism located upon the under side thereof. Fig. 3 is a view illustrating said mechanism detached from the car. Fig. 4 is a plan view of the tipple. Fig. 5 is a sectional detail on the line of the pivotal catches. Fig. 6 is an enlarged longitudinal sectional view of the car upon the tipple and in the position of being dumped.

Referring to the drawings, the letter A designates the end-gate, which is constructed in any form adapted to the end of the car in which the same may be placed. This gate is provided with the flat staple-shaped hinges D, which extend vertically across the gate. The curved ends of these hinges slightly project above the top of the gate, so as to provide an opening, through which the rod B is placed and upon which the gate is hung. The rod B extends the width of the gate and has each end located in bearings *b* upon the sides of the car. Near the bottom of the end-gate A there are two pivotal flaps E, which are constructed with the upper end bent loosely around the small bolt *e*, which has bearings in the end-gate. These flaps extend to the bottom of said end-gate. Under each of said flaps E in the gate there are two slots *a*, through which the corresponding pivotal catches G may pass when the gate is falling back into position.

C represents a pronged rod, Fig. 3, which is located upon the under side of the car in suitable bearings. The forward end *c'* of this rod is bent so as to engage the staple-shaped iron F of the car-tipple. In the rear bifurcated ends *c* of said rod there are pivoted two catches G, which work in orifices *g* in the bottom of the car in conjunction with the pivotal flaps E of the end-gate A, whereby said end-gate is locked or prevented from opening when the car is in its normal position.

I indicates a strong spiral spring which is located upon the rod C. This spiral spring causes the rod C to assume its normal position after the same has been pulled forward by the weight of the car upon the tipple J, owing to the bent portion *c'* of the rod engaging the staple-shaped iron F of the tipple. This spiral spring also performs other very important functions—namely, as the same is gradually compressed by the weight of the loaded car upon the tipple the car is eased gradually onto the tipple, which dumps the same. This relieves the spiral spring of the pressure occasioned by the weight of the loaded car. The spiral spring being so relieved naturally rebounds as the tipple rises and forces the car back upon the track. Said functions performed by this spiral spring in conjunction with the staple-shaped iron F of the tipple constitute a very important and valuable feature of my invention.

F is a staple-shaped iron, which is secured centrally on the tipple, so that when the car is run thereon the same engages the portion *c'* of the rod C and pulls said rod forward, when the catches assume the position indicated by dotted lines in Fig. 3, thereby permitting the gate of the car to open.

H H are two stays designed to rigidly hold the staple-shaped iron in position.

J is the tipple, which is pivoted upon the rod *k*. Under the rear end of the same there is a

curved spring K′, which regulates the movement of the tipple when the loaded car is upon it.

L represents the car-track.

My invention operates as follows: The loaded car when run upon the tipple J is lowered at one end into the position shown in Fig. 6, the gate is opened, and the car is thus unloaded. The car being unloaded, the tipple rises, carrying the same back into its normal position, when the gate accordingly falls back, the flaps E striking the pivotal catches G and passing over the same. The action of the spiral spring heretofore described then starts the car back upon the track and forces the rod C into normal position, thereby locking the gate.

What I claim, and desire to secure by Letters Patent, is—

1. In a mining-car, the combination of the end-gate hinged upon the rod B, having the pivotal flaps E, the rod B, located in suitable bearings upon the rear top sides of the car, the rod C, having the spiral spring I coiled around the same, said rod being located upon the under side of the car directly under said gate in suitable bearings and having in the bifurcated end *c* the pivotal catches G, and the car-tipple provided centrally with a staple-shaped iron adapted to engage the bent end *c′* of the rod C, substantially as described, and for the purpose set forth.

2. In a mining-car, the rod C, provided with the spiral spring I coiled around the same, said rod being located in suitable bearings upon the under side of the rear end of the car and having in the bifurcated ends *c* thereof the pivotal catches G, in combination with the car-tipple provided centrally with a staple-shaped iron adapted to engage the bent end *c′* of the rod C, substantially as described, and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JAS. PARKER.

Witnesses:

SAM. M. GRAHAM,

WM. A. DUNWIDIDE.