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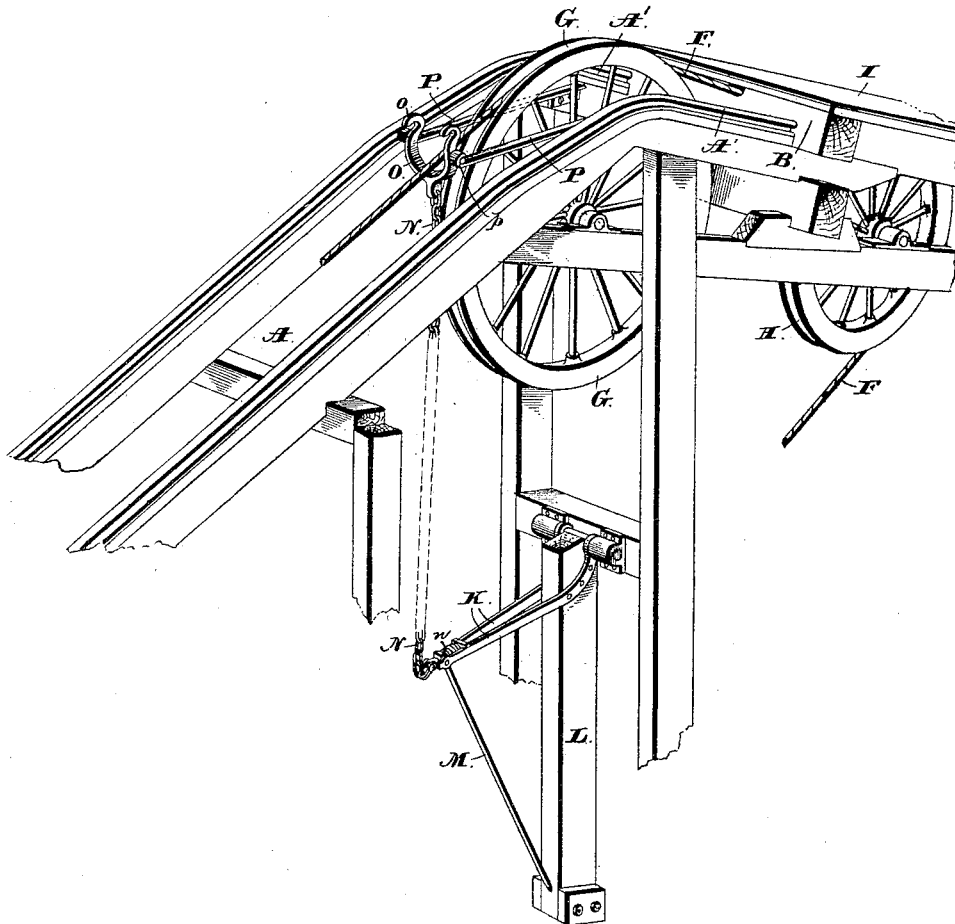
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S. SALMON.  
APPARATUS FOR DUMPING COAL.

No. 419,077.

Patented Jan. 7, 1890.

Fig. 1.



Witnesses:  
Jas E Hutchinson.  
Henry C. Hazard.

Inventor.  
Samuel Salomon, by  
Friend<sup>es</sup> Russell, his Attys

(No Model.)

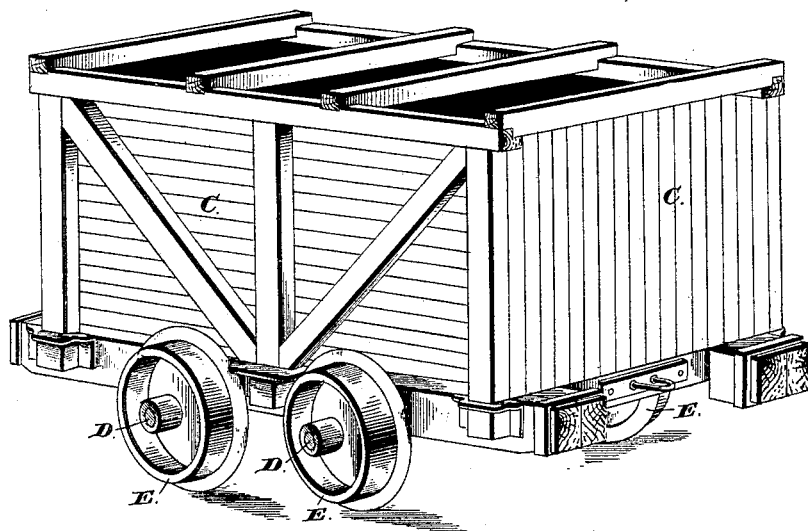
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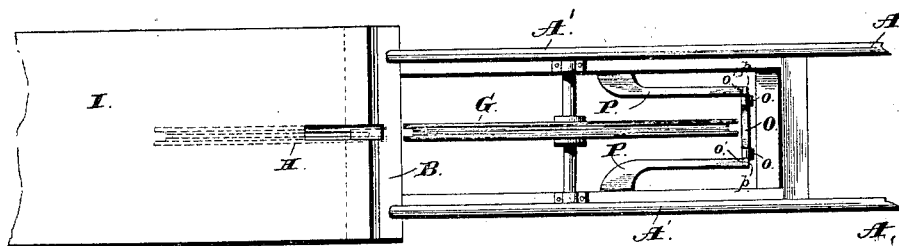
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*Fig. 2.*



*Fig. 3.*



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*Jas. C. Hutchinson.*  
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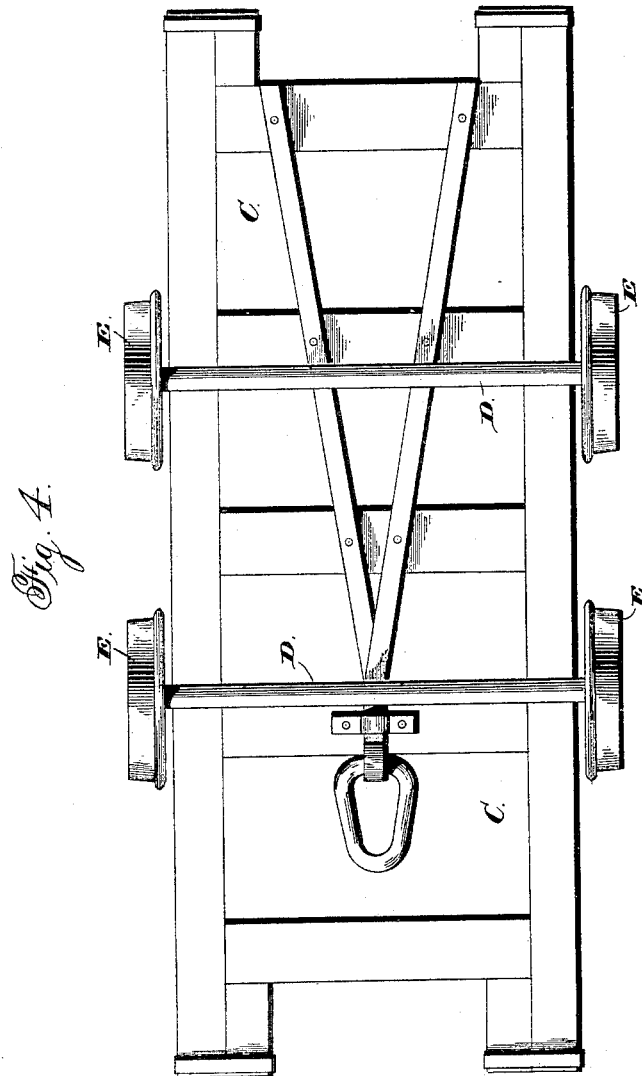
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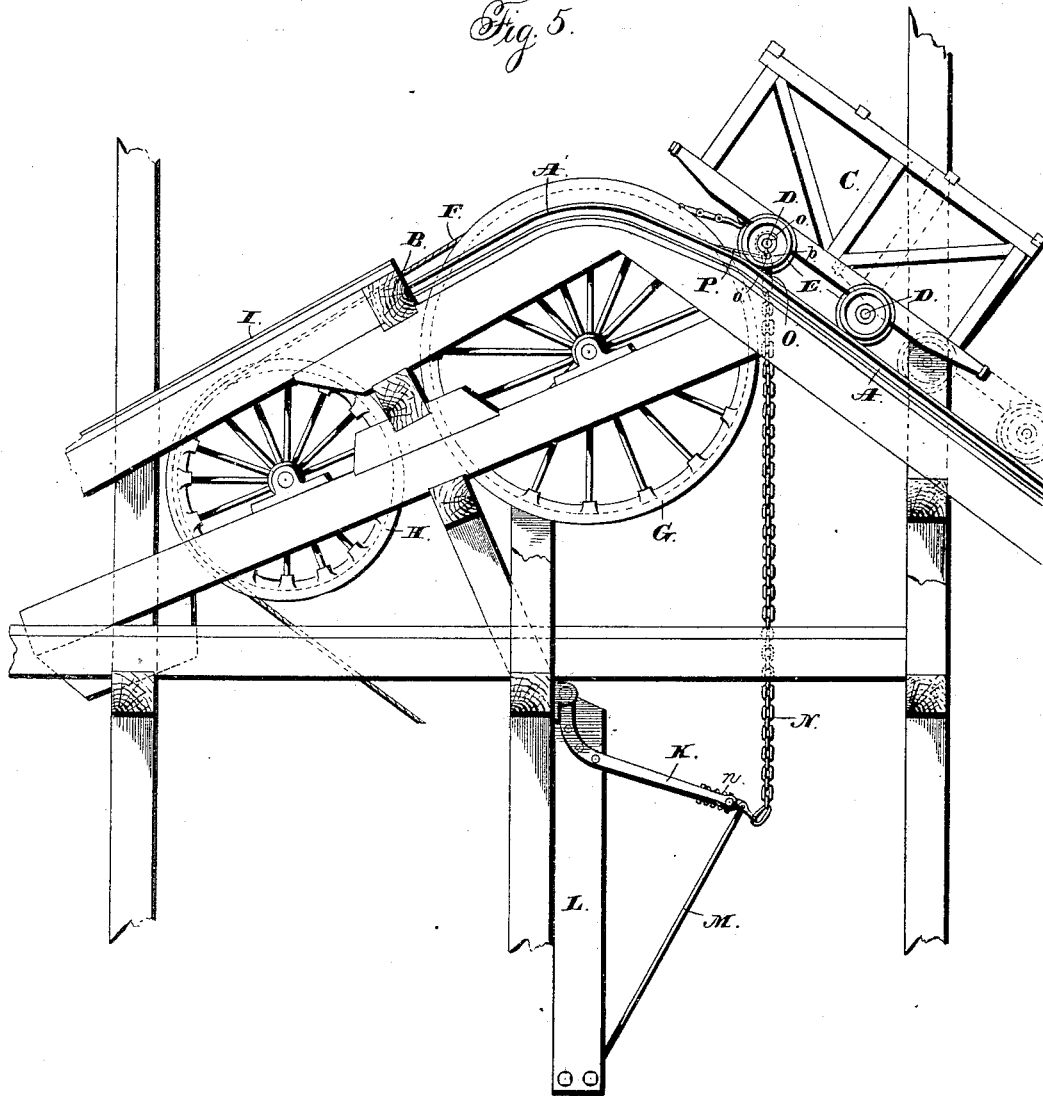
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*Fig. 5.*



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 *Jas. E. Hutchinson.*  
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*Inventor.*  
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 *Chas. W. Russell; his atty.*

(No Model.)

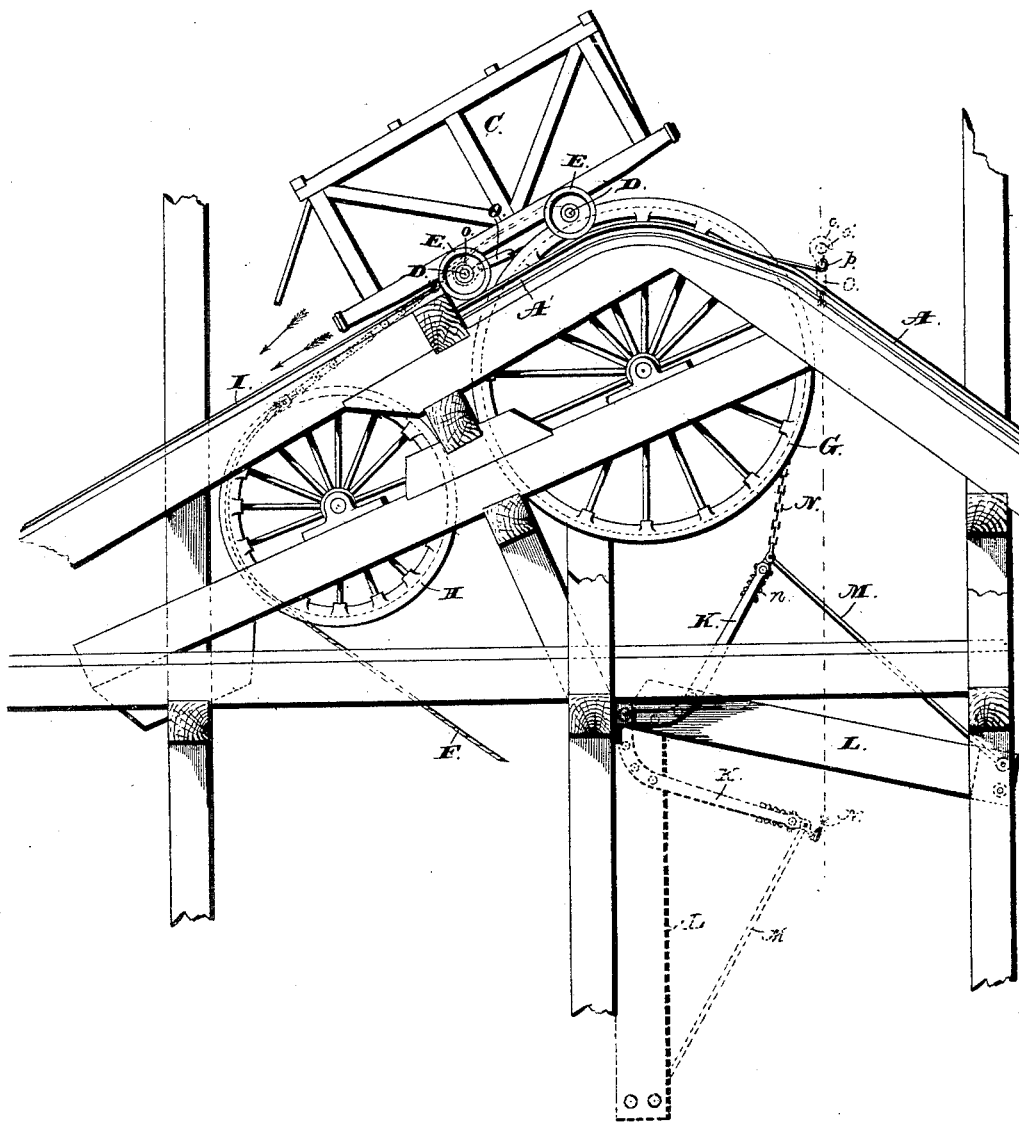
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*Fig. 6.*



*Witnesses:*  
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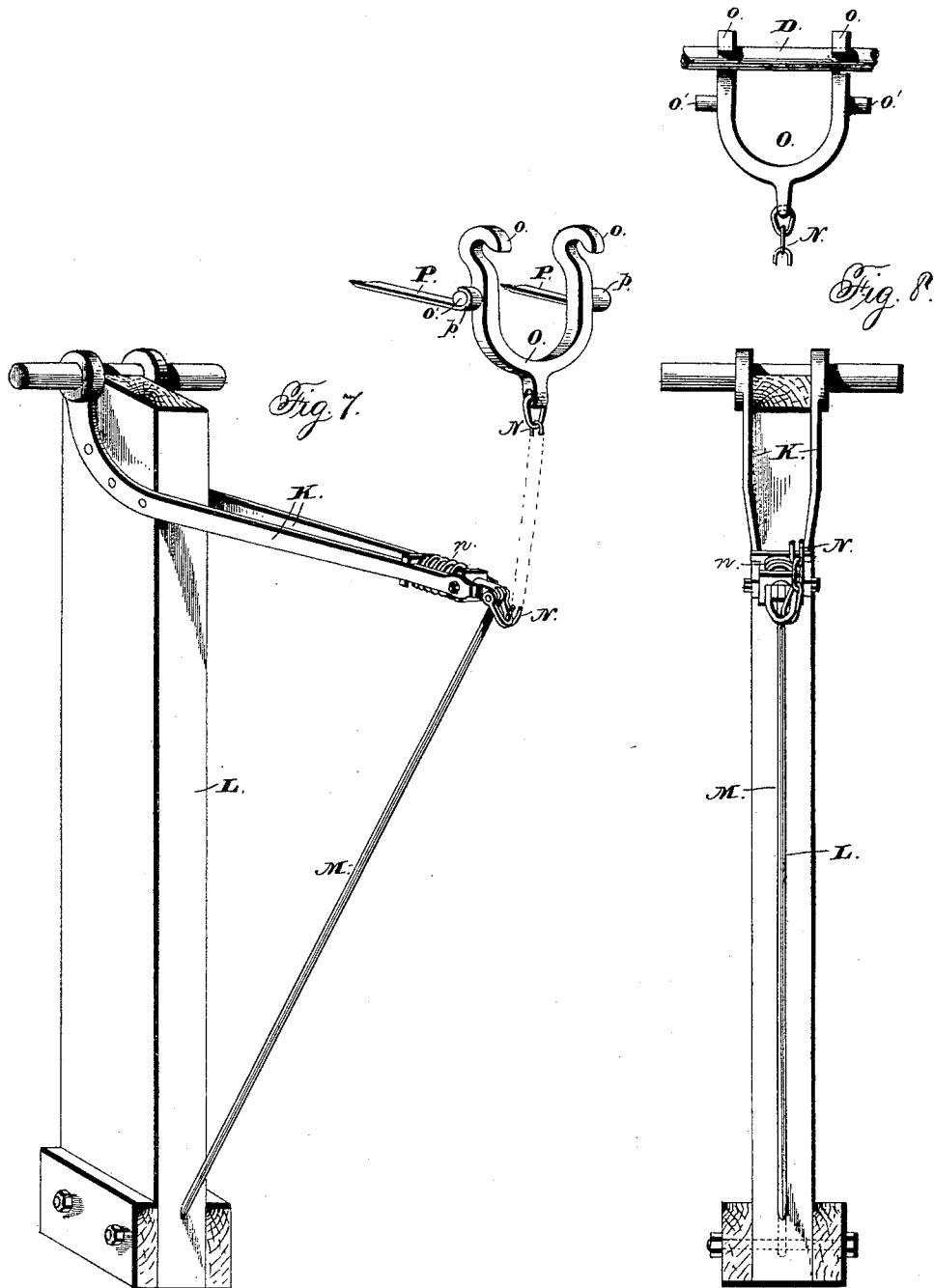
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(No Model.)

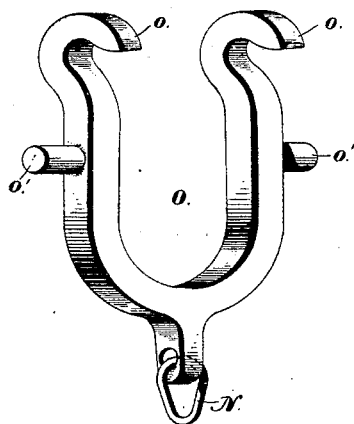
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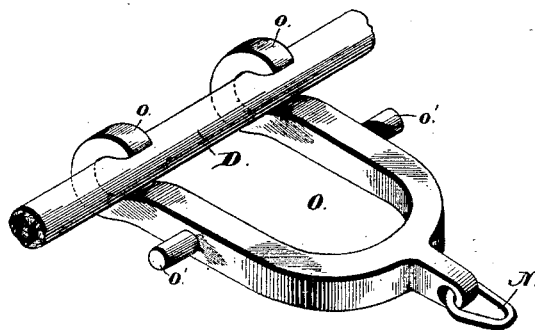
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*Fig. 9*



*Fig. 10.*



*Witnesses:*  
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*Cindle & Russell, his attys*

# UNITED STATES PATENT OFFICE.

SAMUEL SALMON, OF DRIFTON, PENNSYLVANIA, ASSIGNOR TO ECKLEY B. COXE, OF SAME PLACE.

## APPARATUS FOR DUMPING COAL.

SPECIFICATION forming part of Letters Patent No. 419,077, dated January 7, 1890.

Application filed July 30, 1887. Serial No. 245,721. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL SALMON, of Drifton, in the county of Luzerne, and in the State of Pennsylvania, have invented certain

new and useful Improvements in Apparatus for Dumping Coal, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—  
Figure 1 is a perspective view of the upper end of a mine-slope, showing the counterbalancing mechanism in position for engagement with a mine-car. Fig. 2 is a like view of a mine-car. Figs. 3 and 4 are respectively a plan view of the upper side of the upper end of said slope and a like view of the lower side of the car. Fig. 5 is a side elevation of such portion of the slope, showing the upward-moving car at the point of its engagement with the retracting mechanism. Fig. 6 is a like view of the same, with the car at the point where its contents are dumped. Fig. 7 is a perspective view of the retracting mechanism when occupying its normal position. Fig. 8 is a front elevation of the same when engaged with and counterbalancing a car. Fig. 9 is an enlarged perspective view of the engaging portion of said mechanism when in its normal position, and Fig. 10 is a like view of the same after engagement with the axle of a car.

Letters of like name and kind refer to like parts in each of the figures.

The design of my invention is to enable mine-cars to be dumped at the upper end of an inclined elevating tramway or slope without rendering necessary the passage of the coal through or over the slope-track and hoisting mechanism; and to this end such invention consists in an improved dumping apparatus adapted to automatically return an emptied car to the elevating tramway or mine-slope, as hereinafter specified and claimed.

In the carrying of my invention into practice I extend the upper ends of the tracks A and A' of an ordinary inclined tramway or mine-slope in a curve outward and downward, so as to form from such extensions A' and A' an oppositely-arranged dumping-incline that has an opposite angle from that of said slope and terminates in a buffer B and has

such length as to enable it to contain a mine-car C. Said car is of usual construction, and is supported by means of two axles D and D' and four wheels E and E'.

The car C is drawn up the slope and over and upon the dumping-incline by means of the usual cable F, which passes around a suitable pulley G, that is journaled centrally at the upper end of said slope, and a second pulley H, which is similarly journaled at a point below the lower end of the incline, the arrangement being such as to cause said cable to follow the lines of said slope and incline. When a car has passed from the upper end of the slope over and upon the dumping-incline, the front end of its box, which is pivoted at its upper edge, is automatically released, and in consequence of the inclination of said car swings outward, so as to release the contents and permit the same to discharge downward upon an inclined apron I and over the same to any desired point.

This method of discharging the contents of a car prevents all interference with or clogging of the hoisting-cable, as is frequently the case where the usual construction is employed; but the car is left in such position as to prevent it from moving by gravity down the slope when said cable is slackened, and it thus becomes necessary that said car should be otherwise moved from the incline over upon said slope, for which purpose I employ the following mechanism, viz: Pivoted at its rear end upon the supporting-frame of the apparatus is a bar K, which has the form shown in Figs. 7 and 8, and is preferably constructed from two pieces that are secured together at their ends. Between the rear pivoted ends of said bar is secured a wooden beam L, which from thence extends downward, as shown, and has its lower end connected with the outer end of said bar by means of a rod M, that is secured to and extends between said parts. From the outer end of the bar K a chain N extends upward in front of the wheel or pulley G, and at its upper end is connected with the lower central portion of a U-shaped bar O, the ends of which o and o' have the hook shape shown in Fig. 10. From each side of said hook-bar a trunnion o' extends horizontally and later-



ally outward and rests upon and within the upward and forward curved rear end *p* of a plate *P*, which plate has its front end attached to a suitable support between the tracks *A* and *A* of the slope, the arrangement being such as to cause said hook-bar to be supported at just the height to enable its hooked ends *o* and *o'*, which are open to the rear, to be engaged by the front axle *D* of a car as the latter moves up said slope. When a car thus engaged with the hook-bar *O* moves over upon the incline, the chain *N* is drawn around the wheel *G* and the bar *K* and beam *L* turned upward to the positions shown. Said bar *K* and beam *L* operate as counter-balances, and are so proportioned as to overbalance an empty car, so that while not operating to materially retard the movement of a loaded car down the incline they will overbalance the empty car and operate to draw the same backward up said incline and upon the slope-track as soon as the coal is dumped and the hoisting-cable slackened. In order that undue strain of the retracting mechanism may be prevented, the chain *N* is yieldingly connected with the bar *K* through an ordinary spring-pull *n*, which yields whenever the tension exceeds a certain predetermined amount. When a car is moving up the slope and engages with the hook-bar *O*, the trunnions *o'* and *o'* of the latter pass out of the curved ends *p* and *p* of the plates *P* and *P* and offer no obstacle to the free forward movement of said bar; but when the car has been discharged and moves down said slope, said trunnions are again engaged by said curved ends, by which means the motion of said hooked bar in such direction is arrested, and the car-axle instantly moves out of engagement with the same, such operations being performed with ease and without shock.

By use of this apparatus each car, as it reaches the top of the slope, is run upon the dumping-incline, discharged of its contents, and then moved again upon and down said slope, such operations being entirely automatic, with exception of the usual manipulation of the hoisting-cable.

Having thus described my invention, what I claim is—

1. The combination, with an inclined tramway having at its upper end an oppositely-arranged dumping-incline, of a hook-bar arranged to be engaged by a part of a car, and a counter-balance connected with said hook-bar and serving to automatically return the car to the said inclined tramway from the said oppositely-arranged incline when the weight of the car has been lessened by the discharge of its load, substantially as and for the purpose specified.

2. The combination, with an inclined tramway having at its upper end an oppositely-arranged dumping-incline, of a hook-bar near the upper end of said tramway in position to be engaged by a part of a car, a counter-balance, and a yielding connection between the latter and the said hook-bar, substantially as and for the purpose shown.

3. The combination, with an inclined tramway having at its upper end an oppositely-arranged dumping-incline, and also provided near its upper end with plates *P*, having curved ends *p*, of the *U*-shaped hook-bar *O*, having trunnions *o'*, and a counter-balance connected with the said hook-bar, substantially as and for the purpose set forth.

4. In combination with a mine-car, an inclined tramway, and an oppositely-arranged incline which is connected with the upper end of the same, a counterbalancing-beam that is pivoted at one end to or upon the supporting-frame of the slope, a hooked bar which is located near the upper end of said slope and is adapted to be engaged by the front axle of the car as it passes upon the incline, and a chain for connecting the free end of said beam with said hooked bar, so that the forward movement of said car will operate to raise said beam, substantially as and for the purpose shown.

In testimony that I claim the foregoing I have hereunto set my hand this 5th day of July, A. D. 1887.

SAMUEL SALMON.

Witnesses:

HARRY J. DAVIS,  
ELLIOTT A. OBERRENDER.