Oct. 7, 1930. J. T. DOBBIE ET AL 1,777,788

CAR ATTACHED DERAILER

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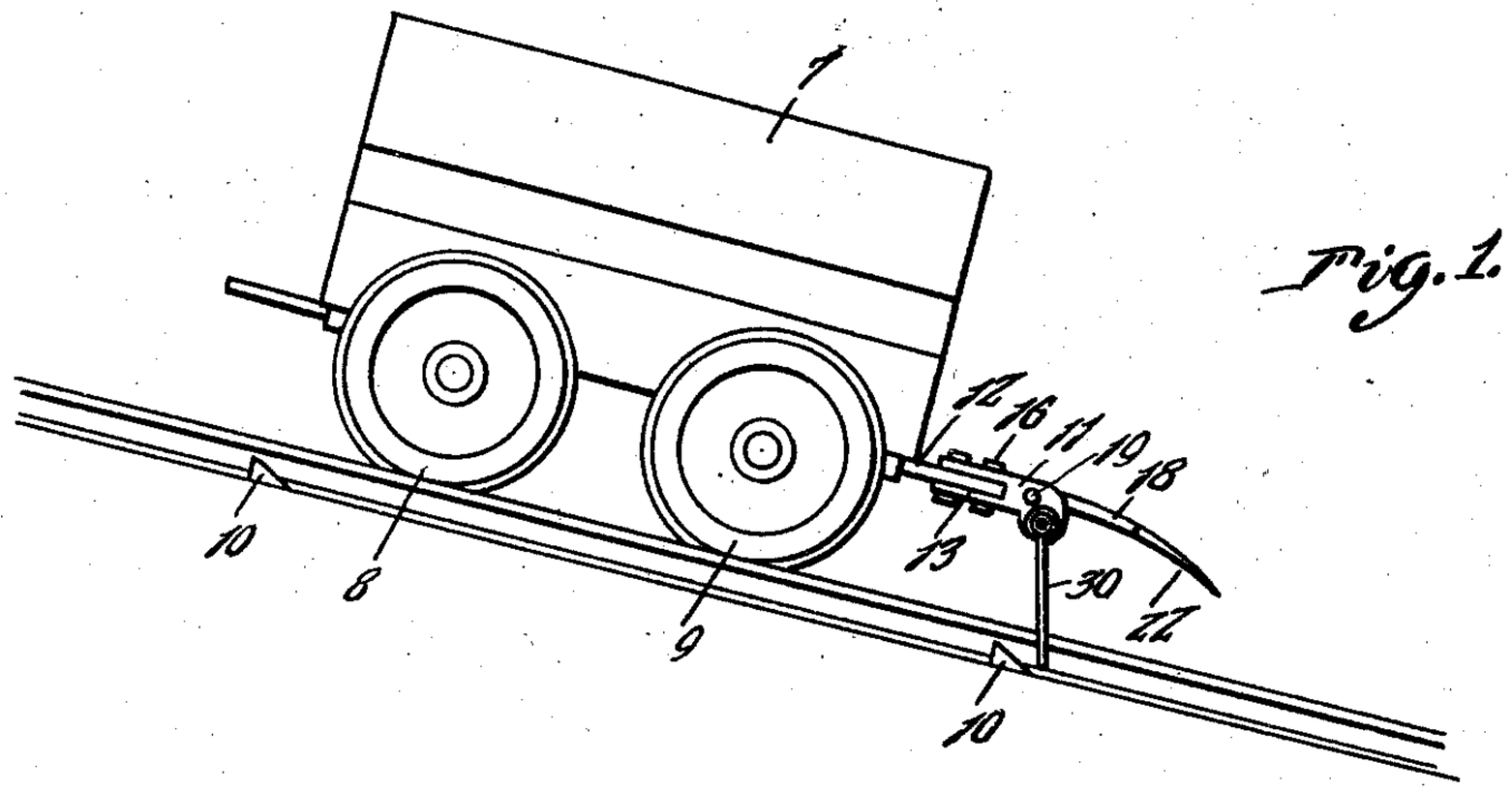


Fig. 1.

Fig. 2.

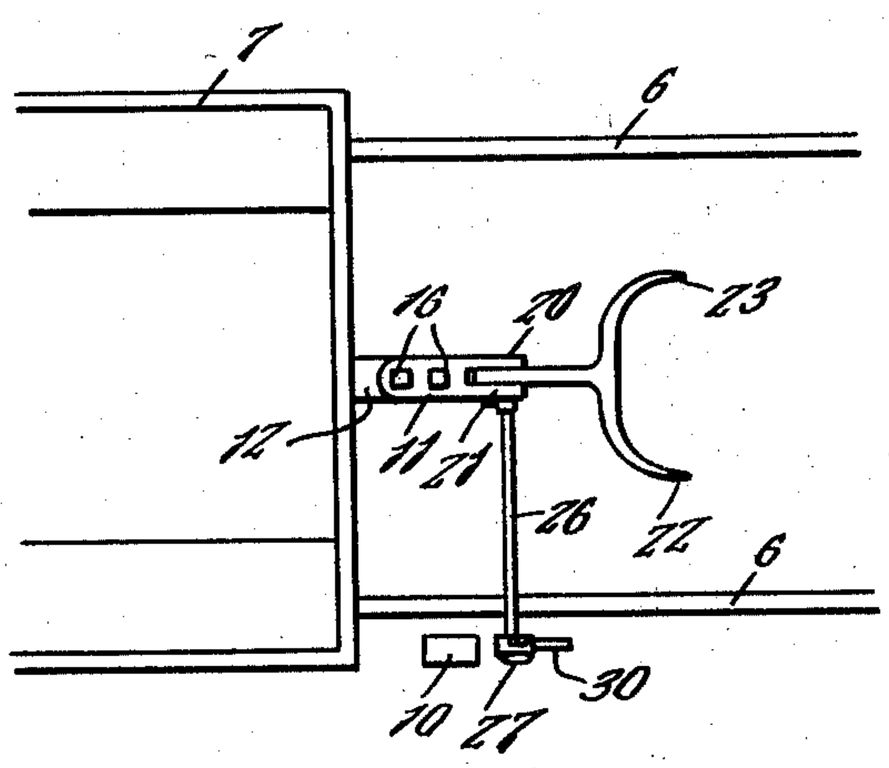


Fig. 4.

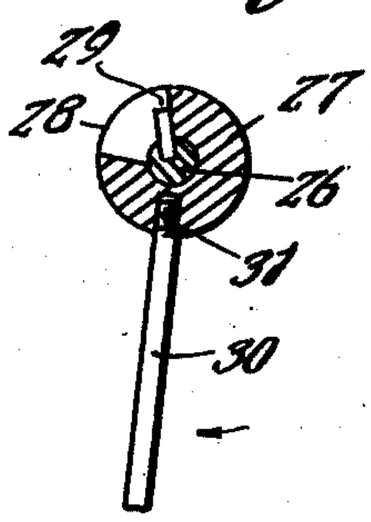
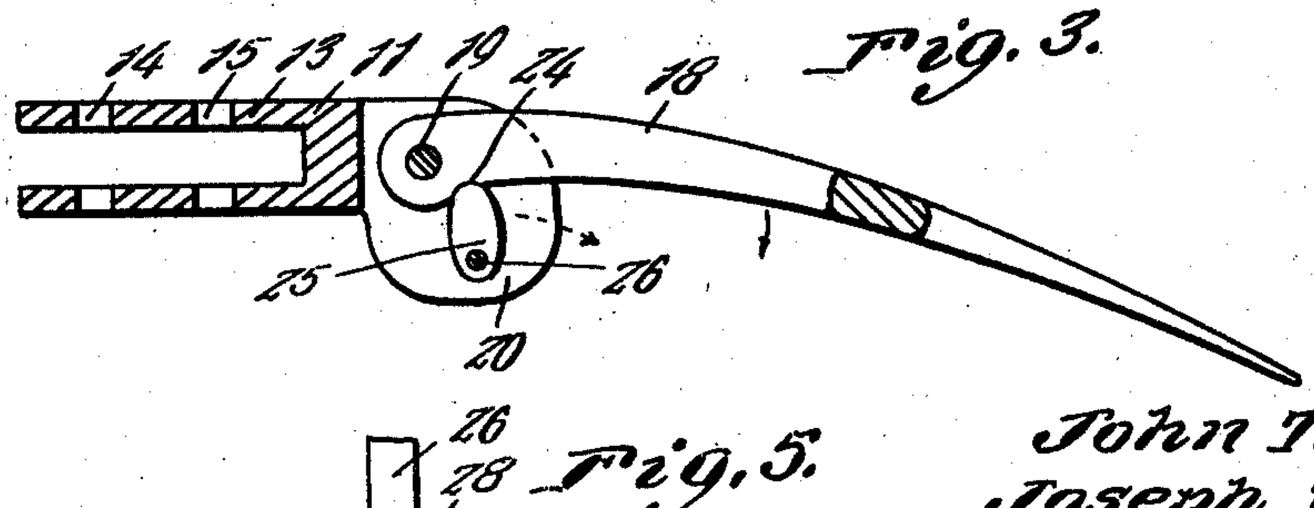


Fig. 3.



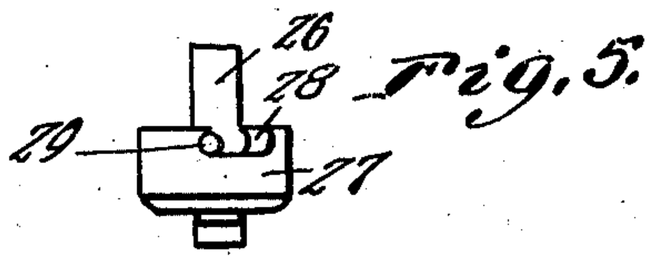


Fig. 5.

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UNITED STATES PATENT OFFICE

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CAR-ATTACHED DERAILER

Application filed October 1, 1929. Serial No. 396,497.

This invention relates to derailers particularly adapted to attachment to mine cars.

An object of the invention is to provide a derailer that is positive in operation, that will not cause undue wear upon the railroad ties or roadbeds, that is strong, compact and durable, thoroughly reliable for its intended purpose, very simple in its method of assembly, and comparatively inexpensive to manufacture and install.

Another object of the invention is to provide a derailer that when tripped will cause the end car of a string of cars to be thrown off the track thereby preventing serious accidents in mines having considerable grades in the track.

With the foregoing and other objects in view, the invention consists of a novel construction, combination and arrangement of parts as will be hereinafter more specifically described and illustrated in the accompanying drawings wherein is disclosed an embodiment of the invention, but it is to be understood that changes, variations and modifications may be resorted to without departing from the spirit of the claims hereto appended.

In the drawings, wherein like reference characters denote corresponding parts throughout the several views:

Figure 1 is a fragmentary side elevation of a section of railroad track with a car supported thereon showing an application of the present invention therewith.

Figure 2 is a fragmentary top plan view thereof.

Figure 3 is a longitudinal section in detail of the device in accordance with the present invention, detached from the car.

Figure 4 is a sectional view in detail of the tripping lever connection.

Figure 5 is an enlarged fragmentary top plan view of the tripping lever connection.

Referring to the drawings in detail, 6 indicates a railroad track, which in order to properly illustrate the invention is on an incline and disclosed in Figure 1. It is customary in mines to have the railroad tracks disposed at varying grades. The numeral 7 indicates a mine car body which when considered with an application of the present invention, is to be understood as the end car of a string of cars. The car body 7 is supported on pairs of wheels 8, 9 that ride on the track 6.

Disposed at intervals adjacent the track are wedge-shaped abutments 10, the inclined faces of which slope with the grade of the track while the perpendicular faces thereof are disposed at right angles to the grade.

The supporting arm is indicated generally at 11 and in event the cars 7 are formed with the conventional drawbar 12, the supporting arm 11 has a yoke-shaped head 13. Through the legs of the head 13 are registering openings 14, 15 by which the head is attached to the draw bar by suitable hold fast means 16. It is to be understood that the head 13 may be modified to fit either the draw bar 12 or may be attached to the end sill of the car. The head 13 is preferably attached to the drawbar or sill at or near the center of the track so as to provide the proper fulcrum for derailing the car, as will be presently described.

The rear end of arm 11 is bifurcated forming legs 20 and 21. The inner end of the derailing arm indicated generaly at 18 is pivoted on a pin 19 between the legs 20, 21. The derailing arm 18 is forked on its outer free end into branches 22, 23, the outer ends of which are pointed. The arm 18 curves downwardly from its inner to its outer end. The lower edge of the arm 18 adjacent the inner end thereof is provided with an arcuate notch 24 in which is normally seated the upper end of an elliptical shaped cam 25 which is rotatable in the furcation in the bifurcation 17.

The cam 25 is eccentrically secured on a shaft 26 which is journalled to the legs 20, 21 and projects laterally therefrom. The end of the shaft 26 terminates in vertical alinement, but above the abutments 10. A hub 27 is rotatably mounted on the end of the shaft 26 and is provided with a radially disposed recess 28 that is less than a quadrant of the hub. Anchored in the shaft 26 and projecting within the recess 28 is a pin 29 that limits the movement of the shaft with respect to the hub.

A tripping arm 30 is threadably secured as at 31, at its upper end to the hub 27. The arm 30 in operating position depends from the hub 27 in alinement with the abutments 10 and is of such length as to contact therewith.

In the application of the invention, the tripping lever 30 depends in the position shown in Figure 4 of the drawings. As the string of cars pass up the incline, the tripping arm 30 rides up the inclined face of the abutment 10 in the direction of the arrow shown in Figure 4. The hub 27 being free to move on the shaft 26 for less than a quadrant of a circle, moves with the arm and turns in the opposite direction when the arm drops from the upper edge of the abutment.

The abutments are spaced at intervals along the tracks, and in event the string of cars would for any reason become detached from the motive vehicle, the tripping arm 30 will come in contact with the perpendicular face of the first abutment in line which causes it to move in the opposite direction from the arrow in Figure 4 and this action causes shaft 26 to turn. When shaft 26 turns cam 24 permits the arm 18 to drop whereby the ends thereof engage the ground. As the car moves downwardly further, the car is fulcrumed upon the arm 18 and thrown off the track.

The arm 30 so balances the shaft 26 that the upper end of the cam 25 under normal conditions will re-seat itself in the notch 24 of the arm 18.

It is to be understood that by describing in detail herein any particular form, structure or arrangement, it is not intended to limit the invention beyond the terms of the several claims, or the requirements of the prior art.

Having thus described my invention, what I claim is:

1. In combination, a railroad track, a vehicle movably mounted on the track, abutments adjacent the rails of the track, a supporting arm having one end bifurcated, a derailing arm pivoted to one end between the legs of said bifurcated ends, and having a notch on one edge thereof, a shaft journalled in the legs of the bifurcated end of the supporting arm and projecting laterally therefrom, a cam on the shaft detachably seated in said notch, a tripping arm rotatably mounted on the shaft and adapted to engage the abutments on the railroad track, means on the shaft and associated with the tripping arm for restricting the rotation of the tripping arm so as to turn the shaft and cause the derailing arm to engage the ground for the purpose of derailing the car to which the device is attached.

2. A derailer comprising a supporting arm having one end bifurcated, a derailing arm pivoted at one end between the legs of said bifurcated ends and having a notch on one edge thereof, a shaft journalled in the legs of the bifurcated end of the supporting arm and projecting laterally therefrom, a cam on the shaft detachably seated in said notch, a hub rotatably mounted on the free end of the shaft, a tripping arm rigidly coupled to the hub and depending therefrom, means on the shaft and associated with the hub for restricting the rotation of the tripping arm so as to turn the shaft and cause the derailing arm to engage the ground for the purpose of derailing the car to which the device is attached.

3. A derailer comprising a supporting arm having one end bifurcated, a derailing arm pivoted at one end between the legs of said bifurcated ends and having a notch on one edge thereof, a shaft journalled in the legs of the bifurcated end of the supporting arm and projecting laterally therefrom, a cam on the shaft detachably seated in said notch, a hub rotatably mounted on the free end of the shaft, a tripping arm rigidly coupled to the hub and depending therefrom, means on the shaft and associated with the hub for restricting the rotation of the tripping arm so as to turn the shaft and cause the derailing arm to engage the ground for the purpose of derailing the car to which the device is attached, said means consisting of a radially disposed recess and a pin anchored to said shaft and ridable in said recess.

4. A derailer comprising a supporting arm having one end bifurcated, a derailing arm pivoted at one end between the legs of said bifurcated ends and having a notch on one edge thereof, a shaft journalled in the legs of the bifurcated end of the supporting arm and projecting laterally therefrom, a cam on the shaft detachably seated in said notch, a hub rotatably mounted on the free end of the shaft, a tripping arm rigidly coupled to the hub and depending therefrom, means on the shaft and associated with the hub for restricting the rotation of the tripping arm so as to turn the shaft and cause the derailing arm to engage the ground for the purpose of derailing the car to which the device is attached, said means consisting of a radially disposed recess and a pin anchored to said shaft and rideable in said recess, said recess being less than a quadrant.

In testimony whereof we affix our signatures.

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JOSEPH TODD.