

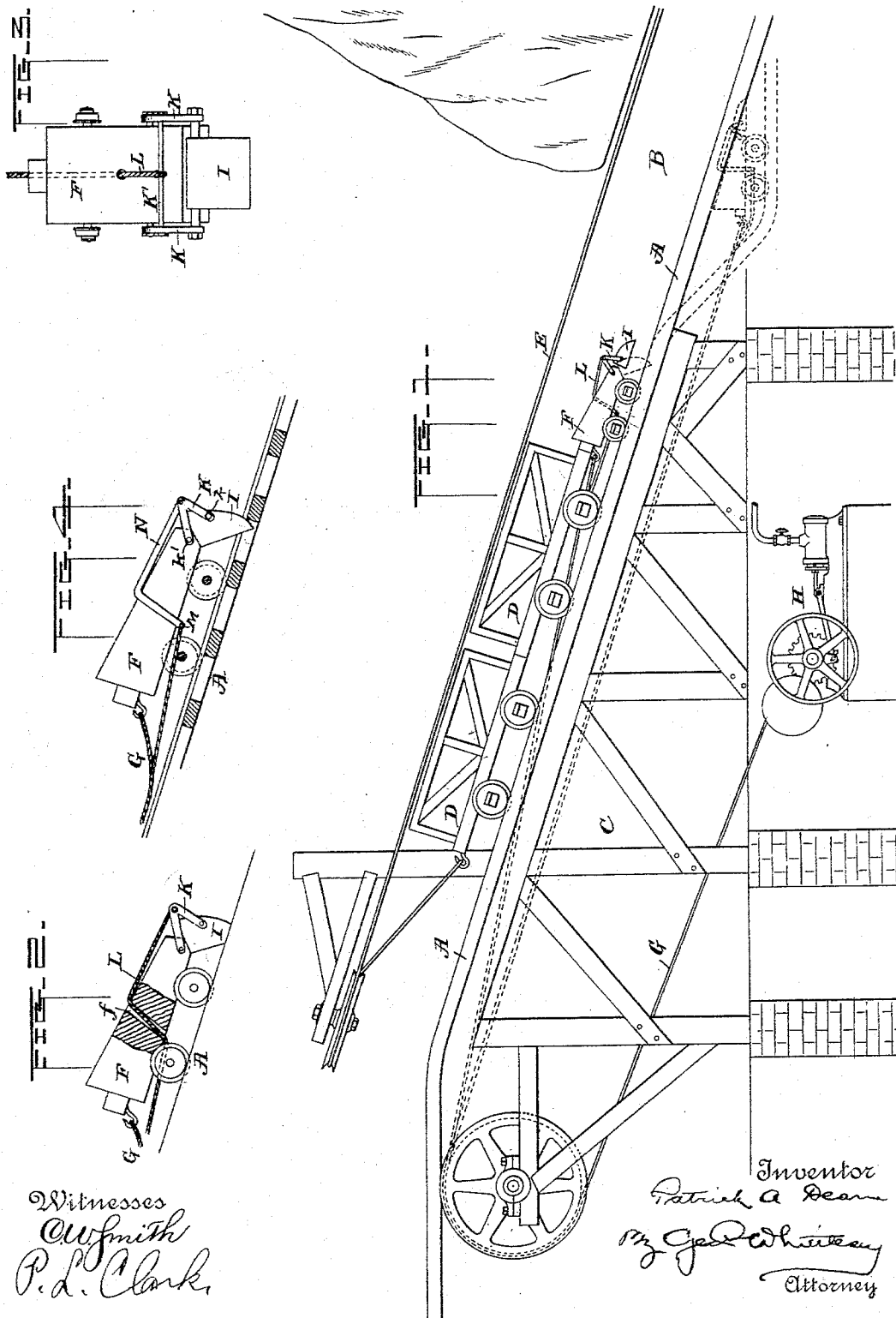
(No Model.)

P. A. DEANE.

SAFETY DEVICE FOR INCLINED PLANE RAILWAYS.

No. 532,033.

Patented Jan. 8, 1895.



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SAFETY DEVICE FOR INCLINED-PLANE RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 532,033, dated January 8, 1895.

Application filed August 11, 1894. Serial No. 520,000. (No model.)

To all whom it may concern:

Be it known that I, PATRICK A. DEANE, a citizen of the United States, residing at Scranton, in the county of Lackawanna and State of Pennsylvania, have invented certain new and useful Improvements in Safety Devices for Inclined-Plane Railways; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to inclined railways, and especially to those used in mines for hoisting coal, ore, &c.

The object of the invention is to prevent the car or cars from running back down the slope in case the hoisting cable breaks.

To this end, the invention consists in a specific form of safety device applied to the hoisting car and arranged to be released by the breaking of the cable so as to stop the car. Various contrivances to accomplish this result have been proposed, but my invention differs from them in construction, and in simplicity of operation.

In the accompanying drawings, Figure 1 is an elevation of a portion of the trestle at the mouth of the mine, showing an inclined railway and cars equipped with my invention. Fig. 2 shows the safety device in operation. Fig. 3 is a top plan view of Fig. 2, and Fig. 4 is a modification.

The inclined plane railway A runs out of the mouth B of the mine, and up on the trestle C which leads to the dump or the breaker. The cars D are hoisted up the slope by a cable E, until they are at or beyond the entrance of the mine, and have passed over a pit in which is housed a truck F, which runs upon a narrow gage track laid between the rails of the main track. The narrow gage track dives into the pit by a steep incline, as shown in the dotted lines, so that the track can readily descend below the level of the main track to permit the train of cars to pass over it. A hoisting cable G is attached to the truck and carried over suitable sheaves to an engine H. Upon starting this engine the truck F rises

out of the pit behind the rear car of the train, and pushes the train up the trestle. This construction is old and well known.

My invention has reference to a safety device applied to the truck F to hold it in case the cable G breaks.

At the rear end of the truck is hinged a heavy stopper I, preferably a block of cast iron, normally held in a raised position by connections between it and the hoisting cable, but adapted to enter between the ties of the track, or into the dirt between them, when the cable breaks and said stopper drops to its lowest position. The rear end of the truck is preferably beveled to form a flat face against which the upper end of the stopper may abut when it is let down. This gives it a broad, firm bearing and relieves the joints from all strain.

The preferred mode of hinging the stopper to the truck is shown in the drawings. The stopper is attached by a pin *k* to the ends of two bent arms, as K, one on each side of the truck. Each arm is pivotally supported on the truck, preferably by a pin *k'*. The upper ends of the arms are united by a cross bar K', to which is fastened one end of a supplementary cable L, which passes through a hole *f* or other suitable passage in the body of the truck and is attached to the main hoisting cable G, as shown. So long as there is a strain upon the cable the arms hold the stopper up, as shown in Fig. 1. Should the cable break, the stopper falls by its own weight, as shown in Fig. 2, where it instantly and effectually checks the backward movement of the truck and train.

Instead of attaching the supplementary cable to the cross bar K', it may be attached to a bar M uniting the ends of the links N pivotally connected with the arms K and located on each side of the truck, as shown in Fig. 4.

Other modifications, not departing from the spirit of my invention, can be easily devised.

It is evident that my device can be applied to any car on an inclined plane railway, not being confined to the special form of truck shown.

Having thus described my invention, what I claim is—

1. A safety device for a car on an inclined plane railway, consisting of a stopper hinged at the rear end of the car, a hoisting cable attached to the car, and flexible connections
5 between the stopper and the hoisting cable, whereby said stopper is allowed to drop when the cable breaks, substantially as described.

2. A safety device for a car on an inclined plane railway, consisting of a stopper on the
10 rear end of said car, arms pivotally supported on said car and attached to the stopper, and means for connecting said arms with the hoisting cable, substantially as described.

3. A safety device for a car on an inclined
15 plane railway, consisting of a stopper at the rear end of the car, arms attached to said stopper, a crossbar uniting said arms, and a supplementary cable connecting said cross bar with the hoisting cable, substantially as
20 described.

4. The combination with a railway car having a beveled rear end, of a stopper supported on said car and adapted to abut firmly against

said beveled end when lowered into position to check a backward movement of said car, 25 substantially as described.

5. The combination with a car for an inclined plane railway, of a hoisting cable attached to said car, a stopper hinged by its forward end to the rear of the car, and a supplementary cable attached to said stopper
30 and connected with the hoisting cable, substantially as described.

6. The combination with a car for an inclined plane railway, of a hoisting cable attached to said car, a stopper at the rear end
35 of the car, arms attached to said stopper, and a supplementary cable connecting said arms with the hoisting cable, substantially as described. 40

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

PATRICK A. DEANE.

Witnesses:

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