(No Model.)

G. G. BITTNER.

CAR BRAKE FOR INCLINED RAILWAYS.

No. 588,122. Patented Aug. 17, 1897.

Fig. 1.

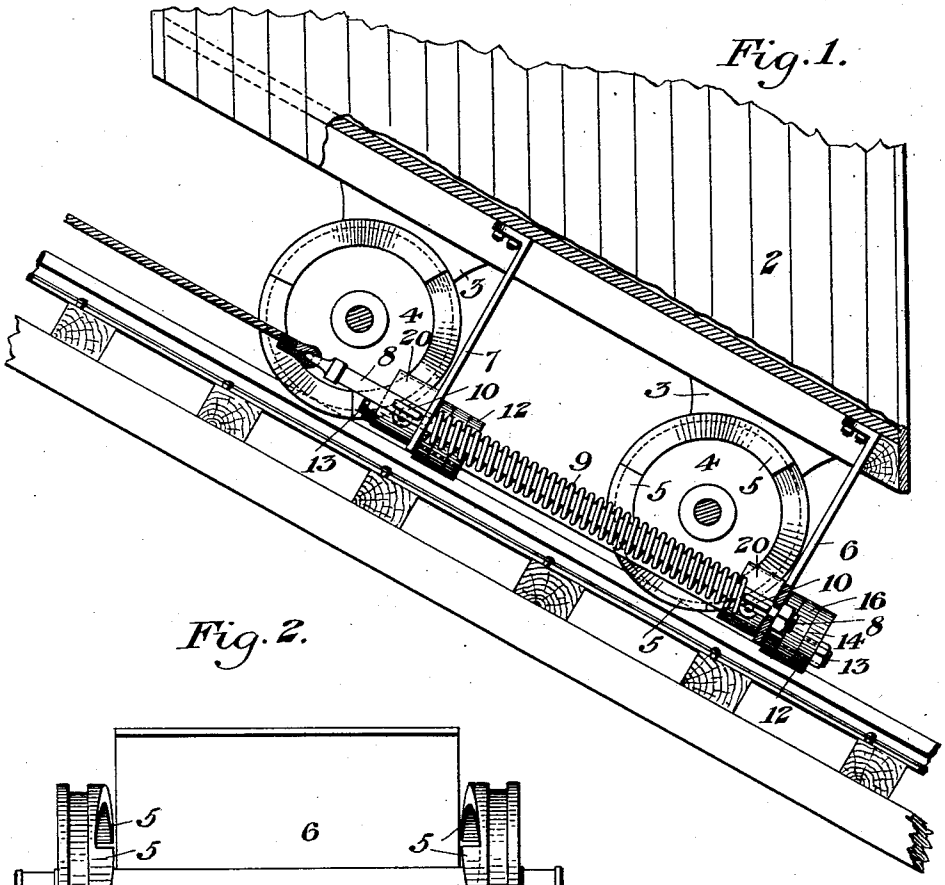
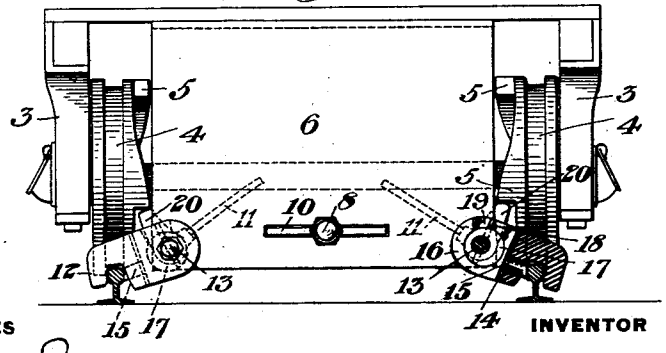


Fig. 2.

Fig. 3.



WITNESSES

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CAR-BRAKE FOR INCLINED RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 588,122, dated August 17, 1897.

Application filed March 8, 1897. Serial No. 626,408. (No model.)

To all whom it may concern:

Be it known that I, GOTTLIEB G. BITTNER, of Allegheny, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Car-Brakes for Inclined Railways, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation showing the inner face of the car-wheels, having the teeth thereon and the spring draft-bar. Fig. 2 is a front view of the truck, showing the locking-dogs which are held by the teeth on the face of the wheels; and Fig. 3 is a rear view of the truck, showing the brake-shoes gripping the rails.

My invention relates to an improvement in brakes for the cars of inclined railways; and it consists in brake-shoes having locking-bolts, which shoes are normally held in an elevated position by the weight of the car exerted on the draft-bar, so that should the weight be removed by the breaking of the cable the brake-shoes will drop on the rails in a position to engage the same, and in locking bolts or dogs which are operated by the teeth on the wheels, so as to grip the rail and prevent the descent of the car.

I will now describe my invention so that others skilled in the art may manufacture and use the same.

In the drawings, 2 represents the body of the car, and 3 the truck-frame or journal-box brackets, in which are car-wheels 4, journaled in the usual manner. On the inner face of the rear wheels are teeth or projections 5. In rear of the front and rear wheels are depending aprons or brackets 6 and 7, in which is mounted the draw-bar 8, surrounded by the spring 9. When the weight of the car is exerted on the cable and draw-bar and pulls the draw-bar forward, the spring is compressed, so that should the force of the weight be removed the draw-bar will be retracted by the force of the spring. Near the rear end of the draw-bar are two horizontal wings 10, which are designed to engage with arms 11, extending from the brake-shoes, when the draw-bar is in its forward position, so as to keep the brake-shoes in an elevated position and be disengaged from the arm 11 when the draw-bar is retracted, allowing the brake-shoes to drop on the track. These brake-shoes 12 are mounted loosely on the longitudinal shafts 13, which shafts are journaled in the brackets 6 and 7, and they are provided with the recess 14, in which the rails fit when the brake-shoes are dropped. The shoes are also recessed about the shaft 13, which recess extends into the recess 14 and is designed to receive the locking-bolt, which consists of a tongue portion 15 and an eccentric-collar portion 16, which encircles a cam or eccentric 17, that is keyed to the shaft 13.

The shoes 12 are secured in relation to the shafts 13 by pins 18, that extend through the cam 17 and the shaft 13 and through slots 19 in the brake-shoes, so that while the shoes have a limited movement sufficient to allow of the dropping of the shoes on the rails without operating the cam 17, yet when the shaft 13 is rotated sufficiently to bring the arms 11 beneath the wings 10 of the draw-bar the pins 18 will have passed the limit of their movement in the slots 19, and the shoes will be held in a raised position away from the rails.

Keyed to the shafts 13, adjacent to the rear wheels 4, are arms 20, which are keyed to the shafts 13 in such a position that when the brake-shoes drop the arms will drop in the path of the teeth 5, so that the teeth will engage the arms and thereby, rotating the shaft 13, cause the cam 17 to move in the eccentric-collars 16 and force the tongues or bolts 15 against the rail.

The operation is as follows: When the car is depending from its cable, the weight of the car keeps the draw-bar in its former position, and the wings 10 are in the path of the arms 11, as is shown in Fig. 2, and the arms being engaged with the wings keep the brake-shoes in an elevated position where they are out of the way. Should the cable break, the force of the spring 9 immediately retracts the draw-bar, and the wings 10, passing from beneath the arms 11, allow the brake-shoes to fall by the force of gravity to the rails, and this movement of the shoes rotates the shafts 13 sufficiently to bring the arms 20 in the path of the teeth 5, and as the car starts in its

downward movement one of the teeth comes in contact with the arms 20 before the wheel has made a quarter-revolution, and thereby, turning the shafts 13 on their axes, forces the bolts 15 against the rail, locking the shoes and preventing any further downward movement of the car.

It will be noticed that the draw-bar 8 extends beyond the rear of the car, so that when the car reaches the foot of the incline the draw-bar will come in contact with a buffer and be kept in its forward position although the weight of the car be removed from the cable.

My invention may be applied to two or more wheels of the car.

The advantages of my invention will be apparent to those skilled in the art.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A brake for cars for inclined railways, consisting of hinged brake-shoes adapted to rest on the rail, in combination with a locking-bolt, and a device on the wheel adapted to shoot the locking-bolt; substantially as and for the purpose specified.

2. In a railway-brake for inclined railways, the combination of a pivoted brake-shoe, a shaft on which the shoe is journaled, a cam keyed to the shaft, an eccentric-collar and bolt arranged to be operated by the cam, arms keyed to the shaft, and projections on the face of the car-wheel adapted to engage with the arms; substantially as and for the purpose specified.

3. In a railway-brake for inclined railways, the combination of a hinged brake-shoe having a locking-bolt, devices adapted to shoot the locking-bolt, and a spring draw-bar adapted to hold the brake-shoe in an elevated position; substantially as and for the purpose specified.

In testimony whereof I have hereunto set my hand.

GOTTLIEB G. BITTNER.

Witnesses:
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