

A. H. LIGHTHALL.

Car Brake.

No. 102,840.

Patented May 10, 1870.

Fig. 1.

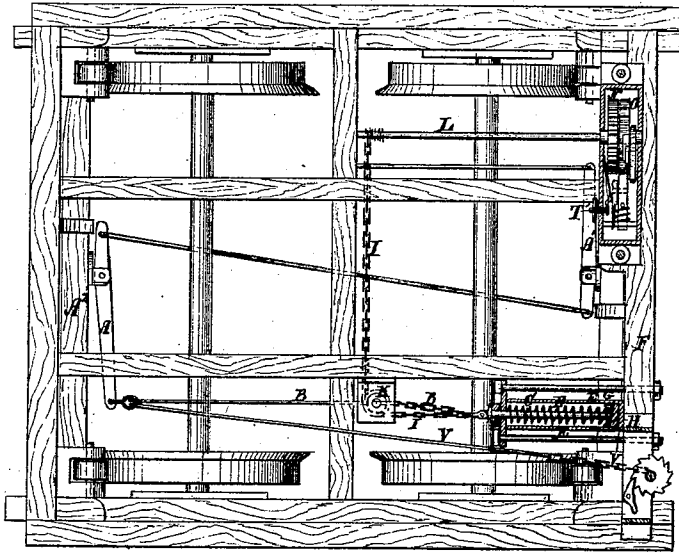
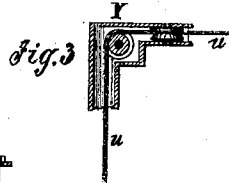
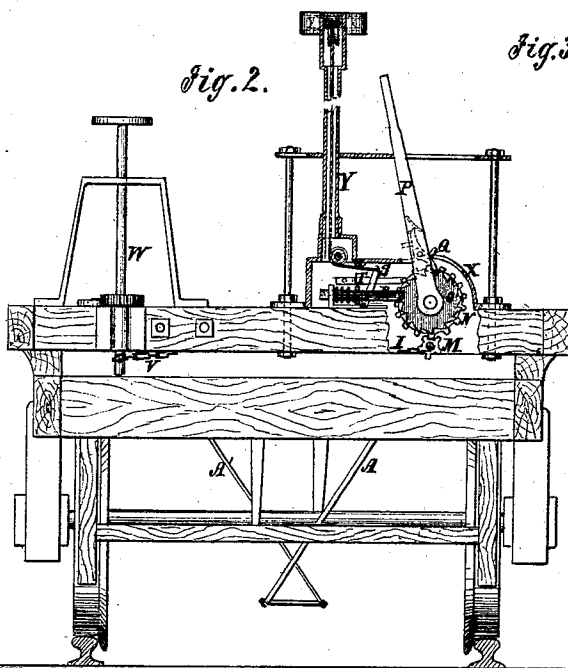


Fig. 2.



Witnesses:

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ALMERIN H. LIGHTHALL, OF ALBANY, NEW YORK.

Letters Patent No. 102,840, dated May 10, 1870.

IMPROVEMENT IN RAILWAY-CAR BRAKES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, ALMERIN H. LIGHTHALL, of Albany, in the county of Albany and State of New York, have invented a new and useful Improvement in Car-Brakes; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings forming part of this specification.

This invention relates to improvements in car-brakes, and consists in an improved arrangement of spring-actuated car-brakes, and means for tripping the springs by the act of pulling the bell-rope.

Figure 1 is a plan of the frame of a car-truck with my improvements applied, and horizontal sections of some of the parts.

Figure 2 is an end elevation of the same, also with some parts sectioned.

Figure 3 is a detail view of part of the guide for the cord.

Similar letters of reference indicate corresponding parts.

A and A¹ represent the brake-levers, attached to the brakes A², of ordinary construction, for applying or releasing them by moving back and forth.

They are connected by a rod or chain, B, to the rod C, having a strong spiral spring, D, fixed upon it, and both arranged in a cylindrical case, E, attached to the platform, and arranged to draw the lever A toward the front beam F for applying the brakes.

The rod C carries a disk, G, at one end, between which and the cylinder-head, at the other end, the spring is confined, so as to be contracted when the rod is drawn out.

H is an elastic cushion, behind the disk G, against which the said disk strikes when the spring flies back, for softening the shock.

The rod C is connected to a chain, I, working over the pulley K, and attached to the winding shaft L, extending to the front of the platform, and having a pinion, M, gearing with the large wheel N, having a ratchet disk, O, attached for turning by a lever, P, and pawl Q, for winding up the chain.

R is a spring, actuated, holding, and tripping pawl, engaging the teeth of the ratchet-wheel for holding it.

Said pawl is connected by the trip-lever S with a

cord, *u*, leading to the bell-rope, and so arranged that when the latter is pulled, the tripping-pawl will be disengaged from the wheel O, thus allowing the spring D, which is contracted by the winding shaft L and chain I, to fly back to the position represented in the drawing.

T is a spring, or it may be any other suitable device, for catching behind the lever S to hold the pawl R out of contact with the wheel O, when required.

It is pulled out to trip the lever S by a stud, T', the said stud T' being pulled by hand.

The pawl Q is disengaged from the wheel O, after the chain is wound up to set the spring, so that it will not obstruct the unwinding of the chain.

The winding up of the chain I to set the spring releases the brake from the wheel.

V is a chain, connecting the ordinary brake-lever with the brake-shaft W, for actuating the brake independently of the above-described apparatus.

The wheels N and O, and the holding and tripping pawl, are enclosed in a case, X, and a hollow guard, Y, is provided for the rope *u*.

Having thus described my invention,

I claim as new and desire to secure by Letters Patent—

1. The combination, with the brake-levers, of the spring D, winding-chain I, shaft L, operating wheels, lever, and pawl, holding and tripping pawl, and bell-cord connection, all substantially as specified.

2. The arrangement of the spring D, rod C, cylinder E, disk G, and spring H, all substantially as specified.

3. The combination, with the ratchet-wheel and winding shaft, of the spring-actuated and holding and tripping pawl R, tripping lever S, and bell-cord connection *u*, all substantially as specified.

4. The combination, with the lever S and pawl R, of the holding spring T and stud T', substantially as specified.

The above specification of my invention signed by me this 31st day of March, 1870.

ALMERIN H. LIGHTHALL.

Witnesses:

GEO. W. MABEE,
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