D. MYERS.

Car Brake.

No. 52,310. Patented Jan. 30, 1866.

Fig 1.

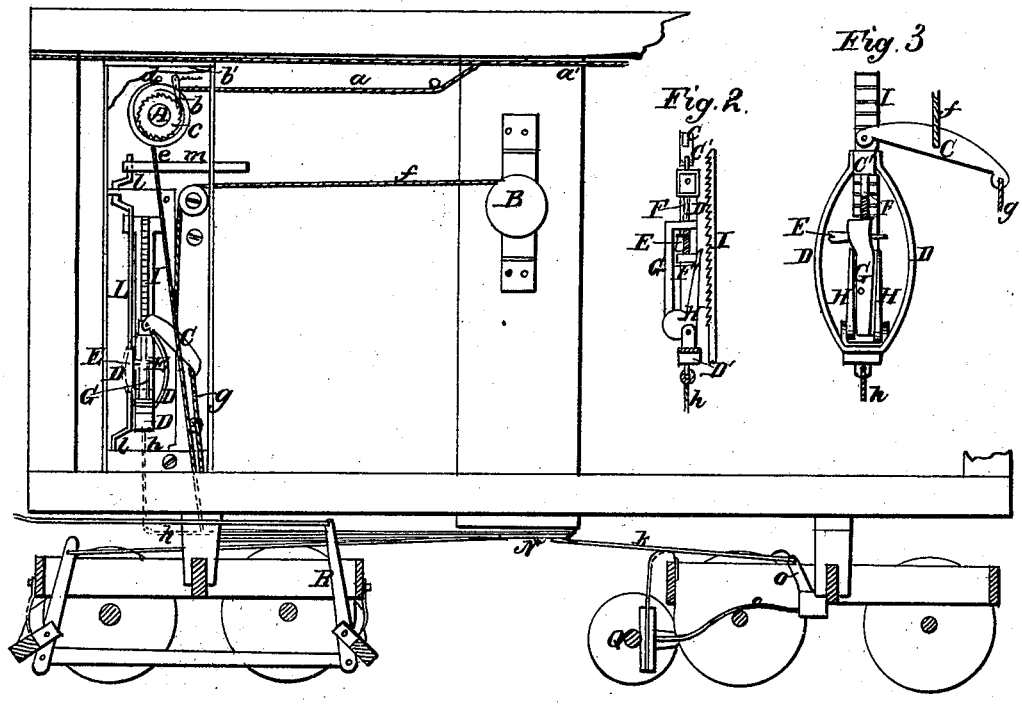
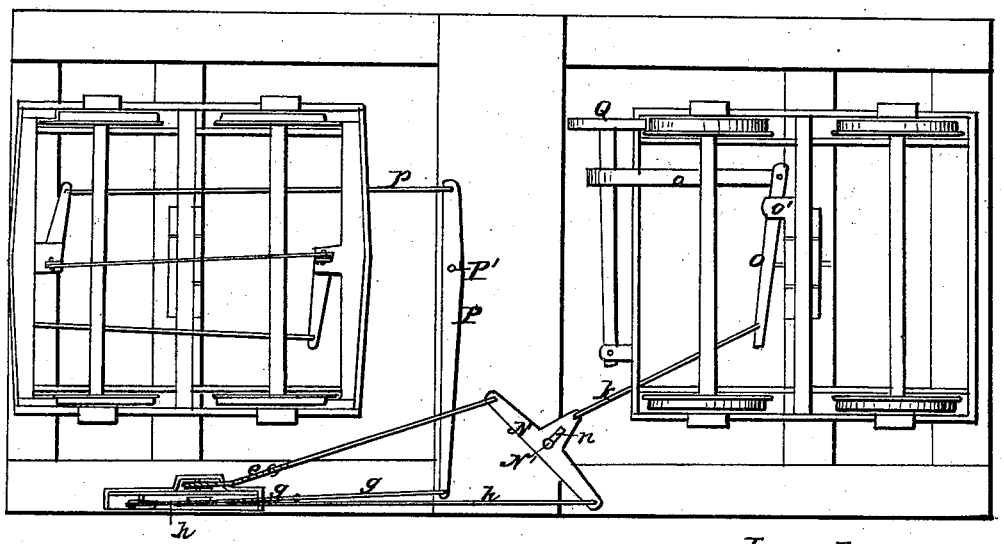


Fig. 2.

Fig. 3



Inventor:
David Myers
by Coburn & Marrs
Attorneys

UNITED STATES PATENT OFFICE.

DAVID MYERS, OF CHICAGO, ILLINOIS.

IMPROVED CAR-BRAKE.

Specification forming part of Letters Patent No. **52,310**, dated January 30, 1866.

To all whom it may concern:

Be it known that I, DAVID MYERS, of the city of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Applying Car-Brakes to Railroad-Trains; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings and the letters and figures marked thereon, which form part of this specification.

My said invention consists in a novel device or devices whereby the brakes can be applied simultaneously to all the cars composing a train, either by the engineer upon the engine or by the baggage-master or any other person in the baggage-car; and also in a novel device whereby the amount of tension applied in operating the brakes can be perfectly regulated and controlled.

To enable those skilled in the art to understand how to construct and use my invention, I will proceed to describe the same with particularity, making reference in so doing to the aforesaid drawings, in which—

Figure 1 represents a front elevation of my invention; Fig. 2, a side view of the same; Fig. 3, an enlarged front view of a portion of the apparatus; and Fig. 4 is a bottom view of a portion of the baggage-car in which the apparatus is designed to be placed, showing the arrangement and connection of the levers for operating the brakes.

Similar letters of reference in the different figures denote corresponding parts of my invention.

I will first describe the arrangement whereby the engineer upon the locomotive applies the brakes upon the cars composing the train.

a' represents the ordinary bell-cord running from the engine through the train at the top of the cars, that portion herein shown being that part passing through the baggage-car, *a* being a cord attached to the bell-cord *a'* and extending to the top of the side of the car, where, passing around a pulley, it runs along the side of the car, to be attached to the pawl *b*, which acts upon the ratchet-wheel *c* by the operation of a spring, *b'*, as shown. The said ratchet-wheel is fixed upon a shaft which projects into the car, and upon the end of which is mounted the wheel. (Marked A.) Upon the said shaft there is coiled a steel spring of suitable elastic force, one end of said spring attached to said shaft, and the other end thereof is fixed by a suitable attachment to the wall, as shown. To said shaft there is also attached one end of the cord, (marked *e*,) which passes down through the floor of the car and is attached to one end of the slotted lever N, as shown in Fig. 4.

The lever N is provided at its center with a transverse slot, *n*, as shown, and is connected to the long arm of the lever O, fulcrumed at O', to the opposite arm of which lever is attached the rod or chain *o*, which is connected with and operates the friction-wheel Q, (described in the Letters Patent granted to me on the 21st day of July, A. D. 1863,) whereby tension is applied to the chain extending through the train to apply the brakes to the several cars composing the train.

By turning the wheel A the spring *d* is wound up, so that its elasticity tends to revolve the shaft upon which A is fixed and upon which the cord *e* is wound in the opposite direction.

Having described the construction of this part of my invention, I will now describe its operation.

The spring *d* being wound up as aforesaid, when the engineer wishes to apply the brakes to the train he simply pulls the cord *a'*, which communicates its tension to the cord *a* and withdraws the pawl *b* from the ratchet-wheel *c*, when the force of the spring *d* revolves the shaft to which the cord *e* is fastened and winds said cord upon the shaft, thereby drawing forward the lever N, and, by means of the rod K, lever O, and rod *o*, applies the friction-wheel and brakes the train. When it is desired to release the brakes the baggage-master simply winds up the spring *d*, when it ceases to act and the pawl *b* falls into the ratchet-wheel and holds the apparatus ready for another occasion. When the brakes are applied in this manner it is evident that the amount of tension is regulated by the elastic force of the spring *d*.

I will now describe the apparatus whereby the baggage-master applies the brakes to the train, and also the local brakes upon the baggage-car.

B represents a wheel fixed upon a shaft upon which the cord *f* is wound, which, passing over a suitable pulley, goes down and is attached to the middle point of the arm C, to one end of which the cord *g* is attached, as

shown, which, passing down through the floor of the car, is attached to the lever P, to the opposite arm of which is attached the brake-rod *p*, which applies the brakes upon the baggage-car only. The other end of said arm C is attached to the block, (marked C′,) to which are attached the upper ends of the oval-shaped or elliptic spring D D, the lower part of said springs being attached to the block D′, to which the cord *h* is attached, which passes down through the floor of the car and is attached to one end of the slotted lever N, as shown in Fig. 4.

The object of employing the springs D D in forming the connection between the arm C and the lever N is, in order that by means of other devices hereinafter described and used in connection therewith, the amount of tension in applying the brakes may be regulated and controlled as hereinafter specified.

From the block C′ there extends downward a rod, (marked F,) the lower end of which is provided with a shoulder or head, as shown. (Marked F′.)

G represents an arm, attached at its lower end to the heel of the pawl H and bent over at the upper end, as shown, the rod F passing loosely through the same.

It is evident that as tension is applied to the cord *f*, thereby raising the arm C, the distance between the blocks C′ and D′ is increased until the springs D D become nearly straight, the head F′ upon the rod F approaching the arm G, and when pressing up against said arm causes the same to rise, throwing the pawl H into the rack I, and thus preventing the end of C attached to said springs D D from rising higher, and limiting the tension upon the cord *h* to the amount already obtained.

For the purpose of making the amount of tension adjustable or variable to suit different occasions, and to provide for the decreasing power or elasticity of the springs by constant use, I introduce a wedge-shaped block (marked E) between the head upon the rod F and the shoulder upon the upper end of G, as shown, so that by moving said block E in or out the time at which the pawl H is thrown into the rack I is hastened or retarded and the operation effected by a greater or less tension upon the springs D D and cord *h*. The said wedge-shaped block is adjusted as follows: The block is attached to a cylindrical clasp or slide (marked E′) upon the crank-shaft L, so that by drawing out or pressing in the arm M said block E is withdrawn or forced farther in between the head F′ and the shoulder G.

The mode in which the baggage-master applies the brakes is as follows: He turns the wheel B, winding up the cord *f* and drawing up the arm C, each end of which rises uniformly until the pawl H checks one end, after which the other end may be still further raised, if desired. The tension upon the cord *g* applies the brakes upon the baggage-car, and the cord *h* applies the friction-wheel Q and operates the brakes throughout the entire train. The tension upon the cord *h* is also regulated by adjusting the head F′ up or down upon the rod F.

Having described my invention, I will now specify what I claim and desire to secure by Letters Patent:

1. In combination with the spring D or its equivalent, the employment of a device for throwing the pawl H into the rack I, substantially as specified and shown.

2. The combination of the spring D, the rod F, provided with the head F′, and the bent arm G, arranged and operating as and for the purposes described.

3. The combination of said spring D, rod F, arm G, and the pawl H, arranged and operating as and for the purposes shown and specified.

4. The combination of the wedge E with the arm G and rod F, provided with the head F′, arranged and operating as and for the purposes specified.

5. The combination of said wedge E with the crank-shaft L and arm M, as and for the purposes shown and described.

6. Operating the friction-wheel for applying the brakes by means of the bell-cord *a′* or its equivalent, in combination with a spring operating substantially as specified and shown.

DAVID MYERS.

Witnesses:
L. L. COBURN,
W. E. MARRS.