D. MYERS.

Car Brake.

No. 52,312. Patented Jan. 30, 1866.

Fig 1.

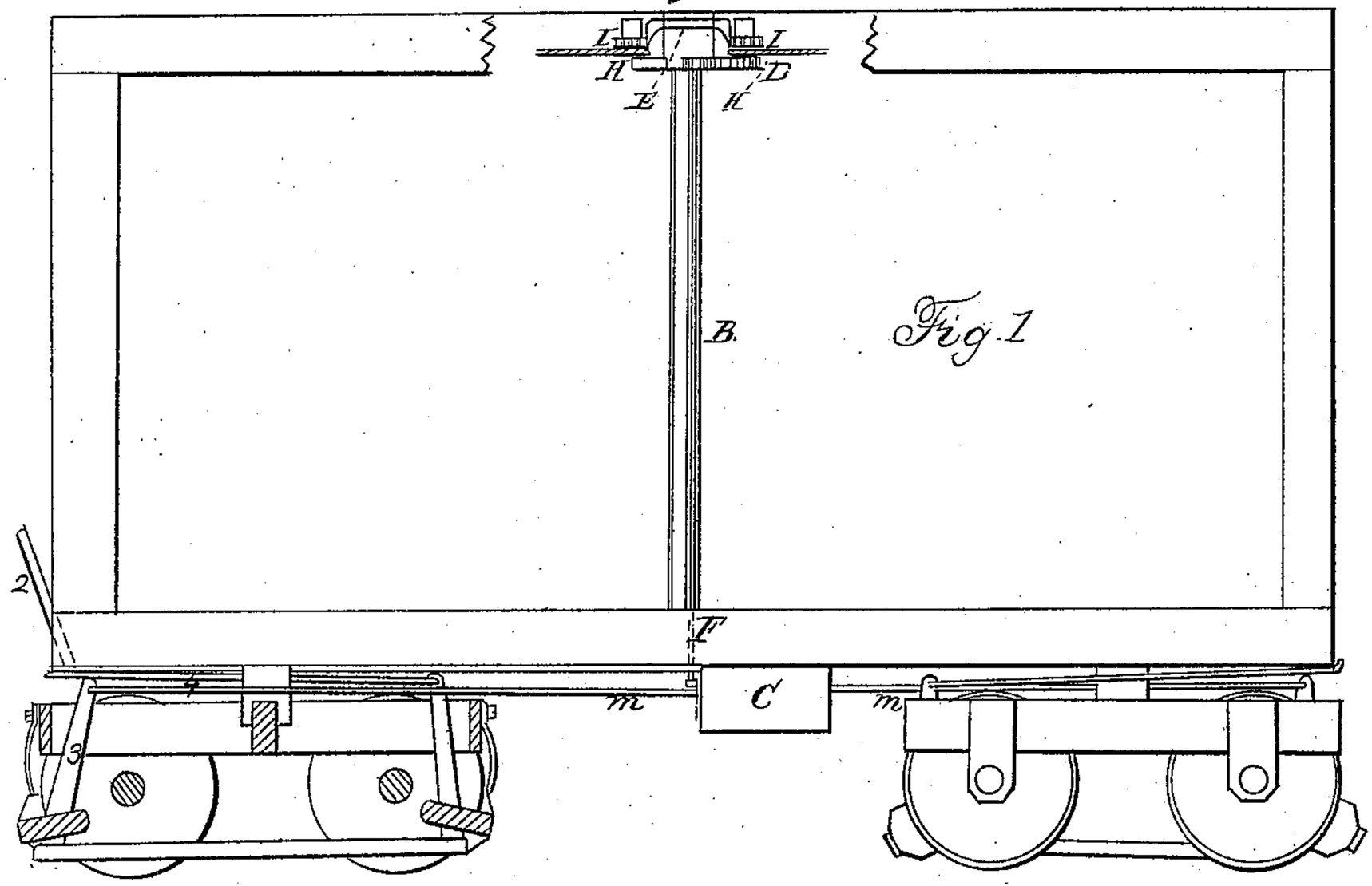

Fig. 1

Fig 2

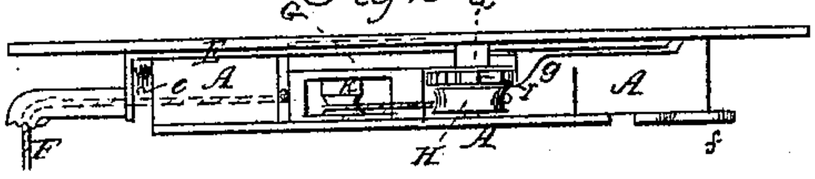

Fig. 3

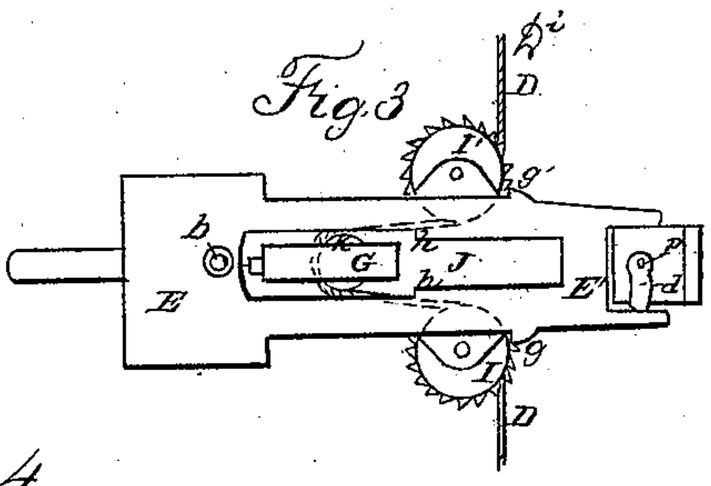

Fig. 5.

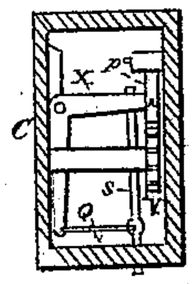

Fig. 4

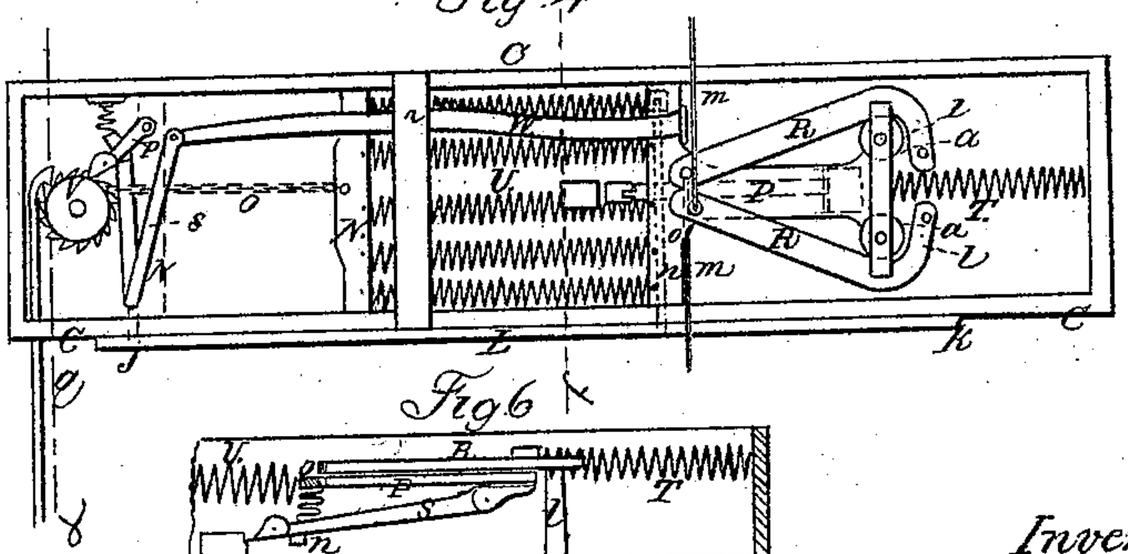

Fig. 6

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UNITED STATES PATENT OFFICE.

DAVID MYERS, OF CHICAGO, ILLINOIS.

IMPROVED CAR-BRAKE.

Specification forming part of Letters Patent No. **52,312**, 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 Safety-Brakes for Railroad-Cars; 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 letters and figures marked thereon, which form a part of this specification, and in which—

Figure 1 represents the frame of a car so drawn as to represent the location of my invention in the car. Fig. 2 is a detached side view of that part of my invention which is located in the top of the car. Fig. 3 is a top view of the same. Fig. 4 represents a top view of that part placed at the bottom of the car. Fig. 5 is a vertical sectional view at the red line *x* in Fig. 4; and Fig. 6 represents a vertical sectional view at the red line *y* in Fig. 4.

The nature of my invention consists in a novel construction and arrangement of mechanical devices, by means of which the engineer, by pulling the bell-cord, applies the brakes to every car in the train, or so many of them as have my invention attached, and then, by giving the bell-cord a second pull, he removes the brakes from the car-wheels, and at the same time the application of my invention does not interfere with the use of the bell-cord by the conductor in the ordinary manner, or with the application of the brakes by the brakemen of the train.

To enable those skilled in the art to manufacture and use my invention, I will proceed to describe the same with particularity.

The same letters of reference refer to the corresponding parts in the different figures.

I place that part of my invention shown in Figs. 1 and 2 in the top of the car, and it is connected with that part shown in Fig. 4, which is placed in the bottom of the car by a cord, F, passing down the tube B, arranged on the side of the car.

The device placed at the top of the car consists of a frame, A, in which there are two stationary pulleys, H H, and the pulley K in the sliding block G. The said sliding block G passes up through the slot J in the plate E. The plate E rests on the top of the frame A, and is attached thereto by means of the pin or pivot *b*. One end of the said plate E passes down over the end of the frame A, and there is between it and the end of the frame two springs, *c'*. This arrangement of the plate E admits of that end of it marked E' to be moved slightly sidewise, as hereinafter described. There are also ratchet-wheels I I' placed above the pulleys H, with springs *a*, Fig. 2, pressing them against said pulleys, so as to cause them to revolve with the pulleys when left free to do so. The button *d* is revolved on the pin *e* by means of the handle *f*, and plays in the slot in the end of the plate E, serving to turn that end of the said plate in either direction the operator may desire. There are also wings or projections *g g'* on the side of the plate E, which turn down in such a position that they can be made to serve as pawls to the ratchet-wheels I I'.

The slot J is constructed with two shoulders, *h h'*, in such a manner that when the button *d* moves the plate E in one direction the shoulder *h'* is brought nearly in front of the block G, and when in the opposite direction it brings the shoulder *h* to the same relative position with respect to the block G.

It is readily seen that the bell-cord D is put around the pulleys H and K in such a manner that if it is pulled in either direction it will move the block G up between the pulleys H, and thereby cause the cord F to apply the brakes in the manner hereinafter described; but it is necessary to have the said block G move only when the bell-cord D is pulled by the engineer, and not when it is pulled in the opposite direction by the conductor, and at the same time the car is liable to be used with either end toward the engine. To accomplish this it is simply necessary to see that the button *d* is turned from the engine toward the rear of the train.

In Fig. 3 the engine is supposed to be in the direction indicated by the index *i*, the button *d* is turned in the opposite direction, which throws back the end of the plate E, so that the pawl *g* catches in the ratchet-wheel I and the shoulder *h'* is brought nearly even with the block G. When the plate E is in this position, if the bell-cord D is pulled in the direction denoted by the index *i*, the block G will move and apply the brake; but when the bell-cord D is pulled in the opposite direction the pawl *g*, catching in the ratchet-wheel I, pulls the plate E still farther in that direction and

moves the shoulder *h'* directly in front of the block G, so that the block G, striking against said shoulder *h'*, is made fast and the brake is not applied, but the bell-cord still passes through on the pulleys and gives the ordinary alarm at the engine. If the car is put into the train with the other end toward the engine, the button *d* is turned in the other direction, when the pawl *g'* is thrown into the ratchet-wheel I' and the shoulder *h* is brought near the block G, and then when the bell-cord is pulled in the direction indicated by the index *i* the block G will strike the shoulder *h* and not apply the brake; but when it is pulled in the opposite direction the block G will pass by the shoulder *h* and apply the brake.

The cord F passes down the pipe B and is attached to the end of the lever L at *j*. The said lever L has its fulcrum on the frame C at *k*.

In the frame C there are two cross-pieces, N and O, whose ends slide in grooves or slots in the side pieces of the frame C, and there extends back from the slide-piece O the arm P, to which there are two pulleys, Q, attached, which vibrate the crooked levers R on the posts *l* in the manner hereinafter described. The brake-rods *m* are attached to the levers R.

There is a jointed dog, S, arranged beneath the arm P, and catches in a notch in the bottom of the frame C in such a manner as to hold the sliding cross-piece O back in the position shown in Fig. 4, and there is a cross-lever, *n*, arranged beneath said dog with one end extending out through the lever L in such a manner that when the lever L is vibrated by means of the cord F the cross-lever *n* is raised and the dog S is removed from the notch aforesaid.

There is one or more springs, T, connecting the arm P to the frame C for the purpose of bringing it back to the position shown in Fig. 4, as hereinafter described.

There are also springs U connecting the two sliding pieces N and O, and the chain or cord *o* connects the sliding piece N to the shaft of the ratchet-wheel V.

The hook *q* is used to turn the ratchet-wheel V for the purpose of winding the chain *o* on the shaft of said wheel, and the jointed pawl or dog *p* serves to hold said wheel in place.

The following-described device is for removing the pawl *p* from the ratchet-wheel V. The crooked lever W has its fulcrum at *r*, with one of its ends passing through a slot in the sliding piece O, and the other end has an arm, *s*, attached to it, which arm extends out in the frame C. There is also placed beneath the arm *s* a bent lever, X, one end of which passes up behind the jointed pawl *p*, and the other end is attached to the arm *s* by means of the rod *y*. When the sliding piece O is back in the position shown in Fig. 4 the arm *s* is thrown back, so that it does not pass out over the lever L; but when the movable piece O is thrown forward the lever W is so moved that the arm *s* is thrown out over said lever L, and then when the lever L is raised the arm *s* is also raised, which pulls on the rod *y* and operates the lever X so as to throw the pawl *p* out of the ratchet-wheel V. Tne hook *q* extends along the side of the car to the lever 2, which is placed at the end of the car at a convenient place to be operated. When the train is made up the brakemen should vibrate the lever 2, which causes the hook *q* to turn the ratchet-wheel V and wind the chain *o* on its shaft, thus drawing the sliding piece N to the position shown by the dotted lines. The ratchet-wheel is kept from turning, so as to let the chain *o* unwind from its shaft by the pawl *p*, and the sliding piece O is kept from being moved by the action of the dog S. This operation puts great tension on the springs U. The brakemen must also see that all the buttons *d* are turned from the engine. Then when the engineer wishes to apply the brakes he simply pulls the bell-cord, which moves the block G and by the cord F vibrates the lever L, which raises the cross-lever *n* and turns the jointed dog S out of the notch, when the whole force of the springs U is exercised in forcing the pulleys Q forward between the crooked levers R. This motion of the levers R operates the lever 3 by means of the brake-rods *m m*, and applies the brakes, and at the same time as the sliding piece O moves forward it vibrates the lever W and causes the arm *s* to pass out over the lever L, when the engineer, by giving the bell-cord a second pull, vibrates the lever L as before; but now he raises the arm *s*, which operates the lever X, as hereinbefore described, and removes the pawl *p* from the ratchet-wheel V, and the spring T brings the sliding pieces back to the position shown in Fig. 4, and the brakes are removed from the car-wheels, and the engineer can immediately move his train at pleasure. It is necessary for the chain *o* to be wound on the shaft, as before described, before the engineer can again apply the brakes.

The rods 4 are the brake-rods, extending from the platform of the car to the levers 5, by which the brakemen apply the brake in the ordinary manner.

Having thus fully described the construction and operation of my safety car-brake, what I claim, and desire to secure by Letters Patent, is—

1. The arrangement of the pulleys H, movable block G, and the cords D and F, when operating substantially as and for the purpose set forth.

2. The plate E, when constructed and operating substantially as described.

3. The combination and arrangement of the plate E, button *d*, ratchet-wheels I I', and the movable block G, when constructed and operating substantially as herein specified.

4. The crooked levers R, when constructed and operated substantially as set forth.

5. The combination and arrangement of the frame C or its equivalent, the sliding pieces N and O, the springs U and T or their equiv-

alents, the levers R, and devices for operating the sliding pieces N and O, when all constructed substantially as and for the purpose herein described.

6. The hook *q*, ratchet-wheel V, and pawl *p*, when arranged and operated substantially as set forth.

7. The combination and arrangement of the lever W, arm *s*, lever L, bent lever X, and pawl *p*, when constructed and operating substantially as described.

8. The combination and arrangement of the lever L, cross-lever *n*, pointed dog S, and sliding piece O, when operated substantially as and for the purposes herein specified.

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