

L. W. TRACY.  
 Railway Car Brake.

No. 112,865.

Patented March 21, 1871.

Fig. 2.

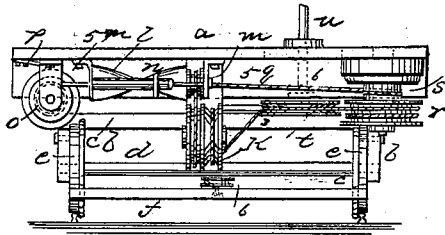
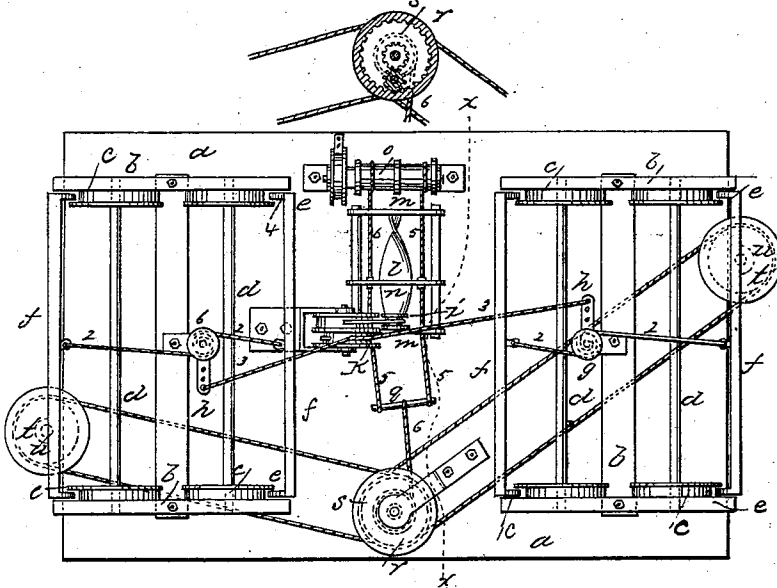


Fig. 3.



WITNESSES:

*Chas. H. Smith*  
*Geo. D. Barber.*

INVENTOR:

*Lewis W. Tracy*  
*Lemuel W. Correll*

# United States Patent Office.

LEWIS W. TRACY, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF AND JAMES E. GRANNISS, OF SAME PLACE.

Letters Patent No. 112,865, dated March 21, 1871.

## IMPROVEMENT IN BRAKES FOR RAILWAY-CARS.

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, LEWIS W. TRACY, of the city and State of New York, have invented and made an Improvement in Brakes for Railway-Cars; and the following is declared to be a full and exact description thereof.

The object of this invention is to furnish to railway-cars a brake that is self-operating, when the holding mechanism is relieved either by hand or automatically in case of accident.

I make use of a spring, that acts to move a follower, and turn a twisted plate, and draw the brakes into contact with the wheels, and this spring is wound up by connections leading to the ordinary brake-wheels and shafts, so that the brakeman winds his brakes out of action while the train is standing still, and, when the train is to be stopped, the brake-wheels are relieved so as to allow the brakes to be thrown into action by the springs.

In the drawing—

Figure 1 is an inverted plan, showing my improvement as applied to the trucks of a car;

Figure 2 is a section at the line  $x x$ ; and

Figure 3 is a plan of the gearing of the pulley between the twisted blade and the brake-wheels.

The platform or bottom of the car  $a$  is connected to the truck-frames  $b b$  by a king-bolt, as usual, and the wheels  $c c$ , axles  $d d$ , brake-blocks  $e e$ , and brake-beams  $f f$ , are also of any desired construction.

Upon the truck-frame, near the center thereof, I introduce a short vertical shaft in metal bearings, and carrying at one end a chain-wheel,  $g$ , and at the other end an arm,  $h$ .

The chains or ropes  $2 2$ , from the centers of the brake-beams  $f$ , pass around this wheel  $g$  in opposite directions, and their ends are attached to said wheel  $g$ , so that, by giving a partial rotation to the wheel  $g$  and its shaft, the brakes  $e e$  will be pressed firmly to the wheels.

The arm  $h$  is employed to give this movement, and for this purpose a rope or chain,  $3$ , leads from the arm  $h$  to a drum,  $k$ , and I remark that the chains  $3$ , coming from the arms  $h$  on the respective trucks, are led to said drum  $k$  on opposite sides thereof, so that the two brake-connections will be actuated by simply turning the wheel or drum  $k$ .

I make use of a twisted blade or plate,  $l$ , mounted upon centers at the ends within the frame  $m$ , and carrying at one end a small drum or pulley,  $i$ , from which a chain or rope,  $4$ , passes to the larger part of the drum  $k$ .

Upon the side rods of the frame  $m$  is mounted a cross-head,  $n$ , made to slide over the twisted blade or plate  $l$ , and, in so doing, give rotation to this twisted plate, and apply power from the pulley  $i$ , by the band or chain  $4$ , to the drum  $k$ , and therefrom to the brakes, as before described.

To actuate this brake it is necessary to move the cross-head  $n$  back and forth. For this purpose I use chains or ropes,  $5$ , passing from such cross-head around the drum  $o$ , upon the shaft of which is a coiled spring, as at  $p$ , and these ropes or chains  $5$  also extend beyond the cross-head  $n$  to a bar,  $q$ , from which a chain,  $6$ , leads to a pulley,  $s$ , on the shaft of the drum  $r$ , and from this drum  $r$  chains or ropes pass to the drum  $t$  of the brake-shafts  $u$  at the ends of the car.

These brake-shafts  $u$  are to be provided with hand-wheels, and ratchet and pawl or stop, in any usual manner; and it will now be seen that upon rotating the brake-wheel shaft  $u$  the rope or chain  $6$  will be wound upon the drum  $s$ , and the cross-head  $n$  be drawn toward the pulley  $i$ , and, in so doing, the brake-blocks will be relieved; but the spring  $p$  will be wound up, so that, by simply throwing out the pawl or stop that holds the brake-shaft  $u$ , and thereby allowing the spring  $p$  to act, said spring  $p$  will draw the cross-head  $n$  along and give a very powerful action, by the twisted plate  $l$ , upon the brakes, to press them upon the wheels and stop the momentum of the car.

The brakes can be relieved when the train has been stopped, and this might be done by connections along from the drum  $t$  on one car to the similar drum on the next, and, if desired, a planetary motion, such as shown in fig. 3, may be employed to lessen the speed of the drum  $r$  and increase the number of turns given to the drum  $s$  in winding up the spring  $p$  and setting the parts ready for use.

I claim as my invention—

1. The twisted blade or plate  $l$ , and the cross-head  $n$ , in combination with the spring  $p$  and connections to the brakes, substantially as specified.

2. The combination of the brake-shafts  $u$ , pulley  $s$ , drum  $r$ , twisted plate  $l$ , cross-head  $n$ , chain-wheel  $g$ , arm  $h$ , and chains or connections between the parts, substantially as and for the purposes set forth.

Dated this 5th day of December, A. D. 1870.

L. W. TRACY.

Witnesses:

CHAS. H. SMITH,  
GEO. T. PINCKNEY.