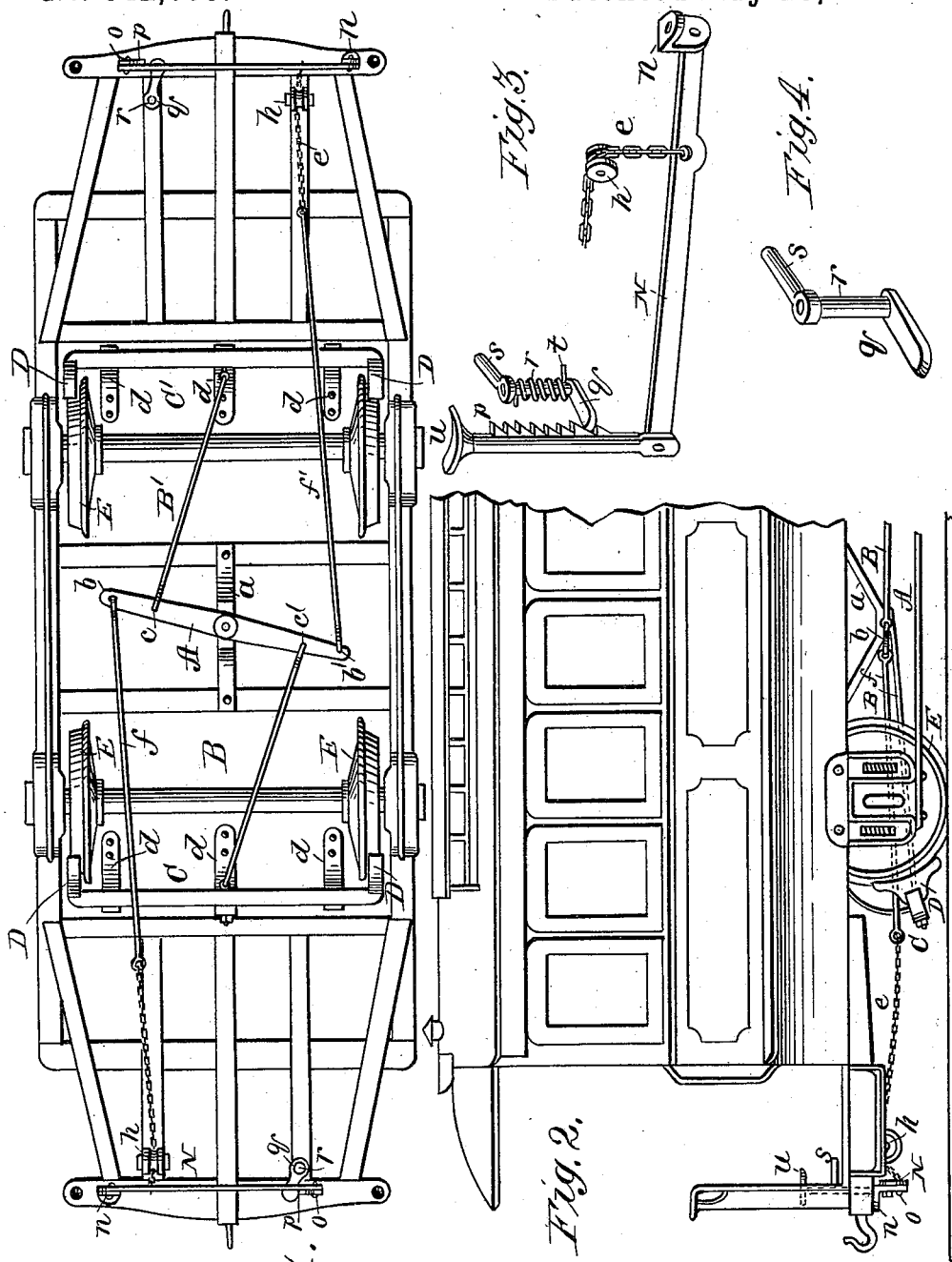


(No Model.)

H. J. ROMBERG.
CAR BRAKE.

No. 342,636.

Patented May 25, 1886.



WITNESSES:

J. D. Garfield
C. Sedgwick

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

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CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 342,636, dated May 25, 1886.

Application filed February 12, 1886. Serial No. 191,767. (No model.)

To all whom it may concern:

Be it known that I, HENRY J. ROMBERG, of Newark, in the county of Essex and State of New Jersey, have invented a new and Improved Car-Brake, of which the following is a full, clear, and exact description.

One of the greatest disadvantages arising from the existing method of applying brakes to street-cars is that the brakes are operated by means of a crank-arm which is actuated by the hand of the driver, and consequently one hand must always be free to operate the brake, which, in case the horses become to any degree unmanageable, is extremely inconvenient, if not dangerous.

The object of my invention is to provide a brake which the driver can operate with his foot; and to this end the invention consists of a braking mechanism controlled by a lever that is operated by a pedal arranged upon the platform of the car.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is an inverted plan view of a car provided with my improved form of brake. Fig. 2 is a side view of a portion of the car. Fig. 3 is an enlarged detail view of the pedal and its connections, and Fig. 4 is a view of a modified construction.

In applying such a brake mechanism as is illustrated in the drawings above referred to, the central brake-lever, A, is, as usual, pivotally connected to a spider, *a*, arranged as best shown in Fig. 1, said lever A being connected to the brake-beams C and C' by means of connecting-rods B and B', said rods being connected to the brake-beams in the usual manner, and being connected to the central brake-lever at the points *c c'*. The beams C C' are suspended from the under side of the car by means of spring-strips *d d d*, three of such strips being preferably employed in connection with each beam, the idea being to suspend the brake-beams so that the brake-shoes D D will be normally thrown back from the peripheries of the wheels E E. Beneath each platform there is arranged a lever, N, one end of said lever being pivotally connected to a bracket, *n*, while the other is pivotally con-

nected to the lower end of a pedal, O, which passes up through the platform within reach of the feet of the driver. These levers N are connected to the ends *b b'* of the lever A by means of chains *ee* and connecting-rods *ff*, the chains *e* passing upward from the levers and over sheaves *h h*, that are mounted in brackets carried by one of the platform-timbers. Upon one side of each of the pedals O there is formed a toothed rack, *p*, which is engaged beneath the platform by a pawl, *q*, carried at the lower end of a short vertical shaft, *r*, that passes up through the platform of the car, the upper end of the shaft *r* being provided with an arm, *s*, as best shown in Figs. 2 and 4. A spiral spring, *t*, is fixed to the shaft *r* and coiled about it, the projecting end of the spring abutting against the walls of the recess within which the shaft is mounted, the parts being so arranged that the spring will act to force the pawl *q* into engagement with the teeth of the rack *p*. The construction of the teeth of the rack *p* is best shown in Fig. 3, and from an inspection of this figure it will be seen that the upper edges of the teeth are formed so as to project at right angles to the shaft, while the lower edges are angular, this construction being adopted in order that the pedal may be depressed and held in the position to which it has been moved by the pawl *q*. Upon the upper end of the pedal there is a foot-plate, *u*.

Such being the general construction of the brake, it will be readily understood that the brake-shoes may be pressed against the peripheries of the wheels by simply applying pressure to the pedal O to force it downward, for this movement of the pedal will carry the lever N downward and draw upon the chain *e* and rod *f*, so that the lever A will be moved to bring the brake-bars toward the center of the car, thus bringing the brake-shoes into engagement with the wheels and checking their rotary motion, and as the pedal is forced downward it will be held in the position to which it has been moved by the engagement of the pawl *q* with the rack *p*; but when the driver desires to throw off the brakes he throws the pawl out of engagement with the rack by pressing on the arm *s*, at which time the springs *d d* will act to throw the brake-bars away from the

wheels, and thus through the medium of the connecting parts return the pedal O to the normal elevated position.

Although I have described the pawl *q* as controlled by a spiral spring that is coiled about the shaft *r*, it will of course be understood that a flat spring arranged to press against the pawl or upon the opposite side of the arm *s* would answer my purpose equally well, such a construction being indicated in Fig. 4.

With the braking mechanism described the driver has both hands free to manage his horses, and consequently is in a much better position to control them should they become frightened or attempt to run away.

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

1. The combination, with a central brake-lever, a brake-bar, and a connecting-rod, of a lever pivotally connected to the platform of the car, a pedal arranged above the car-platform and connected to the said pivotally-mounted lever, a chain connecting the said lever and the connecting-rod, and a sheave over which the chain passes.

2. In a braking mechanism, the combina-

tion, with a lever, N, provided with a pedal, O, and pivotally connected to the platform of a car, of a sheave, *h*, a lever, A, a brake-bar, C, and connecting rods and chains, substantially as described.

3. In a braking mechanism, the combination, with a lever, N, provided with a pedal, O, that is formed with a rack, *p*, of a pawl, *q*, controlled by a spring and connected to a shaft, *r*, which carries an arm, *s*, said lever N being connected to a lever, A, by a rod, *f*, and chain *e*, the lever A being in turn connected to the brake-bar by a connecting-rod, all substantially as described.

4. In a braking mechanism, the combination of the following elements: strips *d d*, bar C, shoes D, connecting-rods B and *f*, a lever, A, chain *e*, sheave *h*, and a lever, N, pivotally connected to the platform of the car, and provided with a pedal which carries a rack that is engaged by a pawl, substantially as described.

HENRY J. ROMBERG.

Witnesses:

JOHN O. FORD,

WM. L. RIGHTER.