

W. R. GREEN.
Brakes for Railway Cars.

No. 208,086.

Patented Sept. 17, 1878.

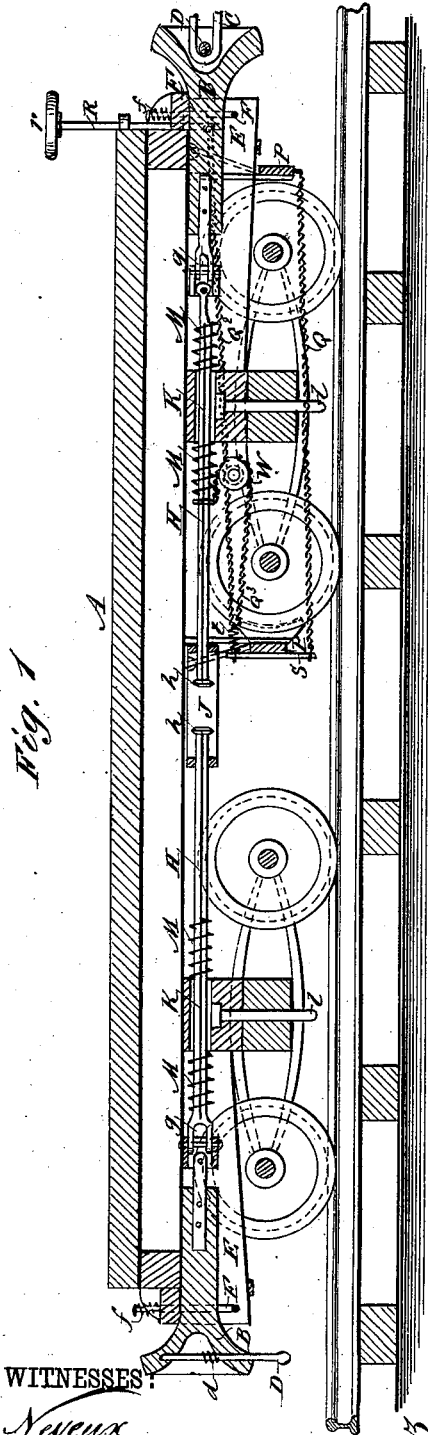


Fig. 1

Fig. 2

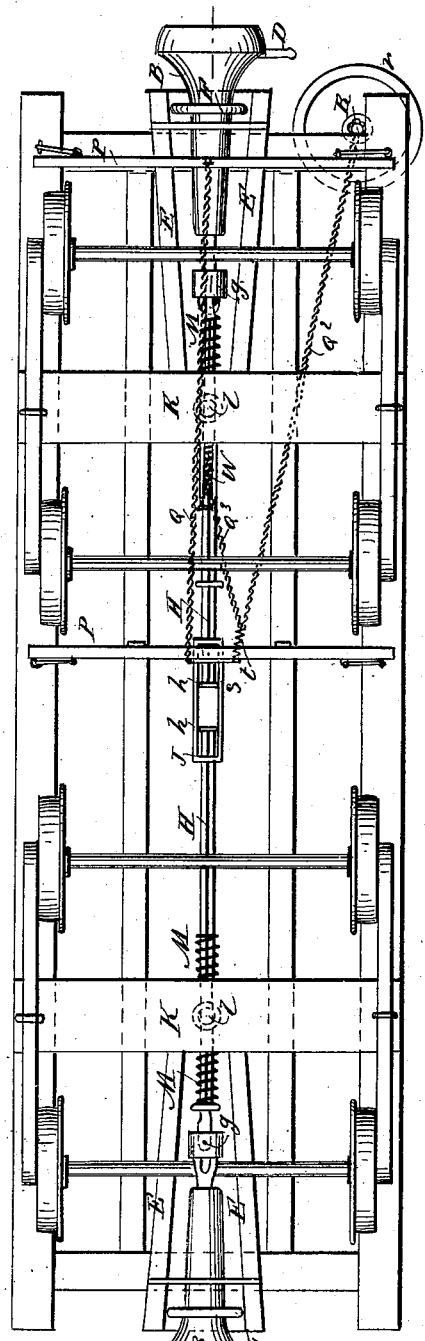
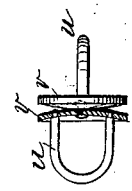


Fig. 3



WITNESSES:

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WILLARD R. GREEN, OF MUSCATINE, IOWA.

IMPROVEMENT IN BRAKES FOR RAILWAY-CARS.

Specification forming part of Letters Patent No. **208,086**, dated September 17, 1878; application filed June 29, 1878.

To all whom it may concern:

Be it known that I, WILLARD R. GREEN, of Muscatine, in the county of Muscatine and State of Iowa, have invented a new and Improved Combined Coupling and Brake for Railway-Cars, of which the following is a specification:

My invention consists in a novel construction, arrangement, and combination of coupling mechanism, connecting-rods, and various other devices, arranged in connection with each other and with the brake mechanism, as hereinafter particularly described, whereby provision is made for operating the brakes of all the cars in a train by power applied from the engine.

In the accompanying drawing, Figure 1 represents a longitudinal sectional view of a car floor and running-gear with my improvements attached. Fig. 2 is a bottom view of the same. Fig. 3 is a detail view.

Similar letters of reference indicate corresponding parts.

A represents the floor of a car, which may be a freight or other car. B represents the draw-head, which is formed with a round shank, in order that it may rotate. Its outer end is of pear-shape or approximate form, to provide for the bumping of one draw-head against another. Its mouth is formed for the reception of the ordinary coupling-link C, being flared outward in front to allow the link to oscillate, and terminating in the rear in a flattened recess for holding the end of the link. The ordinary coupling-pin D is passed through the draw-head at right angles to the flattened recess, and is held in place by a spring, *d*. One end of the pin D projects beyond the exterior of the draw-head, and may be used as a lever for turning the draw-head in order to place it in proper position for coupling.

The draw-head works between guideways E E, which diverge in order to allow lateral play to the draw-head. Vertical play is allowed to said draw-head by means of a rod, F, which is bent in the form of a loop and passed under the front portion, so as to support the same, the ends of the rod being passed upward through the platform and surrounded by spiral springs *f f*, resting between the

platform and the flat heads formed on the ends of the rod, by which means the draw-head is held elastically in place, but is allowed to rise and fall with the motion of the train, or in order to couple the cars.

The rear end of the round shank of the draw-head is connected by a universal joint, *g*, to a square rod, H, which runs longitudinally under the floor A to a point about under the center thereof, where it is connected with a similar rod extending from the opposite end of the car and attached in the same manner to a similar draw-head. The contiguous ends of the rods H H have flattened heads *h h*, to provide for the bumping of one against the other.

The rods H H are connected by means of a yoke consisting of a rectangular iron frame, J, provided with square holes at its ends, through which the square rods pass. By this mode of attachment the turning of one rod insures the turning of the other. Each rod H passes through the bolster K, immediately over the king-bolt *l*, which is countersunk to allow of said passage, and it is surrounded with bumper-springs M M in front and rear of said bolster.

The brake mechanism employed in connection with this invention may be of the ordinary description, consisting of bars P, for carrying the brake-shoes, connected to each other by a chain, Q, from one bar to one end of a lever, S, pivoted to the other bar, the other end of the lever being connected by a chain, Q², with a brake-shaft, R, having its bearings in the platform, and provided with a hand-wheel, *r*, for turning it.

In connecting this brake mechanism with my invention, I attach one end of a chain, Q³, to one end of a stiff spiral spring, *t*, and the other end of said spring to the end of the lever S, to which the chain Q³ is attached. The other end of the chain Q³ is attached to the rod H, being first passed around a pulley, W, hung in bearings attached to the bolster K.

The operation of the invention as a brake is as follows: The entire train being provided with the above-described mechanism on each car, and the foremost draw-head being connected by a rod with suitable mechanism car-

ried by the engine, power is applied to said mechanism to rotate said foremost draw-head. The rotary motion thus imparted is communicated throughout the entire train, as each draw-head imparts rotary motion to the one with which it is connected, and consequently to the rod H attached thereto. As each rod H rotates the chain Q³ is wound around said rod, pulling on one end of the lever and pressing the shoes of the bar P, to which it is pivoted, against one pair of wheels, while the chain Q, attached to the other end of the lever, pulls on the other bar P, and presses its shoes against the other pair of wheels. As the rotary motion of the rods is communicated throughout the train the brakes are simultaneously applied to the wheels of all the trucks of the cars composing the train.

The spring *t* prevents injury to the brake of the forward cars when drawn tightly in order to apply the brakes to the rear cars, and also takes up the slack and lost motion occasioned by the necessary looseness of the parts.

When this invention is used in connection with a car provided with an ordinary draw-head and using the ordinary link and pin, a swivel-link of the form shown in Fig. 3 is employed, consisting of two parts, each composed of a rod, *u*, bent in the form of a loop or bow, and having its ends secured to a concavo-convex disk or plate, *v*, and said disks or plates are secured together, with their convex surfaces in contact, by means of a bolt passing through their centers, so as to allow one part to turn freely while the other remains fixed.

In order to prevent the bending of the rod H by the downward strain of the chain Q³, a suitable number of staples may be driven around it into the floor A.

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

1. A draw-head formed with a rounded stem or shank, and attached to a square rod extending longitudinally toward the center of the car, in combination with a similar draw-head and attached rod and a connecting yoke or frame, J, whereby provision is made for rotating said draw-heads and rods simultaneously, substantially as herein described.

2. The combination, with brake mechanism, substantially as described, of a rotary draw-head, B, rod H, chain Q³, and spring *t*, as and for the purpose described.

3. The combination, with the draw-head B, of the diverging guideways E E, arranged as shown and described, for the purpose specified.

4. The combination, with the draw-head B, of the rod F, formed into a loop or bow passed under said draw-head, and having its ends passed upward through the platform, and provided with springs *f*, substantially as and for the purpose shown and described.

5. The combination, with the draw-head B, of the pin D, held in place by the spring *d*, and having its end projecting, to serve as a lever for turning the draw-head, substantially as herein described.

6. The swivel-link composed of the two parts; *u v u v*, connected together by a bolt or pivot, substantially as and for the purpose herein described.

WILLARD REED GREEN.

Witnesses:

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