R. C. O'HARA.

Car-Brake.

No. 165,250. Patented July 6, 1875.

Fig. 2.

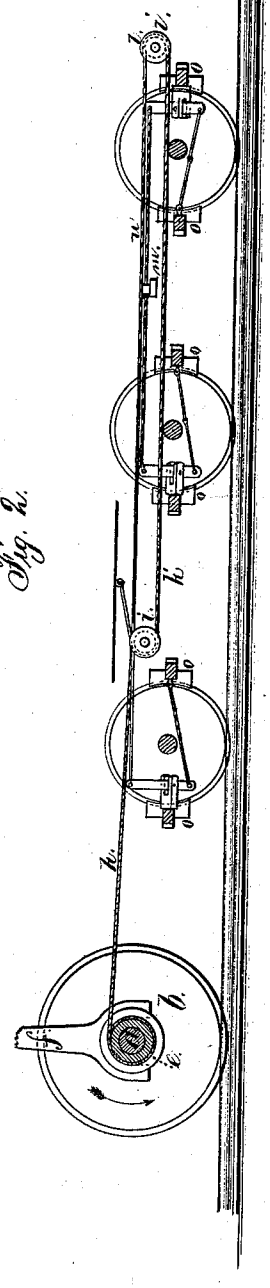
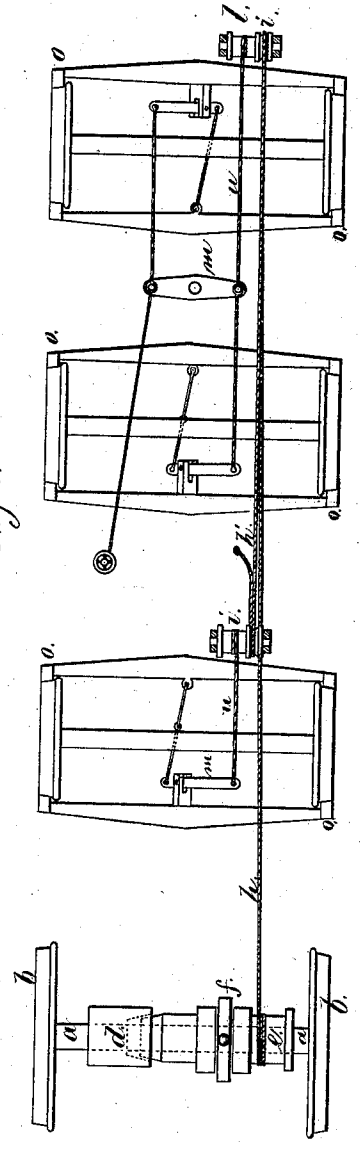


Fig. 1.



Witnesses
Harold Serrell
Geo. D. Pinckney

Inventor
Richard C. O'Hara.
per Lemuel W. Serrell
attg.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

RICHARD C. O'HARA, OF HOUSTON, TEXAS.

IMPROVEMENT IN CAR-BRAKES.

Specification forming part of Letters Patent No. **165,250**, dated July 6, 1875; application filed February 13, 1875.

To all whom it may concern:

Be it known that I, RICHARD C. O'HARA, of Houston, in the State of Texas, have invented an Improvement in Railway Car-Brakes, of which the following is a specification:

I make use of a loose drum upon one of the axles of the engine, preferably upon the axle of the driver, and a lever and friction-coupling, by means of which the drum is revolved when brought into action by the engineer. A chain or wire-rope leads from this drum along to the back end of the train. It is preferable to employ rods beneath the respective cars, with chain connections between the rod of one car and the rod of the next car.

From the rear end of the train the chain or wire-rope returns toward the front of the train, over and around pulleys or drums, to which chains are connected to the brakes. By this construction the chains will hang loosely when not in use, and these will not be operative on the brakes, and will accommodate themselves to the positions of the cars relatively to each other; but as soon as the first-named chain is drawn upon, the chain that is loose around the brake-actuating drums will be tightened and commence to rotate the drums and apply the power to the brakes at the last car, and then the second car, and so on until all the brakes of the train are applied. By this arrangement the difficulties heretofore experienced with chain-brakes are avoided, because, if a chain is passed from the engine back and around brake wheels or drums, the power will be applied to the brakes of the first car, and the momentum causes the rear cars to run toward the first cars and slacken the brake-actuating chain, so that it becomes inoperative, or else the brakes of the front cars are liable to be injured by undue strain.

In the drawing, Figure 1 is a general plan, illustrating the mechanism employed for drawing upon the chains, and the direction in which such chain is led to the brake-actuating wheels or drums; and Fig. 2 is a sectional view of the same.

The axle *a* and wheels *b* are those from which the power is to be derived, and by preference they are the drivers of the engine, or one of the pairs of wheels upon the tender, so as to be contiguous to the engineer. Upon this axle *a* is fastened a friction-clutch, *d*, and the winch-barrel or drum *e* is loose upon the shaft, but can be moved endwise by lever *f* into contact with the friction-clutch, so as to be revolved thereby, and draw upon the wire-rope or chain *h* that extends along beneath the cars of the train to the back end thereof, and it is generally preferable to support this wire-rope or chain upon rollers or guides, and to insert an iron rod beneath each car taking the place of the chain or wire-rope for a portion of the length, and there are to be coupling-hooks to connect the respective portions of the said chain between one car and the next. At the rear car the chain passes around the chain-wheel *i* that is part of or connected with the brake-actuating drum *l*; thence the chain *h'* passes forward and around the chain-wheel *i* of the next car, and so on to the first car of the train. From each drum *l* a chain, *u*, passes to the brake-lever *m*, that may be of ordinary character, and act upon the usual brakes *o*. It will be apparent that the brakes commence to act at the rear of the train, and the power is applied to them successively, as hereinbefore set forth.

I do not claim a car-brake, in which a rope passes around pulleys upon the brake-blocks to draw them together, as the rope is shortened by being wound upon a drum at the engine. In my brake the force exerted is augmented by the brake-levers and drums upon each car.

I claim as my invention—

The combination of chain-drums *l*, chains *u*, brake-levers *m*, chain-wheels *i*, and chain *h*, leading from the rear car to the winding drum *f*, all substantially as and for the purpose set forth.

Signed by me this 29th day of December, A. D. 1874.

R. C. O'HARA.

Witnesses:

A. A. MCBRYDE,
W. SOUTHWICK.