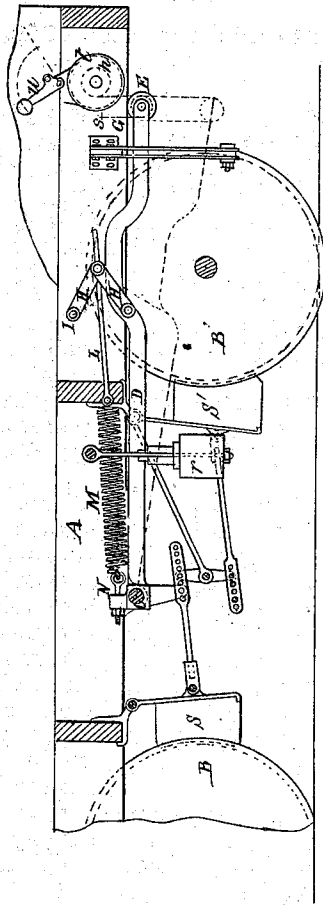


W. NAYLOR.

Improvement in Railway-Car Brakes.

No. 129,855.

Patented July 23, 1872.



WITNESSES

Ing. B. Harding.  
John Parker

W. Naylor  
by his attor.  
Hudson and Son.

# UNITED STATES PATENT OFFICE.

WILLIAM NAYLOR, OF MILD MAY PARK, ENGLAND.

## IMPROVEMENT IN RAILWAY-CAR BRAKES.

Specification forming part of Letters Patent No. 129,855, dated July 23, 1872.

### SPECIFICATION.

I, WILLIAM NAYLOR, of Mildmay Park, in the county of Middlesex, England, engineer, have invented Improvements in Railway-Brakes and in apparatus connected therewith, of which the following is a specification:

This invention relates to a peculiar arrangement of brakes for railway-wagons.

The accompanying drawing represents my improved brake, which is brought into action by the application of a spring (acting by contraction) and toggle-joint links, the brake being lifted off by the brakeman and held off until released also by the hand of the brakeman.

On the end of the brake-lever D there is a pulley, E, under which a short length of lifting-chain, G, is passed, one end of such chain being secured to the framing at s, while the other passes onto and is secured to a windlass, h, carrying a brake-wheel, t, round which a brake-strap is passed, connected to a weighted tipping-lever, u. The brake-lever D is lifted by turning the windlass by means of a handle for the purpose, and is maintained elevated, as shown, by the friction of the brake-strap. When the brake is to be applied the brakeman, as he passes along the wagons, merely throws over the tipping-levers u to the position indicated by the dotted line, whereupon, the windlass-barrels being released, the springs M and toggle-joint links H H will operate upon or depress the brake-levers D of the several wagons, or some of them, and through the arrangement of levers and rods shown in the drawing will apply two brake-blocks, S S', simultaneously to the two wheels on each side of a wagon. In order to check the too sudden

descent of the brake-lever D, I connect it with a plunger or piston working in a cylinder, r, containing liquid, which is slowly displaced by the descent of the piston, while it nevertheless admits of the piston rising again freely when the brake-lever is to be lifted. This result may be obtained by having a valve at the bottom of the cylinder opening inward, such valve having, moreover, a small additional opening made therein, so that on lifting the plunger the liquid, which may be contained in a jacket surrounding the cylinder, enters freely through the entire thoroughfare of the valve; but when the plunger descends the valve instantly closes and permits the liquid to pass only through the small opening made in such valve, and thus controls the descent of the brake-lever.

Having now described my invention, I would observe that what I claim is—

1. The combination, with a brake-lever, of a piston or plunger working in a cylinder containing air or liquid, and operating substantially as hereinbefore described.

2. The weighted tipping-lever u, in combination with the brake-strap, windlass h, and rope or chain for holding out of action a car-brake, substantially as hereinbefore described, and illustrated by the drawing.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WM. NAYLOR.

Witnesses:

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