

A. LANGELLIER.

Car-Brakes.

No. 143,083.

Patented September 23, 1873.

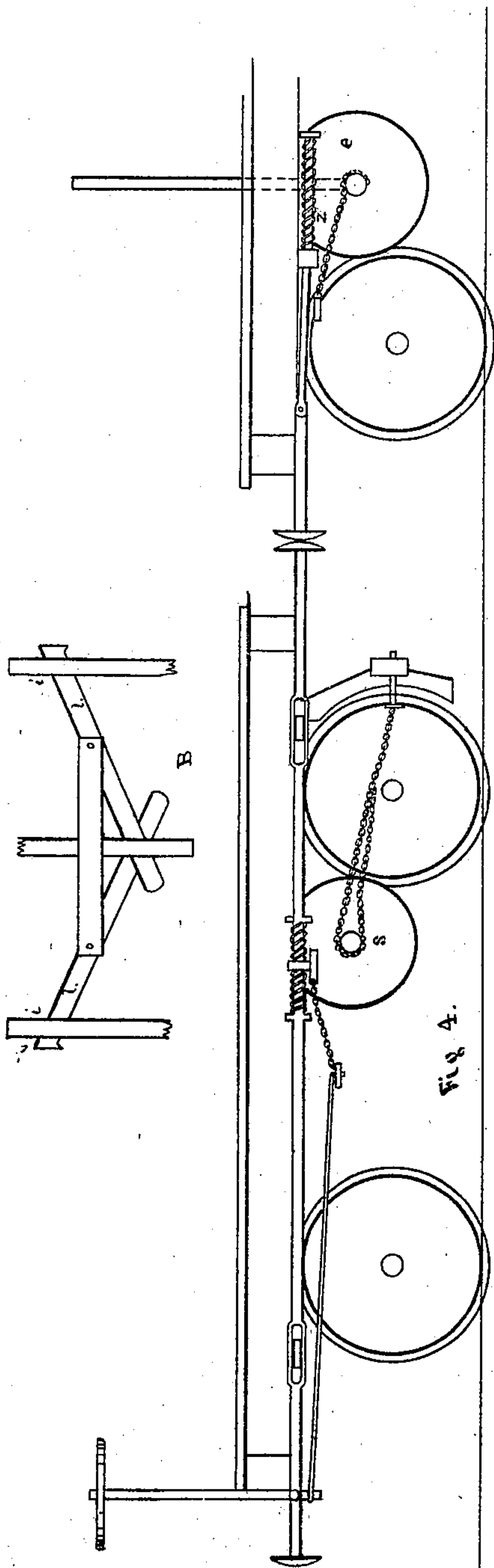


Fig. 4.

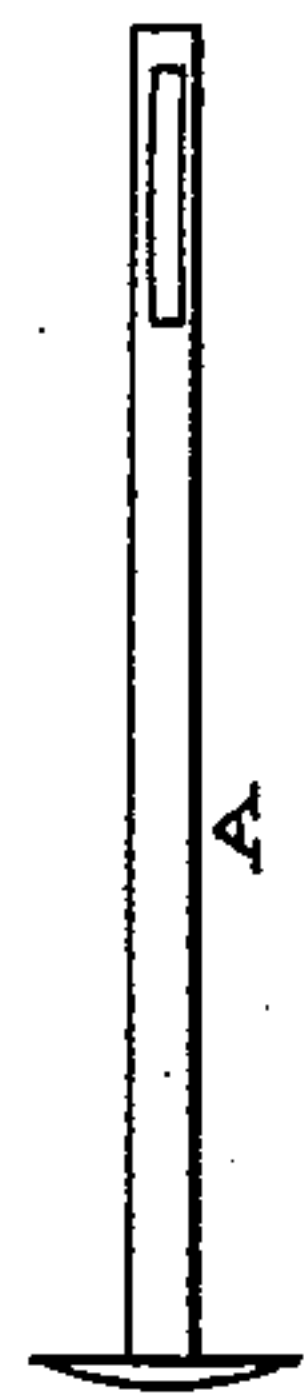


Fig. 2.

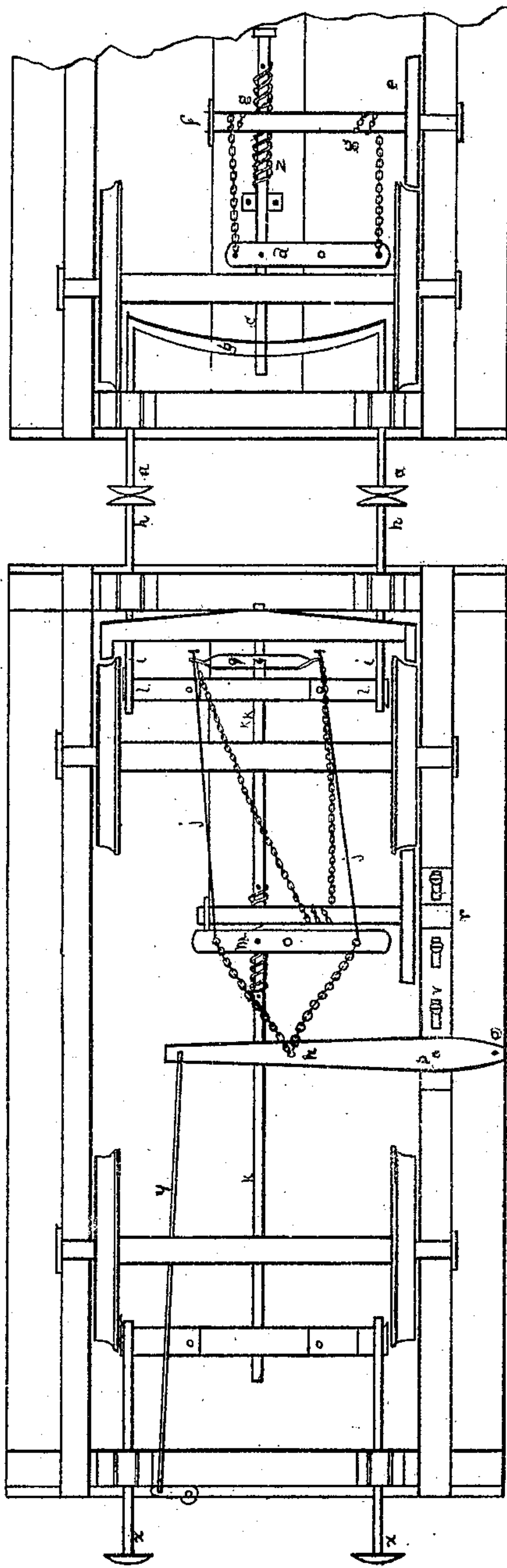


Fig. 3.

Fig. 1

Witnesses  
J. W. Howland  
C. Hutchins

Inventor  
Antoine Langellier  
by his attorney  
Chas. C. Lund

# UNITED STATES PATENT OFFICE.

ANTOINE LANGELLIER, OF CONCORD, NEW HAMPSHIRE.

## IMPROVEMENT IN CAR-BRAKES.

Specification forming part of Letters Patent No. **143,083**, dated September 23, 1873; application filed April 18, 1873.

*To all whom it may concern:*

Be it known that I, ANTOINE LANGELLIER, of Concord, in the county of Merrimack, State of New Hampshire, have invented certain Improvements in Car-Brakes, of which the following is a specification:

The object of my invention is to provide an automatic brake for cars which may be put in operation from the engine, or from any car of a train, by bringing a small friction-wheel in contact with one of the wheels of the tender or by a similar operation upon any car, the revolutions of which friction-wheel will put in operation my brake upon all the cars of a train situated in the rear of the engine or car upon which the brake is first applied.

Referring to the accompanying drawings, Figure 1 is a plan, and Fig. 2 a section, of a part of a tender to which my brake is attached. Fig. 3 is a plan, and Fig. 4 a section, of a part of a car, showing the manner in which my brake is operated.

At *a a*, Fig. 1, are two bunters projecting from the rear end of the tender on each side of the center, connected together by the curved iron rod *b*. Under the center of the tender is another rod, *c*, which is attached at one end to the rod *b*, and at the other end to the lever *d*. A small friction-wheel is placed immediately in the front or rear of one of the wheels of the tender, (shown at *e*, Figs. 1 and 2,) having an axle-tree extending under the tender, and provided with a bearing fixed to the frame of the tender at *f*, and at the other end to a lever or other equivalent device, by which the friction-wheel may be brought in contact with the wheel of the tender at pleasure. To the ends of the lever *d* chains are attached, extending, respectively, to the axle-tree of the friction-wheel, and attached as shown at *g*.

When the tender is in motion, and the friction-wheel is brought in contact with the tender-wheel, it will revolve, wind up the chains, and, by the action of the lever *d* and the connecting-rods *b* and *c*, throw out the bunters *a a*, or cause them to project farther from the rear of the tender.

To the cars I attach similar bunters *h h*, Fig. 3, which, when the brake is not in operation, rest lightly in contact with the bunters upon the tender. From these bunters rods

extend back under the car, each of said rods being attached at *i i* to levers *l l* attached to a bar, as shown. At *B* the arrangement of these levers is more distinctly shown, the opposite ends of these levers being attached to the rod *k k*, which extends under the car and nearly the entire length thereof. The cross-bar to which said levers are attached at their centers is made fast to the draw-bar of the car. At the opposite end of the car is a like arrangement of bunters, rods, and levers, connected with the rod *k k* and the draw-bar. At or near the center of the rod *k k* I place a spiral or rubber spring, or its equivalent, which spring is fastened at the ends to the rod *k*. At *m* another lever is attached to the frame of the car, and this lever, near one end, as shown, is attached to the center of the spring on the rod *k*, and from the extreme ends of this lever chains extend, as shown, to the lever *n*. This lever *n* has its fulcrum at *o*, and is attached at *p* to a slide on the car-frame, which carries the bearing of the friction-wheel *r*. This friction-wheel is shown at *s*, Fig. 4, and its axle-tree extends back under the car, as shown. From this axle-tree chains and rods extend to the cross-bar or whiffletree *q*, which is attached to the beam extending between the jaws of the brake. The rods which extend between the ends of the lever *m* and the whiffletree *q* are attached firmly to the lever *m*, but pass loosely through the ends of *q*, and are provided with nuts and stops at the ends, so that, as either end of *q* is drawn back, the opposite rod will furnish a fulcrum and cause the brake to be drawn against the wheel.

It will be seen that when the bunters on the tender are forced back by the action of the friction-wheel *e*, as before described, they will press back the bunters *h h* on the car, and these in turn, by the action of the levers *i i*, pull forward the connecting-rod *k k*, and with the rod will draw forward one end of the lever *m*. As this lever comes forward it acts upon the lever *n*, moves forward the slide *v*, and presses the friction-wheel against the wheel of the car; thereupon the revolution of the friction-wheel winds up the chain attached to its axle-tree and draws the jaws of the brake up against the car-wheel, with a pressure which constantly increases as the car moves



forward, till the wheels cease to revolve. As the rod *k k* is drawn forward the levers at the opposite ends of the car *l l* are acted upon, pressing out the bunters *x x* to act upon the bunters of the next car in the rear in the same manner that the bunters of the tender act upon the car just described. I attach a rod, *y*, to the lever *n*, by which the brake may be put in operation upon the car by means of the ordinary brake-wheel or other device when the car is not attached to the engine, and a spring is provided to loosen the brake when not in use. The spring *z* upon the tender causes the friction-wheel to come away from the tender-wheel when the brake is not used.

It will be further seen that by the action of the levers *l l* the bunters move in and out with the draw-bar without acting upon the friction-wheels, except when the brake is put in operation from the engine or car, and that the operation of the rods *j j*, for which chains may be substituted, is such that when the brake is

put in operation from any car of a train it will also put in operation the brakes on all the cars in the rear thereof, by causing the bunters to be thrown back, as before described.

At A is shown a bunter and rod with the slot therein, through which the levers *l l* are passed.

I claim—

The brake for cars composed of the bunters *a a*, *h h*, *x x*, the rods *b*, *j j*, and *y*, the friction-wheels *e s*, the levers *d* and *m*, with the chains thereto attached, the levers *l l*, the rod *k* with spring, the rod *c* with spring *z*, the lever *n*, the slide *v*, and the whiffletree *q*, with the chains thereto attached, said devices or their equivalents combined and adjusted to operate as and for the purposes set forth.

ANTOINE LANGELLIER.

Witnesses:

CHAS. C. LUND,  
JOSEPH WELCOME.