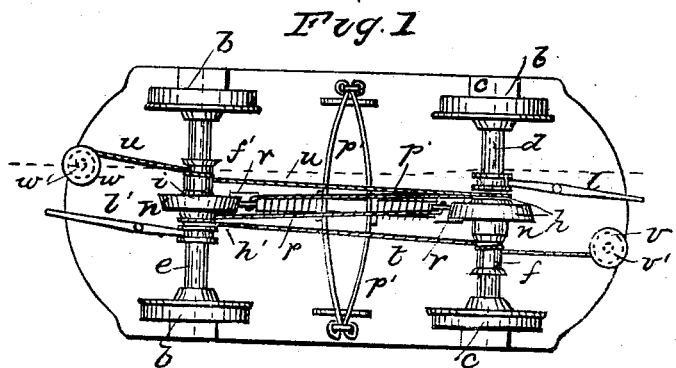


Car Brake and Starter.

Patented March 21, 1871.



Inventor
Joseph Paradis
Samuel W. Perrell

United States Patent Office.

JOSEPH PARADIS, OF BROOKLYN, NEW YORK, ASSIGNOR TO HIMSELF AND SARAH PARKER, OF SAME PLACE.

Letters Patent No. 112,954, dated March 21, 1871.

IMPROVEMENT IN CAR-BRAKES AND STARTERS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JOSEPH PARADIS, of Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Stopping and Starting Railroad-Cars; and the following is declared to be a correct description thereof.

This invention is for storing the force exerted in stopping the car and applying the same to starting the car, thereby lessening the strain upon the horses and facilitating the starting of the car with rapidity, even when ascending an incline.

I am aware that many devices have been proposed for accomplishing the before-named result.

My invention relates to the construction and arrangement of the parts, whereby they are rendered compact, strong, easily managed, and durable.

In the drawing—

Figure 1 is an inverted plan of a car with my improvement applied to the wheels and axles, and

Figure 2 is an elevation, the wheels on one side being removed.

The car body or platform *a* is to be of any desired size or shape, and the wheels *b b* and *c c*, upon the axles *d* and *e*, are to be of any usual character.

Upon the axle *d* is a chain-barrel, *f*, securely fastened in place or formed upon such axle *d*, and upon the axle *e* is a similar barrel, *f'*, and upon the inner ends of these barrels *f f'* are ratchet-wheels, *i*.

Upon each axle *d* or *e* is a second chain-barrel, *h* or *h'*, that is free to turn upon such axle, and to be moved endwise by the lever *l* or *l'*, so that the disk *n* or *n'* and pawl *o* may be in contact with the ratchet-wheel *i*, or sufficiently distant therefrom to be out of contact therewith.

The springs are either helical or elliptical, or a compound of several springs, that are arranged so as to be compressed by a movement longitudinally of the car.

I have shown helical springs around the rod *p*, connected to the bow or elliptic spring *p'*, and *r r* are compressing followers, that slide upon the rod *p* and are connected with the chains *t* and *u*.

The chain *t* passes around the barrels *h* and *f* to the barrel *v*, upon the vertical shaft *v'*, which is provided with a handle at its upper end, and the chain *u* passes in an opposite direction around the barrels *h* and *f'* to the barrel *w* on the vertical shaft *w'*, which is also provided with a handle.

It is now to be understood that the barrel *f*, disk *n*,

and pawl *o* at the forward end of the car are to be thrown out of gear, so as to remain stationary as the wheels *c* and axle revolve, and that the barrel *f'*, disk *n'*, and pawl *o* at the rear axle either revolve with that axle, if the chain *t* around the barrel *h'* hangs comparatively loosely; or, if said chain is attached to the said barrel near the middle of three or four turns of the chain around the barrel, then the disk, barrel, and pawl will remain stationary, while the teeth of the ratchet-wheel underrun the pawls as the axle and wheels revolve.

When the chain *t* is tightened by the handle 3, shaft *v'*, and barrel *v*, then the chain is drawn upon by the barrel *f* as it revolves with the wheels *c*, and the barrel *h'* is simultaneously turned and the springs compressed until, by the resistance of the springs, the revolution of the wheels *c* is stopped, the slack of the chain *t* being wound upon the barrel *v*.

The parts are held by the handle 3 until the car is to be started, when, upon slackening the chain *t*, the springs *p'* will be free to act upon the chain *t* and revolve the barrel *h'*, disk *n'*, and pawl, and through them the wheels *b b* and axle *e*, in the direction in which they move as the car moves forward; thereby the force that is stored in the springs in the act of stopping the car is expended in starting the car, either on an incline or upon a level track.

When the car is being drawn in the reverse direction the disk *n'* and pawl *o* are moved to disconnect from the ratchet-wheel *i*, and the parts at the other end are connected, so that the stopping and starting mechanism is available at either end of the car.

Wire ropes may be substituted for chains. This apparatus may be used singly, to work from only one end of the car.

I claim as my invention—

The barrel *h'*, disk *n'*, pawl, and ratchet on one axle, and a barrel, *f*, on the other axle, in combination with the springs and a rope or chain passing around said barrels and leading to a hand-shaft and barrel for compressing the spring in stopping the car, and applying its power in starting the car, substantially as set forth.

Signed by me this 30th day of November, A. D. 1870.

JOSEPH PARADIS.

Witnesses:

CHAS. H. SMITH,
GEO. T. PINCKNEY.