

D. S. CROSS.  
Car Brake.

No. 47,091.

Patented Apr. 4. 1865.

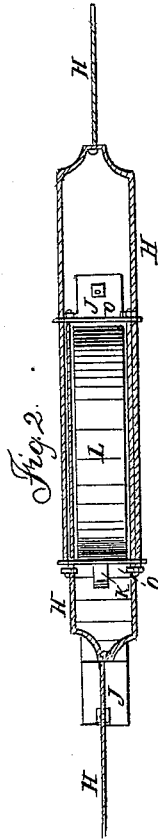


Fig. 2.

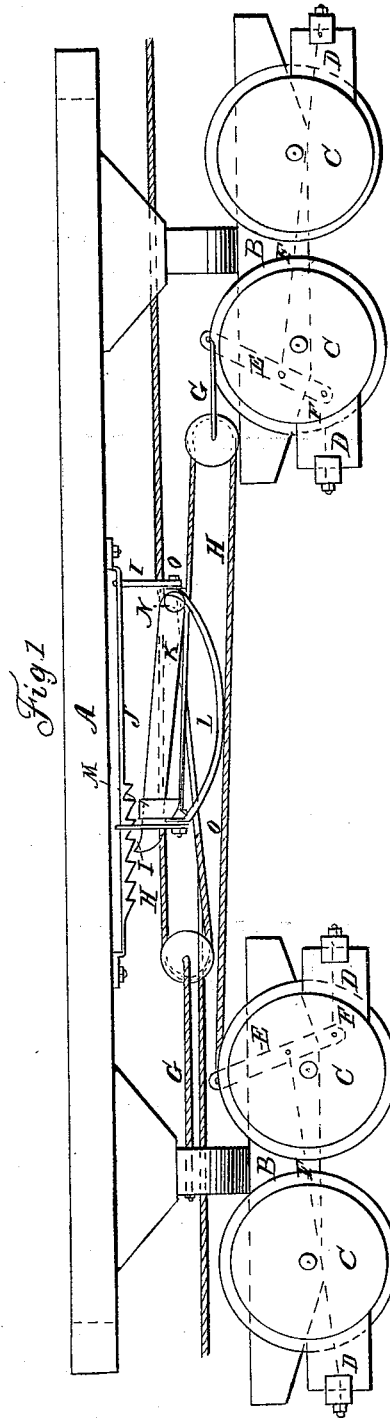


Fig. 1.

Witnesses  
William S. Fetherston  
Thomas Snyder

Inventor  
David S. Cross

# UNITED STATES PATENT OFFICE.

DAVID S. CROSS, OF CINCINNATI, OHIO.

## IMPROVEMENT IN RAILROAD-CAR BRAKES.

Specification forming part of Letters Patent No. 47,091, dated April 4, 1865.

*To all whom it may concern:*

Be it known that I, DAVID S. CROSS, of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in Railroad-Car Brakes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a side view of the running-gear of a railroad-car having my improvement. Fig. 2 represents the bottom view of the spring, pawl, and rack.

Similar letters of reference indicate corresponding parts in the drawings.

My improvement relates to the class of railroad-car brakes which are adapted to operate continuously on entire train; and my invention consists in a provision for equalizing the rubber action throughout the train, and for bringing the rubbers in the rear portion of the train immediately and effectively into service.

To enable others skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents the bed or frame; B B, the front and rear trucks, respectively.

C C C C are the running wheels.

D D D D represent rubbers of customary form suspended from the truck-frame. These rubbers are connected to the hand-brakes at both ends of the car by the customary rods.

E E are levers; F F F F, connecting-rods; G G, rods.

H in Figs. 1 and 2 represents rods and

chain connections, terminating in longitudinal bars or heads O, suspended by stirrups I I from rack J, which is fastened to frame or bed A, allowing stirrups I I to slide on rack J, held apart from the heads or bars O O by means of a flat spring, L. A bent pawl, K, under any excess of tension, meshes into a rack, J, upon the car-body, so as to determine the pressure upon the brakes of that particular car, and to enable the entire tension to pass onward to the brakes in the car immediately following, and so on, to the rear of the train in quick succession, thus relieving the wheels of the front car from undue pressure and from the danger of sliding and wearing into facets, and by the very same means insuring a speedy and adequate action of the rear brakes.

It is evident that this device may be applied either exclusively in connection with hand-brakes or exclusively with power-brakes, or with both. In connection with hand-brakes it will prove an effectual estopple to the prevalent practice of inordinate rubber-pressure acting to stop the wheels and causing them to wear polygonally.

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

The self-acting pawl K and its described or equivalent accessories, for the object set forth.

DAVID S. CROSS.

Witnesses:

WILLIAM J. FETHERSTON,  
THOMAS BUSSERT.