

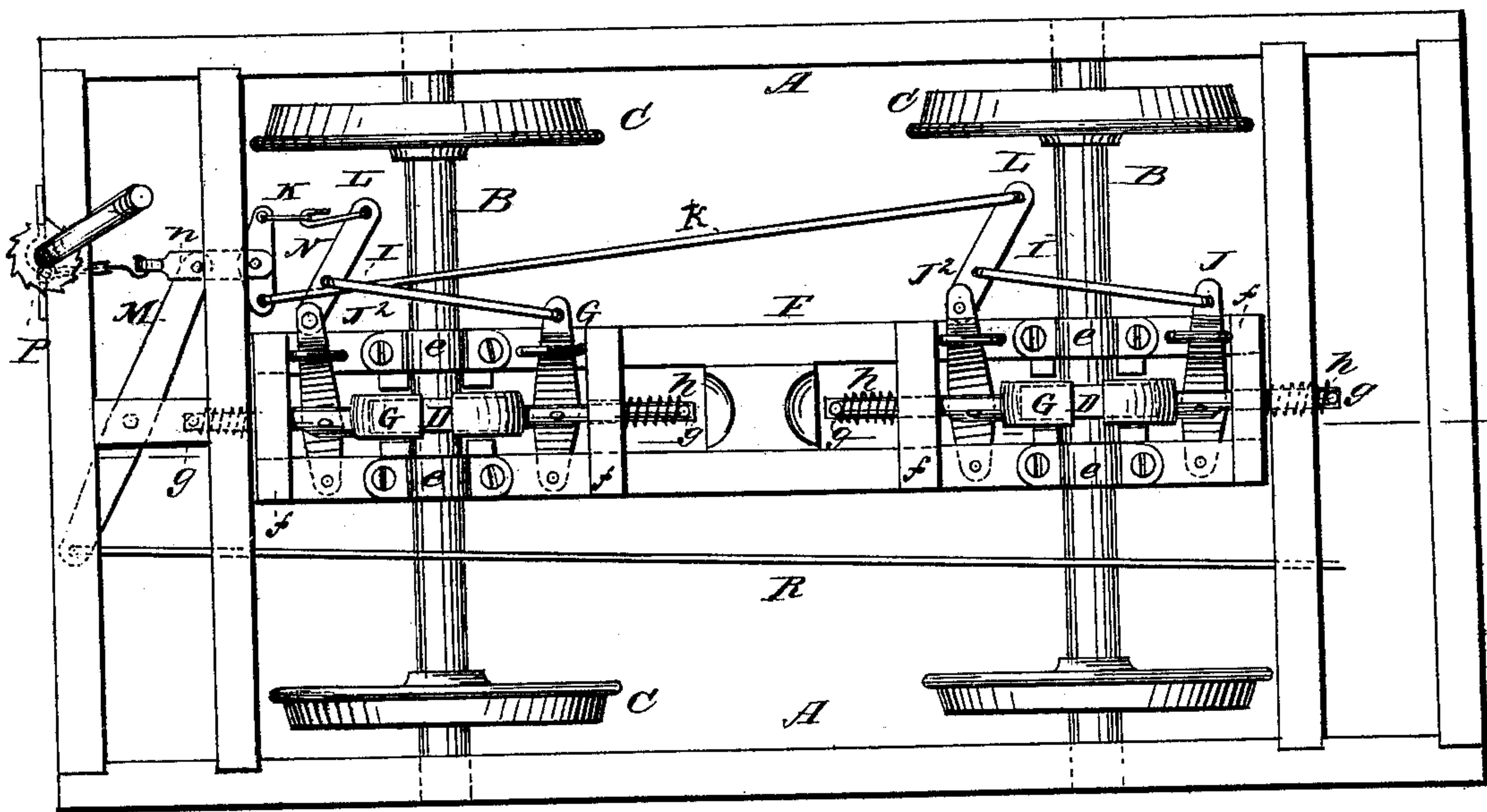
(No Model.)

S. EMERY.  
Car Brake.

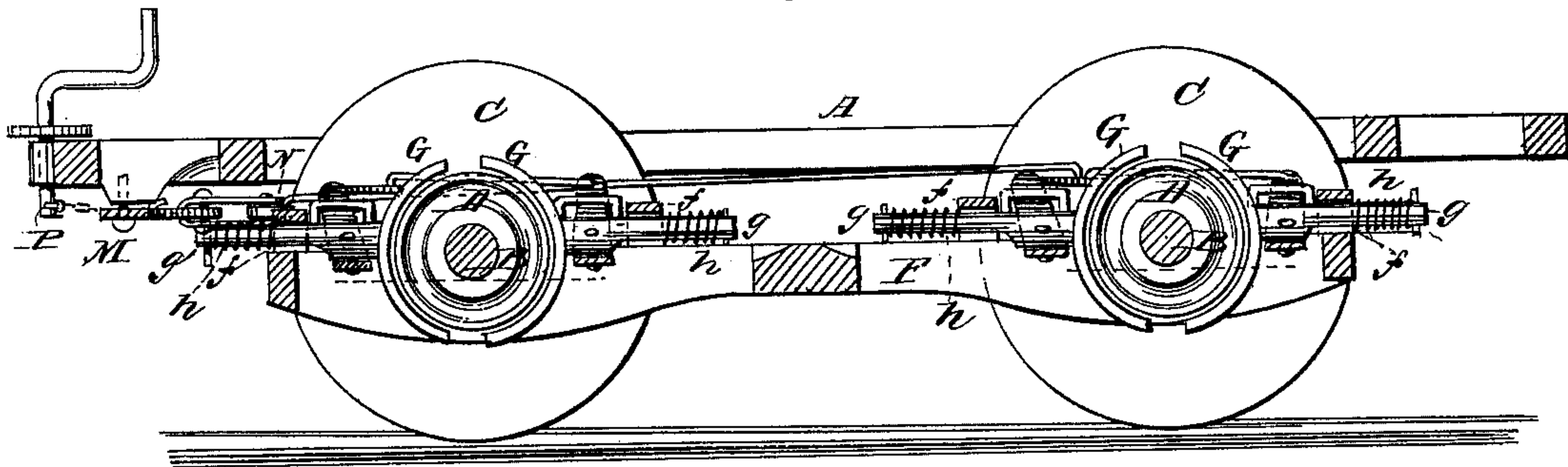
No. 231,291.

Patented Aug. 17, 1880.

*Fig. 1.*



*Fig. 2.*



WITNESSES:

*Francis McArthur.*  
*C. Sedgwick*

INVENTOR:

*S. Emery*  
BY *Munn & Co.*  
ATTORNEYS.



# UNITED STATES PATENT OFFICE.

SAMUEL EMERY, OF SOUTH TOLEDO, OHIO.

## CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 231,291, dated August 17, 1880.

Application filed March 13, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL EMERY, of South Toledo, in the county of Lucas and State of Ohio, have invented a new and useful Improvement in Car-Brakes, of which the following is a specification.

My invention relates to that class of brakes in which the shoe engages with a wheel which is smaller than and independent of the wheels on which the car runs, and is particularly applicable to street-railway cars.

The invention consists in the novel construction, arrangement, and combination of levers, brake-shoes, wheels carried by the axles, and devices operating in connection therewith, whereby provision is made for applying the brakes in a speedy and efficacious manner, and with economy of labor on the part of the driver.

The accompanying drawings represent the running-gear of a street-car with my improvements applied thereto, Figure 1 being a top view, and Fig. 2 a longitudinal vertical section.

Similar letters of reference indicate corresponding parts.

A is the frame of the car, B the axles, and C the wheels, all of which are of the usual description.

The mechanism is the same on both axles, and the two sets are connected by rods, so as to operate simultaneously.

Midway of the length of the axle is rigidly attached a wheel, D, which has a diameter of about twelve inches and a width of face of about four inches.

The two wheels D of the two axles work in slots in a frame, F, which is suspended from the axles B by means of strap-bearings *e* on either side of the wheels D.

Attached to the frame F are cross-bars *f*, in which work the stems *g* of the brake-shoes G. Said stems are each provided with a spring, *h*, one end of which bears against the bar *f*, and the other end against an abutment on the stem *g*, and thus has a tendency to keep the shoe G away from the wheel D.

Referring now to either one of the sets of brake mechanism shown in Fig. 1, J repre-

sents a lever having one end pivoted to the frame F and the other end connected to one end of a rod, I.

Between the ends the lever J is pivoted to the stem *g* of the brake shoe, toward the right-hand side of the drawings.

J<sup>2</sup> is a similar lever having one end pivoted to the frame F and the other end connected to one end of a lever, L, and between the ends it is pivoted to the stem *g* of the brake-shoe, toward the left-hand side of the drawings.

The outer end of the lever L is connected to one end of a rod, K, and between its ends said lever is connected to the other end of the rod I, above mentioned. Now, by pulling on the rod K the two brake-shoes G G are forced toward each other and made to clamp the wheel D between them.

When the parts are in the position shown in the drawings, the levers J, J<sup>2</sup>, and L are all of them levers of the second kind; but as soon as the lever L is pulled beyond a straight line drawn longitudinally through L and J<sup>2</sup> said lever L is immediately transformed into a lever of the first kind. In the first position it pulls on the lever J, and in the second position it pushes on the lever J<sup>2</sup>, and thus the two levers are moved toward each other.

The rod K has its front end connected to a lever, M, at the front end of the car.

When the brake mechanism is applied to only one of the axles, the rod K may connect directly to the lever; but when the mechanism is applied to both axles, as shown in the drawings, the rods K of both sets are attached to an equalizing-bar, N, connected by a link, *n*, with the lever M, so that both sets are operated simultaneously.

The lever M is here shown as connected by a chain with a shaft, P, provided with a crank for turning it in the usual manner.

When the car is to run both ways the other end of the lever M is connected by a rod, R, with a shaft at the opposite end of the car.

By the arrangement of the levers and their connections, as shown herein, the brake mechanism may be applied by the driver with very little outlay of power.

It is obvious that as soon as pressure is removed from the shaft P the springs *h* restore the parts to the first position.

Having thus fully described my invention,  
5 I claim as new and desire to secure by Letters Patent—

The combination, with the axle B and wheel D, carried thereby, of the brake-shoes G, stems

*g*, springs *h*, levers J, J<sup>2</sup>, and L, rods I and K, lever M, and shaft P, arranged and operating 10 substantially as and for the purpose herein shown and described.

SAMUEL EMERY.

Witnesses:

DANIEL BINKLEY,  
HARVEY R. EMERY.