

G. B. BRYANT.
Car-Brakes,

No. 155,491.

Patented Sept. 29, 1874.

Fig. 1.

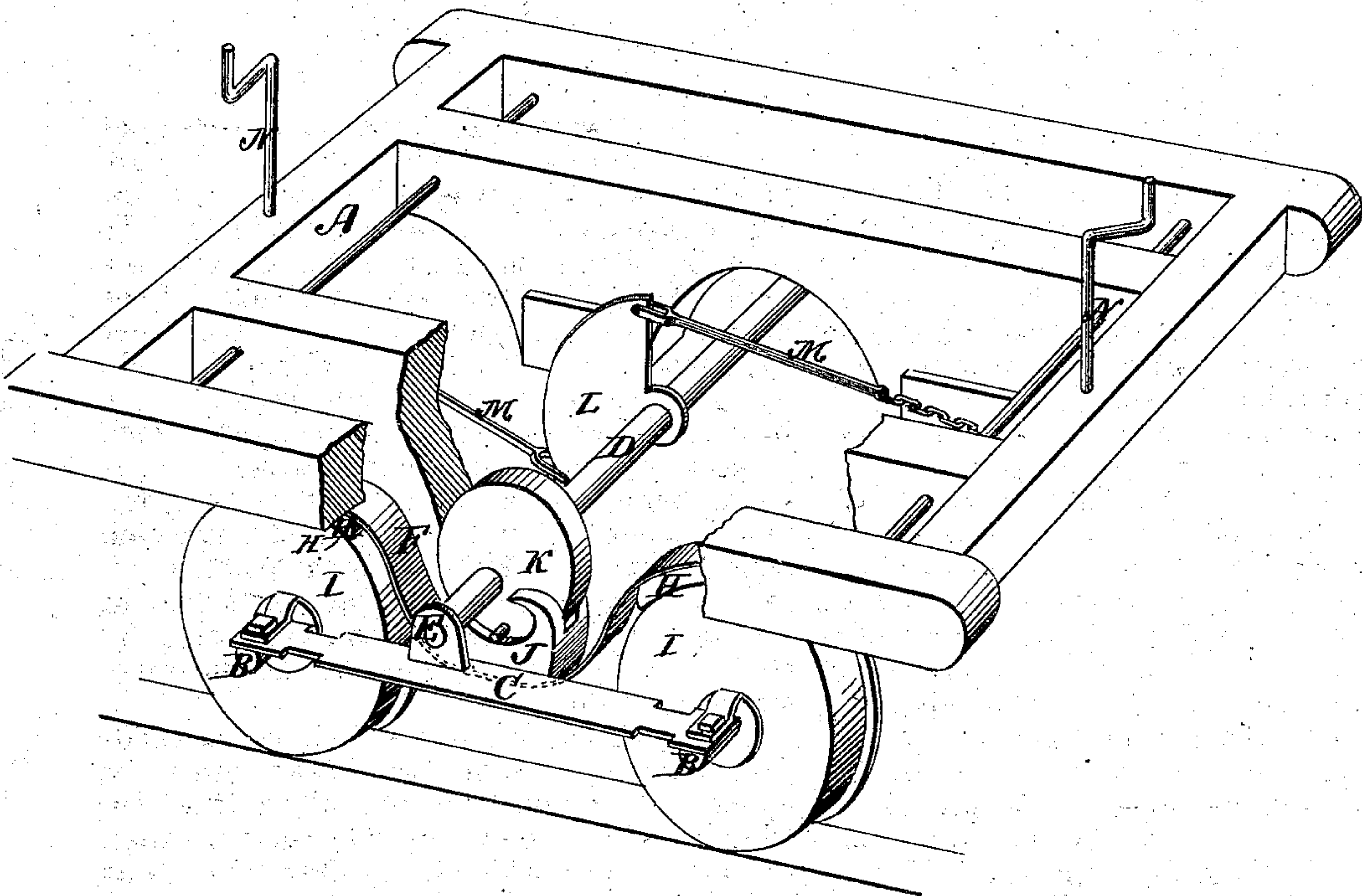
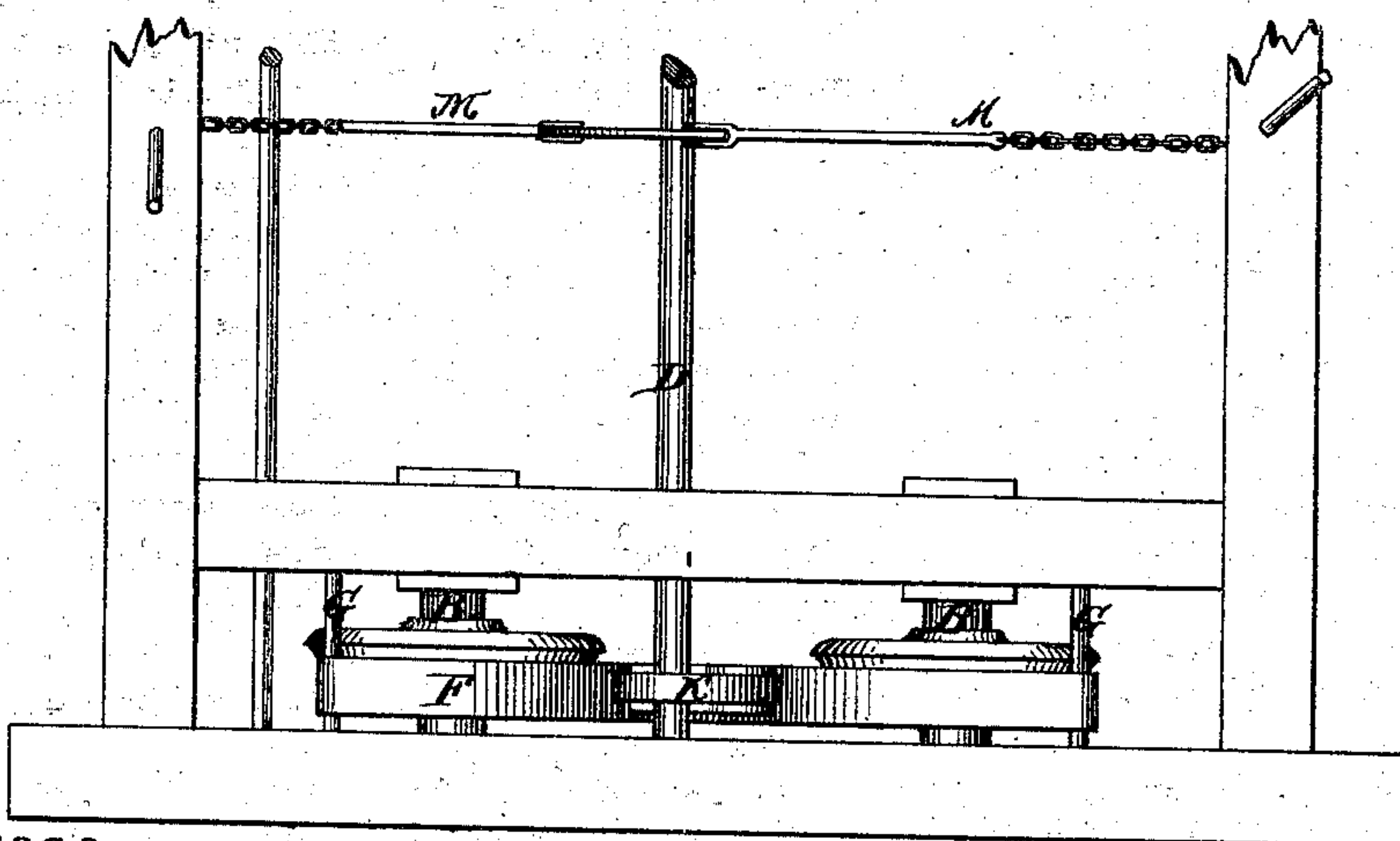


Fig. 2.



Witnesses.
C. F. Prong.
A. H. Ellsworth.

Inventor.
George B. Bryant.
by his Attys.
Hill & Ellsworth

UNITED STATES PATENT OFFICE.

GEORGE B. BRYANT, OF POTTSVILLE, PENNSYLVANIA.

IMPROVEMENT IN CAR-BRAKES.

Specification forming part of Letters Patent No. **155,491**, dated September 29, 1874; application filed May 24, 1872.

To all whom it may concern:

Be it known that I, GEORGE B. BRYANT, of Pottsville, in the county of Schuylkill and State of Pennsylvania, have invented a new and Improved Car-Brake; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view of my invention, and Fig. 2 a partial plan view.

Similar letters of reference in the accompanying drawings denote the same parts.

This invention relates to that class of car-brakes in which the brake-shoes are located above the wheels, and are applied by being pressed downward upon the perimeters of the same, its peculiar construction adapting it for use only upon such cars as employ fixed axles, the ends of which project beyond the wheels; and its object is to provide a brake principally for street-cars, which can be quickly and effectually applied, which will release itself automatically when the applying-force is removed, and in which the pressure of the brake-shoes will be so equalized as to prevent undue strain upon the axles in any particular direction. To this end, the invention consists in locating the brake-shoes upon curved spring-plates or straps above the wheels, and operating them by means of eccentrics upon a transverse shaft between each pair of wheels, which shaft has its bearings on horizontal plates extending from the outer ends of each axle to the corresponding ends of the next, the eccentrics operating to depress the curved spring-plates with their shoes, while the elasticity of the same is sufficient to raise the shoes when the pressure is removed.

The details of construction and method of operation will be more fully described hereinafter.

A represents the car-truck, to which are attached the independent axles B. The outer ends of the axles are connected by horizontal plates C, inside which the wheels are journaled. D represents a shaft, which extends across the truck transversely, and is journaled in lugs E, which rise from the plates C. F represents a curved spring plate or strap,

the ends of which are attached to rods G at opposite ends of the truck. The straps F are located above the wheels, as shown, one being connected to each side of the truck. To the lower side of the plate F are attached the brake-shoes H. Between the wheels I I the plate F is bent downward, and passes under the shaft D, where it is provided with a block, J, upon its upper surface. In the top of the block J is cut a curved groove, into which projects the lower perimeter of a cam, K, this latter being located on the shaft D, and provided on one side with a projecting pin, which bears upon the upper edge of the block J. L represents a cam-shaped plate, attached to the shaft D at its center, and connected by chains M to the brake-rods N N at the opposite ends of the car.

The operation of my invention will be readily understood. When the brakes are to be applied, the shaft D is partially rotated by winding up the chains in the usual manner. A partial revolution of the shaft and cams will be sufficient to depress the central part of the curved plates F and cause the brake-shoes to bear powerfully upon the wheels. Upon releasing the chains, the elasticity of the spring-plates is sufficient to raise the shoes, forcing the shaft back to its former position, and releasing the wheels.

It will be seen that, owing to the direct action of the cam upon the spring-plate, the brakes are applied quickly, while the leverage obtained by the use of the cam-shaped plate L enables great power to be exerted, and puts the brake under good control.

It will be remembered that both sides of the car or truck are provided with the same device, operated by a common shaft, as described.

My invention is intended particularly for street-cars, though it may be advantageously applied to others.

The depressing-force which the cam-shaft exerts on the wheels is counterbalanced on the axles by the horizontal plates C, which are of the same elasticity as the straps F, and, consequently, yield to the leverage of the shaft to the same extent. The power applied is thus equally divided between the upper sides of the wheels and the ends of the axles;

consequently, the latter are relieved of any excessive strain from one direction.

Having thus described my invention, what I claim is—

The curved spring-plates F, having brake-shoes H H and blocks J, in combination with the horizontal plates C C, shaft D, cam K,

and cam-shaped plate L, connected to the brake-rods N, substantially as described, and for the purpose set forth.

GEORGE B. BRYANT.

Witnesses:

JAMES C. SHURDY,

PRESTON BREARLEY.