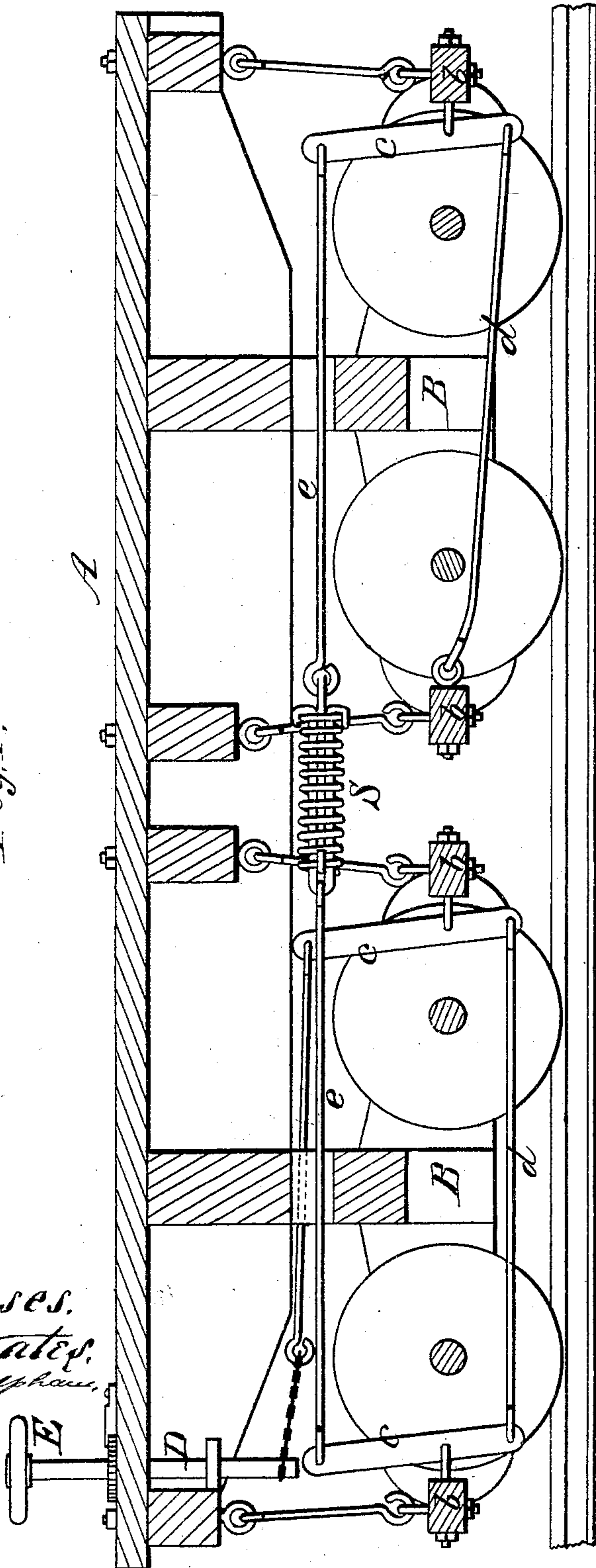


J. A. COLLINS.  
Car-Brakes.

No. 151,848.

Patented June 9, 1874.

Fig. 1.



Witnesses.  
E. H. Bates,  
George E. Upham,

Fig. 2.

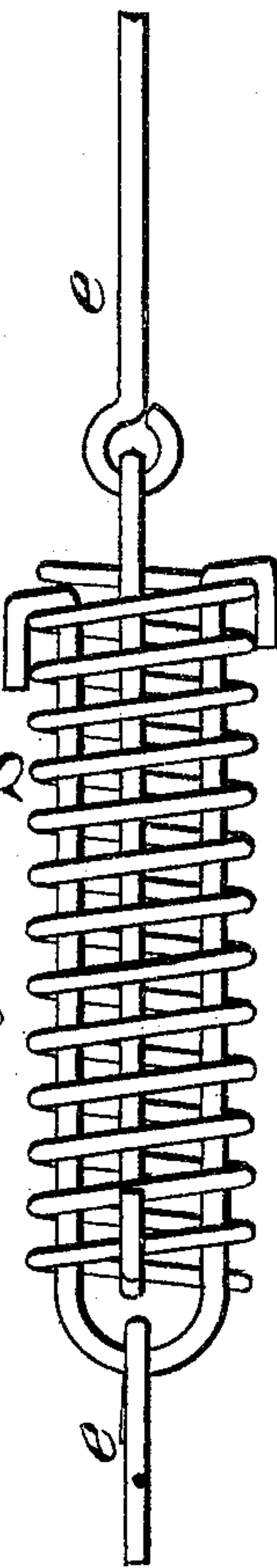
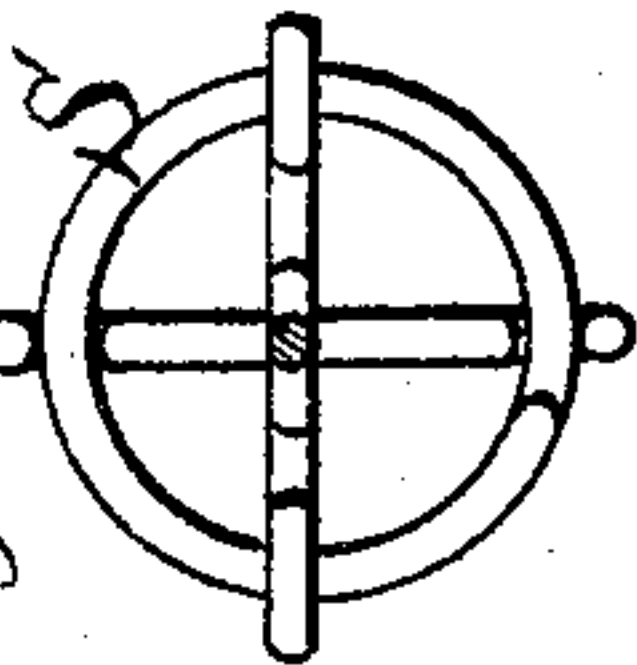


Fig. 3.



Inventor.  
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# UNITED STATES PATENT OFFICE.

JAMES A. COLLINS, OF FORT SCOTT, KANSAS.

## IMPROVEMENT IN CAR-BRAKES.

Specification forming part of Letters Patent No. 151,848, dated June 9, 1874; application filed April 25, 1874.

*To all whom it may concern:*

Be it known that I, JAMES A. COLLINS, of Fort Scott, in the county of Bourbon and State of Kansas, have invented a new and valuable Improvement in Car-Brakes; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a sectional view of my car-brake, and Fig. 2 is a detail view.

This invention has relation to car-brakes; and it consists in the combination, with an equalizing and regulating spring, of the appliances commonly used where a brake-shoe is applied to each wheel under a car, as will be hereinafter described.

In the annexed drawings, A is the platform of a railway-car, and B B are the trucks thereof. *b b* are brake-bars, holding at each end brake-shoes, and hung to the cross-beams of the platform of said car. *c c c* are levers, applied to the brake-bars *b b* at or near the middle of the length thereof, and constructed with eyes at both ends. To the ends of these levers are attached connecting-rods *d d* and main rods *e e*, which serve to communicate the pressure applied to the wheels of one truck to the wheels of the other by means of brake-rod D, which is provided with a hand-wheel, E, a ratchet-wheel and pawl, and is connected to the braking mechanism by the usual well-known device of a chain or chains. S is a metallic helical spring, which is arranged under the platform, and at the middle of the length thereof, and connected with rods *e e* in such manner that when the brakes are applied it will be compressed, and when the brakes are released it will react and release the wheels from the pressure of the shoes; and that I may produce these effects I construct my spring in the following manner:

I take a helical metal spring, of suitable

length and strength, and pass longitudinally through it the legs of a U-shaped piece of metal, the extremities of which may be bent around the last rib or coil of said spring, or applied in any other suitable manner. Through the same spring, and at its other end, I pass in a similar manner another U-shaped piece of metal, likewise secured to the last rib of my spring, and at right angles to the first piece, as shown in cross-section in Fig. 3. When the rods *e e* are applied to the loops of these U-shaped pieces of metal, and the brakes are applied, it is obvious that the spring will be compressed, and that when the brakes are released the spring will react and recover its normal position. It is obvious also that the greater strain—that is, the power necessary for braking the car—is received by this spring so as to compress it, and that the lesser strain, or power necessary for disengaging the shoes from the peripheries of the wheels, is supplied by the rebound of the spring itself, and thus preserves its elasticity intact.

Hitherto, when springs have been used in braking appliances, they have been applied directly to the rods in such a manner as to bring the strain of applying the brakes in their extension, which application soon destroys the elasticity of said springs, and causes the rods to sag, while at the same time it renders them ineffective for the purpose for which they were constructed.

What I claim as new, and desire to secure by Letters Patent, is—

The compression-spring S, in combination with the rods *e e d d*, the brake-bars *b b*, and the levers *c c* of the braking mechanism of a car, substantially as and for the purpose described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JAMES A. COLLINS.

Witnesses:

J. N. BINFORD,  
GEORGE PATTERSON.