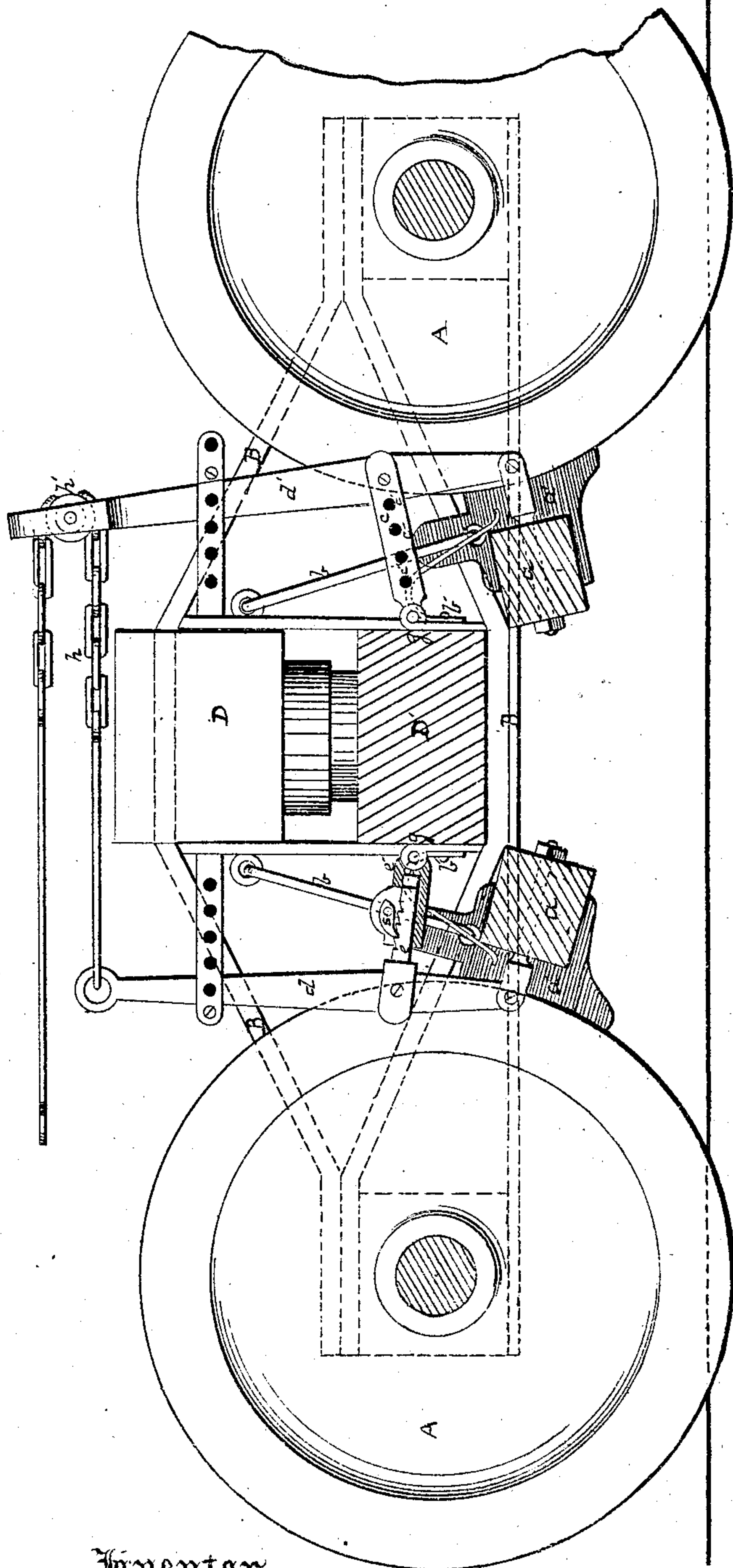


J. F. ELDER.
Railway Car-Brakes.

No. 135,212.

Patented Jan. 28, 1878.



Witnesses.

James I. Hay.
H. E. Henderson.

Inventor.

James F. Elder.
by Bakewell, Chasly & Kerr,
his attys.

UNITED STATES PATENT OFFICE

JAMES F. ELDER, OF BLAIRSVILLE, PENNSYLVANIA.

IMPROVEMENT IN RAILWAY-CAR BRAKES.

Specification forming part of Letters Patent No. 135,212, dated January 28, 1873.

To all whom it may concern:

Be it known that I, JAMES F. ELDER, of Blairsville, in the county of Indiana and State of Pennsylvania, have invented a new and useful Improvement in Railroad-Brakes; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing making a part of this specification, which represents a longitudinal vertical section of a four-wheeled car-truck illustrative of my improvement.

My improvement, while useful with various forms of car-trucks, is particularly designed for freight-trucks, having a double bolster and brakes between the wheels. In such trucks the brake-rod and lever connections have commonly been placed under the bolster, where they were so near the track as often to be the cause of accident. In my present improvement I make the fulcrums of the brake-levers one on each outer face or side of the lower bolster; I provide a ratchet device for taking up the slack caused by the wearing away of the brake-shoes; and simplify the arrangement and operation of the brake by passing the brake-chain from the end of one brake-lever over a pulley in the end of the other; and in the features of construction and combination hereinafter claimed consist the nature of my invention.

To enable others skilled in the art to make and use my improvement, I will proceed to describe its construction and mode of operation.

The ordinary car-wheels are represented at A, the truck-frame is marked B, and the bolsters D D'. The ordinary brake-bars *a* are arranged between the wheels with shoes *a'*, of any suitable construction, hung in the usual way by chains *b*, and held clear of the wheels when not in use by springs *b'* of any suitable construction. The brake-levers *d d'*, also of any desired form, are, by the usual joint, connected with the brake-bars, as shown. On each side of the lower bolster D' is attached a fulcrum-post, consisting either of a single post, *c*, slotted lengthwise, and with a series of pin-holes, *c'*, for the inward and outward adjustment of the brake-lever in taking up the slack; or, as I prefer to make this post, it consists of two parts, the one part, *e*, having a toothed rack, and sliding in and out of the other U-shaped part *e'*. The one part, *e*, is jointed to the brake-lever, and the other part, *e'*, is con-

nected either by a rigid connection or by a hinge-joint, as shown, (preferably the latter,) to the bolster D'. The part *e'* carries a pawl, *s*, which engages the teeth of the rack of the part *e* in such way that while the fulcrum-post thus formed may be lengthened at pleasure for taking up the slack by simply drawing out the part *e*, (which frequently has to be done,) it can be shortened (which has to be done only where a new shoe is put on) only by throwing the pawl out of gear with the rack; hence, in taking up the slack caused by the wearing away of the shoes, the fulcrum-post can be readily lengthened, and at any point of adjustment it will retain its place until set back when a new shoe is put on. The forward end of the pawl should be made the heavier, or a spring or other equivalent means be employed to keep it in gear.

It will be observed that the brake-bars move to and from the wheels in an arc, of which the clevis or chains *b* usually employed are the radius. To adapt the brake-levers to this change in the direction of motion from a right line, I prefer to attach the fulcrum-post to the bolster by a hinge-joint, as shown at *g*; and to simplify the operation of the brake-levers, I pass the brake-chain *h* from the upper or outer end of one lever over a pulley, *h'*, arranged in the corresponding end of the other, as shown.

The upper end of the brake-lever *d'* may be bent over so that the pulley *h'* shall lie horizontally instead of vertically, if so desired, the center of the pulley being in line with the center of the lever.

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

1. The brake-levers *d d'* pivoted to the opposite outer faces of the bolster, operating the brake-bars by their lower ends, and being connected at their upper or opposite ends by the brake-chain *h*, substantially as set forth.

2. An extensible fulcrum-post consisting of two parts, one sliding on or in the other, the parts being held in the proper relative position when extended by means of a ratchet and pawl, substantially as and for the purposes set forth.

In testimony whereof I, the said JAMES F. ELDER, have hereunto set my hand.

JAMES F. ELDER.

Witnesses:

W. N. PAXTON,
G. H. CHRISTY.