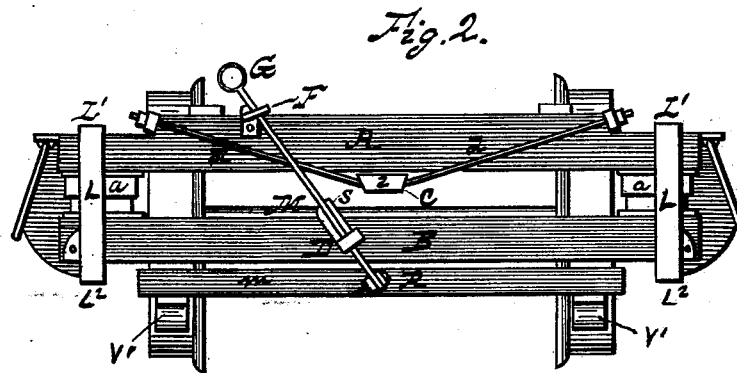
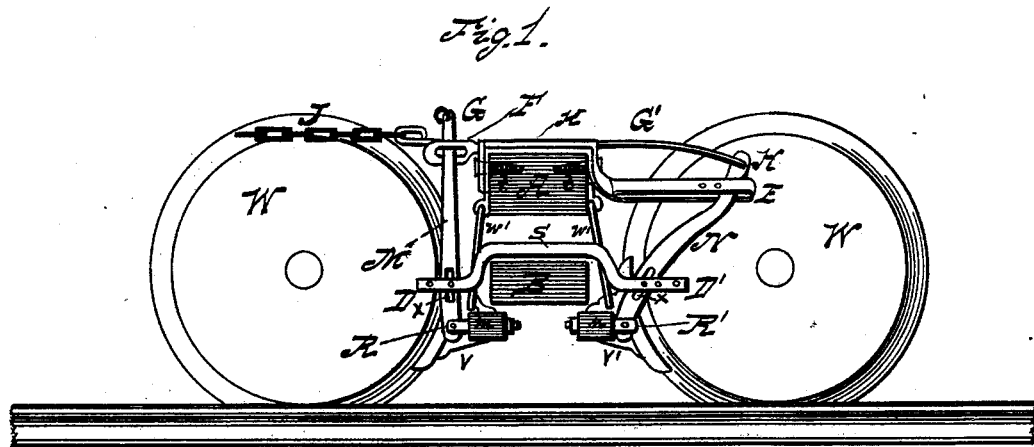


F. A. MATHEWS.
Car-Brake.

No. 215,014.

Patented May 6, 1879.



WITNESSES.
E. H. Bates
J. Chatfield

INVENTOR.
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UNITED STATES PATENT OFFICE.

FELIX A. MATHEWS, OF HARRISBURG, PENNSYLVANIA.

IMPROVEMENT IN CAR-BRAKES.

Specification forming part of Letters Patent No. **215,014**, dated May 6, 1879; application filed December 14, 1878.

To all whom it may concern:

Be it known that I, FELIX A. MATHEWS, of the city of Harrisburg, county of Dauphin, and State of Pennsylvania, have invented certain new and useful Improvements in Car-Brakes for Railway-Cars, of which the following is a specification, reference being had therein to the accompanying drawings, making a part thereof, in which—

Figure 1 represents a longitudinal sectional view of a car-truck with my improved brake mounted thereon. Fig. 2 represents a transverse view of the same, the vertical section being made near the middle of the car-truck.

The objections existing in the usual brake-mountings employing the common brake-bars and hangers, levers, lever-connectors, and chains are, mainly, that, first, the lever-connectors are located too low, they being below the brake-bars, and therefore in dangerous proximity to objects that may be on the track; second, the connected parts are not safely secured together, often occasioning wrecks of trains by certain parts dropping off onto the track and obstructing it; third, the connected parts are not so joined as to be readily adjusted to compensate for the wear of the liners of the shoes.

The object of my improvement is, therefore, mainly, to provide the ordinary brake-bars, hangers, and shoes with such superior lever-connectors and lever-keepers that not only the objections above enumerated may be avoided and remedied, but that the brake may be fully as powerful as, and without the rigidity attendant on, other improvements on the common lever-brakes hung from the bolster, and therefore, also, much superior to brakes hung from the spring-plank.

In the accompanying drawings, A represents the truck-bolster, and *d d* the truss-rods thereon, strung over the saddle *z*, and having attached thereto the brake-hangers *w' w'* by the ordinary clevises, thereby suspending the ordinary brake-bars *m n* and shoes *v v'*. B represents the spring-plank wholly unconnected with the brake, excepting that the connector *s* of the brake-levers M N simply rests thereon when stress is off said levers, so as to properly hold the shoe-liners R R' away from the truck-wheels W W, to avoid cutting their

upper ends by wear. Said connector *s* is made of bell-crank form, as shown, having its ends D D' bent below the top of the spring-plank B and slotted, to pass through them the levers M N, pivoted thereto by one of several holes therein, made to take up the wear of the liners by adjustment of the pivot-pins into different sets of said holes. The body of the said connector is of round stuff, and by its form it is somewhat spring-like, thus presenting or holding the levers M N sensitively taut, with sufficient elasticity to compensate for the fall and rise of the bolster A, which governs the fall and rise of the shoes *v v'* and a variation of pressure thereon by difference of situation against the wheel-tread.

Directly on the bolster A is affixed, by screws or bolts *t t*, the keeper K of the levers M N, also slotted at its ends E F, to pass through them the upper ends of said levers, each of which has a ring, G, or link G', inserted therein, so that should their lower parts become detached from their connections by loss of parts the levers themselves will be kept in the slots of the keeper K. Both the keeper K and the connector *s* have their slotted ends closed, so that the connector *s* is also kept secure against dropping off, as the levers M N must first be disengaged before it can be removed.

The keeper K is made of flat bar, bent, as shown, to form a slotted end at F, and bent and returned to form the long or sweep slot at E, in which are several holes for pins when it is desired to limit the backward sweep of lever N.

The brake is actuated by the usual link, G', chain J, and any approved reel device therefor. The brake is drawn taut by link G' sweeping lever end H toward bolster A, and it is released or falls away from the car-wheels (duly distanced therefrom) by gravity, the hangings and connector *s* seeking their places of rest.

The slots *x x* in the brake-levers M N are so situated in said bars as to allow the connector *s* to adapt itself, and therefore the fulcrum of said levers at the pins in said slots, to compensate for the rise and fall of the bolster A, and thus avoid too great rigidity in the brake mechanism.

By this mode of constructing and combining the co-operative elements in my brake I

obtain a degree of elasticity in it, while I do not lose its effectiveness.

I am aware that various car-brakes are in use in which the fulera of the brake-levers are fixedly supported on or against the truck-log or lower timber of the truck, thus causing too great rigidity in the brake, and which actual practice proves I have obviated by my bent connector, in which the fulera of the levers are somewhat yielding, and which accommodate themselves so as to sustain the resistance equally on each other wholly free from lateral purchase on the truck-log. I therefore do not claim fulera or pivots for brake-levers supported on the truck-log; nor do I claim the brake-lever connector broadly; but I do claim it when made bell-crank form and supported freely over the truck-log.

Having thus fully and clearly described my

invention, what I regard as new and useful, and what I desire to secure by Letters Patent of the United States of America, is substantially embraced in the following claim:

The combination of the brake-levers M N, pivoted at their lower extremities to the swinging brake-bars *m n*, with the connector *s*, perforated at the ends, and adjustably fulcrumed to the brake-levers, slotted at *xx*, by pins passing through said slots and perforations, and the slotted keeper K, all arranged substantially as shown and described.

In testimony that I claim the foregoing as my invention I have hereunto set my hand and seal this 12th day of December, 1878.

FELIX A. MATHEWS. [L. S.]

Attest:

THEOPHILUS WEAVER,

PETER STUCKER.