

B. F. STEWART.

CAR-BRAKE.

No. 178,481.

Patented June 6, 1876.

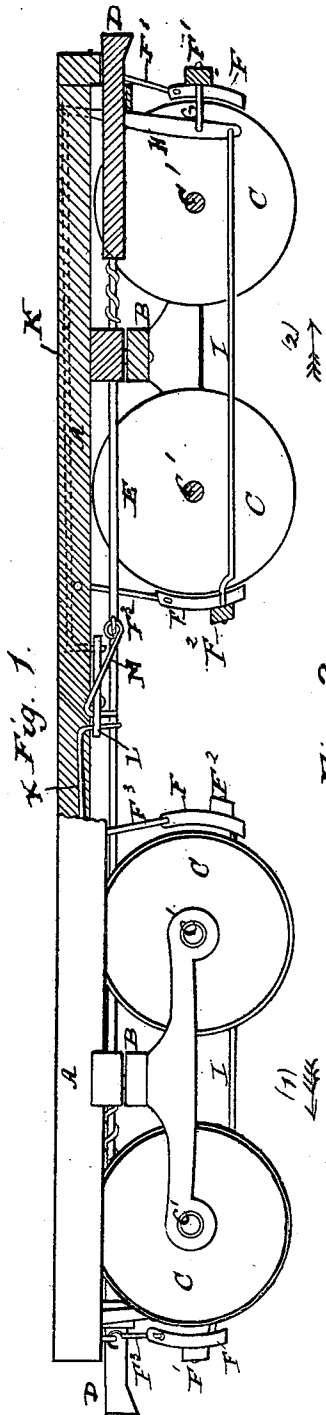
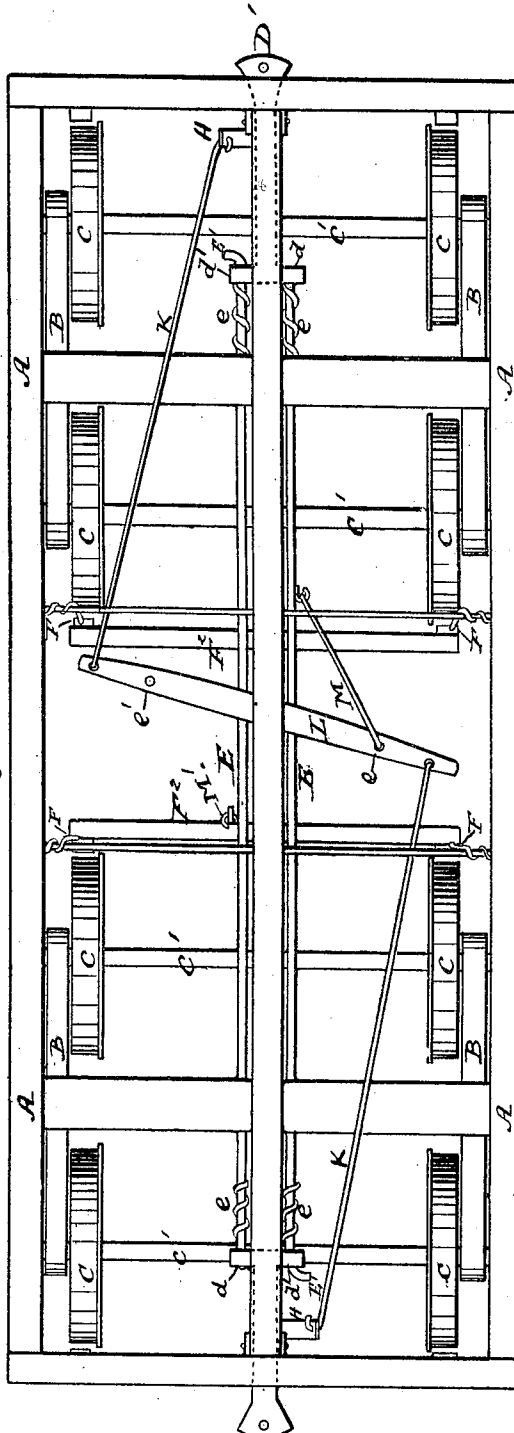


Fig. 2.



WITNESSES

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IMPROVEMENT IN CAR-BRAKES.

Specification forming part of Letters Patent No. **178,481**, dated June 6, 1876; application filed March 23, 1876.

To all whom it may concern:

Be it known that I, BENJAMIN F. STEWART, of New Philadelphia, in the county of Tuscarawas and State of Ohio, have invented certain new and useful Improvements in Railroad-Car Brakes; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in car-brakes, the nature of which will be fully explained by reference to the accompanying drawings, in which—

Figure 1 represents a side view, partly in section; and Fig. 2, a plan view of so much of a car with my improvements applied thereto as will illustrate my invention.

In each of the views similar letters of reference are employed to indicate corresponding parts wherever they occur.

A represents the main framing or platform of a car, which is supported on suitable under-carriages B B, each of which is represented as provided with two pairs of wheels, C C. The axles C' of each two pairs are supported so as to revolve parallel one with the other. D D' are the bumper-heads, which are each provided with lateral extensions d d' on their rear ends. To the extensions d are attached the ends of a pair of draft-rods, E, which are supported with capability of sliding freely in bearings carried by the cross-beams of the framing A, or by other suitable supports, the opposite ends of each of the rods E passing freely through guides or holes in the extensions d', and being provided with projections or stops E', which, when the train is in motion, rest against the face of the extensions d'. The rods E are provided with springs e at each end, adapted to prevent the jar occasioned by the stopping or starting of the train, and also to lessen the strain on the rods E. F are the brakes, which are applied in sets of four—one to each wheel; and they are connected together in pairs by cross bars or rods F¹ F², and supported in position by means of links or chains F³, one end of which is con-

nected to the framing A, while the other end is attached to the brakes, as shown. To the center of the cross-bars F¹, at the front and rear end of the carriage, is connected a link, G, which is connected to, and forming the center of motion of, a double lever, H, the lower end of which is pivoted to a rod or chain, I, attached to the center of a cross-bar, F², while the opposite end of the lever H is pivoted to a rod or chain, K, the opposite end of which is connected to one end of a double lever, L, pivoted centrally to the framing A, and provided at each end with holes or links e e', for the attachment of one end of one of a pair of rods or chains, M M', one of which is attached to each of the draft-rods E, and capable of being connected alternately with the double lever L, according to the direction of motion of the car.

The brake in the drawings is arranged for the car to be drawn in the direction of the arrow 1; and so long as due tension is exerted on the draft-bars E, by means of the bumper-heads being drawn out, as shown by the drawing, the brakes will be held off all the wheels; but immediately the draft-bars E are drawn in the direction of the arrow 2, by setting the brakes on the rear car, the draft-bars E will be held in tension and drawn backward, thereby setting the brakes throughout the entire length of the train. Supposing it is required to draw the cars in the direction of the arrow 2, it is simply necessary to remove the rod or chain M from the hole or link e, and allow it to hang free, and attach the chain M' to the hole or link e', when the brakes will immediately operate in the reverse direction. By this arrangement it will be seen that the conductor or brakeman on the cars at the end of a train, by setting the brakes of his own car by means of suitable brake-wheels, levers, or other suitable connections, will also set the brakes of all the cars in front of him. It will also be readily understood that when stopping a train, the steam being shut off the engine, and the brakes applied at the rear of the train, the draft-bars E throughout the train will be held taut, when the momentum of each car will carry it forward from the rear car, thereby setting its own brakes.

I have only shown one car in the drawings;

but it will be evident to any competent person that any number of cars may be readily coupled together by ordinary links or means.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, with the sliding bumper-heads $D D'$, having extensions $d d'$, of the sliding draft-rods E , each of which has one end secured rigidly to the extension d on one bumper-head, and its other end supported by, and sliding freely in, guides or bearings in the extension d' of the opposite bumper-head, and provided with the stops E' and springs e , all arranged and operating substantially as and for the purpose specified.

2. The combination, with the sliding bumper-heads $D D'$, draft-bars E , and springs e , of the alternate rods or chains $M M'$ and lever L , substantially as set forth.

3. The combination, with the sliding bumper-heads $D D'$, draft-bars E , springs e , and alternate rods or chains $M M'$, of the rods or chain K , lever H , cross-bars F^2 , brakes F , and links or chains F^3 , substantially as described.

4. A pair of bumper-heads, $D D'$, connected adjustably, one with the other, by means of a pair of sliding draft-rods, E , one end of each of which is attached to the extension d of the near, while the other end works freely in bearings in the extension d' of the opposite, bumper-head, substantially as and for the purpose set forth.

5. The arrangement of the sliding bumpers $D D'$, having the extensions $d d'$, draft-rods E , rods or chains $M M'$, lever L , rods K , and lever H , connected by suitable rods to the brake, whereby, when the speed of the rear car in a train is checked by having its brakes first set, the momentum of each forward car will carry the latter forward with sufficient force to set the brakes thereon, as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

BENJAMIN F. STEWART.

Witnesses:

J. H. BORTH,
PETER SMITH.