

D. A. BENNETT.

DRAFT-BARS FOR RAILWAY-CARS.

No. 173,757.

Patented Feb. 22, 1876.

Fig. 1.

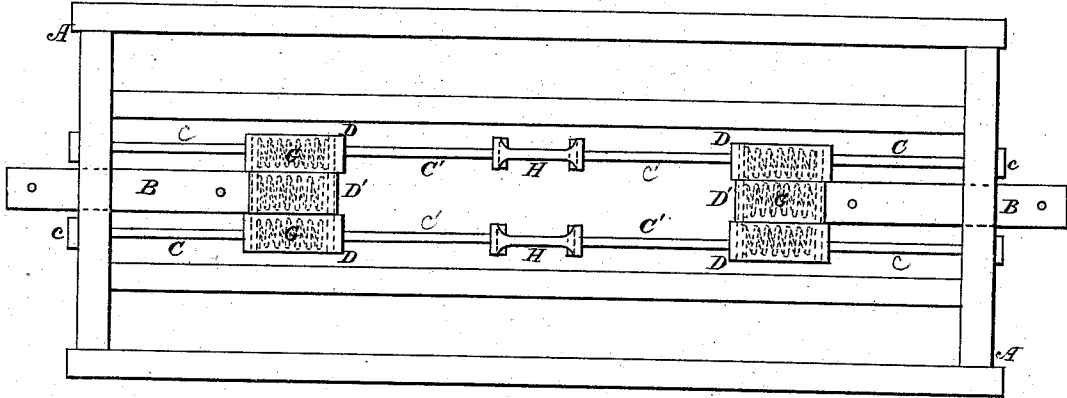


Fig. 2.

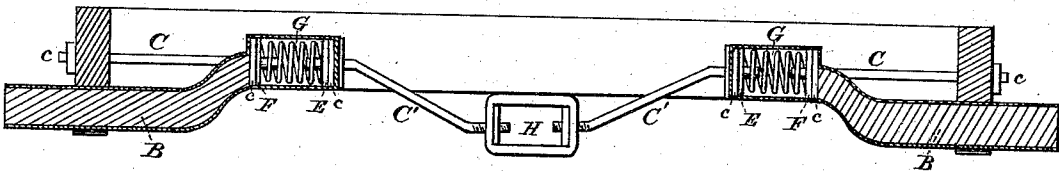


Fig. 3.

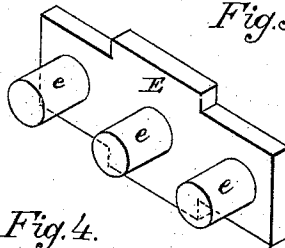
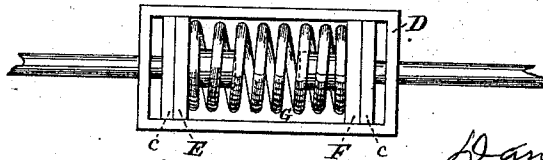


Fig. 4.



Attest.
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Inventor:

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UNITED STATES PATENT OFFICE

DANIEL A. BENNETT, OF WAUSEON, ASSIGNOR OF ONE-HALF HIS RIGHT
TO HEMAN A. CANFIELD, OF TEDROW, OHIO.

IMPROVEMENT IN DRAFT-BARS FOR RAILWAY-CARS.

Specification forming part of Letters Patent No. 173,757, dated February 22, 1876; application filed
January 15, 1876.

To all whom it may concern:

Be it known that I, DANIEL A. BENNETT, of Wauseon, in the county of Fulton and State of Ohio, have invented certain new and useful Improvements in Draft and Buffing Apparatus for Railroad-Cars; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The object of my invention is to afford greater longitudinal motion to the draw-heads, with increased strength to the buffer attachments, and more perfect power of resistance to the buffer-springs, so as to overcome the severe and injurious strains to which railroad-cars are exposed in starting trains; and it consists in the method hereinafter described of combining the draft-rods with the draw-heads and buffing apparatus, so that in starting a train the draft applied at one end of the car will be exerted through the medium of a series of rods, sliding plates, and springs, and thus gradually transmitted through the entire frame-work of the car, greatly diminishing the effect of sudden shocks.

Figure 1 is a plan view of the car-frame with my invention applied. Fig. 2 is a vertical longitudinal section of the same, showing the draft-rods bent to form braces, for affording an increased support to the center of the car. Fig. 3 is a view of one of the sliding plates provided with studs; and Fig. 4 is a view of a spring-box with the spring partially compressed, showing the arrangement of the spring and sliding plates in relation to the draft-rods.

A A represent the end cross-beams of the frame-work; B B, the draw-heads, and C C' the draft-rods, each of which is made in four sections, connected by suitable loops and nuts. The draw-heads are supported by hangers, in such a manner as to afford them sufficient longitudinal and lateral play, and are connected at their rear or inner ends with the draft-rods C C' through the medium of the loops or spring-boxes D D' and sliding plates and springs contained therein.

The spring-box D' is attached to and forms

a portion of the draw-head, the additional loops or boxes D D' being placed on either side. These three boxes contain the sliding plates E F, which are recessed or formed with shoulders, in the manner shown in Fig. 3, the central portion being wider, to fit the larger dimensions of the box D', the shoulders also acting to prevent the lateral motion and displacement of the plate. The plates are provided with studs *e*, upon which are fitted the spiral springs G, which assist in transmitting the draft to the rods C C', and also serve to perform the functions of buffer-springs in neutralizing the shocks which occur when the cars meet in the act of coupling, and in starting or stopping the train.

As before remarked, the draft-rods on each side are made in four sections, C C', having screw-threads cut upon their ends for the reception of the nuts or heads *e*, by means of which they are confined within and adjusted in relation to the frame-work of the car and the other various parts of the apparatus. They are connected in the center by means of the loop or turn-buckle H, which is also used for tightening the rods to the requisite degree of tension.

The draft-rods may be made straight, as represented in Fig. 1; or the sections C C' may be bent or slightly curved, as shown in Fig. 2, in which case they will serve to afford an increased support to the center of the car, and the usual braces employed for that purpose may be dispensed with.

The operation of the combined draft and buffing apparatus, as above described, will be readily understood. Upon applying to either draw-head the force or drawing power required to move the car, the spring-box D', constituting a part of the draw-head B, is drawn forward, carrying with it the plate E, which compresses the springs G G, transmitting the draft to the plate F and loops or side boxes D D'. These boxes would be torn from their places were they not held securely in position by the rods C C', which now receive the draft, and gradually transfer it, through the central loops or turn-buckles H H, succeeding rods C C', side boxes or loops D D, and rods C C, with their appropriate nut-heads *e*, to the cross-beam A

at the opposite end of the car, which is thus impelled or moved by a pushing action from the rear without subjecting the frame-work to the injurious strains consequent to the ordinary manner of drawing the car by its forward end.

The same advantage is also obtained in backing, the force in this case being exerted first through the plate F, and afterward transmitted through the springs G and plate E to the side boxes D, whence it is reflected through the rods C to the cross-beam at the same end of the car, propelling it with a pushing power, in the same manner as before.

In the event of sudden stoppages, the yielding bumpers transfer the force gradually, through the springs G and plates E F, to the rods C C' and their connecting-loops, thereby equalizing the shock and protecting every part of the frame-work from injurious strain.

By employing three buffer-springs at each end of the car, in the manner shown and described, their power of resisting shocks is largely increased and the strain more equally distributed, thus subserving objects not hitherto attained. The additional buffer-springs contained in the side boxes or loops D also contribute by their elasticity to imparting an easier motion to the cars while being drawn or impelled forward in a train.

When the cars are connected in a train and drawn forward by the engine, each one is impelled from the rear end, and is required to carry only its own weight, the cars which are

coupled with the forward car being drawn entirely by the draft apparatus, and none of the strain involved in drawing the train being sustained by any car, except that immediately appertaining to its own weight.

I am aware that the draw-heads have been connected by means of sliding rods, so that the draft-strain exerted upon one draw-head is transmitted to the other, and so on throughout the train. I do not, therefore, claim such construction as my invention. It will be observed that my draft-rods are rigidly secured to both ends of the bed-frame, forming strong longitudinal braces for the frame, and at the same time sustaining the entire draft of the train.

I claim as my invention—

1. The draw-head B, in combination with the loops or boxes, D D', plates E F, springs G, and draft-rods C C', all substantially as and for the purpose specified.

2. The draft-rods C C', constructed in sections, and connected by suitable loops, H D, and nuts c, in combination with the plates E F, springs G, draw-head B, and frame-work A, all arranged to operate substantially as and for the purpose set forth.

In testimony whereof I have hereunto affixed my signature this 15th day of January, 1876, in presence of two witnesses.

DANIEL A. BENNETT.

Witnesses:

A. R. BROWN,
E. L. SCHMIDT.