W. R. CROSS.

DRAFT BARS FOR RAILWAY CARS.

No. 181,048. Patented Aug. 15, 1876.

Fig. 1.

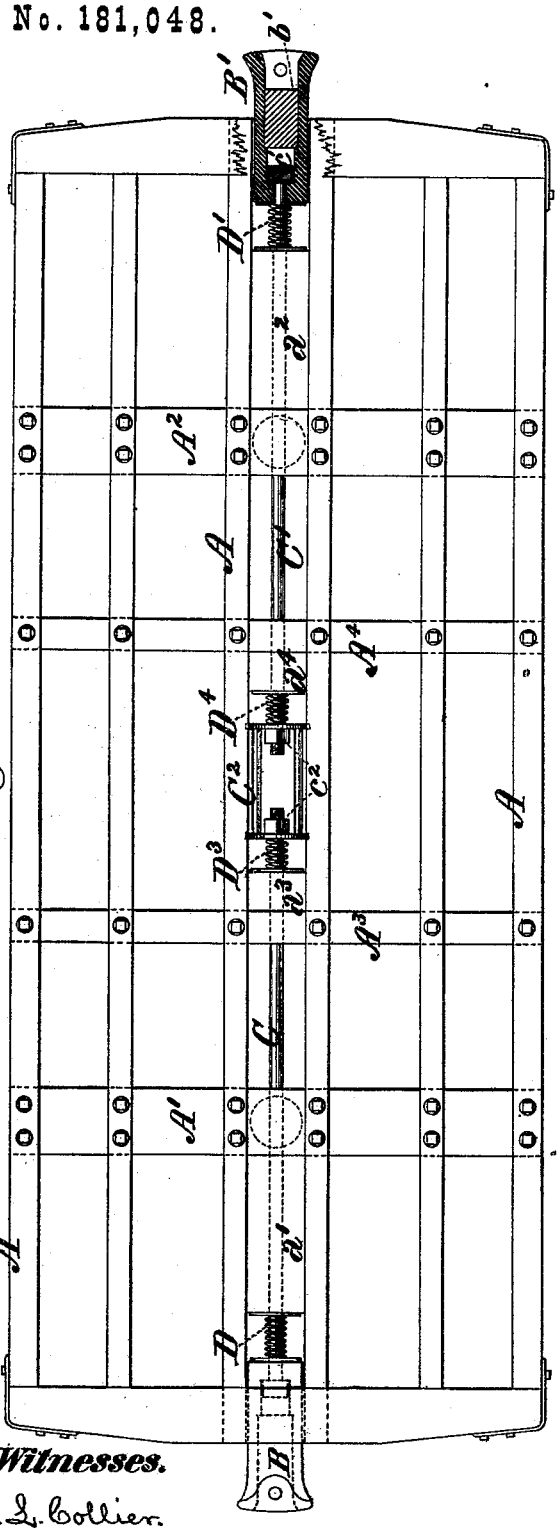
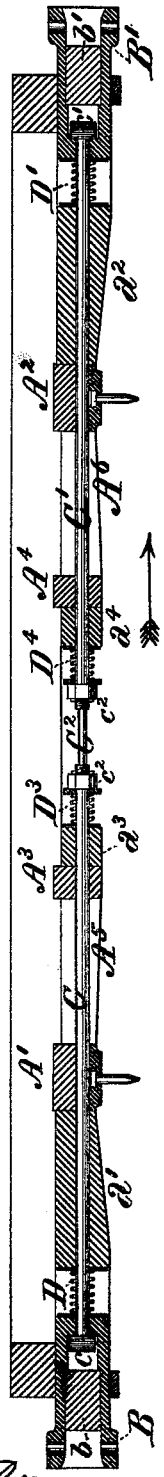


Fig. 2.



Witnesses.

D. L. Collier.

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UNITED STATES PATENT OFFICE.

WILLIAM R. CROSS, OF PIEDMONT, WEST VIRGINIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO SYLVESTER A. SILVER, OF SAME PLACE.

IMPROVEMENT IN DRAFT-BARS FOR RAILWAY-CARS.

Specification forming part of Letters Patent No. **181,048**, dated August 15, 1876; application filed June 15, 1876.

To all whom it may concern:

Be it known that I, WILLIAM R. CROSS, of Piedmont, in the county of Mineral and State of West Virginia, have invented certain new and useful Improvements in Draft and Buffing Apparatus for Railroad-Cars, of which the following is a specification:

The object of my invention is to provide a draft and buffing apparatus, in which the shocks induced in starting, stopping, and bumping shall be, as far as practicable, reduced, and the strain in drawing and pushing be equalized and distributed throughout the car-frame; to which ends my improvements consist in combining with the draw-heads two draw-bars, connected by an intermediate swivel, central and end buffing-springs, and jam-blocks and distance pieces, through which the shocks and strains brought upon the springs are transmitted to the car-frame, all as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a plan or top view, partly in section, of a car-frame, having my improvements attached, and Fig. 2 a vertical longitudinal central section through the same.

My improvements are shown as applied to a car-frame, A, of the style of construction usually employed upon American railroads. Two draw-heads, B B′, one at each end of the frame, are arranged in guides beneath the same, with the capacity of a limited amount of longitudinal movement, each draw-head being suitably recessed for the reception of a coupling link and pin. The draw-heads are connected by two draw-rods, C C^1, passing through their inner ends, and united at or near the center of the car-frame by a swivel, C^2. Heads c c^1 are formed upon the outer ends of the rods C C^1, and, respectively, bear against the inner end faces of the draw-heads B B′, so as to prevent the latter from being drawn farther apart than the distance between the heads, while permitting them, when under compression, to be pushed closer together. The inner ends of the draw-rods are connected to the swivel C^2 by nuts c^2, or by keys, as may be found preferable. The two draw-heads are thus connected independently of the frame of the car, so that while being hauled in a train the strain of the following cars is sustained by the draft-rods, and not by the frame of the leading car, as otherwise would be the case. The use of the swivel and the two separate draw-rods renders the apparatus more conveniently applicable, and affords better facilities for renewal and repair than where a single draw-rod is employed.

The pull or thrust applied to the draw-heads B B′ in the operations of hauling, starting, stopping, or coupling cars, is transferred to the frame A through a series of springs, arranged substantially as follows: A spring, D, is placed between the draw-head B and a jam-block, a^1, secured to the sills, and abutting against the adjacent bolster A^1, and a similar spring, D^1, is placed between the other draw-head B′, and a jam-block, a^2, abutting against the bolster A^2, adjacent to the draw-head B′. Springs D^3 D^4, at each end of the swivel C^2, bear on the heads of the swivel, and also, respectively, against jam-blocks a^3 a^4, one of which, a^3, is secured to an intermediate cross-beam, A^3, of the frame, and the other, a^4, to a similar beam, A^4, on the opposite side of the swivel, the jam-blocks a^3 a^4 being provided to enable the cross-beams A^3 A^4 to be set sufficiently far apart. Distance-pieces A^5 are placed between the bolster A^1 and beam A^3, and similar pieces A^6 between the bolster A^2 and beam A^4. The draw-heads B B′ are, respectively, provided with draw-head blocks b b^1, to prevent the couplings from jamming into the castings, and the jam-blocks are provided with suitable washers to afford bearings for the springs.

It is obvious that, if preferred, the swivel C^2 might be dispensed with, and a single draw-rod, provided with a bearing or bearings near its center for the springs D^3 D^4, could be substituted without departing from the spirit of my invention, as the office of the swivel is to serve not only as a connection for the rods, but also as an abutment for said springs; but I consider the arrangement of two draw-rods and a swivel, as shown, to be more desirable, in view of the greater convenience of application and repair.

In the operation of the apparatus, when pwer is applied to draw the car in the direc-

tion of the arrow, the springs D and D^4 are compressed, and the strain is thereby applied to the frame through the bolsters A^1 A^2 and cross-beams A^3 A^4, being transmitted through the jam-blocks a^1 a^2 and distance-pieces A^5 A^6. In pushing the car from the opposite end and in the same direction, it is obvious that the same application and transmission of strain will be made, and, further, that in either case the strain due to the weight of the remaining cars of the train is sustained wh lly by the draft-rods and swivel, and not by the frame of the car. Similarly, in coupling cars the shock is received by two springs at different points in the length of the car, and the concussion correspondingly reduced and distributed throughout the frame.

I am well aware that sundry arrangements of continuous draw-bars, provided with buffing-springs, have been heretofore known, and do not, therefore, broadly, claim such device.

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

1. The combination of two draw-heads, united by a continuous draw rod or rods, springs, and jam-blocks, interposed between the draw-rods and frame-bolsters, and springs interposed between a central abutment on the draw-rod and transverse beams of the car-frame on each side of said abutment, substantially as set forth.

2. The combination of the draw-heads B B′, draw-rods C C^1, swivels C^2, springs D D^1 D^3 D^4, jam-blocks a^1 a^2 a^3 a^4, bolsters A^1 A^2, and cross-beams A^3 A^4, substantially as set forth.

In testimony whereof I have hereunto subscribed my name this 13th day of June, A. D. 1876.

W. R. CROSS.

Witnesses:
R. H. BURNUP,
W. E. HESKITT.