A. MILLIKEN.

DRAW-BARS FOR RAILWAY CARS.

No. 185,643. Patented Dec. 26, 1876.

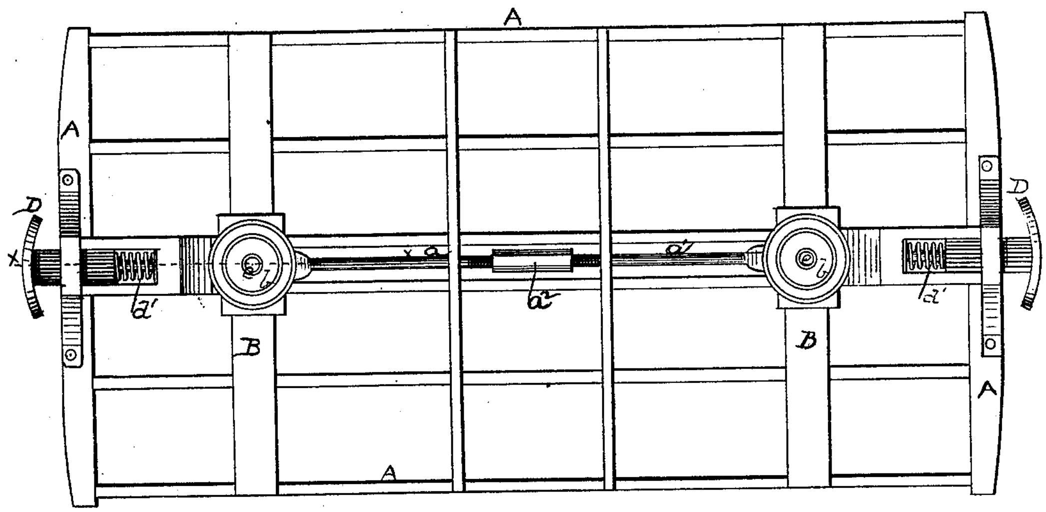

Fig. 1.

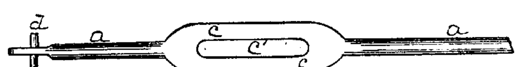

Fig. 3.

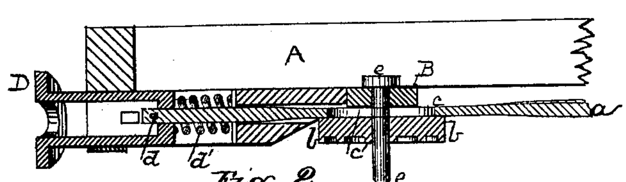

Fig. 2.

Witnesses
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THE GRAPHIC CO. N.Y.

UNITED STATES PATENT OFFICE.

ANDREW MILLIKEN, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN DRAW-BARS FOR RAILWAY-CARS.

Specification forming part of Letters Patent No. **185,643**, dated December 26, 1876; application filed November 18, 1876.

To all whom it may concern:

Be it known that I, ANDREW MILLIKEN, of Pittsburg, county of Allegheny, State of Pennsylvania, have invented or discovered a new and useful Improvement in Draw-Bars for Railway-Cars; and I do hereby declare the following to be a full, clear, concise, and exact description thereof, reference being had to the accompanying drawing, making a part of this specification, in which—like letters indicating like parts—

Figure 1 is a bottom view of the frame of a car-body, showing my improvements as applied thereto. Fig. 2 is an enlarged sectional view in the line *x x* of Fig. 1, and Fig. 3 is an enlarged plan view of one end of the draw-bar.

My invention relates to that class of railway-car draft-connections in which the draw-heads at the opposite ends of the car are connected together independently of the frame or body of the car.

The frame of an ordinary car-body is represented at A. The usual bolsters are shown at B, the bolster-plates at *b*, and the king-bolt at *e*. Any desired pattern or style of draw-head D may be employed, and these and other devices used in connection therewith are, except as hereinafter stated, of any desired style or construction. The draw-head D at the opposite ends of the car are connected directly together by a draw-bar, $a\ a^1$, secured at its ends to the draw-heads by keys *d*, the draw-heads being backed by the usual, or any desired, arrangement of springs *d'*. The draw-bar $a\ a^1$ is preferably made of round or polygonal iron, which, where it passes the bolsters B, is flattened down, as at *c*, through a length equal to the breadth of bolster B or bolster-plate *b*, plus the amount of end play for which provision is or ought to be made. The object of thus flattening down the draw-bar is, that as the bolster B must be recessed for the passage of the bar, a round or polygonal bar would require so deep a recess as to weaken seriously the strength of the bolster, while with a flattened bar the recess need not be so deep as to lessen to any serious extent the supporting power of the bolster. A slot, *c'*, is punched in this flattened part, through which the king-bolt *e* passes. The object of the slot is to make provision for the end play of the draw-bar.

In case the punching of the slot removes too much material, and seriously weakens the bar at this point, the difficulty may be met by the usual operations of plating or upsetting. Continuous draw-bars are not new; but when made in a single piece, as has usually been done, it involves considerable labor and expense to renew them.

To lessen such labor and expense, I make the draw-bar in two pieces, $a\ a^1$, and joint or unite their adjacent ends by means of a tapped socket, a^2, screwing onto them by right and left hand threads. Then, if either end breaks, it is much more easily and cheaply replaced than if it were made in one continuous length, and with a great saving in respect to loss of service; and as regards breakage, the slot *c'* is an important element, since in case the bar $a\ a^1$ breaks between the slots, as will oftenest be the case, the base of each slot will then engage its king-bolt, and the car can complete its trip.

I claim herein as my invention—

1. A continuous draw-bar, flattened and slotted, as at *c c'*, in combination with recessed bolster B and king-bolt *e*, substantially as set forth.

2. The jointed draw-bar $a\ a^1\ a^2$, flattened and slotted where it passes the bolster, in combination with the king-bolts *e*, substantially as set forth.

In testimony whereof I have hereunto set my hand.

ANDREW MILLIKEN.

Witnesses:

J. J. MCCORMICK,

CLAUDIUS L. PARKER.