

UNITED STATES PATENT OFFICE.

LORENZO D. LIVERMORE, OF HARTLAND, VERMONT.

COUPLING RAILROAD-CARS.

Specification of Letters Patent No. 8,514, dated November 11, 1851.

To all whom it may concern:

Be it known that I, LORENZO D. LIVERMORE, of Hartland, in the county of Windsor and State of Vermont, have invented a new and Improved Mode of Coupling Railroad Cars and Guiding the Trucks of the Same; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification.

The nature of my invention consists, first, in the combination of a stiff coupling with the ends of two cars and with the trucks under them, in such a manner that the position of the cars upon a track will guide the trucks and keep them at all times in their proper positions upon the track; to wit,—with the axles of the trucks at right angles to any straight track, and at right angles to the tangent of any curved railroad track, which arrangement greatly reduces the amount of wear and tear of the flanches of the wheels upon the rails—and thereby greatly increases their durability; and what is of much greater importance, my said improved method of car coupling and truck guiding, renders it impossible for a car to run off the track.

In the accompanying drawings Figure 1, is a plan or top view of a curved railroad track with the trucks of two cars resting upon it; Fig. 2 a side elevation of a truck and section of a car resting upon a track; and Fig. 3 a longitudinal vertical section of a car coupling detached.

Similar letters indicate like parts in all the figures.

The cars are represented by the beams a, a , which rest upon and connect each pair of trucks, by means of the king bolts f, f . Each coupling is composed of a flat draft bar e , inclosed in a casing b , as represented in Fig. 3. The said casing b , has a flaring mouth h , at its outer end, which leads into cavities m, m , formed above and below the draft bar, for the reception of the outwardly projecting end or tongue of the coupling of the car to be connected to. When two cars are brought together, the projecting tongue from the coupling on either car, may pass above or below the tongue of the coupling on the other car, into either of the receptacles m , prepared for it.

The couplings are united to each other by

a bolt j , (Fig. 3,) inserted into either of the holes i, i , Fig. 1; and when two couplings are united to each other, they are firm and unyielding.

The draft bar e , of a coupling, is connected to a car at the point g , by any suitable joint or contrivance that will admit of the necessary movements, and it—the said draft bar—is also connected to the truck under that end of the car, by the angular lever c, c , which projects outwardly from the transverse beam d , of the truck, and is connected to the draft bar of the coupling at the point h , by means of a rivet or bolt secured to one and working in a slot in the other, or by any other suitable joint that will admit of the requisite movements. The position of the said point g , must be governed by the position of the point h , and vice versa; and the positions of the two points g, g , and h, h , must be so governed that when the connections are all complete, and two or more cars coupled together, the axles of the trucks will be in positions at right angles to any straight track, and at right angles to the tangent of any curved railroad track over which they may pass.

The following is a formula or statement by which the relative distances between the points of attachment may be determined. Let a , represent the distance from the face of the coupler on Fig. 1, to point h ; b , the distance from the point h , to the point g ; c the distance from the point g , to f ; d , the distance from the king bolts or points f, f , of the same car; then as twice $(a+b+c)$ is to d , so is c to b .

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

The combination of a stiff car coupling with the ends of a couple of cars and with the trucks under the same, substantially in the manner herein set forth; by which the cars are made to guide the trucks under them and keep them in their proper positions on the track; to wit,—in such positions that a line drawn midway between and parallel with the truck axles, will be at right angles to any straight track, and also at right angles to the tangent of any curved railroad track.

LORENZO D. LIVERMORE.

Witnesses:

MARTIN BURK,
GEO. W. POST, Jr.