J. MILLHOLLAND.

Car Spring.

No. 3,278. Patented Sept. 23, 1843.

Fig. 1.

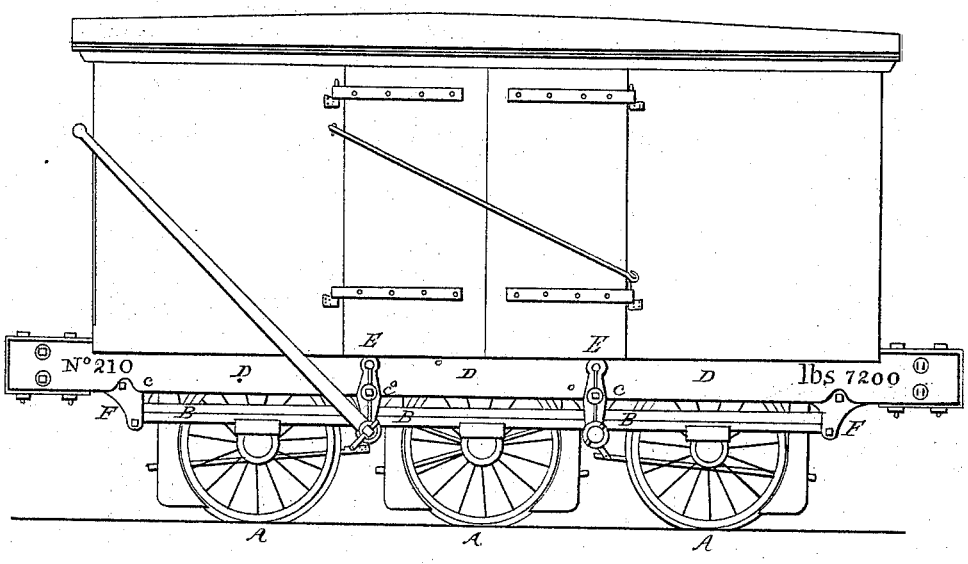


Fig. 2.

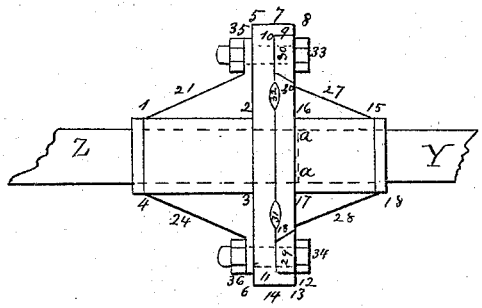


Fig. 4.

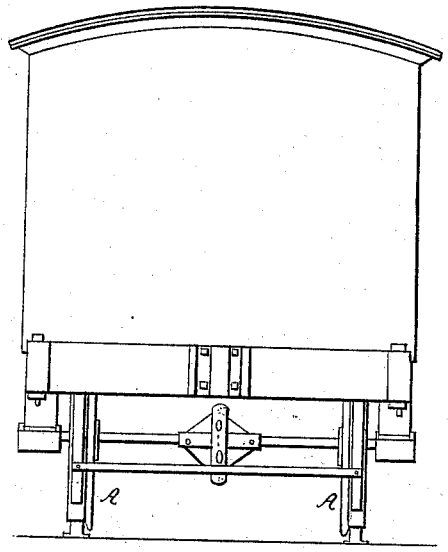
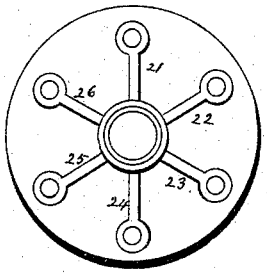


Fig. 3.



UNITED STATES PATENT OFFICE.

JAMES MILLHOLLAND, OF BALTIMORE, MARYLAND.

SPRING FOR RAILROAD-CARS.

Specification of Letters Patent No. 3,278, dated September 23, 1843.

To all whom it may concern:

Be it known that I, JAMES MILLHOLLAND, of the city of Baltimore, in the State of Maryland, have invented certain new and useful Improvements in the Manner of Constructing Railroad-Cars; and I do hereby declare that the following is a full and exact description thereof.

My main improvement consists in the substituting for the springs now in use, straight, longitudinal springs, placed on each side of the car, in such manner as that the body of the car shall rest upon, and be sustained by, them; the spring bearing on all the boxes of the journals of the side of the car to which it appertains. To support the body of the car, and allow the longitudinal springs to act, there are bearing blocks on the upper sides of the springs, upon which the car body immediately rests. These bearing blocks should be placed equidistant between the respective contiguous wheels, there being similar bearing blocks, or other supports, between the ends of the car and the fore and hind wheels, and at the same distance from these wheels with the intermediate bearing blocks. The ends of these springs are inserted into pockets secured to the body of the car. To prevent any lateral motion of the spring, I place brackets of cast-iron opposite to each of the bearing blocks, which brackets I secure by means of bolts, or otherwise, to the sides of the car, allowing them to extend below the springs. In the lower ends of these brackets, there may be holes to receive the shafts of the brakes. Or if not used for this purpose, rods of iron may be inserted in these holes, which may extend from side to side of the car immediately below the springs, they being secured in place by nuts, or keys.

The above-named springs may consist of one or more pieces, or plates, of wood, or of steel; and they are applicable to cars having any number of wheels, and whether intended for the conveyance of passengers, or for merchandise.

In the accompanying drawing, Figure 1 is a side view of a six-wheeled baggage, or merchandise, car, taken from one which I have actually built, and had for some time in use, for the purpose of testing its properties.

The wheels A, A, A, are thirty three inches in diameter.

B, B, is one of the springs, which is composed of two pieces of ash, each piece being twelve feet long, seven inches wide and two inches thick, or deep.

C, C, C, are pieces of wood, (colored red in the drawing) which constitute the bearing blocks. In the actual car from which the drawing is taken, these blocks are two inches in thickness. It is necessary in all cases that their thickness should be such as to allow of the necessary play to the spring, without its being brought into contact with the lower side piece, D, D, of the car before the spring is so much bent as to endanger its breaking. The side piece, D, D, is eleven inches in depth, and is so framed as to allow a space of an inch and a half, at least, between the bottom of the car and the flanch of the wheel.

E, E, are the cast-iron brackets, above named, and F, F, are pockets of cast-iron which receive the ends of the springs, and may also perform the office of end bearing blocks.

In constructing my cars, I lengthen the journals of the axles sufficiently to allow that end play, or lateral motion, which may be necessary to enable them to pass freely around the shortest curve on the road on which they are to be used. This is a well-known device, but as this end-play is not desirable excepting for running around curves, I usually employ plates of steel, which I drop into the boxes at the ends of the axles, when the cars are running on straight, or on nearly straight, parts of the road, a space being provided in the box for that purpose.

The dimensions of the respective parts, as above given, may be varied; and they may be otherwise modified, without, in any way, changing the nature of this part of my improvement in the manner of combining the spring with the car. I have also adopted a new and advantageous mode of so connecting the pairs of wheels on each axle as to admit of the revolving of said wheels with different velocities when the car is running around curves. For this purpose, I divide each axle into two parts by a transverse section near its center, and upon each of these parts I affix a disk, and the flat faces of these disks are held together by suitable means, to be presently described, so as to admit of their turning upon each other,

while by their width, or diameters, they serve to connect the two sections of the axle in a manner which insures its steady action.

In Fig. 2 Y, and Z, show portions of the two segments of the axle of a car. On the part Z, is firmly secured a cast-iron collar, shown at 1, 2, 3, 4. A flanch, 5, 2, 3, 6, extends out from this collar, constituting one piece with it, and presenting a flat face, or disk, on its inner side, of about sixteen inches in diameter. This flanch, or disk, may be an inch and a half in thickness. It has a projecting rim, 7, 8, 9, 10, 11, 12, 13, 14, surrounding it, and rising from its face about an inch and a half. A similar collar, 15, 16, 17, 18, is affixed to the segment Y, of the axle; and the inner end of this collar is also formed into a disk, 19, 20, which may be about a foot in diameter, the face of which is to be in contact with that on Z. 21, 22, 23, 24, 25, 26, 27, and 28, Figs. 2 and 3, represent wings, or brackets, cast onto the collars and disks to strengthen them; Fig. 3, representing the outer face of one of the disks. The disk 19, 20, is beveled around its outer edge, as shown in the drawing; 29, 30, is a cast-iron ring which fits within the projecting rim of the larger disk, and is beveled on its inner edge so as to fit the bevel of the smaller disk; the inner end of the axle Z, projects beyond the face of its disk, and enters a cavity in the center of the smaller disk, the termination of which is shown by the dotted line *a*, *a;* the ring, 29, 30, is to be confined in place by screw bolts, 33, 34, 35, 36. The disks and rim are turned perfectly true, and when the whole are in place the disks will turn readily upon each other. The ring, 29, 30, is not to be placed in actual contact with the face of the larger disk, but may be about the sixteenth of an inch from it, so as to admit of the adjusting of the disks to each other, in case of any wear; 31, 32, are circular cavities in the faces of the disks to contain tallow, or other lubricating article. Fig. 4, is an end view of a car, with my improvement thereon.

The dimensions above named may be varied to any convenient extent, but those which I have given are such as I have essayed, and found to answer well.

Having thus fully set forth the nature of my improvements on railroad cars, and shown the manner in which the same are carried into operation, what I claim therein as new, and desire to secure by Letters Patent, is,

The combining with such cars of a spring on each side, formed of wood, or of metal, extending along over all the bearings of the axles, having bearing blocks between each of the wheels, and being received within pockets at their ends, as set forth; the whole being arranged, combined and operating, substantially as above described.

JAMES MILLHOLLAND.

Witnesses:
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