C. W. MANSFIELD.

Car-Truck.

No. 164,651. Patented June 22, 1875.

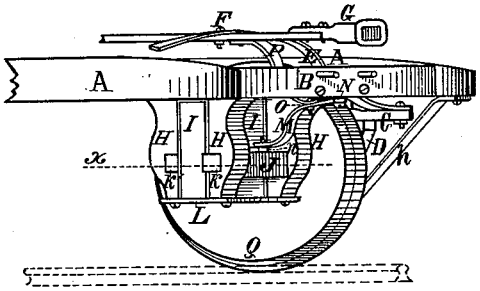

Fig. 1.

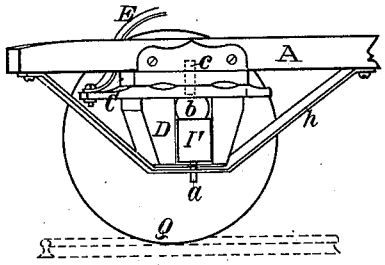

Fig. 2.

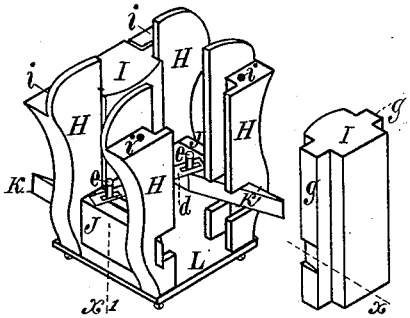

Fig. 3.

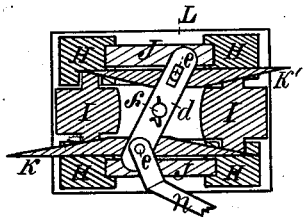

Fig. 4.

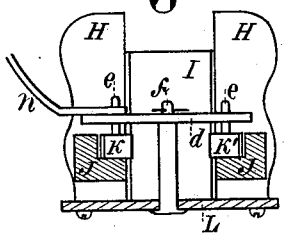

Fig. 5.

Witnesses:

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CHARLES W. MANSFIELD, OF BRAINTREE, MASSACHUSETTS.

IMPROVEMENT IN CAR-TRUCKS.

Specification forming part of Letters Patent No. **164,651**, dated June 22, 1875; application filed May 28, 1875.

To all whom it may concern:

Be it known that I, CHARLES W. MANSFIELD, of Braintree, in the county of Norfolk, State of Massachusetts, have invented a certain new and useful Improvement in Car-Trucks, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which my invention appertains to make and use the same, reference being had to the accompanying drawing forming a part of this specification, in which—

Figure 1 is an isometrical perspective view, showing the forward end of the truck; Fig. 2, an elevation showing the side opposite that represented in Fig. 1; Fig. 3, an isometrical perspective view, showing the lever mechanism; Fig. 4, a sectional view taken on the line *x*, Fig. 1; and Fig. 5, a sectional view taken on the line *x'*, Fig. 3.

Like letters of reference indicate corresponding parts in the different figures of the drawing.

My invention relates to means for adapting the truck to run readily on a curved track without injury either to the track or wheels; and consists in a novel construction and arrangement of the parts, as hereinafter more fully set forth and claimed, by which a simpler and more effective device of this character is produced than is now in ordinary use.

The nature and operation of my invention will be readily obvious to all conversant with such matters from the following description.

In the drawing, A A represent the side pieces of the truck, which are framed together or connected, in the usual manner, by the end pieces or cross-beams B. Extending longitudinally through the center of the truck, and arranged in parallelism between the side pieces A A, are two beams, (not shown,) framed into and supported by the end pieces B. Projecting vertically from these are four lug-bars, H, connected in pairs by the cross-beams J—that is to say, a lug on each center beam is coupled to the lug directly opposite on the companion beam. The contiguous faces or sides of the lugs on each beam are grooved vertically at *i i* to receive the boxes I, in which the axles of the truck are journaled, the boxes being provided with a tenon on each side, fitting into the grooves, and so constructed and arranged as to be susceptible of reciprocating lateral movements on the bed L, on which they rest, the bed being attached to the lower ends of the lugs. Arranged midway between the four lugs H, and projecting upwardly from the bed L, there is a support, *f*, on which the horizontal lever *d* is pivoted at its center. This lever is slotted near its ends to receive the studs *e e* of the sliding key-bars K K', which bars are fitted to work laterally in grooves cut in the lugs H immediately inside of the beams J. The key-bars are straight upon their outer sides, but inclined or chamfered each way from the center to the ends on their inner sides, forming double wedges, as best shown in Fig. 4, the tenons on the boxes I I being beveled to correspond with the wedges at the points where the same come in contact therewith, as shown at *x*, Fig. 3.

It will be understood that in my improved truck the axle is divided, or that each wheel is provided with an independent axle, the inner ends of the axles of each pair of wheels being journaled in the boxes I I and the outer or wheel ends in the boxes I', as seen in Fig. 2, but one wheel, Q, and one outer box, I, being represented in the drawing. The outer boxes I' are arranged to slide vertically between the standards D, and are provided with superimposed springs *b*, the standards being framed together or connected at the top and bottom, and mounted on the journals *a c* in the braces *h* and frame A. Attached to the upper ends of the standards D there is a horizontal lever, C, to which the long bent lever E is jointed, the last-named lever being also pivoted at F to the draw-bar G. Attached to the under side of the draw-bar there is a bent arm, P, which is rigidly coupled at O to a corresponding arm, M, jointed at *n* to the lever *d*.

In the use of my improvement, when the truck is passing around a curve, the tendency of the frame-work A and of a car, if mounted on the same, will be to advance in a right or direct line, while the bar G will be drawn in a line tangential to the same; but the bar being connected by the lever E to the lever C, and by the arms M P to the lever *d*, the key-bars K K' will be moved and the boxes I I' adjusted to bring and maintain the axles at

right angles to the draw-bar, and thus prevent all undue slipping and cramping of the wheels, in a manner which will be readily apparent without a more explicit description.

It will be obvious that the arrangement of the boxes I I and bars K K′ is such, in relation to the draw-bar, that the boxes and axle will always be adjusted automatically to correspond with the line of draft, and that the bars K K′ will always be in contact with the boxes I I, thus preventing all backlash or vibration of the same.

It will be obvious that the lever E is but auxiliary to the arms M P, and may be omitted, if desired; also, that a wheel and axle so mounted is well adapted to other purposes than for use in a car-truck, as described.

Having thus explained my invention, what I claim is—

1. In combination with the wheel Q, mounted upon an independent axle, the swiveling box I′, sliding boxes I I, key-bars K K′, lever *d*, arms O P, and draw-bar G, combined to operate substantially as set forth.

2. The auxiliary lever E, in combination with the bar G and swiveling box I′, substantially as set forth and specified.

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