

No. 112,897.

PATENTED MAR. 21, 1871.

C. S. BUCK.
RAILWAY CAR TRUCK.

Fig. 1.

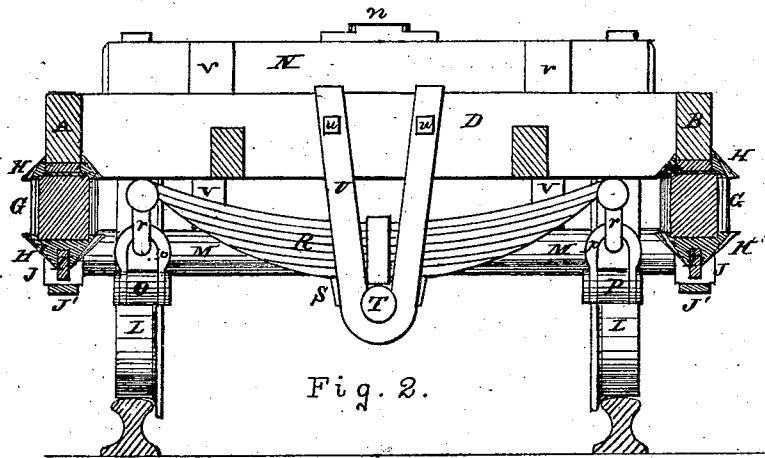
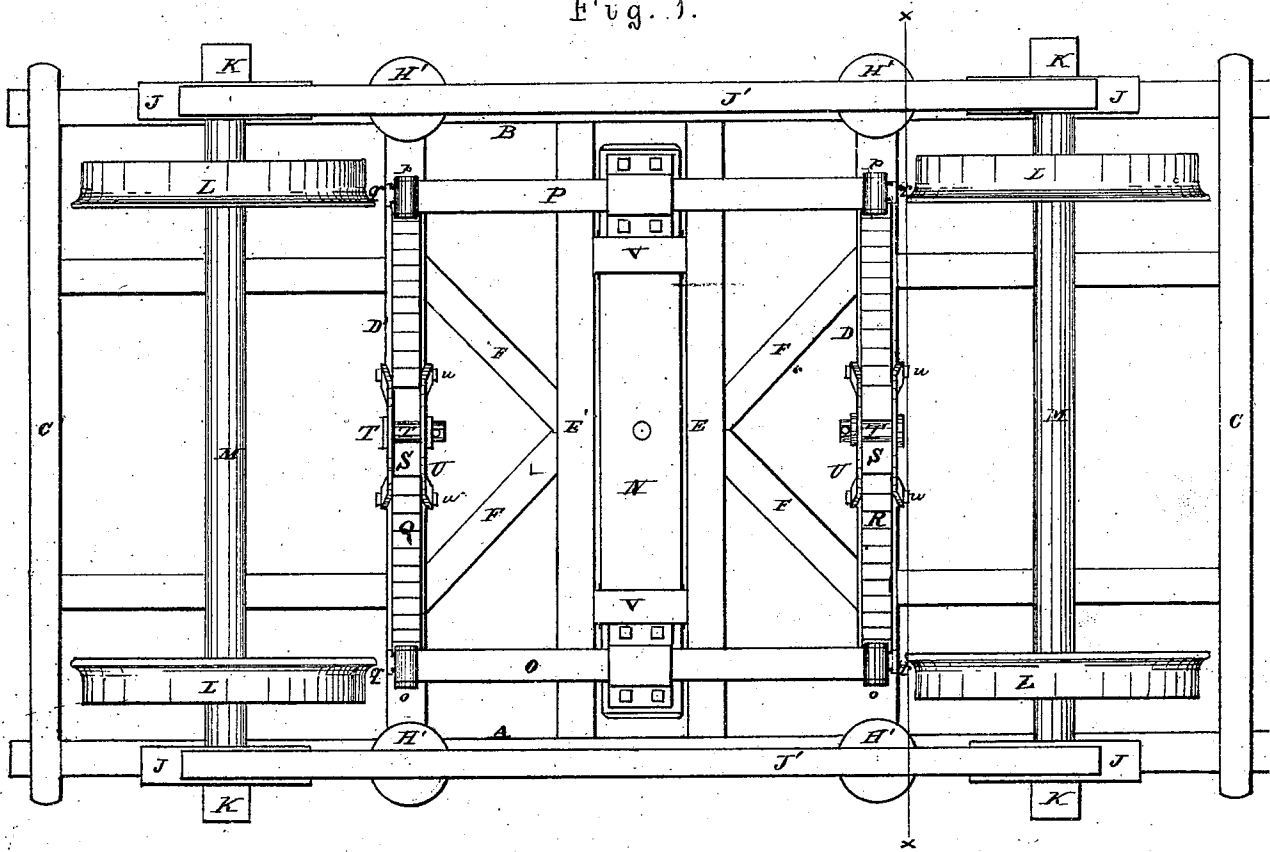


Fig. 2.

Attest

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CHAUNCEY S. BUCK, OF ST. LOUIS, MISSOURI, ASSIGNOR TO HIMSELF
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Letters Patent No. 112,897, dated March 21, 1871.

IMPROVEMENT IN RAILWAY-CAR TRUCKS.

The Schedule referred to in these Letters Patent and making part of the same.

I, CHAUNCEY S. BUCK, of the city and county of St. Louis, and State of Missouri, have invented a new and useful Improvement in Swing-motion Car-trucks for Railways, of which the following is a specification.

Nature and Object of the Invention.

My invention consists in the firm attachment, beneath the ends of the bolster, of springs extending across at right angles with the bolster, and whose ends are connected by shackles to the ends of springs suspended from the intermediate cross-ties of the truck.

The object is to give an easy and durable combined spring and swing-motion, and to bring the bearing directly over the springs of the equalizer bar, so that there shall be no tendency to warp or strain the frame of the truck.

Description of the Drawing.

Figure 1 is a bottom view of the truck.

Figure 2 is a transverse section at the line X-X, fig. 1.

General Description.

A B are the pedestal or side timbers; and C C' D D' E E' are, respectively, the outside, intermediate, and center cross-ties.

F are braces, extending obliquely from center to the intermediate cross-ties.

G are the equalizer springs having caps H secured beneath the pedestal timbers, and steps H' secured to the equalizer bars I.

J are the pedestals, connected by longitudinal straps J'.

K are the axle-boxes.

L are the wheels; and

M, the axles.

N is the bolster; and

n, the center plate.

O P are half elliptical springs, firmly and rigidly attached at their mid-lengths to the lower side of the bolster, near the ends of the latter.

At the outer ends of the springs O P are loops or links o p, which hang in similar loops q r, at the outer ends of the springs Q R, which are attached at their mid-length to step-blocks S.

The step-blocks are supported on pins T, passing through the loops of the hanger straps U, which pass over the intermediate cross-ties, and are held in place by bolts u, or otherwise.

V are straps or stirrups, whose ends are attached to the tops of the center cross-ties E E', and which pass down between these cross-ties and the bolster, and beneath the latter. These stirrups answer two

purposes: first, as friction-plates, against which friction-plates v, attached to the sides of the bolster, impinge; and, second, as safety loops to sustain the bolster in case of the breakage of a spring.

My device admits of some modification without change of principle; for instance, in applying it to short freight trucks, rigid equalizer bars may take the place of the springs O P, such bars having the shackle connection o p q r with the springs Q R, so as to allow the swing of the bolster upon the shackle connection. This modification would not furnish so perfect an arrangement as that shown, but would answer the purpose for most freight-cars, and would constitute a better arrangement than that in ordinary use.

I prefer to make the springs Q R of sufficient power to hold up their ends on ordinary occasions in contact with the lower side of the intermediate cross-ties; but having sufficient flexibility to be brought into use as springs on any extraordinary occasions.

The bolster has constant and free capacity for swing-motion on the shackle connections of the springs and spring motion on the springs O P, and the equalizer springs G.

The upward movement of the wheel on passing over an inequality of the track first raises the end of the equalizer-bar resting on the journal-box; the strain then comes on the spring G, which is preferably located vertically beneath the end of the intermediate cross-tie D or D', which end may be raised, but never to the same extent as the wheel, and still-decreased movement of the spring step S is caused.

This step turns freely on its supporting pivot-pin T, so that there is no racking strain on the attachments, and as one end of the tie is raised, the spring Q or R is raised equally at both ends, and but a slight and equal movement is communicated to the springs O P, and in a still-decreased extent to the bolster.

The whole weight of one end of the car comes on the intermediate cross-tie D or D', directly from the springs O P Q R, and as the equalizer springs are nearly or quite vertically beneath the said ends of the ties, there is no warping strain upon the pedestal timbers, and the truck may be made the full length of a six-wheel truck, so as to give a long and steady bearing upon the track without rendering it weak, owing to the distance between the wheels and the central point, upon which the body of the car is supported.

The common short four-wheel truck is unsteady, owing to the short bearing upon the track, and when the length of the truck is increased, so as to lessen this difficulty, the trucks are rendered weak owing to the distance between the wheels, as stated, the bolster being supported on the center of the truck.

With my truck, as before described, the bearings

of the car-body on the frame of the truck are placed near to the wheels and directly upon the tie-bar over the equalizer springs, so that there is no injurious strain.

Considerable difficulty attends the use of six-wheeled trucks, especially on uneven tracks, or those having short curves, because the wheels must necessarily be in a straight line, and on short curves the axles have hard side pressure against the boxes, and the flange of the wheels against the rails, causing considerable wear of the journals and boxes, and also the wheels and rails, as well as straining the truck.

The six-wheel truck is also strained by the unevenness of the track, as it is supported in turn on each pair of wheels, and thus the steadiness gained by an extended bearing on the track is lost by the addition of the third pair of wheels.

Claim.

I claim as my invention—

A swing-motion car-truck, having transverse springs Q R, applied to the intermediate cross-ties D D, and connected at their ends by shackles o q p r, and longitudinal springs or bars O P to the bolster N, as herein represented and described, for the purposes set forth.

In testimony of which invention I have hereunto set my hand.

CHAUNCEY S. BUCK.

Witnesses:

SAML. KNIGHT,
GEORGE ELLIOT.