

(No Model.)

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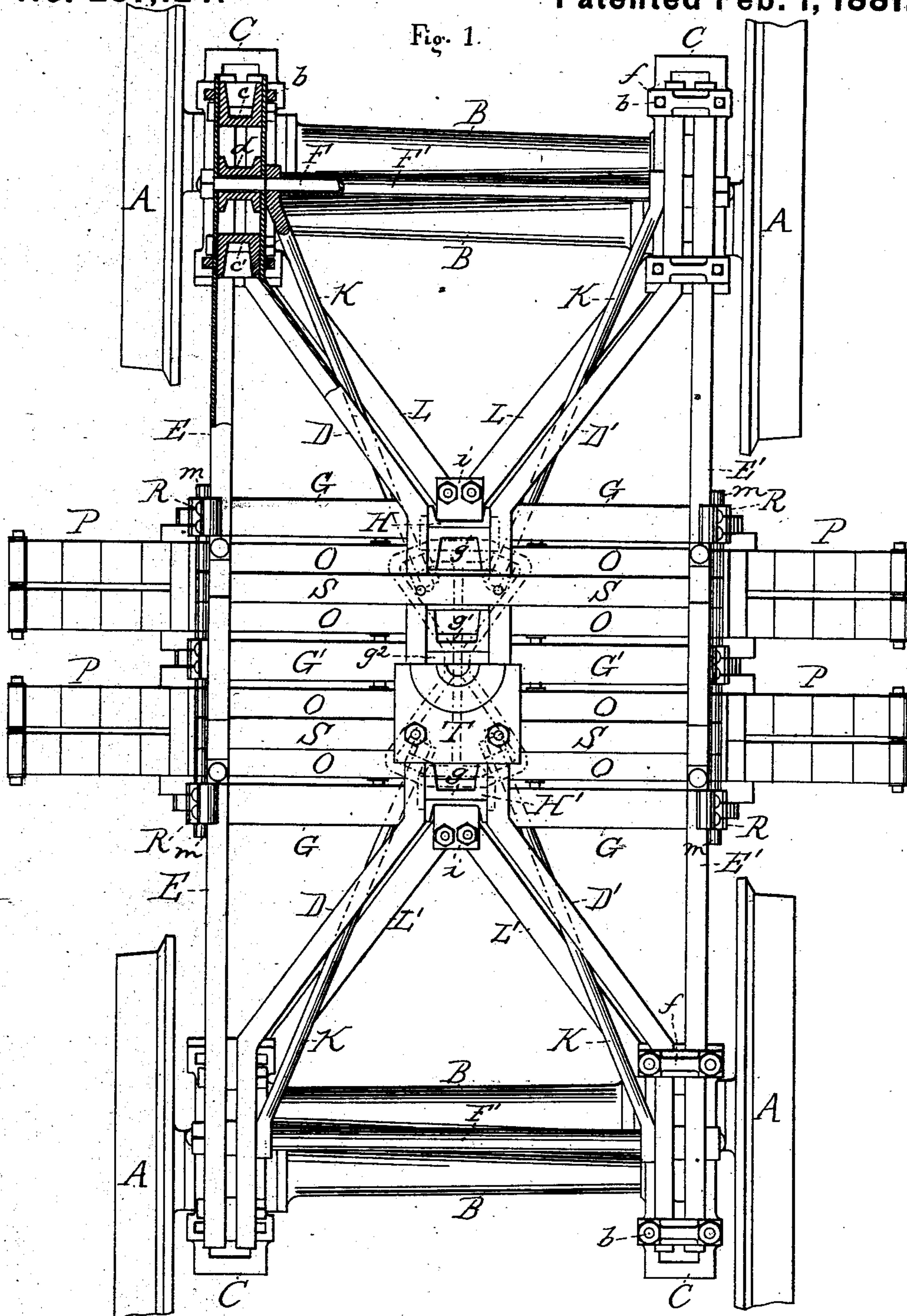
L. D. PEYTON, dec'd.

R. PEYTON, Administratrix.

Car Truck.

No. 237,124.

Patented Feb. 1, 1881.



WITNESSES

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H. H. H.

(No Model.)

3 Sheets—Sheet 2.

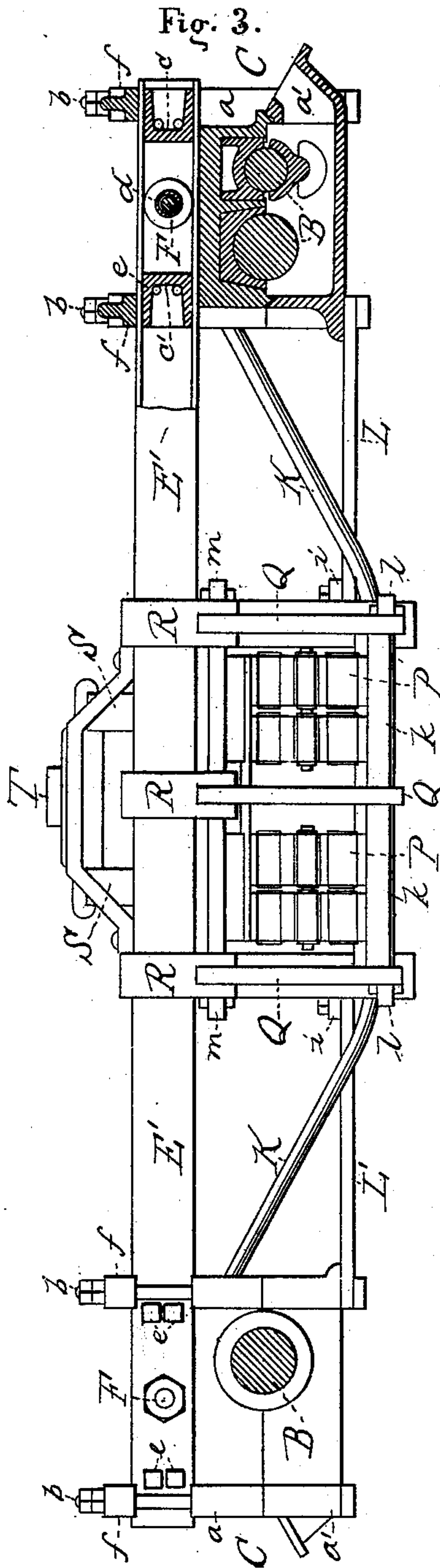
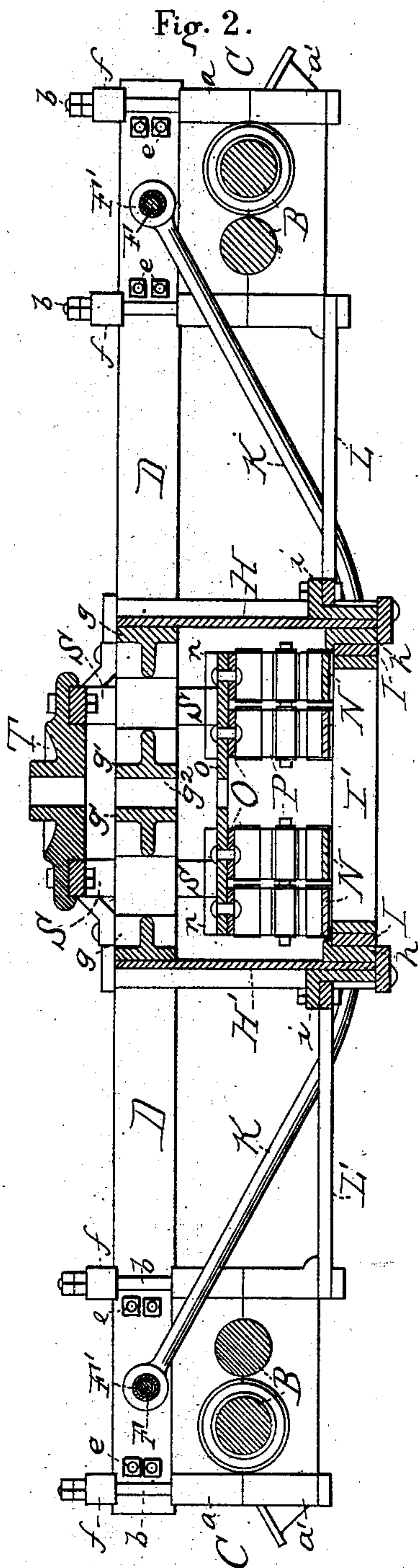
L. D. PEYTON, dec'd.

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Car Truck.

No. 237,124.

Patented Feb. 1, 1881.



WITNESSES

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(No Model.)

3 Sheets—Sheet 3.

L. D. PEYTON, dec'd.

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Car Truck.

No. 237,124.

Fig. 4. Patented Feb. 1, 1881.

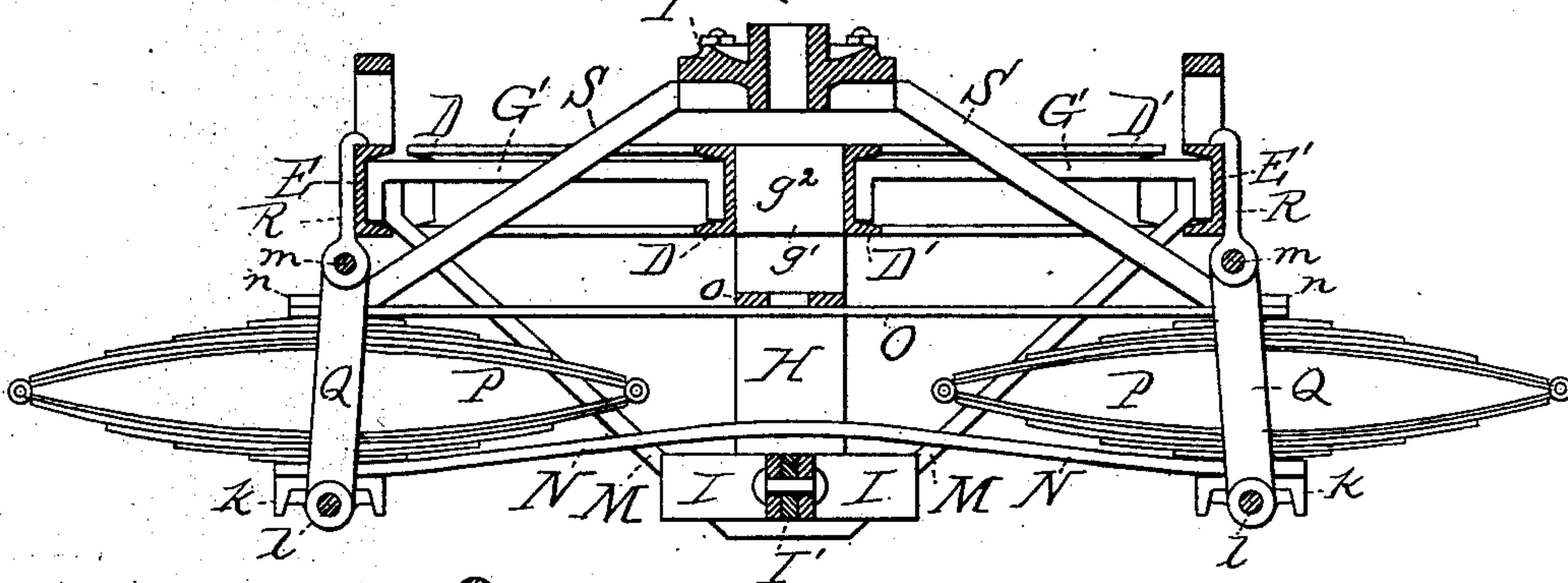
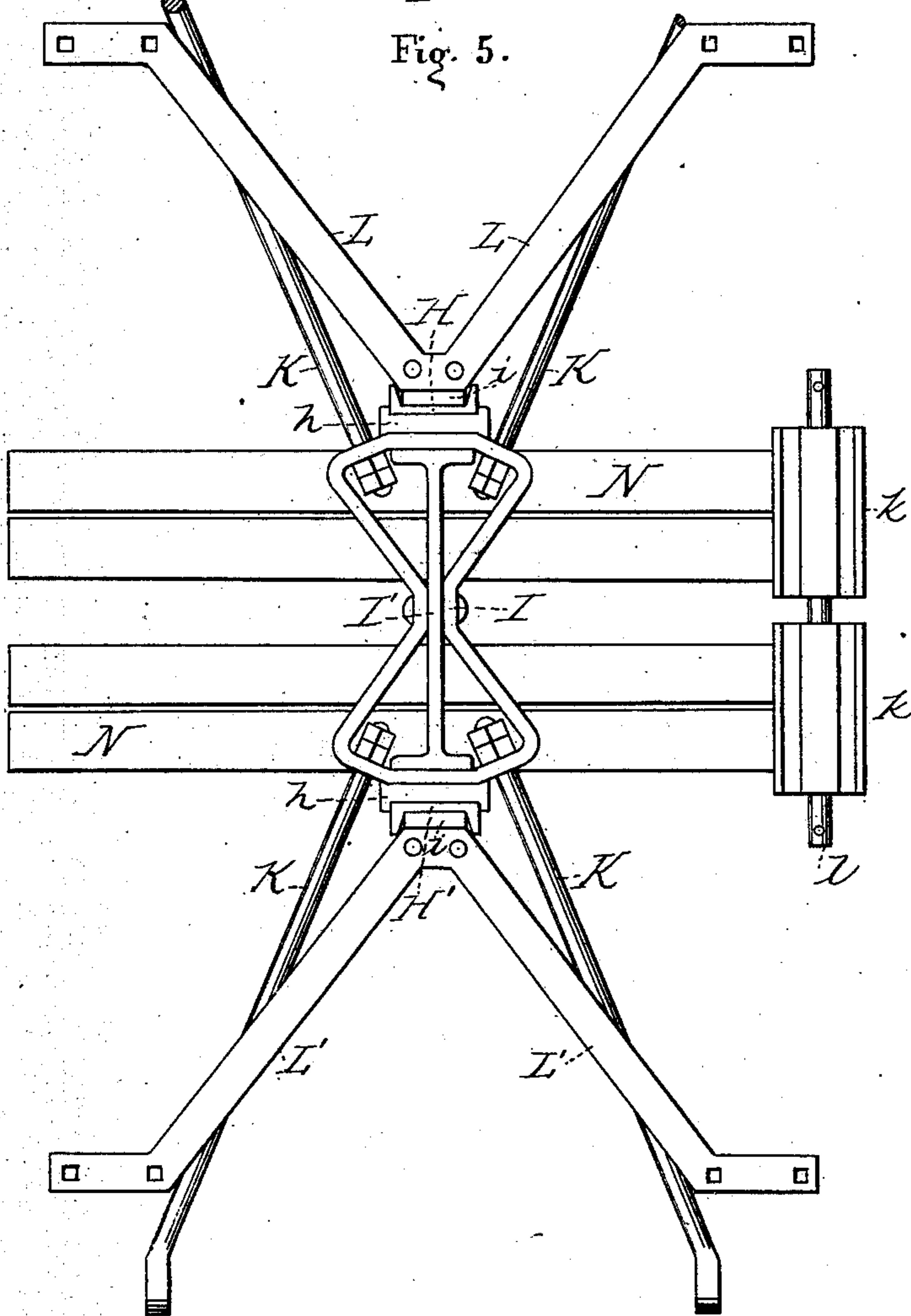


Fig. 5.



WITNESSES
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UNITED STATES PATENT OFFICE.

ROSA PEYTON, OF CHICAGO, ILLINOIS, ADMINISTRATRIX OF LARAMIE DOUGLASS PEYTON, DECEASED.

CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 237,124, dated February 1, 1881.

Application filed November 22, 1880. (No model.)

To all whom it may concern:

Be it known that LARAMIE DOUGLASS PEYTON, deceased, late of the city of Chicago, county of Cook, and State of Illinois, did invent a certain new and useful Improvement in Car-Trucks, of which the following is a specification.

The object of the invention is to produce a practical car-truck having the axle journal-bearings located inside of the wheels, and having a central support for the car-body, sustained directly from said inside axle-bearings by diagonal trusses, so that when one wheel is passing over a broken rail or any depression in the track the car will be supported by the other three wheels, and the fourth wheel will be carried over the broken rail or depression without damage. This feature of the truck will prevent many accidents, and it will also make the cars run much easier, since the ends of rails will be passed in the same manner without noise or jar.

The invention also involves the peculiarities in construction of such a truck, in order to provide for a swinging bolster, so as to allow the car-body a limited lateral movement upon the truck, and, further, to enable the use of elliptical springs, and to provide proper connections with the peculiar journal-boxes of the independent axles, upon which application for Letters Patent has already been made.

The invention consists in the several novel devices and combinations of devices employed to accomplish the above purposes, all as fully hereinafter explained, and pointed out by the claims.

In the accompanying drawings, forming a part hereof, Figure 1 is a top view of the truck with one half of the center plate removed, and with the main frame above one axle-box in horizontal section; Fig. 2, a vertical central longitudinal section through the truck-frame, the wheels being removed; Fig. 3, a side elevation of the truck-frame with the wheels removed, one of the axle-boxes being in section; Fig. 4, a vertical central cross-section through the truck-frame; and Fig. 5, a bottom view, showing some parts of the truck-frame.

Like letters denote corresponding parts in all five figures.

A represents the wheels of the truck, which are four in number, and are mounted on the ends of independent axles B, so that in running around curves the wheels on one side of the truck can travel faster than those on the other side. The axles B are arranged side by side, as shown, and their journals are inclosed by boxes C, each of which has bearings for two journals. Each box is made in two horizontal parts, *a a'*, which are provided with lugs at their corners, and through these lugs pass bolts *b*, that secure the parts *a a'* together and connect the box with the truck-frame. The two wheels on each side of the truck are arranged at equal distances from a central line, so that they will not have any tendency to twist the truck from the rails in running. This necessitates the placing of the wheels nearer together on one side of the truck than on the other.

The peculiar independent axles and their boxes are included in a separate application for Letters Patent, and they are not therefore described more fully herein.

The main or top frame of the truck, which rests on the axle-boxes, is composed principally of two diagonal bars, *D D'*, and two side bars, *E E'*. The opposite diagonal bars are parallel with each other at their ends, and extend longitudinally with the truck across the tops of the axle-boxes on their inner sides, and they are then bent laterally toward each other and run parallel, close together, past the center of the truck, when they branch out again to the axle-boxes at the other end of the truck. The side bars are straight and connect the axle-boxes at the sides of the truck. Such side bars rest upon the axle-boxes at their ends, as shown at the outer edge of said boxes. Both the diagonal bars and the side bars are made from rolled wrought-iron channel-bars, which have a vertical web and top and bottom horizontal flanges projecting on one side of the web. Upon the axle-boxes the flanged sides of the diagonal and side bars are turned toward each other, and between each set of bars, to keep them rigidly the proper distance apart, are placed two block-castings, *cc'*, above the ends of the box, and a spool-casting, *d*, above the center of the box. The side and di-

agonal bars above each box are connected together by bolts *c*, passing through the flanges of the block-castings *c c'*, while the bars above the laterally-opposite boxes are connected by tie-
 5 rods or long bolts *F*, which pass through the diagonal and side bars and through the spools *d*. The bolts *F* have nuts on their outer ends, which draw the two sets of bars together at their ends, while upon each bolt, between the bars, is
 10 placed a gas-pipe, *F'*, which holds the bars and the boxes rigidly the proper distance apart. Above the ends of the boxes saddles *f* are placed across the diagonal and side bars, and the bolts *b*, which pass up through the lugs of
 15 the boxes, extend through these saddles and are provided with nuts on their upper ends, which draw the bars solidly down upon the boxes, and at the same time secure the sections of the boxes together.

20 Between the central parallel portions of the diagonal bars *D D'* are placed four block-castings, *g g'*, having flanges projecting on one side only. The end blocks, *g*, are placed near the ends of the central parallel parts of the
 25 diagonal bars, and are turned with their flanges inward. The two intermediate blocks *g'* are arranged on opposite sides of the center of the truck, and have their plain sides facing each other. They form between them a laterally-
 30 elongated opening, *g²*, for the king-bolt of the car, so that such king-bolt can move laterally therein across the truck, to allow for the swinging of the car-body on its bolster, but cannot play longitudinally of the truck. All four
 35 block-castings *g g'* are riveted or bolted to the diagonal channel-bars.

The diagonal bars are connected with the side bars at the center by cross-bars *G G'*, of flat iron. These flat cross-bars are bent down-
 40 wardly at their ends, and rest between the horizontal flanges of the diagonal and side bars, as shown in Fig. 4. There are preferably six of these cross-bars, the four end bars, *G*, extending from the ends of the parallel portions of the diagonal bars to the side bars, and
 45 the two central bars, *G'*, connecting the centers of the diagonal bars and the side bars. These parts complete the upper or main frame of the truck, which, it will be seen, is an exceedingly strong and rigid frame, and has the
 50 axle-boxes connected diagonally with a central point, which is braced laterally to give it great strength and stiffness.

55 *H H'* are two posts of channel-iron, which, at their upper ends, are secured by rivets or bolts to the end block-casting, *g*, and lie between the diagonal channel-bars *D D'*, and may also be secured to them. These posts extend downwardly to points a short distance
 60 below the level of the bottoms of the axle-boxes, and have secured to their lower ends a horizontal frame, *I*, which rests between them, blocks *h* being placed between the ends of the frame and the posts to make room for side
 65 braces, that will be presently described. The frame *I* is, in general shape, of the form of the letter *X* with its ends closed. Through the

center of this frame, to give it stiffness, runs a bar, *I'*, having *T* ends. This bar is secured at the center and ends to the frame *I*. Four tie-
 70 rods, *K*, extend from the ends of the frame *I*, to which they are secured, upwardly and diagonally, to the inner sides of the diagonal channel-bars above the center of the axle-boxes. The diagonal tie-rods *K* have eyes forged in
 75 their upper ends, through which eyes the bolts *F* pass.

The gas-pipe sleeves *F'* are made of such length that the eyes of the tie-rods are accommodated between the ends of said gas-pipes
 80 and the sides of the diagonal channel-bars, the tie-rods being rigidly held with the other parts when the nuts on the ends of the bolts *F* are tightened.

To the lower ends of the posts *H H'*, on their
 85 outer sides, are secured wrought-iron blocks *i*, which have flanges at their upper ends, to which flanges are bolted the inner angles of horizontal *V*-braces *L L'*, extending from the
 90 blocks *i* to the under sides of the axle-boxes, where their ends are held by two of the bolts of each axle-box. These braces serve to prevent the wrenching of the axle-boxes from position by giving them a bottom as well as top
 95 support. Four side braces, *M*, extend from the blocks *i* upwardly and outwardly laterally to the side bars, *E E'*, where their bent ends rest under the outer ends of the end cross-bars
 100 *G*. Each pair of the side braces, *M*, is forged from a single piece of flat iron, and is riveted to the blocks *i* by means of rivets formed directly on such blocks.

The swinging spring-bolster is constructed in the following manner: It has four lower
 105 cross bars or plates, *N*, and four upper cross bars or plates, *O*. These are arranged in pairs, as shown, between the posts *H H'*, and between the main frame and the frame *I*. Between the ends of the upper and lower cross-bars are placed the elliptical springs *P*. There are
 110 eight of these springs, and they are arranged transversely in pairs and secured at their centers to such cross-bars. Each pair of lower cross-bars is connected at the ends by blocks
 115 *k*, secured on the under sides of the cross-bars, through which blocks pass the two lower pivot-bolts, *l*. These bolts form pivots for the links
 120 *Q*, (three on each side,) which extend from hangers *R*, secured to the side channel-bars, *E E'*. The links are pivoted to the hangers by bolts *m*. Each pair of upper cross-bars, *O*,
 125 is connected at the ends by blocks *n*, from which rise brace-bars *S*, extending inwardly and upwardly, between the cross-bars *G G'*, to points above the main frame, where the brace-bars are connected by the center plate, *T*, which
 130 is bolted thereto. The car-body at one end rests upon this plate, and the king-bolt extends centrally down through it, through the elongated opening *g²*, and through a hole in a
 135 plate, *o*, which extends centrally across the four upper cross-bars, *P*, and binds them all together. By these means the car-body is allowed to swing laterally a short distance on

the truck, this movement being limited by the length of the opening g^2 . The king-bolt has two bearings, and the elongated opening g^2 prevents the straining of the parts of the bolster.

The diagonal channel-bars, the posts $H H'$, frame I , and diagonal tie-rods K form true diagonal trusses between the axle-boxes and the center of the truck.

The swinging bolster is supported directly from the side bars; but these side bars are braced laterally from the center and supported from the center by the upwardly-inclined side braces, so that the weight upon the center plate is finally sustained at the center of the truck by the diagonal trusses. Thus it will be seen that the truck possesses all the advantages of safety and ease in running that trucks constructed with diagonal trusses are claimed to have, and at the same time a practicable truck is produced having a swinging bolster and provided with elliptical springs, which are preferable to spiral springs.

The channel-bars give the truck great strength, and, in connection with the other parts, make a strong and rigid structure.

This truck is cheaper and lighter than those now in use, and is much smaller, by reason of being confined wholly within the wheels. The inside bearings being much nearer together than outside bearings, the weight of the car acts with less leverage, and a stronger truck can be produced with lighter materials.

What is claimed as the invention of the said L. DOUGLASS PEYTON is—

1. In a car-truck supported from inside bearings, the combination of the diagonal vertical trusses with a bolster hung so as to swing laterally across the truck, substantially as described and shown.

2. In a car-truck supported from inside bearings, the combination of the diagonal vertical trusses with the laterally-swinging bolster and the elliptical springs, substantially as described and shown.

3. In a car-truck supported from inside bearings and trussed diagonally, the diagonal and side bars secured together substantially as described, and made of channel-iron, as set forth.

4. In a car-truck supported from inside bearings and trussed diagonally by vertical trusses, the main frame composed of diagonal and side bars, $D D' E E'$, and connected together above the axle-boxes by tie-rods F , substantially as described and shown.

5. In a car-truck supported from inside bearings and trussed diagonally, the main frame composed of diagonal and side bars, in combination with the tie-rods F and pipe-sleeves F' , for connecting such bars above the axle-boxes at the ends of the truck, substantially as described and shown.

6. In a car-truck supported from inside bearings, the combination, with the main horizontal frame $D D' E E'$, having central posts, $H H'$, and a frame, I , connecting the lower ends

of said posts, of diagonal truss-rods K , connecting such lower frame with the main frame above the axle-boxes, substantially as described and shown.

7. In a car-truck supported from inside bearings, the combination, with the main horizontal frame having central posts, and a frame connecting the lower ends of said posts, of diagonal tie-rods K and the cross-rods F and sleeves F' , substantially as described and shown.

8. In a car-truck supported from inside bearings, the combination, with the main frame, composed of diagonal and side bars, $D D' E E'$, connected together at their ends, the diagonal bars being connected together at the center of the truck and braced from the side bars by cross-bars $G G'$, of the central posts, $H H'$, the diagonal truss-rods K , connecting the lower ends of the posts with the corners of the main frame, and side braces, M , supporting the side bars from the lower ends of the posts, substantially as described and shown.

9. In a car-truck supported from inside bearings, the combination, with the main frame, composed of diagonal and side bars, $D D' E E'$, trussed diagonally from the center by vertical trusses, and braced laterally by bars $G G'$ and braces M , of the swinging bolster, hung from the side bars, $E E'$, and the brace-bars S , supporting the center plate, T , from the bolster above the diagonal bars, substantially as described and shown.

10. In a car-truck supported from inside bearings, the combination, with the main frame, composed of diagonal and side bars, $D D' E E'$, trussed diagonally from the center by vertical trusses, and braced laterally by bars $G G'$ and braces M , of the swinging bolster, composed of lower and upper plates, $N O$, the lower plate being hung from the side bars, $E E'$, the elliptical springs P , held between such plates $N O$, and the brace-bars S , supporting the center plate, T , from the bolster above the diagonal bars, substantially as described and shown.

11. In a car-truck supported from inside bearings and trussed diagonally, the combination, with the diagonal bars $D D'$ and side bars, $E E'$, secured together above the axle-boxes, said diagonal bars being secured together at the center, and forming the laterally-elongated king-bolt slot g^2 , of the bolster-plates $N O$, and springs P , hung from the side bars, the cross-plate o , having king-bolt hole, and the center plate, supported from the bolster above the diagonal bars, substantially as described and shown.

12. In a car-truck supported from inside bearings, the combination, with the axle-boxes C , connected laterally above the axles, of the main frame, composed of diagonal and side bars, $D D' E E'$, connecting the tops of such axle-boxes longitudinally and diagonally, and trussed diagonally from the center by vertical trusses, and the horizontal braces $L L'$, con-

necting the queen-posts of the trusses with the lower sides of the axle-boxes, substantially as described and shown.

5 13. In a car-truck supported from inside bearings, the combination, with the diagonally-trussed frame and the long axle-boxes, of the double axles B B, journaled at each end in said boxes, substantially as described and shown.

10 14. In a car-truck supported from inside bearings, the long axle-boxes C, divided hori-

zontally into two parts, the diagonally-trussed frame, connected with the top and bottom of said axle-boxes by the same bolts that hold the parts of the boxes together, and the dou- 15 ble axles B B, journaled at each end in said boxes, substantially as described and shown.

ROSA PEYTON,
Administratrix.

Witnesses:

F. W. KASEHAGEN,
OLIVER W. MARBLE.