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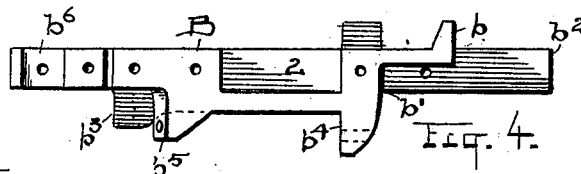
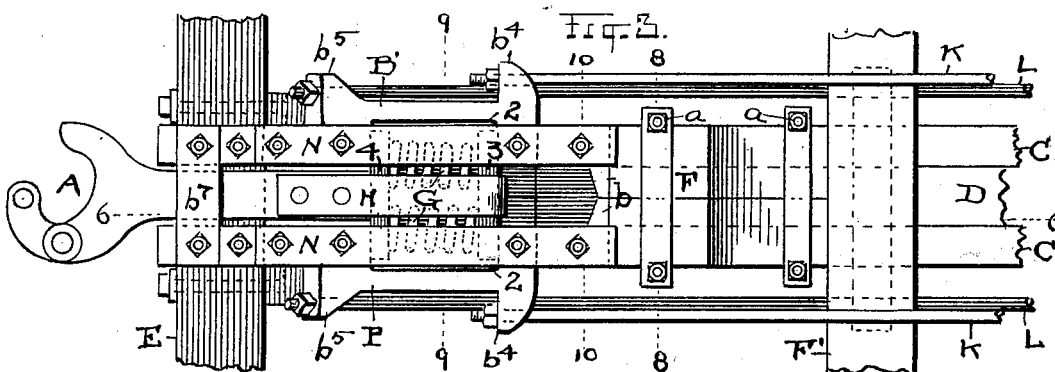
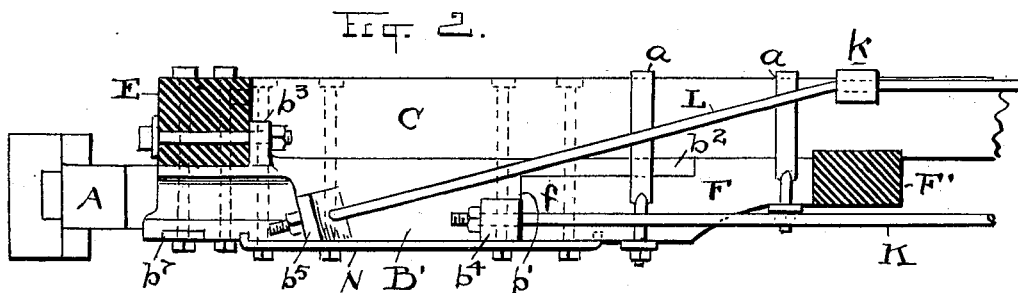
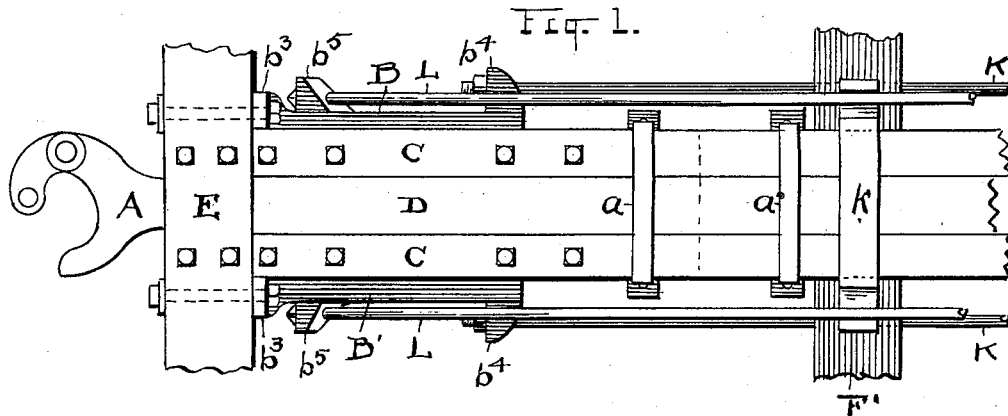
Patented Apr. 24, 1900.

F. K. SEYFRIED.  
DRAFT RIGGING FOR CARS.

(Application filed Dec. 29, 1899.)

(No Model.)

2 Sheets—Sheet 1.



ATTEST

*T. B. Moore*  
*H. E. Mylon.*

INVENTOR.

*Frederick K. Seyfried*  
By *H. V. Fisher*  
ATTY

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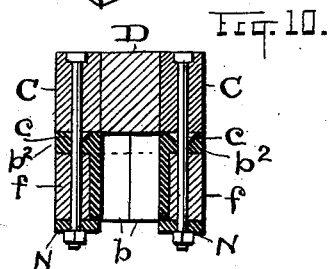
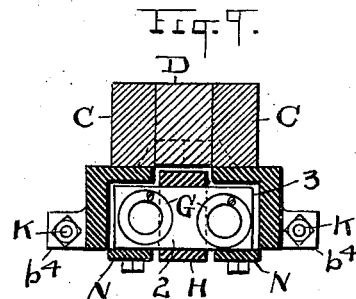
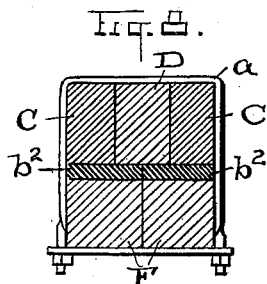
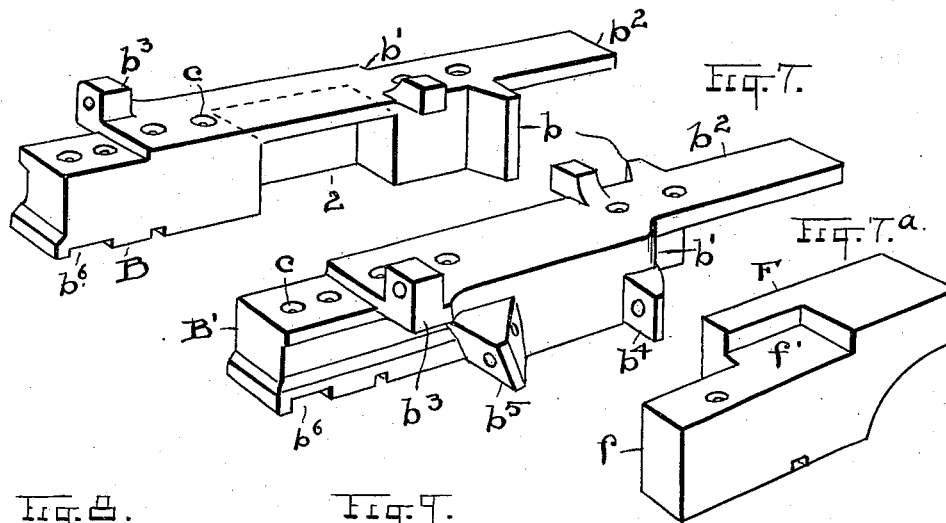
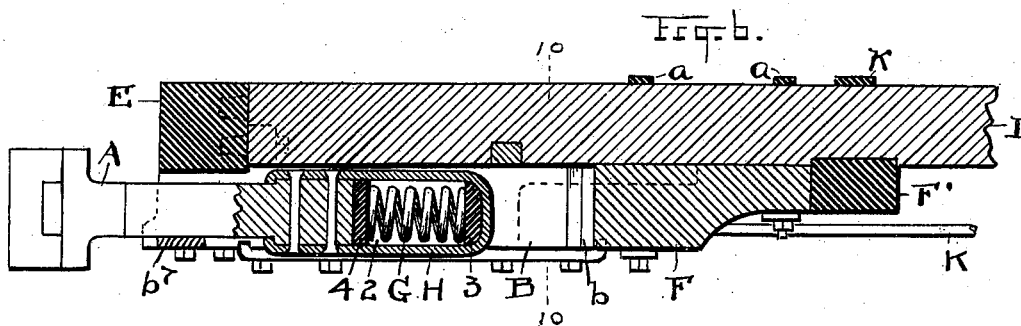
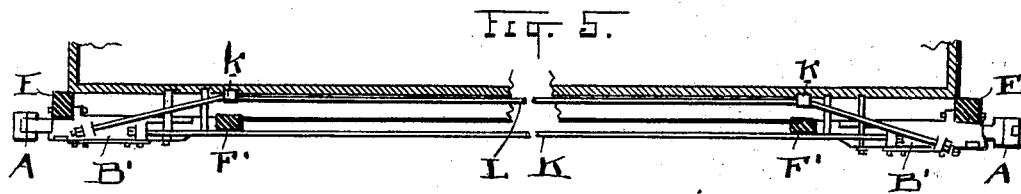
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2 Sheets—Sheet 2.



ATTEST  
W. B. Moore  
H. E. Medina.

INVENTOR.  
Frederick K. Seyfried  
BY H. F. Fisher ATTY

# UNITED STATES PATENT OFFICE.

FREDERICK K. SEYFRIED, OF CLEVELAND, OHIO.

## DRAFT-RIGGING FOR CARS.

SPECIFICATION forming part of Letters Patent No. 648,220, dated April 24, 1900.

Application filed December 29, 1899. Serial No. 741,897. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK K. SEYFRIED, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Draft-Riggings for Cars; and I do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to draft-riggings for cars; and the invention consists in the construction and combination of parts, substantially as shown and described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of a part of the car and the rigging which embodies my invention. Fig. 2 is a side elevation of the said parts as shown in Fig. 1, and Fig. 3 is a bottom plan thereof. Fig. 4 is a bottom plan of one of the members of the draft-rigging frame. Fig. 5 is a longitudinal sectional elevation of a portion of a car-frame, showing both ends and with my novel construction of rigging parts exhibited in working position, but reduced in size as compared with the other views. Fig. 6 is a longitudinal sectional elevation of draw-bar and rigging corresponding to line 6 6, Fig. 3. Fig. 7 is a perspective elevation of the two members of the draft-rigging frame separated, so as to show the details of their construction. Fig. 7<sup>a</sup> is a perspective view of one of the back braces or supports. Fig. 8 is a cross-section on line 8 8, Fig. 3; and Figs. 9 and 10 are cross-sections of Fig. 3 on lines 9 9 and 10 10, respectively.

Referring to the drawings, A represents the draw-bar, which is supported by and between the two members of what may be termed the "draw-bar" or "draft-rigging" frame comprising the parts or sections B and B'. These parts are alike in all the details of their construction, and the draw-bar is supported between their inner sides, as hereinafter fully described.

C represents the stringers on which the draw-bar frame or rigging is directly supported, and the filling-timber D comes between the stringers, as shown.

As cars have been built hitherto the draft

constructions are too light to be coupled up with the heavier cars of to-day or to be placed on modern cars, which are constructed for much larger loads than formerly and are themselves much heavier than before. The present invention is therefore designed to meet the demands for a stronger construction and safety in these vital connecting parts of the cars. I have therefore planned to adapt my improvements to cars which are already built and in service without altering or removing the stringers or any other part of the car body or frame, as well as designing it for entirely-new cars. The old draft-bar riggings, such as they are, can be removed and mine substituted in their place, and this change not only affords greater strength and efficiency in the draft-rigging proper, but is designed especially also to strengthen the center stringers, which form the main support for the rigging. The narrowest width of these stringers is usually about thirteen and one-half inches, and I have devised an attachment in my improved mechanism adapted to be secured to these stringers and at the same time to reinforce them, especially in their weak points, as will appear in this description farther along.

Now referring again to the drawings it will be seen that the rigging members B B' are constructed to be bolted through the stringers and are constructed on their top surface to engage the frame comprising the stringers in the most effective manner, being rabbeted at their front to bear against the inner edge of the front sill E and otherwise fashioned to engage firmly with the stringers, while at their rear there are heavy inwardly-projecting flanges b, which rest against the wooden back support or brace F, which in turn abuts against the body-bolster F'. The flanges b are sufficiently heavy to divide the shock which comes upon the rigging in the backing of the car, wherein the part F serves as a strong brace against the bolster. This materially relieves the strain upon the bolts which tie up the rigging to the stringers and contributes also to the strengthening of the parts under jarring or backward movements.

Another vital and valuable feature of my invention is in the spring mechanism for the draw-bar, wherein I am enabled to employ

double springs or a pair of springs side by side in relations where hitherto a single spring alone could be utilized—that is to say, it has been practicable to employ only single springs with the old size or style of stringers hereinbefore described, but such springs have been found not to be heavy enough for the larger size of cars now being constructed or for the old cars with the loads they should have, and hence it has been a common experience with the single spring that both the draw-bars and the stringers have been broken through lack of proper spring resistance. This is more frequently true, possibly, when a train of cars is backed and the head of the draw-bar, which is only about an inch and three-quarters from the end sill, strikes the said sill and the blow of the entire train is communicated directly to this point, and the object of the spring is defeated. Of course I am aware that double springs are not original with me; but in all cases in which they have been used, so far as I am aware, the entire center-stringer construction of the cars would have to be removed and altered to adapt them to the double-spring mechanism, and this means practically the rebuilding of the bottom of the car and involves much expense and labor; but by my improvement I avoid this rebuilding altogether and can place my draw-bar rigging, with its double springs, on any car on the road and get the effect, practically, of having reconstructed the bottom of the car with stringers of a larger size. To these ends it will be observed that I form the rigging members B and B', as shown, with pockets 2 oppositely, about midway their length, on their inner sides, in which I place a pair of strong spiral springs G, side by side, one for each member, and which are interposed between a follower 3 at their rear and a cross plate or bar 4 at their front, the ends of said parts 3 and 4 of course extending into the opposite pockets and having the spring resting between and against them. The draw-bar is connected up with these parts by means of the strap H, which is engaged around the follower 3 and firmly bolted at its ends at the top and bottom, respectively, of the draw-bar. An important feature of the construction of the follower is the rounding of its rear edges, top, and bottom, so as to enable the strap H to be bent on a curve instead of an angle, and thereby preserving its strength at the bending and preventing breaking, which otherwise is liable to occur when the strap is angular at these corners.

The back brace or support F is shown in outline in connection with Fig. 7 and might be in one piece for both rigging parts B and B'; but in this instance a separate brace is used for each part and they are together supported in place by the straps *a*, which tie them firmly to the stringers. Each brace F also has a projecting portion *f*, which abuts against a shoulder *b'* on the rigging, and on its top is a recess *f'*, in which rests the exten-

sion *b*<sup>2</sup> of the rigging member. This affords a very durable and serviceable resistance to the heavy jamming to which cars are subjected and which demand the strongest possible construction in their otherwise vulnerable parts. The extension *b*<sup>2</sup> is heavy and designed more especially to give strength to the stringer, so as to prevent possible breaking of the stringer between the bolster and the end sill, which is its weak point. Then again by running this part *b*<sup>2</sup> back an opening is afforded for the play of a pocket-strap, tail-strap, or stem of different forms of draw-bars from the one here shown, and which are preferred by some.

Each member B and B' is provided at its front with a side lug *b*<sup>3</sup>, which rests against the end sill and is locked thereon by a bolt. This helps to sustain the pull, thus giving strength, as well as otherwise contributing to the supporting and strengthening of the parts, and being located at one side allows removal of rigging without disturbing the stringers.

Two separate lines of rods connect the ends of the car—the tie-rods K and the truss-rods L. The tie-rods are perfectly straight, as here shown, and are secured at their ends in the heavy side lugs *b*<sup>4</sup> of the rigging, while the truss-rods are secured to the other heavy lugs *b*<sup>5</sup> farther forward. A truss rest or bridge *k* supports the truss-rods over the stringers; but both rods have their entire pull from their ends on the rigging and are of such strength together and so firmly connected with the rigging at both ends that they would be sufficient to sustain all the pull on the car if the stringers were entirely broken away. The slack can also be taken up at their ends, and they serve to firmly knit the ends of the car together. The rods thus connected up distribute the pull from end to end of the car, thus relieving both ends in their stringer connections, and the truss-rods serve additionally as strengthening means directly for the stringers. For this reason also the truss-rest *k* is placed directly over the body-bolster, as shown in Fig. 2. The straight direct line of truss-rods L above, between their rests above the body-bolsters, gives sufficient spring to the rods to prevent straining at the rigging-frame when the car is loaded.

By countersinking the bolt-holes *c* in the top of the rigging members I prevent shearing off of the bolts, and the countersinks serve as guides when the bolts are driven in and prevent mutilation of the thread.

The straps N at the bottom of the rigging-frame keep the springs up in position, but enable easy removal without disturbing any other parts, and serve also to strengthen the parts. The ends of the straps are turned up to fit into grooves in the frame B B' to prevent a possible shearing of the bolts when the rigging-frame is under a strain.

The draw-bar-supporting strap *b*<sup>7</sup> at the front of the draft-rigging frame is set in the

pockets  $b^6$  to prevent the shearing off of the bolts if the draw-head should come back and strike the strap.

What I claim is—

- 5 1. The car-frame and the draft-rigging secured at each end thereto, and a set of rods connecting said draft-riggings, said rods comprising the direct-pulling rods running in a straight line between said draft-riggings, and  
10 the truss-rods running at an inclination from each draft-rigging to rests upon the car-frame stringers above the body-bolster, and thence in a straight line between said rests, substantially as described.
- 15 2. The car-frame, the draft-rigging secured to each end thereof and consisting at each end of two parts having each a set of lugs on its outer side, in combination with a direct-pulling connecting-rod between the corre-  
20 sponding lugs of the said rigging parts of each end of the car, and a truss-rod engaged with the other of said lugs and supported by a rest on the top of the stringers over each body-bolster of the car-frame, said truss-rods  
25 running in a direct line from each rigging to said rests and thence in a straight line between said rests, substantially as described.
3. The combination of a set of draft-rigging frames located at opposite ends of a car,  
30 straight connecting tie-rods for said frames, and truss-rods connecting said frames having rests upon the stringers above the body-bolster of said car, said truss-rods and tie-rods having a straight line of pull and run-  
35 ning in a parallel plane with the floor of the

car at each side of the center stringers between said rests, substantially as described.

4. In draft mechanism for a car, a draft-bar frame consisting of two equal parts adapted to be arranged side by side and to have a  
40 draw-bar between them, said members each having a pocket 2 in its inner side, inwardly-projecting flanges  $b$ , shoulders  $b'$ , and extension  $b^2$ , in combination with back braces  $F$  constructed to engage said flanges, shoulders  
45 and extensions, substantially as described.

5. The car-body and the draw-bar frames consisting of two separate members located at opposite ends of the car, each member of  
50 said frames provided with a pocket 2 on its inner side, an inwardly-projecting flange  $b$  back of said pocket, an extension  $b^2$  back of said flanges, and separate brace-pieces  $F$  back of said flanges and extensions, a set of  
55 lugs  $b^4$  and  $b^5$  at each side of said members, in combination with straight tie-rods and truss-rods connecting the lugs on said opposite members, said truss-rods having rests on  
60 the stringers above the body-bolster of the car, and having a straight line of pull and running in a parallel line with the floor of the car between said rests, substantially as described.

Witness my hand to the foregoing specification this 20th day of December, 1899.

FREDERICK K. SEYFRIED.

Witnesses:

H. E. MUDRA,  
R. B. MOSER.