

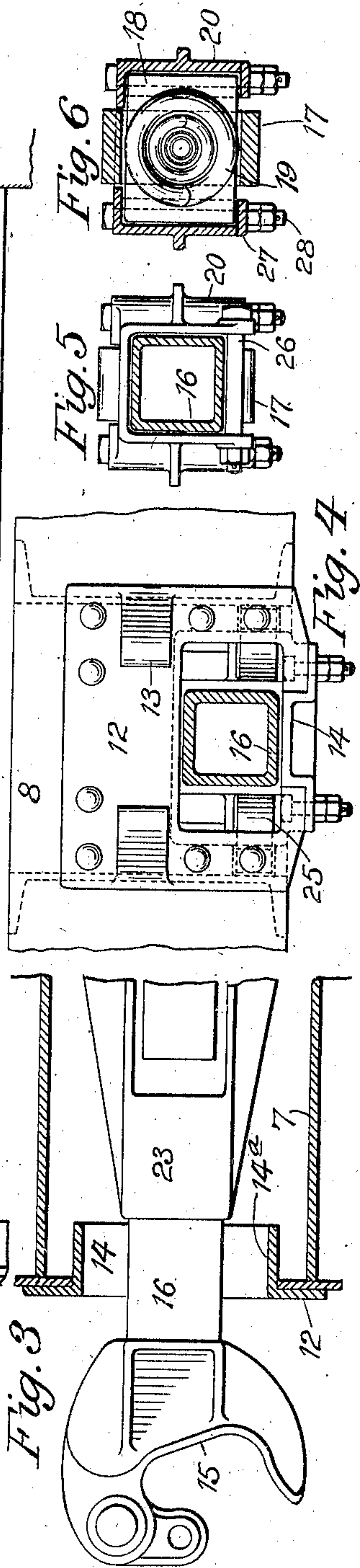
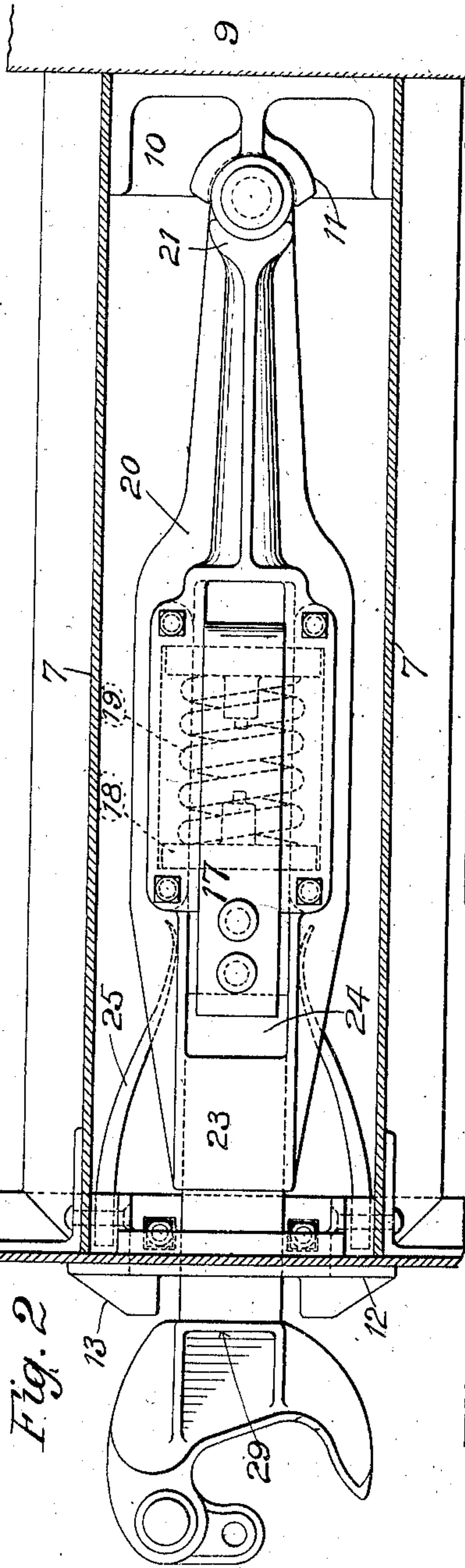
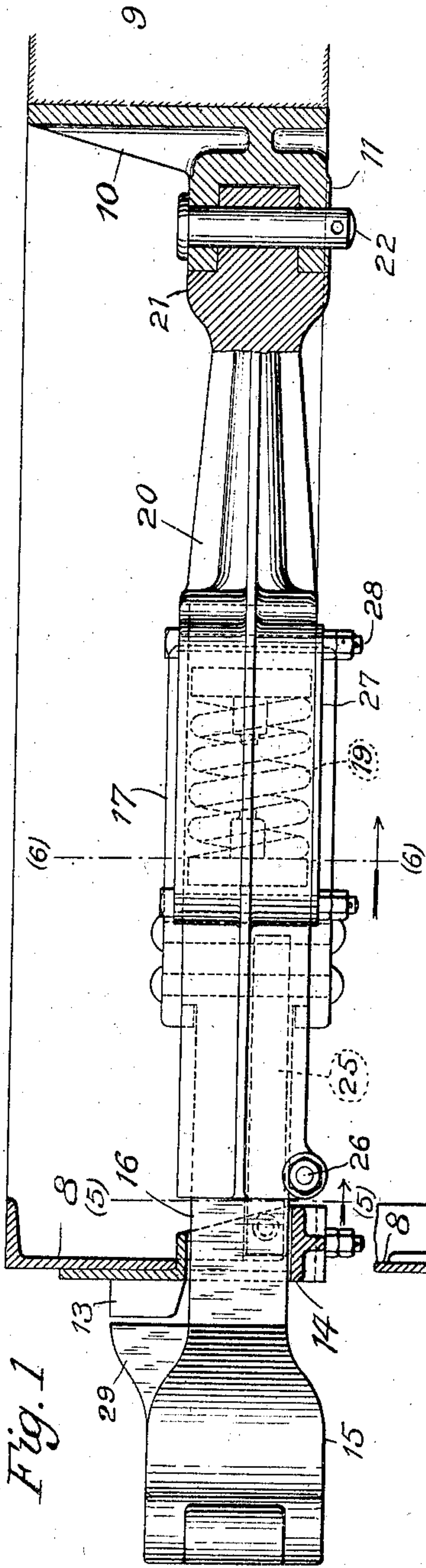
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PATENTED APR. 16, 1907.

G. W. SCOTT & O. A. THELIN.

DRAFT GEAR RIGGING.

APPLICATION FILED JULY 13, 1903.



Witness:

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UNITED STATES PATENT OFFICE.

GEORGE WELSBY SCOTT AND OSCAR ALBIN THELIN, OF CHICAGO, ILLINOIS,
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DRAFT-GEAR RIGGING.

No. 850,498.

Specification of Letters Patent

Patented April 16, 1907.

Application filed July 13, 1903. Serial No. 165,204.

To all whom it may concern:

Be it known that we, GEORGE WELSBY SCOTT, a citizen of the United States, and OSCAR ALBIN THELIN, a subject of the King
5 of Sweden, both residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Draft-Gear Rigging, of which the following is a specification.

10 Our invention relates in general to draft gear rigging used for attaching together the several cars in a train, and consists essentially in means for mounting the draw bar and yoke and springs and all the drawing ap-
15 paratus upon a pivoted frame attached to a fixed part of the car frame.

The objects of our invention are, to provide for the pivotal mounting of the draw bar; to provide means for normally holding
20 a pivoted draw bar in place; to provide a pivoted mounting which will take both thrust and pull of the draw bar and carry the draw bar spring and its appurtenances; and avoid the danger of breakage from shocks.

25 The above objects, as well as other advantages which will hereinafter appear, we attain by means of the construction and assemblage of parts illustrated in preferred form in the accompanying drawings, wherein,—

30 Figure 1 is a partial vertical central section through the frame and draft gear of a car and showing the draw bar holder in side elevation.

Figure 2 is a plan of the draw bar holder and
35 partial horizontal section through the draft sills and end sills of a car frame.

Figure 3 is a partial horizontal section of the front end of the draw bar carrier also showing the end of the draft rigging holder and
40 draw bar.

Figure 4 is a vertical sectional view, the section being taken just behind the head of the draw bar.

Figures 5 and 6 are vertical sections taken
45 respectively on the lines 5 and 6 in Figure 1.

In the ordinary construction of draft rigging there is a draw bar, a draw bar yoke, springs and followers inclosed in the yoke and all the parts move longitudinally within
50 a recess formed by two side members called draft sills which extend from the body bolster of the car frame to the end sill of the car frame, and on the end sill there is commonly

provided a draw bar carrier iron of a general U form in which the draw bar moves long- 55
itudinally and has but limited lateral play.

The limited clearance between the draw bar and the side stops affords a very small space for lateral movement of the draw bar when coupled with another as in the case of 60
cars on sharp curves, and it is well known that this limited side clearance is insufficient, and that the inability of the draw bar to assume a direction which it would take if it were free to move laterally the required dis- 65
tance results in damaging shocks and stresses being applied to the ends of the draft sills and also to the end sills of the car and to adjacent parts. If the side clearance of the stops were made larger but without the in- 70
tervention of a suitable controlling device, it would but increase the shocks consequent upon angular impact. Furthermore there would be no assurance that the draw bar head would be found in the proper situation 75
for coupling.

In order to overcome many of these difficulties we provide for the attachment of the draw bar by pivotal connection to some fixed 80
portion of the under frame and allow lateral movement of the draw bar and also provide means for returning it to its normal position when uncoupled. In the accompanying drawings the draft sills 7, the end sill 8 and the body bolster of the frame, 9, may be of 85
the ordinary construction. The draw bar head 15, draw bar 16, yoke 17, followers 18, and spring 19 may be of any ordinary construction, and do not form part of our invention. 90

At some point, either integrally with the body bolster of the car frame or attached thereto or attached both to the body holster and to the draft sills we provide a bracket 10 which has forwardly projecting bearing lugs 95
11, and in these bearing lugs we pivot a draft rigging holder 20 which is fastened therein by a pin 22 and may abut both against the pin and also by reason of the head 21 may abut directly against the lugs 11 of the bracket 10. 100
The holder 20 consists essentially of an open frame which is provided with space indicated at 24 for the reception of the draw bar yoke, springs, and followers as shown therein, and at its forward end has a housing 23 to em- 105
brace the draw bar.

In the present instance the draft rigging holder 20 is designed with an open top and bottom and the followers 18 are retained in place therein by means of the draw bar guides 27 bolted thereto by the bolts 28. This forms a space, 24, which contains the springs 19 and followers 18 and allows free play of the yoke 17 in the open space above and below, as will be evident from Figure 6. The forward end of the holder has a housing 23 embracing the draw bar 16, and the latter is retained in place by means of the bolt 26 as shown in Figure 5, which also acts specifically to restrain the vertical sides of housing 23 from spreading. By this open-bottom construction the placing and removal of the entire draft rigging into and from the draft rigging holder by merely removing the flanges 27 and the bolt 26 is facilitated, as will be apparent from reference to the drawings.

At the front end of the holder 20 and attached to the end sill 8 we provide a draw bar carrier 12 which is preferably made integral with thrust blocks 13, and which is provided with a bearing seat 14 therein and the side stops 14^a as shown in Figure 3. The space upon the plate 14 allows of considerable lateral movement of the draw bar, and in order to maintain the uncoupled draw bar in proper position for coupling we provide some form of spring or equivalent mechanism as the flat springs 25, having a bearing upon the respective sides of the holder as shown in Figure 2. It is obvious that the spring mechanism 25 or its equivalent may be attached to holder 20 and its force exerted against the framing without departing from the spirit of our invention.

In such constructions we regard it as of great importance that most of the pulling and buffing strains upon the draft rigging should be taken up near the position of the king pin at the body bolster and therefore we have provided the pivot of the draft rigging holder at the point shown and attached directly to the body bolster or cross sills of the car. In the case of an excessive angular buffing stress being applied to the draw bar head such as may occur in coupling cars on a curve, the impact, unless suitably guarded against, would result in a heavy shock being applied to the side stop 14^a; this, however, we prevent by use of the horn or safety lug 29 on the draw bar head and providing thrust blocks 13 on the draw bar carrier 12. The horn or safety lug 29 will at the time of the application of the shocking movement, engage with one of the thrust blocks 13 and the lateral movement of the draw bar will be arrested, and the destructive shock upon the side stops 14^a avoided. It will be seen that the engagement of the horn or safety lug 29 with the thrust block 13 will not take place in any but cases of extreme buffing stresses, in which cases the horn or safety lug 29 will be

pushed in against the draw bar carrier plate and thrust blocks 13, while in other cases the draw bar is free to swing sidewise the full extent of the space upon the bearing 14 as before described. The draw bar carrier 12 shown in Figures 1 and 4 as integral with thrust blocks 13 may obviously be divided into a plurality of parts without departure from our invention. It will be understood of course that in our construction the draw bar holder 20 practically takes the place of the draft sills 17 so far as supporting the followers and springs are concerned, and it will be evident that so far as the draft rigging itself requires it, the draft sills 7 might be entirely dispensed with, as we regard it as important to attach the draft rigging at the point shown, directly with the body bolster, or as near as practicable thereto. And it will be of course understood that we are not restricted to any form of draft rigging nor to any form of spring for the purposes described herein. In the case of the use of what are called friction draft gears of course the housing of the draft rigging holder 20 may be made of proper design and strength to resist the thrusts induced in such rigging, and otherwise the design of the housing may be changed or modified without any departure from our invention.

The many advantages of this device will readily occur to those familiar with the use of draft rigging on cars. The means by which the draw bar is retained normally in place at the center of a car, it will be observed, does not interfere with the application of the drawing and buffing strains directly at the center of the body bolster in the most approved position, while the lateral movement allowed to the draw bar easily accommodates the displacement from alignment which takes place whenever coupled cars are upon a sharp curve.

Having thus described our invention and illustrated its use, what we claim, and desire to secure by Letters Patent, is the following:

1. In draft rigging, the combination with a pivotally mounted holder for the draw-bar of a carrier allowing lateral movement of the bar, and means for taking up the sidewise shock in extreme cases.

2. In draft rigging, the combination with a draw-bar having a pivotal mounting, of a draw-bar carrier provided with a wide bearing-seat to allow of lateral movement of the bar, and thrust blocks for directly taking up sidewise thrust of the bar in extreme movements.

3. The combination with a draw-bar head having an upwardly projecting safety lug or bracket, of a draw-bar carrier provided with thrust blocks to co-operate with said lug upon the draw-bar head in case of extreme angular concussive shocks.

4. The combination with a draw-bar head

having an upwardly projecting safety lug or bracket, of a draw-bar carrier provided with thrust blocks to co-operate with said lug upon the draw-bar head in case of extreme concussive shocks.

5 5. The combination with a car frame and a pivoted housing for the draw bar and spring therefor, of a draw bar holder or bearing inserted in the car frame and having a broad seat allowing lateral play of the bar, and a pair of integral stops extending outside of the car frame and adapted to engage the coupler head on its sides when pressed inward to extreme position, substantially as described.

15 6. In draft gear rigging the combination with the car frame of a bracket thereon, and a swinging draw bar casing pivoted in the bracket and provided with thrust shoulders engaging the bracket, to relieve the pivoting pin of pressure, substantially as described.

20 7. The combination of an integral cast draw bar casing adapted to contain a spring and followers, and having a slot for the draw bar yoke, a draw bar provided with a yoke and a coil spring and followers removably retained in the casing, springs to retain the pivoted casing normally in central alinement

with the car, and side stops on the car frame engaging the coupler head when pressed inward to its extreme position, substantially as described. 30

8. In draft rigging, a drawbar head having a safety horn or projection, and a drawbar carrier having a thrust lug at each side of the draw-head for engagement with the horn or projection in cases of extreme angular concussive shocks; substantially as described. 35

9. In draft rigging, a pivoted draft rigging holder forming a housing for the drawbar, and drawbar spring, yoke and followers, springs arranged to bear upon opposite sides of the holder, and co-operating thrust projections or bearings adapted to take up the side thrust in cases of extreme angular concussive shocks; substantially as described. 40

In testimony whereof we have hereunder signed our names in the presence of the two subscribed witnesses. 45

GEORGE WELSBY SCOTT.
OSCAR ALBIN THELIN.

Witnesses:

PAUL CARPENTER,
CHAS. H. EBERT.