

967,385.

Fig. 1.


Fig. 2.

Fig. 3.

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## DRAFT-RIGGING.

967,385.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that I, JOHN A. JACKSON, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Draft-Rigging, of which the following is a specification, reference being had therein to the accompanying drawings.

It is desirable that the thrust and pull of the couplers of a car be carried to its main or longitudinal sills in a direct line and be distributed among them as evenly as possible. It is also preferable that any shocks or strains in excess of the capacity of the shock-absorbing appliances in the draft rigging be conveyed likewise to the members of the frame by a rigid, continuous or solid connection. It is further an advantage if the absorption or cushioning members, usually springs, be under the same direction of strain, either pulling or buffing, and be all acted on simultaneously.

This invention relates to a draft rigging wherein the shock absorbing or cushioning members are under compression, either in pulling, or in buffing, and whereby all strains or shocks are carried directly to the body bolster, and thus distributed evenly to the main sills, and whereby substantially continuous and rigid connections both for pulling or for buffing are provided for transmitting strains or shocks above the capacity of the shock absorbers.

This invention consists in the matters hereinafter set forth, and more particularly pointed out in the appended claims.

In the drawings, Figure 1 is a view in side elevation of a draft rigging embodying the invention, with the adjacent portion of the car body, main sills and body bolster. Fig. 2 is a view in section on or about line  $x-x$  of Fig. 1, showing a modification of the manner of securing the eye bolts. Fig. 3 is a view in cross section on line  $y-y$  of Fig. 1.

Referring to the drawings, 1 indicates a main sill, 2 an end sill, 3 a body bolster and 4 draft timbers of a railway car, all disposed in the usual manner. The transversely slotted inner end of a standard coupler 5 is longitudinally reciprocable through the head 6 of a yoke, a key 7 secured in the coupler aperture playing in slots 8 in the sides of the yoke head. Cotter pins 9 or like suitable stops are provided in the key ends for

holding the key in place, and the latter may, if desired, extend through slots 10 in the draft timbers, as herein indicated. The usual stirrup or hanger 11 supports the coupler.

The rear end 12 of the yoke body which is a substantially rectangular frame whose sides 13 are connected by a middle cross-bar or stop 14, all preferably integrally formed, and ribbed and flanged for strength and lightness, is apertured to slide on horizontal stubs 15 of a thrust member or block 16. The latter, which forms an abutment or stop for the yoke, is held by a transverse key 17 and eye-bolts 18 that engage the key outside the draft timbers 4, cotter pins 19 locking the key in place. The eyebolts draw the thrust block against the body bolster 3 so that it is practically a part thereof.

A slide block 20 abutting the inner end of the coupler is reciprocable longitudinally in the frame ahead of the yoke cross-stop 14 and has stubs 21 in axial alinement with the thrust block stubs 15. A second slide block 24 is reciprocable longitudinally in the frame to the rear of the yoke stop 14 against which it is yieldingly pressed by springs 25 in compression between the rear end 12 of the yoke and the block. The guide stubs 15 and similar stubs 26 on the block act as spring keepers and as stops limiting the relative movement of the yoke and slide block, while other stubs 22 on the block 24 passing through guide apertures in the yoke stop 14 are adapted to abut the stops 21 of the first block 20, and coact with them as keepers for springs 23 which hold the slide block 20 normally projected.

A key 27 through a suitable aperture in the forward slide block 20 and a similar key 28 fixed in the rear slide block 24 are reciprocable in slots 29 of a pair of rigid draft links 30 which connect them to the thrust block key 17.

When desired, the filling plate 31 and nuts 32 by which the eyebolts 18 are drawn home, may be omitted, as shown in Fig. 1, in which case the eye-bolts of one rigging extend to the center of the car when they are connected by appropriate means to the corresponding extended eyebolts from the other rigging. Thus, in a train, each car is practically pulling only its own weight, while the continuous arrangement of the coupling draws the train.



The parts are adjusted and disposed so that the springs are compressed under either pulling or buffing movements. Obviously, the springs may be made of any desired strength or adjusted so that any requirement of service may be met.

By the construction shown, all buffing and draft strains are transmitted directly to the body bolster or transom which rides on the trucks and bears the weight of the car body and which is fastened to all of the longitudinal or main sills, thus making the bolster the most rigid part of a car construction to which to anchor the shock absorbing devices and to transmit all the pulling and buffing strains after the spring capacity of the draft rigging has been exhausted or overcome. Furthermore, the full action of all the springs is obtained both in pulling and buffing, and this is done within the same limit of motion as if only a single spring were used, all the springs being brought into play simultaneously.

When fully compressed, the draft rigging presents a substantially continuous solid connection in direct line with the coupler thrust from the coupler to the body bolster so that the latter receives the final shock and arrests the coupler movement. When desired the eye bolts 18 may be carried back to the center of the car as indicated in Fig. 1. The draft timbers are thus relieved of all buffing strains.

Obviously, changes in the construction may be made without departing from the spirit of the invention and I do not care to limit myself to any particular form or arrangement of parts.

What I claim as my invention is:

1. A draft rigging for a car comprising a thrust member rigidly secured to the underframe of the car, rigid draft links secured to the thrust member, a yoke movable longitudinally of the car, cushioning means in the yoke adapted to force the latter against the thrust member, and a coupler having limited longitudinally reciprocable movement in the yoke and abutting the cushioning means.

2. A draft rigging for a car comprising a thrust member secured to the underframe of the car, rigid draft links extending therefrom longitudinally of the car, a yoke reciprocable on the thrust member parallel to the links, a coupler reciprocable in the yoke longitudinally of the car, a cushioning member between the coupler and yoke movable longitudinally in the yoke and links, and a second cushioning member between the yoke and thrust member movable longitudinally in the yoke and links, said cushioning members being adapted to be simultaneously in compression between the yoke and links when the coupler is drawn out and to form a substantially continuous compression mem-

ber between the coupler and thrust member when the coupler is moved in.

3. In a car having body bolsters near each end thereof, draft riggings each comprising a thrust member, rigid draft links secured to the thrust member, a yoke movable longitudinally of the car, cushioning means, and a coupler having limited longitudinally reciprocable movement in the yoke and abutting said cushioning means, and means connecting the thrust members adapted to hold said thrust members against the outer side of the adjacent bolster, and to transfer the pull of each of said members to the remote bolster.

4. A draft rigging for a car comprising a thrust block secured to the underframe of the car, a pair of rigid parallel links secured thereto, a yoke between the links whose inner end has sliding engagement with and abuts the block, a slide block longitudinally reciprocable in the yoke between its inner end and a middle stop on the yoke, springs in compression between the block and the inner end of the yoke, a transverse key in the block whose ends are reciprocable in longitudinal slots in the links, a second slide block longitudinally reciprocable in the yoke between its head and the middle stop, springs in compression between the second block and middle stop, a transverse key in the second block whose ends are reciprocable in longitudinal slots in the links, a coupler whose inner end is longitudinally reciprocable through the yoke head and abuts the second slide block, and a transverse key in the coupler whose ends are reciprocable in longitudinal slots in the yoke head.

5. A draft rigging for a car comprising a thrust block secured to the underframe of the car, a pair of rigid parallel links secured thereto, a yoke consisting of a substantially rectangular integral frame having a transverse bar forming a middle stop between the links whose inner end has sliding engagement with and abuts the block, a slide block longitudinally reciprocable in the yoke between its inner end and the middle stop on the yoke, springs in compression between the block and the inner end of the yoke, a transverse key in the block whose ends are reciprocable in longitudinal slots in the links, a second slide block longitudinally reciprocable in the yoke between its head and the middle stop, springs in compression between the second block and middle stop, a transverse key in the second block whose ends are reciprocable in longitudinal slots in the links, a coupler whose inner end is longitudinally reciprocable through the yoke head and abuts the second slide block, a transverse key in the coupler whose ends are reciprocable in longitudinal slots in the yoke head, and stubs on the blocks and yoke in axial alinement acting as keepers for the



springs and forming solid stubs between the blocks and yoke when the springs are compressed and the stubs are in contact under buffing strains.

6. The combination with the body bolster of a car of a draft rigging comprising a thrust block on the outside of the bolster, a transverse key therethrough, eye bolts extending longitudinally of the car through the bolster adapted to engage the block key ends and hold the block against the bolster, a pair of rigid links whose inner apertured ends are engaged by the thrust block key, a yoke between the links whose inner end has sliding engagement with and abuts the block, a slide block longitudinally reciprocable in the yoke between its inner end and a middle stop on the yoke, springs in compression between the block and the inner end of the yoke, a transverse key in the block whose ends are reciprocable in longitudinal slots in the links, a second slide block longitudinally reciprocable in the yoke between its head and the middle stop, springs in compression between the second block and middle stop, a transverse key in the second block whose ends are reciprocable in longitudinal slots in the links, a coupler whose inner end is longitudinally reciprocable through the yoke head and abuts the second slide block, and a transverse key in the coupler whose ends are reciprocable in longitudinal slots in the yoke heads.

7. The combination with the end sills,

main sills and body bolsters of a car of draft riggings each consisting of a thrust block adapted to be secured to the outer side of a bolster, a pair of rigid parallel links secured thereto, a yoke between the links whose inner end has sliding engagement with and abuts the block, a slide block longitudinally reciprocable in the yoke between its inner end and a middle stop on the yoke, springs in compression between the block and the inner end of the yoke, a transverse key in the block whose ends are reciprocable in longitudinal slots in the links, a second slide block longitudinally reciprocable in the yoke between its head and the middle stop, springs in compression between the second block and middle stop, a transverse key in the second block whose ends are reciprocable in longitudinal slots in the links a coupler whose inner end is longitudinally reciprocable through the yoke head and abuts the second slide block, a transverse key in the coupler whose ends are reciprocable in longitudinal slots in the yoke head, and eye bolts extending through the bolsters each of whose outer ends are connected to a thrust block and whose inner ends are connected each to each.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN A. JACKSON.

Witnesses:

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