No. 705,169. Patented July 22, 1902.

E. C. WASHBURN.

DRAFT RIGGING FOR ENGINES AND CARS.

(Application filed Sept. 21, 1901.)

(No Model.) 4 Sheets—Sheet 1.

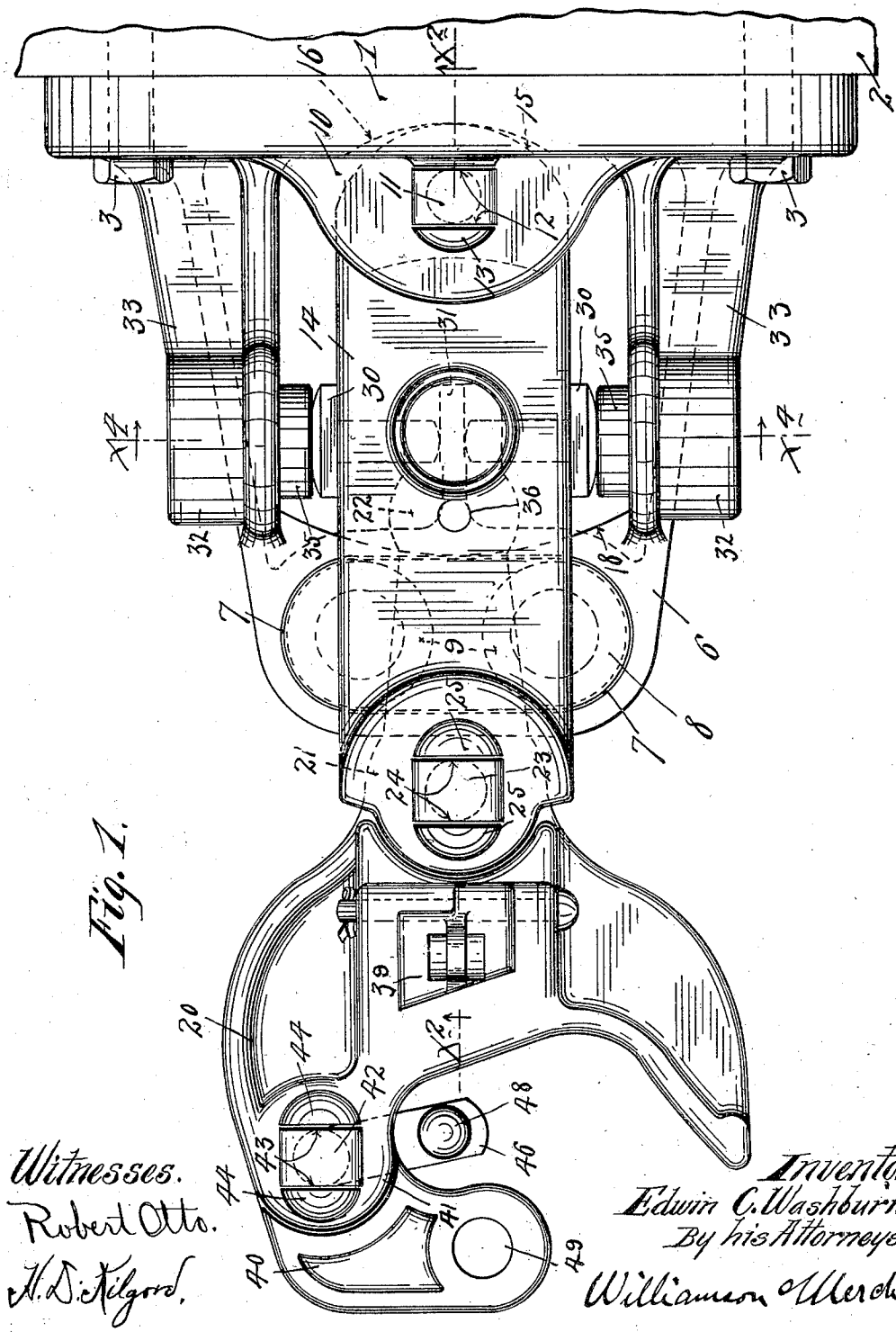


Fig. 1.

Witnesses.
Robert Otto.
H. D. Kilgord.

Inventor.
Edwin C. Washburn.
By his Attorneys.
Williamson & Merchant

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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(No Model.) 4 Sheets—Sheet 2.

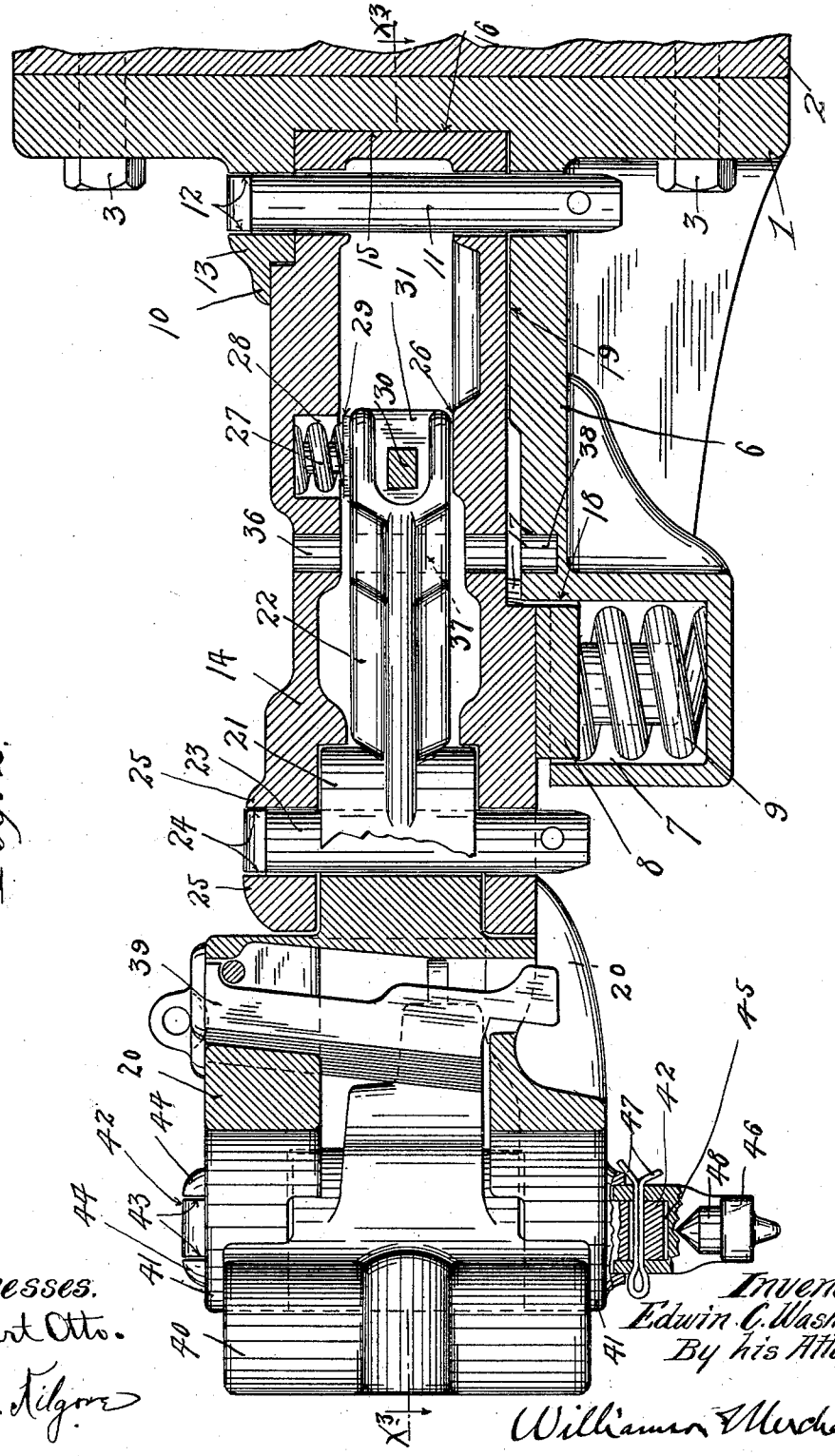


Fig. 2.

Witnesses.
Robert Otto.
H. D. Kilgore

Inventor:
Edwin C. Washburn
By his Attorneys
Williamson & Merchant

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(No Model.) 4 Sheets—Sheet 3.

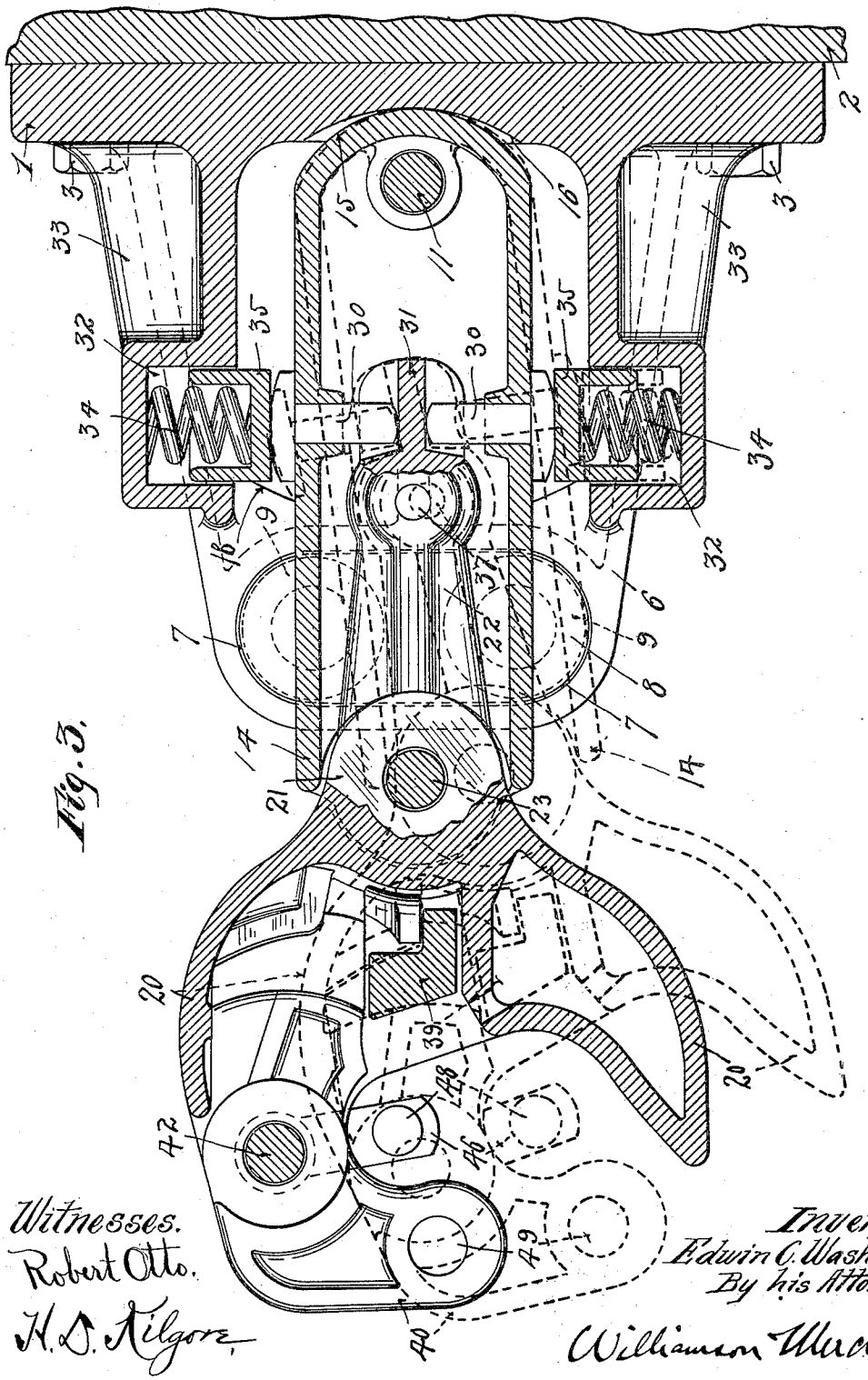


Fig. 3.

Witnesses.
Robert Otto.
H. D. Kilgore.

Inventor:
Edwin C. Washburn.
By his Attorneys.
Williamson Merchant

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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(No Model.) 4 Sheets—Sheet 4.

Fig. 4.

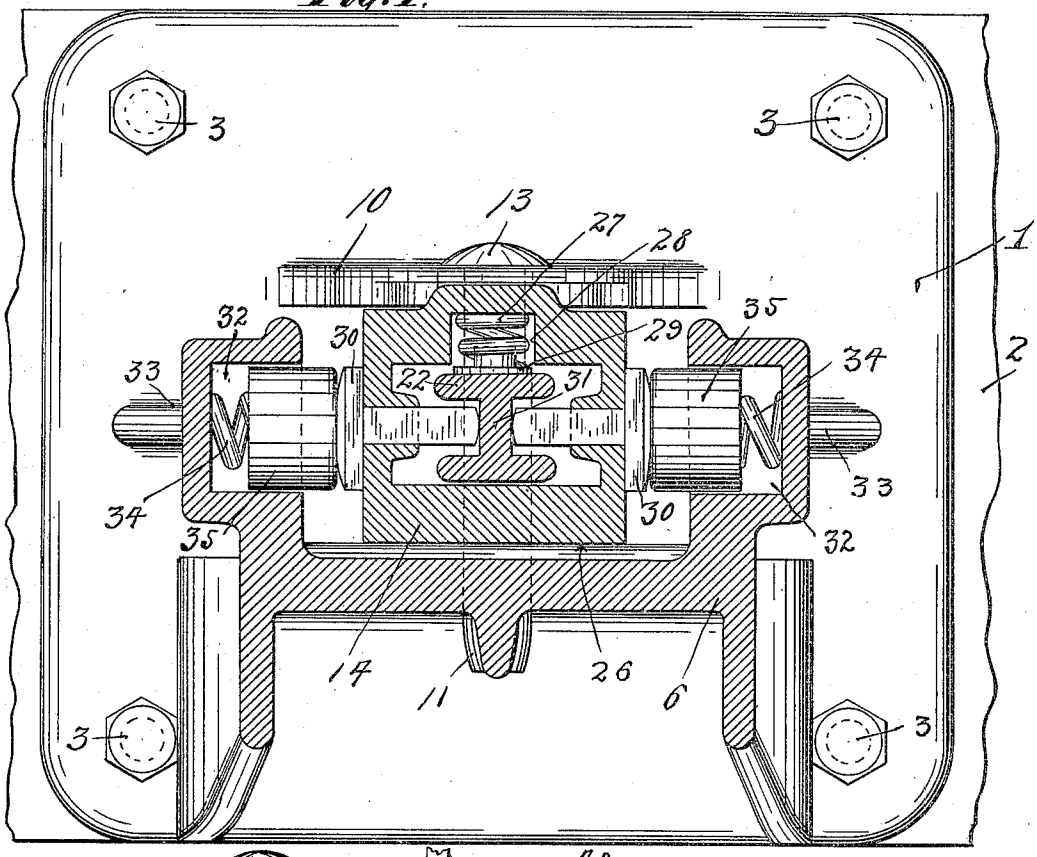
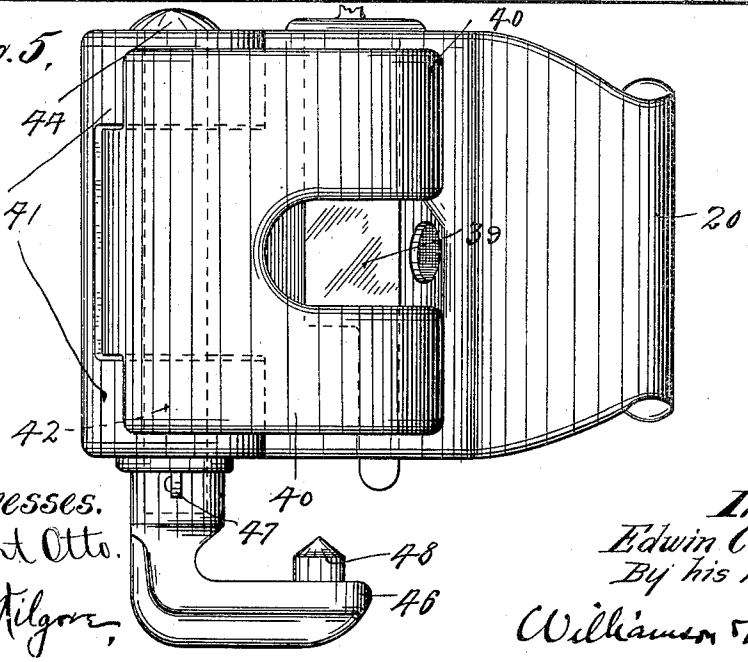


Fig. 5.



Witnesses.
Robert Otto.
N. D. Milgore,

Inventor.
Edwin C. Washburn.
By his Attorneys.
Williamson & Merchant

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDWIN C. WASHBURN, OF MINNEAPOLIS, MINNESOTA.

DRAFT-RIGGING FOR ENGINES AND CARS.

SPECIFICATION forming part of Letters Patent No. 705,169, dated July 22, 1902.

Application filed September 21, 1901. Serial No. 76,018. (No model.)

To all whom it may concern:

Be it known that I, EDWIN C. WASHBURN, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Draft-Rigging for Engines and Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention relates to draft-riggings for cars and engine-tenders, and has for its object to improve the same in the several particulars hereinafter noted.

To these ends my invention consists of the novel devices and combinations of devices hereinafter described, and defined in the claims.

The invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Figure 1 is a plan view of my improved draft device, the same in this illustration being shown as designed for application to and as intended as a draft-rigging for an engine-tender. Fig. 2 is a vertical longitudinal section taken approximately on the line x^2 x^2 of Fig. 1, some parts being shown in full. Fig. 3 is a horizontal section taken approximately on the line x^3 x^3 of Fig. 2, some parts being shown in full. Fig. 4 is a transverse vertical section taken on the line x^4 x^4 of Fig. 1, and Fig. 5 is a front elevation of the coupler-head.

In the illustrations given, wherein the draft device is designed for application to an engine-tender, the numeral 1 indicates a heavy draft-bracket, the flanged head or inner end of which is securable to the transverse draft-timber 2 of the tender by means of nutted bolts 3 or other means. The said bracket 1 has a projecting shelf or support 6, which is formed at its outer end with a transversely-elongated and vertically-depressed spring seat or pocket 7, in which a transversely-extended chafing-plate 8 is supported for vertical movements by a pair of strong coiled springs 9, that are compressed between the said chafing-plate 8 and the bottom of said spring-seat 7. At some distance above the shelf 6 the bracket 1 is provided with a strong draft-lug 10, through which and the said shelf 6 a pintle or pivot-bolt 11 is passed. Preferably one side of the head of the pivot-bolt 11 is cut away at 12 for coöperation with a flange 13 on the said draft-lug 10 to thereby prevent turning of the said bolt 11 in its seats.

A short or stub draft-bar 14 is pivoted at its inner end on the pintle or pivot-pin 11, with its segmental surface 15 arranged to bear against a segmental seat or depression 16, formed in the outer face of the bracket 1, between the shelf 6 and the draft-lug 10. On its under side, about midway of its length, the draft-bar 14 is formed with a segmental ledge or shoulder 18, formed on the upper surface of the bracket 6. The segmental shoulders 17 and 18 are struck from the axis of the pivot 11 for an obvious reason. The inner end of the draft-bar 14 rests upon a raised bearing-surface 19 of the shelf 6, and the intermediate portion thereof rests upon and is supported by the spring-sustaining chafing plate or block 8, over which it is free to oscillate.

The coupler-head 20 is pivoted to the outer end of the draft-bar 14, it being for this purpose provided with a strong hinge or pivot lug 21 at its rear end, from which a lever or tail extension 22 is projected. The hinge-lug 21 fits in a suitable seat formed in the free end of the draft-bar 14 and is pivotally secured thereto by a pintle or pivot-bolt 23, the head of which is preferably flattened on opposite sides at 24 for coöperation with lugs 25 on the said draft-bar to thereby prevent the turning of the said bolt 23 in its seats. The tail or lever extension 22 works in the recessed interior of the draft-bar 14, and its extreme inner end is pressed downward against a wearing-surface 26 by means of a coiled spring 27, which works in a suitable seat 28, formed in the upper wall of the draft-bar 14. Preferably the chafing-block 29 is placed between the lower end of the spring 27 and the free end of the said tail or lever extension 22.

The principal novel feature of my present invention is found in a spring centering device which by a common action is arranged to yieldingly hold the draft-bar 14 in an in-

termediate normal position with respect to the draft-bracket 1 or other support to which it is pivoted and the coupler-head and its tail or lever extension 22 in an intermediate normal position with respect to said draft-bar. This spring device, as illustrated in the drawings, comprises as follows: 30 indicates a pair of headed plungers, the stems of which work one through each side of the draft-bar 14 and engage the vertical web 31, formed at the free end of the tail or lever extension 22, with their inner ends. The stems of the head-plungers 30 are of such length that when both are forced to their limit or with the heads of said plungers engaging the sides of the said draft-bar the said tail or lever extension 22 will stand in its central or intermediate position with respect to the said draft-bar.

Just outward of the head of each plunger 30 the draft-bracket 1 is provided with one of a pair of spring sockets or seats 32, that are rigidly connected to the said bracket 1 and to its shelf 6 by ribbed flanges 33. Within each spring seat or socket 32 is a spring 34 and a recessed block or cap 35, the latter of which is pressed outward and into engagement with the head of the coöperating plunger 30 by means of the said spring. The tension of the springs 34 being equal, they serve normally to force both of the plungers 30 inward to their limits and then to act directly upon the said draft-bar 14 to hold it in its intermediate position, or, in other words, to hold the coupler-head and draft-bar in their normal intermediate positions. (Indicated by full lines in Figs. 1 and 3.)

Preferably the draft-bar 14, the tail or lever extension 22, and the shelf 6 of the bracket 1 are provided, respectively, with perforations 36, 37, and 38, which in the normal positions of the parts register or aline, so that a suitable pin may be passed therethrough to thereby render the said connecting parts rigid.

The coupler-head 20 is provided with an ordinary or suitable locking-dog 39 and with a pivoted knuckle 40, the latter of which is pivoted to the ears 41 of said coupler-head by a pintle or pivot-bolt 42, the head of which is shown as flattened at 43 for coöperation with a lug 44 on the said coupler-head. The lug 44, as is obvious, holds the pivot-bolt 42 from turning in its seats, which are formed within the ears 41 of the coupler-head 30. The lower end of the pivot-bolt 42 is preferably squared, and to this lower end the socket portion 45 of a safety-arm 46 is detachably but rigidly secured by means of a split key 47 or other suitable devices. The projected end of the safety-arm 46 underlies the inner end of the knuckle of the coupler of the coupled car, and it is provided with a vertically-projected and preferably conical-pointed lug 48, which will directly underlie the pin-seat 49, which in the standard Master Car-Builders' type of coupler is provided in the free end of the pivoted knuckle. With this construction if the coupler of the coupled car is torn loose from its mounting and permitted to drop the pin-seat 49 of its knuckle will be engaged over the projection 48, so that the loosened coupler will not only be supported by the safety-arm, but will be held in position against lateral movements. This construction has an obvious importance.

In traveling a curve with the coupler described it is of course evident that the draft-bar 14 will be drawn toward the center of the arc being traveled and that the coupler-head will not only be carried therewith, but will be given an additional movement in the same direction on its pivot-pin 23. These extreme movements are indicated by dotted lines in Fig. 3. Now it is evident that under the movements indicated by the dotted-line position in Fig. 3 the right-hand spring 34 will be compressed by the movement of the draft-bar 14, while the left-hand spring will be relieved of strain or given clearance to a corresponding extent, so that the movement of the inner end of the tailpiece or lever 22 toward the left side of the draft-bar will either not be resisted at all or to a very slight extent by the left-hand spring 32. Again, with the arrangement of the spring 32 above described the said springs are caused to exert their full force to keep the coupler-head and its tail extension 22 in their normal positions with respect to said draft-bar. This arrangement of the said springs is thought to be broadly new.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. The combination with a recessed draft-bar pivoted for lateral oscillations, of a coupler-head pivoted to the free end of said draft-bar, and provided with a projecting tailpiece that works in the recess of said bar, and a spring device applied to said draft-bar and to said tailpiece, said spring device working through the walls of said draft-bar and serving to yieldingly hold said draft-bar and coupler-head centered or in an intermediate normal position, substantially as described.

2. The combination with a recessed draft-bar pivoted for lateral oscillations, of a coupler-head pivoted to the free end of said draft-bar and provided with a tailpiece that works within the recess of said draft-bar, and spring devices comprising a pair of plungers or parts and springs acting thereon, which plungers work through the walls of the said draft-bar and by the coöperation therewith of said spring normally hold said draft-bar and said coupler in intermediate or centered positions, substantially as described.

3. The combination with a recessed draft-bar 14 pivoted at 11, of the coupler-head 20 formed with the lug 21 and tail extension 22, the pin 23 pivotally connecting said lug portion 21 to the free end of said draft-bar and engaging said tailpiece 22, the pair of plungers 30 working through the walls of said draft-bar, and a pair of springs, one operat-

ing on each of said plungers 30, substantially as described.

4. The combination with a bracket or support formed with the pair of laterally-spaced spring-pockets 32, of the draft-bar 14 pivoted at 11, the coupler-head 20 pivoted to the free end of the said draft-bar and provided with the tailpiece 22, the pair of headed plungers 30 working through said draft-bar and operating on said tailpiece 22, and the spring device involving the springs 34 and caps 35, said parts 34, 35 working within said pockets 33, and operating upon said plungers 30, substantially as described.

5. The combination with a bracket or support, of a draft-bar pivoted thereto, and a coupler-head pivoted to said draft-bar, the said three parts having coincident perforations or openings, which adapt them to be locked together, substantially as described.

6. A coupler-head pivoted for lateral oscillations and provided with a rearwardly-projected tail piece or portion, in combination with a spring applied entirely at the rear of the pivot of said coupler-head to press downward on said tailpiece, to thereby hold the coupler-head upward, substantially as described.

7. The combination with a recessed draft-bar pivoted for lateral oscillations, of a coupler-head pivoted to the free end of said draft-bar and provided with a tailpiece working within the recess thereof, and a spring applied between the upper wall of said draft-bar and the free end of said tailpiece, whereby said coupler-head is yieldingly held upward, substantially as described.

8. The combination with a draft-bar pivoted for lateral oscillations, and a coupler-head with projected tailpiece pivoted to said draft-bar, of a spring device applied to yieldingly hold upward said draft-bar, and another spring device applied between said draft-bar and said tailpiece for yieldingly holding upward said coupler-head, substantially as described.

9. The combination with a coupler-head of the Master Car-Builders' type having the pivoted knuckle with pin seat or passage 49, of the safety arm or projection carried by the coupler below the same and provided with a vertical lug or projection immediately below the seat or perforation 49, of an interlocking coupler, substantially as and for the purposes set forth.

10. The combination with the coupler of the Master Car-Builders' type, involving a knuckle pivoted to the coupler-head by a pintle or bolt 42 and having the pin seat or passage 49, of a safety-arm secured to the lower end of said pintle 42 and provided with the lug or vertical projection 48 positioned substantially as and for the purposes set forth.

11. The combination with a laterally-movable draft-bar and coupler-head pivoted thereto, of centering-springs applied one on each side of said bar and head, the arrangement being such that lateral movement of said bar against the spring on one side will not cause the spring on the other side to be compressed, substantially as described.

12. The combination with a laterally-movable draft-bar, of a coupler-head pivoted thereto and provided with a rearwardly-projecting tailpiece, and centering-springs acting on the opposite sides of said bar and tail of coupler-head, the arrangement being such that, under lateral movements of said bar and head, in one direction, the spring on the opposite side will not be compressed, substantially as described.

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

EDWIN C. WASHBURN.

Witnesses:
ELIZABETH KELIHER,
F. D. MERCHANT.