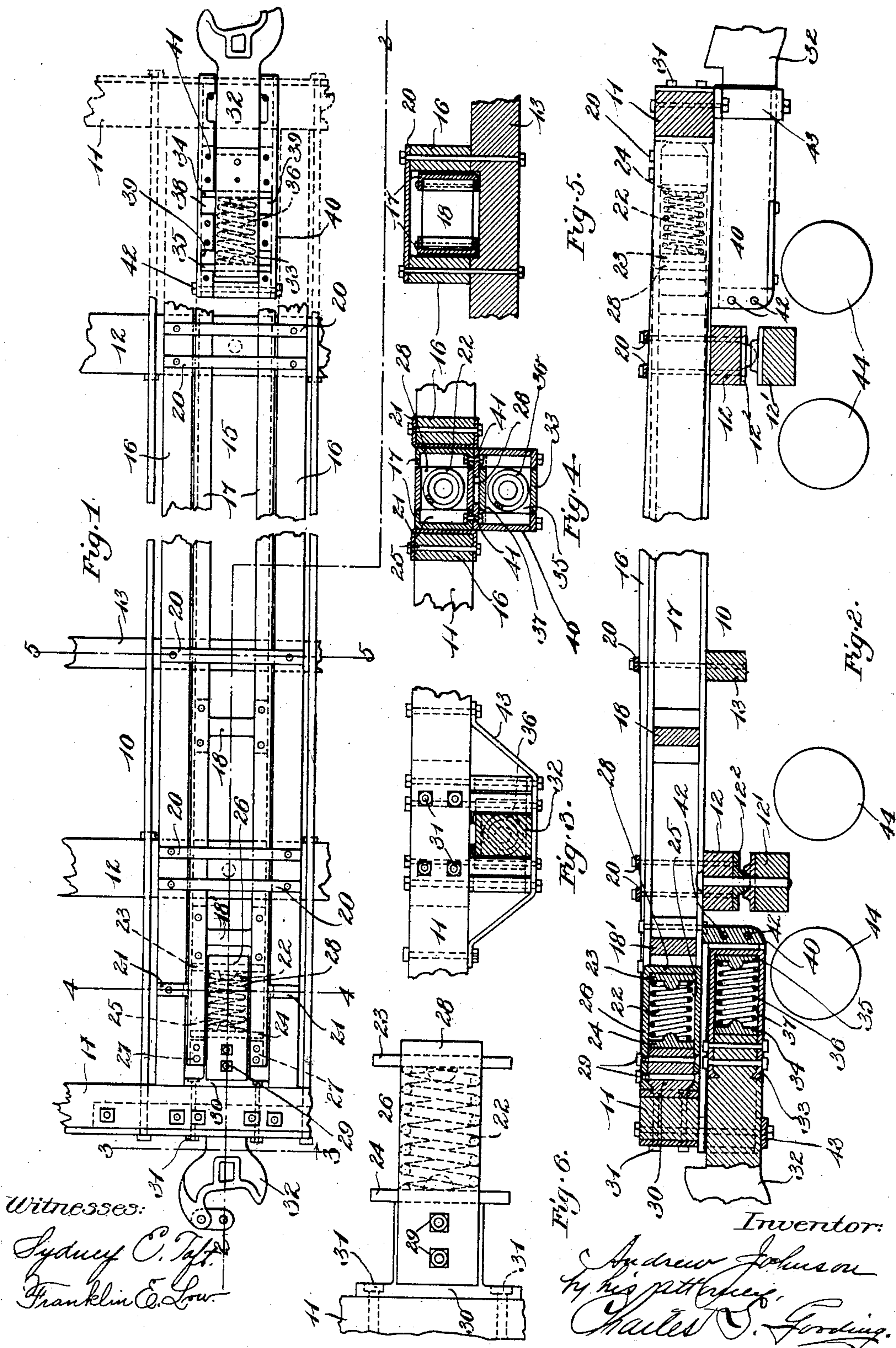


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CONTINUOUS DRAFT RIGGING FOR CARS.

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UNITED STATES PATENT OFFICE.

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CONTINUOUS DRAFT-RIGGING FOR CARS.

SPECIFICATION forming part of Letters Patent No. 786,034, dated March 28, 1905.

Application filed January 28, 1905. Serial No. 243,044.

To all whom it may concern:

Be it known that I, ANDREW JOHNSON, a citizen of the United States, residing at Concord, in the county of Merrimac and State of New Hampshire, have invented new and useful Improvements in Continuous Draft-Rigging for Cars, of which the following is a specification.

This invention relates to an improved draft-rigging for cars, and is an improvement upon the patent for a like device issued to me November 29, 1904, No. 775,977, but differs from the device of that invention in that the springs interposed between the draft-beam or draw-bar frame and the end sills of the cars are so connected to said draft-beam that an endwise thrust imparted to the draft-beam through the draw-bars is received by both of the springs located at the opposite ends of the draft-beam and the end sills of the cars, no matter in which direction the thrust may be imparted to the draft-beam—that is, whether it is a pull in one direction upon a draw-bar or a thrust in the opposite direction upon said draw-bar—both of said springs will be compressed thereby and said pull or thrust imparted by both of said springs to the car-frame.

The object of the invention is to provide a draft-rigging that is practically independent in its action of the car body and trucks, except that it imparts a thrust or pull to said car body and trucks through springs interposed between a portion of said draft-rigging and the end sill of the car-body.

The object of the invention is, further, to provide a strong, durable, flexible, and continuous draft-rigging, thus saving the sills of the car from sagging and breaking over the body-bolster, and particularly preventing the center sills from injury caused by the draft-rigging being bolted to them, as in the present construction.

The object of this invention is, further, to provide a draft-rigging that is continuous and flexible throughout the entire length of the train of cars, whereby said train of cars is caused to start and stop with more flexibility and freedom from shocks and jars, thereby saving passengers, freight, and rolling-stock from injury.

The invention consists in the combination

and arrangement of parts set forth in the following specification, and particularly pointed out in the claims thereof.

Referring to the drawings, Figure 1 is a plan view of a portion of a car-body with my improved draft-rigging attached thereto, said car-body being broken away to save space in the drawings and said draft-rigging being broken away at the right-hand end thereof to more clearly illustrate the construction of the same. Fig. 2 is a vertical section, partly in elevation, taken on line 2 2 of Fig. 1, illustrating my improved draft-rigging in connection with the body and trucks of a car, the same being broken away to save space. Fig. 3 is a sectional elevation taken on line 3 3 of Fig. 1 looking toward the right in said figure. Fig. 4 is a sectional elevation taken on line 4 4 of Fig. 1 looking toward the right in said figure. Fig. 5 is a sectional elevation taken on line 5 5 of Fig. 1. Fig. 6 is an enlarged plan view of the spring-holder, showing the same attached to a portion of the end sill of the car.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, 10 is a car-frame of well-known construction.

11 11 are the end sills, 12 12 the body-bolsters, 12' the truck-bolster, and 12² the center-plate, by means of which the truck-frame is pivoted to the car-frame; 13 13, the cross-frame tie-timbers, and 16 16 the center sills.

A draft-beam 15 extends longitudinally throughout the entire length of the car-frame 10 and is located between the center sills 16 16, said draft-beam being constructed of two channel-irons 17 17, rigidly fastened together by tie-plates 18 and 18'. Said channel-irons extend lengthwise of the frame to within a short distance of the inside of each of the end sills 11. The channel-irons 17 are fastened together with their flanged sides toward each other. Iron straps 20 20 extend across the top of the channel-irons and are fastened at their opposite ends to the center sills 16 16 upon opposite sides of the draft-beam 15. These straps act as guides to prevent the draft-beam from moving upwardly between the center sills 16, while underneath the channel-irons 17 bear upon the top of the body-

bolsters 12 and cross-frame timbers 13. The channel-irons 17 are guided along their sides adjacent to the center sills 16 by chafing-plates 21 21, fast to said center sills 16.

5 At each of the opposite ends of the draft-beam 15 a spring 22 is interposed between two followers 23 and 24, said followers projecting through a recess 25, extending laterally across the spring-holder 26. The opposite ends of each of the followers 23 and 24 project beyond the spring-holder 26 and into the recess between the upper and lower flanges of the channel-irons 17 and abut, respectively, against the stop-plates 18' and 27. 10 The stop-plates 27 are fastened rigidly to the channel-irons 17, between the flanges thereof, and the plate 18' constitutes a stop-plate, as well as a tie-plate, for said channel-irons. Between the plates 18' and 27 is a space, located vertically between the flanges of the channel-irons, in which the projecting ends of the followers are free to move, as hereinafter described, the spring 22 holding the projecting ends of said followers 23 and 24 normally 15 against said stop-plates 18' and 27, respectively.

The spring-holder 26 consists of a U-shaped strap 28, fastened at its ends by bolts 29 to a base 30, which in turn is fastened by bolts 31 20 to the end sill 11.

At each of the opposite ends of the draft-beam is a draw-bar 32, and fastened to the rear end of said draw-bar is a U-shaped strap 33, provided with follower-plates 34 and 35, 25 said follower-plates having a spring 36 interposed therebetween and located in a recess or pocket 37 between the upper and lower sides of said U-shaped strap. The opposite ends of the follower-plates 34 and 35 project into recesses 38 and 39, respectively, formed in the draft-arms 40. Said draft-arms are fastened by bolts 41, Fig. 4, to the lower flanges of the channel-irons 17. The rear ends of the draft-arms 40 are joined together by bolts 42 30 42. The front end of the draw-bar 32 is supported to slide upon a yoke-strap 43, fast to the under side of the end sill 11, Fig. 3. The rear end of the draw-bar is supported by the strap 33 and follower-plates 34 and 35, said follower-plates projecting into the space located between the upper and lower flanges of the channel-irons, which constitute the draft-arms 40, (see Fig. 4,) and as said follower-plates rest upon the lower flanges of 35 said channel-irons it is evident that they will support the strap 33 as it moves backwardly and forwardly, as hereinafter described, and said strap, being rigidly fastened to the draw-bar 32, acts to support said draw-bar in its reciprocal sliding movement. 40

The truck may be of any well-known type, consisting, essentially, of wheels 44, (diagrammatically shown in Fig. 2,) said wheels being fastened to axles rotatable upon a suitable 45 frame and said frame being fastened to the

truck-bolster 12', which is pivotally connected by the center plate 12² to the body-bolster 12 of the car.

The general operation of my improved draft-rigging is as follows: Assuming the 50 parts to be in the relative positions illustrated in Figs. 1 and 2 and that a thrust is imparted to the draw-bar 32 at the left-hand end of the car-frame, said thrust will cause said draw-bar to move toward the right, Fig. 2, sliding 55 upon the yoke-strap 43 and compressing the spring 36, moving the follower-plate 34 toward the right until said spring has compressed to a sufficient extent to move said draft-beam toward the right by means of the follower- 60 plate 35 and draft-arms 40, said draft-arms being fastened to the channel-irons 17 of the draft-beam 15. When said draft-beam is thus moved, by reference to Fig. 1 it will be seen that the stop-plates 27 will move the follower 65 24 toward the right, thus compressing the spring 22, moving the follower 23 and U-shaped strap 28, together with the base 30, toward the right; but as said base is fastened to the end sill 11 of the car it is evident that 70 said end sill will be moved, together with the rest of the car-frame, toward the right, and thus said car-frame will be moved with a yielding pressure toward the right when the draw-bar 32 is moved toward the right. When the 75 draw-bar 32 at the left-hand end of the car-frame, Figs. 1 and 2, is drawn toward the left, the follower 35 will compress the spring 36 and move the draft-arms 40, together with the channel-irons 17 or draft-beam 15, to- 80 ward the left, thus causing the tie-plate 18' to push the follower 23 toward the left, Fig. 1, compressing the spring 22 and moving the car-frame by said spring pressing upon the follower 24, which rests against the base 30, 85 thus imparting, through the spring 22, a motion toward the left of the car-frame and its connected trucks. It will thus be evident that whether a draw-bar is moved toward the right or toward the left, Fig. 2, the car-body 90 will be started with a yielding spring-pressure imparted through the draft-rigging and that whether the draw-bars are moved toward the left or toward the right both of the springs 22 at opposite ends of the draft-beam 95 will be simultaneously compressed. 100

Having thus described my invention, what I claim, and desire by Letters Patent to secure, is—

1. A car-frame, a draft-beam extending longitudinally of said car-frame and adapted to slide thereon, a draw-bar at each of the opposite ends, respectively, of said draft-beam, adapted to slide upon said draft-beam, and a spring interposed between said car-frame and 105 each of the opposite ends, respectively, of said draft-beam, both of said springs adapted to receive simultaneously an endwise thrust imparted to said draft-beam. 110

2. A car-frame, a draft-beam extending lon- 115

gitudinally of said car-frame and adapted to slide thereon, a draw-bar at each of the opposite ends, respectively, of said draft-beam, adapted to slide upon said draft-beam, and a
 5 spring interposed between said car-frame and each of the opposite ends, respectively, of said draft-beam, both of said springs adapted to receive simultaneously an endwise thrust imparted to said draft-beam in opposite direc-
 10 tions.

3. A car-frame, a draft-beam extending longitudinally of said car-frame and adapted to slide thereon, a draw-bar at each of the opposite ends, respectively, of said draft-beam,
 15 adapted to slide upon said draft-beam, a spring-holder fast to said car-frame, said holder provided with a recess extending laterally there-through, two followers extending through said holder, slidable therein, and abutting at their
 20 opposite ends against said draft-beam, and a spring located between and bearing at its opposite ends, respectively, against said followers.

4. A car-frame, a draft-beam extending longitudinally of said car-frame and adapted to
 25 slide thereon, a draw-bar at each of the opposite ends, respectively, of said draft-beam, adapted to slide upon said draft-beam, said draft-beam formed of two channel-bars fast together with their flanged sides toward each
 30 other, stop-plates fast to said channel-irons between said flanges, a spring-holder fast to said car-frame, said holder provided with a recess extending laterally therethrough, two
 35 followers extending through said holder, slidable therein, and abutting at their opposite ends against said stop-plates, and a spring located between and bearing at its opposite ends, respectively, against said followers.

5. A car-frame, a draft-beam supported
 40 upon, extending longitudinally of, and adapt-

ed to slide upon said car-frame, a draw-bar attached to each of the opposite ends, respectively, of said draft-beam, adapted to slide upon said draft-beam, a spring interposed between
 45 each of said draw-bars and said draft-beam, respectively, and a spring interposed between said car-frame and each of the opposite ends, respectively, of said draft-beam, both of said
 50 springs adapted to receive simultaneously an endwise thrust imparted to said draft-beam.

6. A car-frame, trucks pivoted thereto, a draft-beam supported upon, extending longitudinally of and adapted to slide upon said
 car-frame, a draw-bar at each of the opposite
 55 ends, respectively, of said draft-beam, and a spring interposed between said car-frame and each of the opposite ends, respectively, of said
 60 draft-beam, both of said springs adapted to receive simultaneously an endwise thrust imparted to said draft-beam.

7. A car-frame comprising in its construction two center sills extending longitudinally thereof, body-bolsters extending transversely
 of and fast to said center sills, a draft-beam located between said center sills and adapted
 65 to slide upon said body-bolsters, a draw-bar at the opposite ends, respectively, of said draft-beam, and a spring interposed between said car-frame and each of the opposite ends,
 70 respectively, of said draft-beam, said springs adapted to receive simultaneously an endwise thrust imparted to said draft-beam.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ANDREW JOHNSON.

Witnesses:

CHARLES S. GOODING,
 ANNIE J. DAILEY.