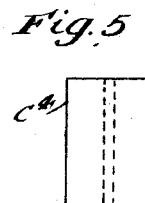
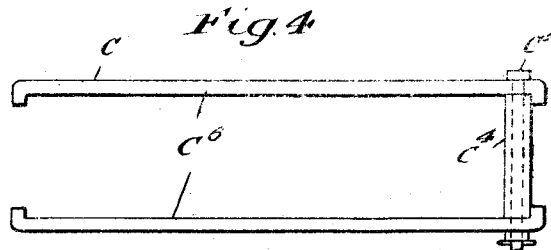
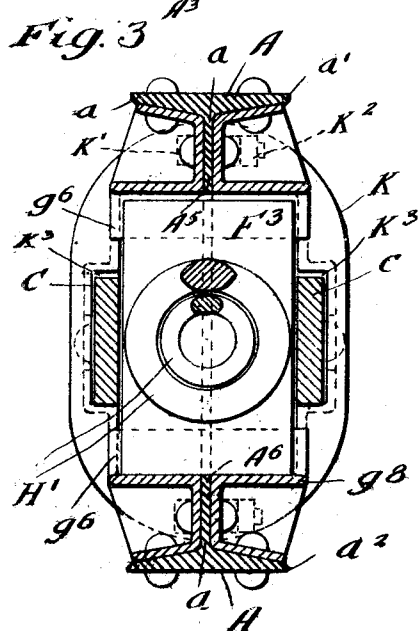
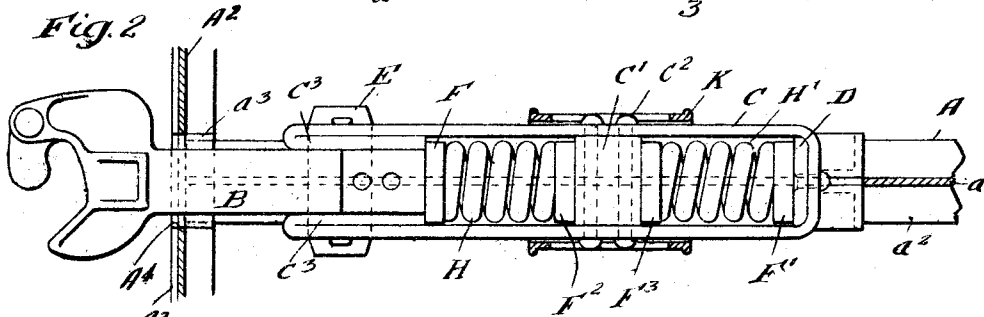


1,064,666.

Fig. 1



Wm. Geiger
at W. H. Sunday.

By Merinday, Evans, Adcock & Clarke.

Attorneys

UNITED STATES PATENT OFFICE

JOHN F. O'CONNOR, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO
WILLIAM H. MINER, OF CHICAGO, ILLINOIS.

DRAFT-RIGGING FOR RAILWAY-CARS.

1,064,666.

Specification of Letters Patent.

Patented June 10, 1913.

Original application filed March 16, 1908, Serial No. 421,438. Divided and this application filed May 24, 1909. Serial No. 497,879.

To all whom it may concern:

Be it known that I, JOHN F. O'CONNOR, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Draft-Rigging for Railway-Cars, of which the following is a specification.

This application is a division of my original application No. 421,438, filed March 16th, 1908.

My invention relates to draft gears or rigging for railway cars.

The object of my invention is to provide a draft rigging of a construction adapted for use on cars having a single center sill, and it consists in the means I employ to practically combine with and apply to a single center sill car the draft rigging.

The preferred embodiment of the invention is shown and described in the accompanying drawing forming a part of this specification.

In said drawing, Figure 1 is a side elevation, partly in central, longitudinal section, of a single center sill draft rigging embodying my invention. Fig. 2 is a plan view, partly in central, longitudinal, horizontal section. Fig. 3 is a cross section on line 3—3 of Fig. 1. Fig. 4 shows a modified construction of the yoke. And Fig. 5 is a detail view of the connecting block between the two separate piece limbs of the yoke shown in Fig. 4.

In the drawing, A represents the center sill of a car of the kind having a single center sill directly in line with the draw-bar B.

C is a horizontally disposed draw-bar yoke connected with the draw-bar B by a flat, horizontally extending key E. The two members or limbs of the yoke C are preferably formed in one integral piece, and a filler block D is also preferably inserted at the bent rear end of the yoke, the same being shaped to fit the rounded corners thereof.

F and F¹ are the front and rear followers and F² F³ intermediate followers extending uprightly through the horizontally disposed draw-bar yoke C.

G G are the upper and lower stop members or stop castings, each preferably comprising two separate members or castings of a channel form in cross section adapted

to fit against and securely riveted to the upright web *a* of the single center sill and to the upper and lower flanges *a*¹ and *a*² thereof as will be readily understood from Figs. 1, 2 and 3 of the drawing. Each of the stop members or castings G is furnished with stops or shoulders *g* *g*¹ *g*² *g*³ *g*⁴ *g*⁵ *g*⁶ *g*⁷ for the followers F F¹ F² F³ to abut against, the stops or shoulders *g*¹ *g*² *g*⁴ *g*⁷ being limiting stops to limit the compression of the tandem arranged cushioning springs H H¹ of the draft rigging.

The central upright web *a* of the single center sill A has a central, longitudinally extending slot, recess, pocket or cut out portion, A¹, to receive the draw-bar, followers and springs, said slot or cut out portion extending the full length of the draft rigging, as will be readily understood from Fig. 1 of the drawing.

The draw-bar yoke C is furnished with an intermediate abutment block C¹ between the two intermediate followers F² F³ to cause the said intermediate followers to move alternately with the draw-bar in pulling or buffing, said abutment block being secured to the draft yoke C by horizontal connections or bolts C² which extend transversely through the abutment block C¹ and the limbs of the draft yoke C. The draw-bar yoke at the front end of its two limbs is preferably furnished with bends or folds C³, the ends of which may abut against the front follower F, said folded ends of the draft yoke giving an extending bearing contact between the draft yoke and the horizontal key E by which the draft yoke is connected to the draw-bar.

The front end sill A² of the car is provided with a central opening A⁴ in line with the slot or opening A¹ in the vertically disposed web *a* of the single center sill A for the draw-bar B to project through and to permit the draw-bar to swing laterally as required. And the front plate or carry-iron A³, which fits outside of and in front of the end sill A², is provided with an inwardly or rearwardly projecting flange *a*³ for the draw-bar to ride upon and give an extended bearing surface therefor.

Tie-plates or castings K K are provided, one on each side of the center-sill A, the same being removably secured in place by bolts K¹ having threaded nuts K². These

upright tie-plates K are each furnished with a guide channel K³ to receive the two limbs or members of the draw-bar yoke C, which fit one on each side of the upright followers F F¹ F² F³. The followers F F¹ F² F³ rest and reciprocate at their lower edges upon the horizontal flanges g³ of the lower stop member G, said flanges thus affording a smooth, wide and extended bearing for the followers to rest and reciprocate upon. The corresponding horizontal flanges g³ of the upper stop member G also serve as a wide or extended guide or chafing plate for the upper edges of the followers. The channelled stop members G G are secured to the upper and lower bifurcated portions A⁵ A⁶ of the single center-sill A, above and below the central slot or draft rigging pocket A¹ formed therein, also serve as reinforcements to stiffen and strengthen the center-sill and to compensate for the weakening thereof by the central, longitudinal slot or cut out portion A¹. The central web a of the single center sill A is preferably provided with upwardly and downwardly projecting integral stop shoulders or tongues a⁴ registering with the several stops of the stop members G G so that these uncut-out or projecting shoulders a⁴ of the web a may serve as further stops or as reinforcements for the stops g g¹ g² g³ g⁴ g⁵ g⁶ g⁷ of the stop members G.

In Figs. 4 and 5, the yoke C is illustrated as being made in three pieces with a connecting block C⁴ and bolt C⁵ between the two limbs C⁶ of the yoke which are made in separate pieces. The connecting block C⁴ has a hole through which the bolt C⁵ extends.

I claim:—

1. In a tandem spring draft rigging, the combination with a draw-bar and horizontally disposed draw-bar yoke connected to said draw-bar, tandem arranged springs and front, rear and intermediate followers, of a single center-sill in line with the draw-bar and having a longitudinal slot or opening to receive the draw-bar, followers and springs, and pairs of channel-shaped stop castings fitting on opposite sides of the upright web of said center-sill and against the flanges thereof and secured thereto, and provided with front, rear and intermediate stop shoulders for the front, rear and intermediate followers to abut against, substantially as specified.
2. In a tandem spring draft rigging, the combination with a draw-bar, of a horizontally disposed draft yoke connected thereto, vertically disposed front, rear and intermediate followers extending through said draft yoke, tandem springs between said followers and a single center sill in line with the draw-bar and having a longitudinal slot in its upright web to receive the draw-bar, springs and followers, and stop members having a plurality of stop shoulders for the

followers to abut against secured on opposite sides of the center sill web above and below the followers, substantially as specified.

3. In a tandem spring draft rigging, the combination with a draw-bar, of a horizontally disposed draft yoke connected thereto, vertically disposed front, rear and intermediate followers extending through said draft yoke, tandem springs between said followers and a single center sill in line with the draw-bar and having a longitudinal slot in its upright web to receive the draw-bar, springs and followers, and stop members having a plurality of stop shoulders for the followers to abut against secured on opposite sides of the center sill web above and below the followers, said center sill web having integral stop tongues or projections, substantially as specified.

4. In a tandem spring draft rigging, the combination with a draw-bar, of a horizontally disposed draft yoke connected thereto, vertically disposed front, rear and intermediate followers extending through said draft yoke, tandem springs between said followers and a single center sill in line with the draw-bar and having a longitudinal slot in its upright web to receive the draw-bar, springs and followers, and stop members having a plurality of stop shoulders for the followers to abut against secured on opposite sides of the center sill web above and below the followers, and tie-plates secured on each side of said center-sill and embracing the draft yoke, substantially as specified.

5. In a tandem spring draft rigging, the combination with a draw-bar, of a horizontally disposed draft yoke connected thereto, vertically disposed front, rear and intermediate followers extending through said draft yoke, tandem springs between said followers and a single center sill in line with the draw-bar and having a longitudinal slot in its upright web to receive the draw-bar, springs and followers, and stop members having a plurality of stop shoulders for the followers to abut against secured on opposite sides of the center sill web above and below the followers, and tie-plate secured on each side of said center sill and embracing the draft-yoke, said tie-plates having channels to receive and guide the draft yoke, substantially as specified.

6. In a draft rigging, a single center sill having a vertically disposed web in which a longitudinally extending slot is formed, an intermediate stop arranged in said slot and connected to the center sill, end stops connected to the center sill, front and rear springs arranged in said slot on opposite sides of the intermediate stop, and followers interposed between the ends of said springs and the stops on the center sill, substantially as described.

7. In a draft rigging, a single center sill having a vertically disposed web in which a longitudinally extending opening is formed, members connected to the center sill adjacent the lower edge of said opening and projecting laterally therefrom, tandem arranged springs arranged in said opening and cooperating with followers that pass transversely through the opening, and end stops and an intermediate stop cooperating with said followers and rigidly connected to the center sill; substantially as described.
8. In a tandem spring draft rigging, a single center sill having a vertically disposed web in which a longitudinally extending slot is formed, means connected to said web for reinforcing the slot therein, tandem arranged springs located in said slot and cooperating with followers that pass transversely through the slot, end stops and an intermediate stop connected to the center sill and cooperating with said followers, a draw-bar, and means for transmitting the movements of said draw-bar to said followers; substantially as described.
9. In a tandem spring draft rigging, a center sill having a vertically disposed web in which a longitudinally extending slot is formed, flanged members secured to the vertical web of said sill adjacent the edges of said slot, front and rear springs arranged in said slot and cooperating with followers that pass transversely through the slot, end stops and an intermediate stop cooperating with said followers and connected to the flanged members on the web of the center sill, a draw-bar, and means for transmitting the movements of said draw-bar to said followers to compress the springs under buffing and pulling shocks; substantially as described.
10. In a tandem spring draft rigging, a single center sill having a vertically disposed web in which a longitudinally extending slot is formed, intermediate stop members connected to the center sill and projecting into said slot, end stops connected to the center sill, front and rear springs arranged in said slot between followers that cooperate with said stops, a draw-bar, a device passing transversely through the slot in the center sill, between the intermediate followers and the intermediate stop members, and a connection between said device and the draw-bar; substantially as described.
11. In a tandem spring draft rigging, a single center sill having a vertically disposed web in which a longitudinally extending slot is formed, flanged members projecting laterally from the opposite sides of the web of the center sill at the top and bottom edges of said slot, end stops and an intermediate stop connected to said flanged members, front and rear springs arranged in the slot between followers that cooperate with said stops, a draw-bar, devices passing transversely through the slot in the center sill between the intermediate followers and in rear of the rear follower, and a connection between said devices and the draw-bar; substantially as described.
12. In a tandem spring draft rigging, a single center sill having a vertically disposed web, a pair of tandem arranged springs located in openings in the vertical web of said sill, a pair of followers for each of said springs, and end stops and an intermediate stop rigidly connected to the vertical web of the sill and cooperating with said followers; substantially as described.
13. In a tandem spring draft rigging, a single center sill having a vertically disposed web in which a longitudinally extending slot is formed, flanged members connected to the vertical web of the sill adjacent the edges of the slot therein and projecting laterally from said web, pairs of devices connected to the laterally projecting flanges of said members to form an intermediate stop, end stops formed by pairs of members that are connected to said laterally projecting flanges, and front and rear springs interposed between followers that are arranged in the slot in the center sill between the intermediate stop and the end stops; substantially as described.
14. In a tandem spring draft rigging, a single center sill having a vertically disposed web in which a longitudinally extending slot is formed, a draw-bar, a draft yoke connected to said draw-bar and extending parallel to the center sill on opposite sides of the web thereof, a pair of devices connected to said yoke and passing transversely through the slot in the web of the center sill, a spring and a pair of followers arranged between said devices, a second spring and a pair of followers arranged between one of said devices and the end of the draw-bar, and an intermediate stop and end stops connected to the center sill and cooperating with said followers, substantially as described.
15. A tandem spring draft rigging, comprising a single center sill having a vertical web in which a longitudinally extending slot is formed, flanged members connected to the vertical web of the center sill so as to partially surround the slot therein, a pair of tandem arranged springs and cooperating followers located in the slot in the center sill; front stop members cooperating with the front follower and connected to the vertical web of the center sill and to the flanged members thereon, an intermediate stop arranged between the intermediate followers and consisting of members that are connected to the vertical web of the center sill and to the flanged members thereon, and an end stop cooperating with the end follower

and also consisting of members that are connected to the vertical web of the center sill and to the flanged members thereon; substantially, as described.

16. In a tandem spring draft rigging, a single supporting member having a vertical web that is provided with an elongated opening, tandem arranged springs located in said opening, followers for said springs, flanges projecting laterally from the web of said member for supporting said followers, stops carried by said member and cooperating with said followers, a draw-bar, and means for transmitting the movements of said draw-bar to said followers to compress the springs under buffing and pulling shocks; substantially as described.

17. In a draft rigging, a single center sill provided with a vertically disposed web in which a longitudinally extending slot is formed, a plurality of tandem arranged shock-absorbing elements located in said slot, followers cooperating with said shock-absorbing elements, and an intermediate stop and end stops carried by said center sill and cooperating with said followers; substantially as specified.

18. In a draft rigging, a supporting member having a vertical web in which openings are formed, shock-absorbing elements arranged in said openings in tandem relation to each other, followers cooperating with said shock-absorbing elements, and an intermediate stop and end stops connected to the vertical web of said member and cooperating with said followers; substantially as specified.

19. In a draft rigging, an approximately I-shaped supporting member having openings formed in its vertical web, a plurality of shock-absorbing elements and followers arranged in said openings in tandem relation to each other, flanges projecting laterally from the top and bottom edges of the openings in said supporting member, and an intermediate stop and end stops connected to said flanges and also to the vertical web of said supporting member; substantially as described.

20. In a draft rigging, a single center sill having a longitudinally extending slot formed therein, a plurality of compressible members arranged in said slot in tandem relation to each other, a pair of followers cooperating with each of said compressible members, follower stops rigidly connected to the center sill, and members connected to the center sill to form a wide supporting surface on which said followers slide, substantially as described.

21. In a draft rigging, a center sill having a vertical web in which a longitudinally extending slot is formed, members connected to the web of the center sill adjacent the upper and lower edges of the slot therein and

provided with horizontally disposed flanges that project laterally from said web, tandem springs arranged in said slot between pairs of followers that extend transversely through the slot and rest on said horizontally disposed flanges, and stops connected to the flanged members on the center sill and cooperating with said followers, substantially as described.

22. In a tandem draft rigging, a single supporting member constructed to receive tandem arranged shock-absorbing elements and followers cooperating therewith, flanges projecting laterally from said member to form a flat supporting surface on which said followers slide, and an intermediate stop and end stops connected to said member and cooperating with said followers, substantially as described.

23. In a tandem spring draft rigging, a single center sill having a vertically disposed web in which a longitudinally extending slot is formed; a draw-bar, means connected to said draw-bar and which extend parallel to the center sill on opposite sides of the web thereof, a pair of devices connected to said means and passing transversely through the slot in the web of the center sill, a spring and a pair of followers arranged between said devices, a second spring and a pair of followers arranged between one of said devices and the end of the draw-bar, and an intermediate stop and end stops connected to the center sill and cooperating with said followers, substantially as described.

24. In a car the combination with end-sills and a single metal beam center-sill, the ends of which are connected to said end-sills, and which has a portion of its web between its edges cut away to form a continuous space or guide-way extending from its ends to a point beyond the rear ends of the springs, a draw-bar extending longitudinally into said guide-way, means for retaining said draw-bar in place within said guide-way, suitable springs and devices including the springs for transmitting the strain of the buff and pull of the draw-bar to the center-sill.

25. In car the combination with end-sill and a single metal beam center-sill, the ends of which are connected to said end-sills, and which has a portion of its web between its edges cut away to form a continuous space or guide-way extending from its ends to a point beyond the rear ends of the springs, the center sill being provided with flanges at the edges of said guide-way, a draw-bar extending longitudinally into said guide-way, means for retaining said draw-bar in place within said guide-way, suitable springs, and devices including the springs for transmitting the strain of the buff and pull of the draw-bar to the center-sill.

26. A draft rigging for cars comprising a

single center sill having a continuous longitudinal transverse opening extending from its ends past the location of the springs, having rear portions of greater width forming
5 shoulders, a draw-bar retained within said opening, cushioning means for said draw-bar which include said springs and a member which engages said shoulders of the center sill and other means which connect the
10 upper and lower bifurcations of said sill.

27. A draft rigging for cars comprising a single center-sill having a continuous longitudinal transverse opening extending from its ends past the location of the springs, the

rear portion of which is increased in height, 15
a draw-bar retained in said opening, devices for cushioning said draw-bar which includes said springs, suitable front and rear followers, the front follower engaging the
20 shoulders of said center-sill, resulting from the increase of height of the opening, and separate means for connecting the upper and lower bifurcations of the sill.

JOHN F. O'CONNOR.

Witnesses:

EDMUND ADCOCK,
H. M. MUNDAY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."