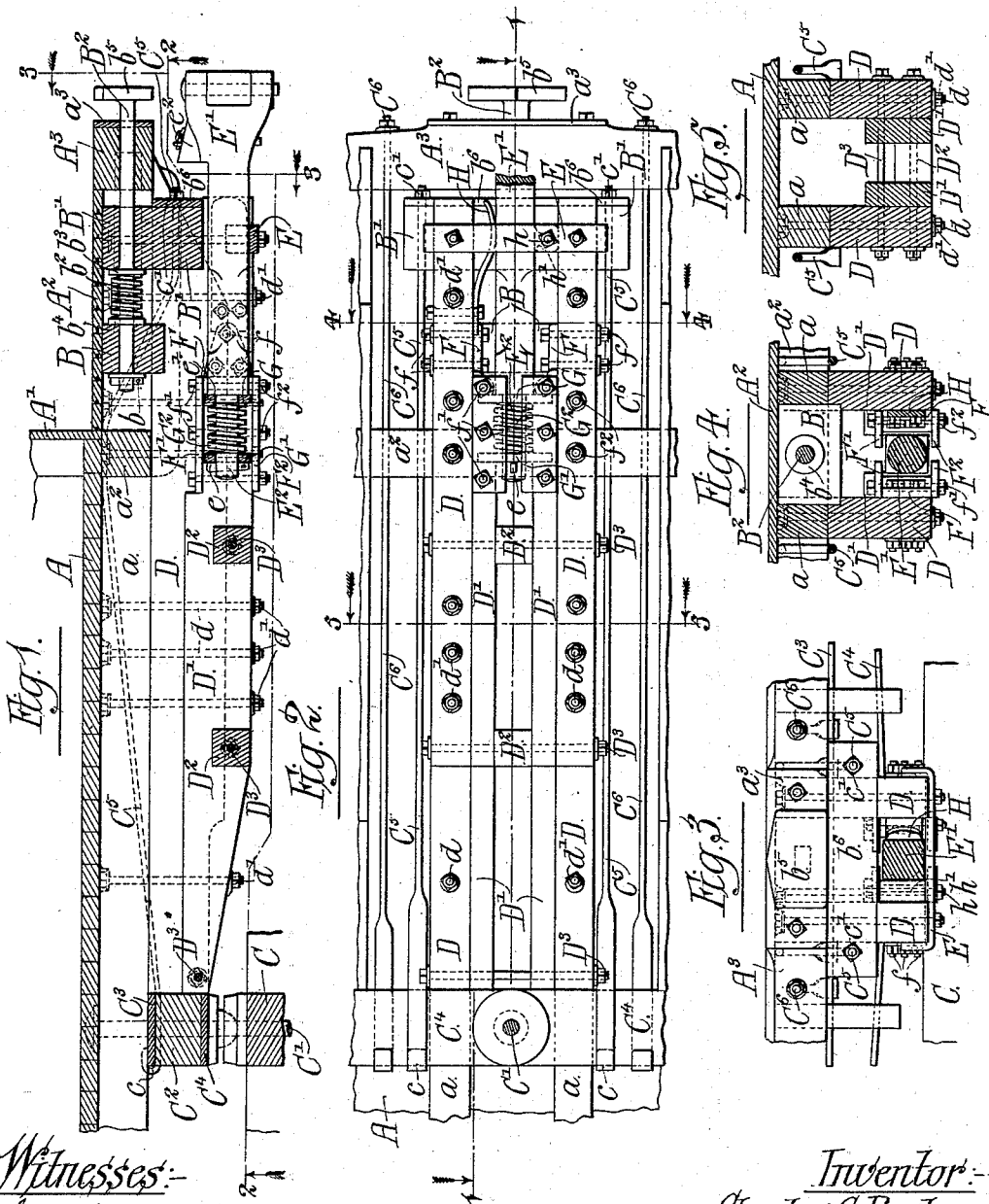


(No Model.)

C. C. BORTON.
DRAFT RIGGING FOR PLATFORM CARS.

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Patented Aug. 21, 1894.



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UNITED STATES PATENT OFFICE.

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DRAFT-RIGGING FOR PLATFORM-CARS.

SPECIFICATION forming part of Letters Patent No. 524,817, dated August 21, 1894.

Application filed December 13, 1893. Serial No. 493,601. (No model.)

To all whom it may concern:

Be it known that I, CHESTER C. BORTON, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Draft-Rigging for Platform-Cars; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to draft-rigging for platform railway cars, that is to say, it relates to the construction and arrangement of the blocks, rods and other parts of a platform railway car by which the draw-bar of the car is supported.

I use the term platform car as meaning either passenger, baggage and express, or other light freight cars having a platform at each end as distinguished from the ordinary freight cars having no platforms and which latter are built with special reference to hard usage and severe end strains. The former are usually made a part of a passenger train for obvious reasons. Freight cars are handled very roughly and especially in the "yards" when switching, and receive very severe end blows which are delivered upon the coupler ends and buffers. When platform cars, as heretofore constructed, are made up with freight cars; they are subjected to the same severe blows and usage as said freight cars, and hence, the draft rigging not being properly constructed to withstand the same, the platforms are jammed, become loose, the coupler is bent downward so low as to be out of line with the adjacent coupler of another car, the whole rigging comes out of place and requires repair, and very often the platform, rigging and all are broken off from the car, requiring it to be at once sent to the repair shop. Hence, when a platform car is found empty at one end of a route it is held idle in the yards until a proper load is found for it in due course of business in order that it may be returned to its home station as part of a passenger train or express train, rather than as a part of a freight train, in which latter event, experience teaches that it would be so damaged as to require it to be sent to the shop for repairs.

The object, therefore, of my invention is to produce a draft rigging for platform cars that, while conforming to the rules of the Master Car-Builders' Association, will be light yet especially strong and durable, and capable of standing the utmost wear and rough usage.

To this end the invention consists in the special construction of the various parts of the rigging as set forth in the following description and accompanying drawings, and specially pointed out in the appended claims.

In the drawings:—Figure 1 is a vertical longitudinal sectional view of a portion of a platform car wherein the drawbar is secured in my improved rigging, said section being taken on the line 1—1 of Fig. 2 and looking in the direction indicated by the arrows. Fig. 2 is a plan view of the bottom thereof, looking on the line 2—2 of Fig. 1 in the direction indicated by the arrows. Fig. 3 is an end elevation, with the drawbar in section, taken on line 3—3 of Fig. 1. Fig. 4 is a transverse vertical sectional view, taken on line 4—4 of Fig. 2 and looking in the direction indicated by the arrows. Fig. 5 is a similar view, taken on line 5—5 of Fig. 2.

In said drawings, let A represent the flooring of the car, A' the end thereof, A² the platform floor, *a a* the side sills, and *a*² the end sill of the car, all of these parts being constructed and arranged in the usual manner.

A³ is the usual platform end sill, usually faced with an iron plate *a*³, and between it and the end sill of the car *a*² are the two buffer blocks B B', arranged at a suitable distance apart transversely of the car platform. The buffer bar B², which is of rectangular form in cross-section throughout its main part and provided with a spindle portion at its inner end, extends through suitable apertures in the said buffer blocks and platform end sill, and is held in position to prevent an outward displacement by a pin or key *b* passing through a suitable opening in its end. Surrounding the buffer bar loosely is a coiled spring *b*² the ends of which press against bearing plates *b*³ *b*⁴. The plate *b*³ is secured against movement on the buffer bar by means of the shoulders formed by the juncture of the spindle portion with the rectangular part of the bar B², but the plate *b*⁴ is an apertured collar and

fits loosely over the buffer bar. The spring b^2 presses the plates b^3 b^4 apart normally, as shown in Fig. 1, but cushions any blow given to the end b^5 of the buffer bar B^2 , as will be readily understood.

The bar B' is made considerably heavier in thickness than usual heretofore, and in practice on an ordinary sized car this difference will be at least two inches, the bar being an oak timber. It will be observed that the bar extends below the bottom line of the car sill and upon the front face of such extension a protecting plate b^6 is secured to receive the thrust of the drawbar, as will be hereinafter explained.

C represents one of the trucks, united to the car in the usual manner by the kingbolt C' , which latter passes vertically down through the car floor A , transom block C^2 and two transversely arranged iron straps or bars C^3 C^4 , the latter being arranged respectively above and below the transom block C^2 ; said transom block and straps C^3 C^4 constituting in effect one of the bolsters of the car. The construction of this part of the car is similar to that of any ordinary car. Tie straps or rods C^5 C^6 on each side of the draft timbers hereinafter to be mentioned, connect the block B' , and end platform sill A^3 , respectively, with the iron strap C^3 .

By referring to Fig. 1 it will be noticed that the tie rod C^5 is provided at its rear end with a hook c which engages the rear edge of the iron strap C^3 , that it passes beneath said strap C^3 and then forwardly and upwardly above the end sill a^2 , upon which it rests, and then downwardly and through the block B' and the face plate b^6 , and that it is secured in this position by a nut c' upon its threaded forward end.

D D are draft timbers consisting of heavy oak pieces that rest at their upper edges against the lower edges of the car sills a , being held in place by a series of bolts d passed through the sills and timbers and having at their lower ends suitable retaining nuts d' . The rear ends of the timbers D set squarely against the forward or outer vertical face of the transom block C^2 . The forward ends of the timbers D are cut away so as to set firmly against the rear lower face and under face of the block B' , as clearly shown in Fig. 1, the extreme end of the draft timber extending out flush with the outer face of the protecting plate b^6 . Upon the proximate sides of the draft timbers D D are placed reinforcing or filling blocks D' D' extending longitudinally forward from the timber C^2 , and spreading blocks D^2 D^2 are interposed between said filling blocks, as shown, for the purpose of maintaining a suitable interval between the latter and at the same time permitting the secure clamping together of the draft timbers and filling blocks, which latter object is effected by means of the transversely arranged bolts D^3 D^3 . It will thus be noticed that the draft timbers are firmly secured by

the bolts d D^3 and the tie rods C^5 against displacement in every direction and that this construction affords a very solid and substantial rigging.

Secured by bolts or in any other suitable manner beneath the forward ends of the draft timbers D is a horizontally arranged iron plate or bar E , upon which the forward end of the drawbar E' rests and upon which it slides. The rear end of the drawbar E' is held and supported in a pocket or housing now to be described. Forward of the forward end of the filling blocks D' are two cheek-pieces or castings F , the same being metal plates bolted at f to the inside faces of the draft timbers D and provided with rear vertical faces. These cheek-castings F are of less thickness than the filling blocks D' .

F' F^2 are respectively upper and lower plates of metal somewhat wider than the thickness of the cheek plates F and of a length sufficient to have their ends rest upon the upper and lower edges of the cheek plates and of the filling blocks, the upper margin of the latter being notched or cut away, as shown in Fig. 1, so that its forward end shall be of the same height as the width or height of the cheek-plates F . These plates F' F^2 are secured together by bolts f' passing through and locked in position by nuts f^2 .

The rear end of the drawbar is reduced in size, as illustrated in Fig. 1, in order that said reduced portion or spindle E^2 may be conveniently passed through apertured follower plates G G' , a key or pin e locking said drawbar in position in rear of the follower plate G' in a familiar manner. A spiral spring G^2 of a desired strength surrounds the spindle E^2 of the drawbar and has its ends resting against the follower plates G G' . The follower plates G and G' are of such dimensions as will enable them to move freely forward and backward between the pocket straps F' and F^2 , and they are of such length as will enable them to move freely between the draft timbers while at the same time abutting against the ends of the filling blocks D' and the cheek plates F . The spring G^2 will thus normally hold the follower plates away from each other against the ends of said filling blocks and cheek plates. It will be observed that the drawbar is provided with a shoulder e' against which the follower plate G also presses, and that the distance between the face of this shoulder e' and the pin e is predetermined with respect to the location of the cheek-castings F , so that the spring G will normally press the drawbar E' outwardly and hold its forward end slightly in advance of the face of the buffer bar B^2 . The drawbar E' is provided with a raised extension e^2 forming a shoulder adapted to strike against the face of the plate b^6 whenever the pressure on the drawbar E' is sufficient to exceed the resistance capacity of the spring G^2 . That is to say, when pressure is applied to the drawbar E' in a direction toward the spring G^2 the

latter is compressed and takes the first thrust of the pressure so that the shoulder e^2 will not strike the plate b^6 with the same force that it would if the spring G^2 were not present.

5 In order to provide for the lateral movement of the drawbar E' necessary in coupling the car together, said bar is held yieldingly in central position by means of a spoon-shaped plate spring H secured on the inner
10 face of the draft timber D and bearing at its free end against the side of said drawbar, as clearly shown in Fig. 2. A bolt h , passing vertically through the bar B' and carrying
15 bar E , and provided on its part extending between said bars with an encircling collar or bearing-block h' (shown in Fig. 3) serves to hold said drawbar in central position positively against the action of the spring H .
20 Sufficient play is provided in the follower plates G and G' to permit of the slight movement incident to this part of the drawbar when the same is shifted laterally in coupling.

From the foregoing description it will be evident that I have devised a construction
25 capable of sustaining, without injury, the most severe shocks and strains to which a car is likely to be subjected, that is to say, a construction capable of sustaining such shocks and strains almost or equally as well as will
30 an ordinary freight car.

By reason of the arrangement of the draft timbers so as to abut against the transverse transom block, the end thrust on said timbers is transmitted to this block, but owing to the
35 trussing of said block by the rods C^5 and C^6 no injury or displacement thereof can occur. The tendency of the platform to buckle and bend downward under severe shocks or strains is also prevented by reason of the truss-rods
40 extending from the lower part of the bar B' to and over the end sill a^2 of the car. The making of the draft timbers of extra depth or width vertically, so as to extend down parallel with the lower edge of the drawbar is a
45 feature of importance, affording as it does great strength as well as a most convenient means of mounting and housing said drawbar.

I claim as my invention—

50 1. A combined draft rigging and platform support for cars, comprising a pair of draft timbers secured longitudinally beneath the car body and projecting beneath the end platform thereof, said draft timbers abutting
55 at their inner ends against the transom block of the car, a transversely arranged supporting beam carried on the outer ends of said draft-timbers, a transversely arranged metal

strap or brace bar secured on said transom block, truss or stay rods extending from said metal strap upwardly and outwardly over the
60 end sill of the car and thence to the lower part of said supporting beam, reinforcing or lining pieces secured to the inner proximate faces of said draft timbers, space blocks secured at intervals between said draft timbers,
65 and a drawbar supporting strap secured across and beneath the forward ends of said draft-timbers, substantially as set forth.

2. A combined draft rigging and platform support for cars, comprising a pair of draft
70 timbers secured longitudinally beneath the car body and projecting beneath the end platform thereof, said draft timbers abutting at their inner ends against the transom block of the car, a transversely arranged support-
75 ing beam carried on the outer ends of said draft-timbers, a transversely arranged metal strap or brace bar secured on said transom block, truss or stay rods extending from said metal strap upwardly and outwardly over the
80 end sill of the car and thence to the lower part of said supporting beam, reinforcing or lining pieces secured to the inner proximate faces of said draft timbers, space blocks secured at intervals between said draft timbers,
85 a drawbar supporting strap secured across and beneath the forward ends of said draft-timbers, and a housing for the drawbar spring and its follower plates, comprising cheek-pieces secured on the inner faces of the draft
90 timbers against the ends of which the outer one of said follower plates rests, shoulders for the opposite follower plate formed by the square ends of the lining pieces of the draft timbers, and protecting straps or plates ex-
95 tending across from said cheek-pieces to said lining pieces respectively above and below said draw-bar spring, substantially as set forth.

3. In a draft-rigging and platform support
100 for cars, the combination with the drawbar thereof, of the draft timbers D , lining pieces D' , space blocks D^2 , supporting beam B' , carrying bar E and truss-rods C^5 , C^6 , arranged and combined substantially
105 as and for the purpose set forth.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

CHESTER C. BORTON.

Witnesses:

TAYLOR E. BROWN,
ALBERT H. GRAVES.