

Aug. 25, 1925.

1,551,353

A. H. WESTON

FRONT DRAFT LUG

Filed Feb. 20, 1925

2 Sheets-Sheet 1

Fig. 1.

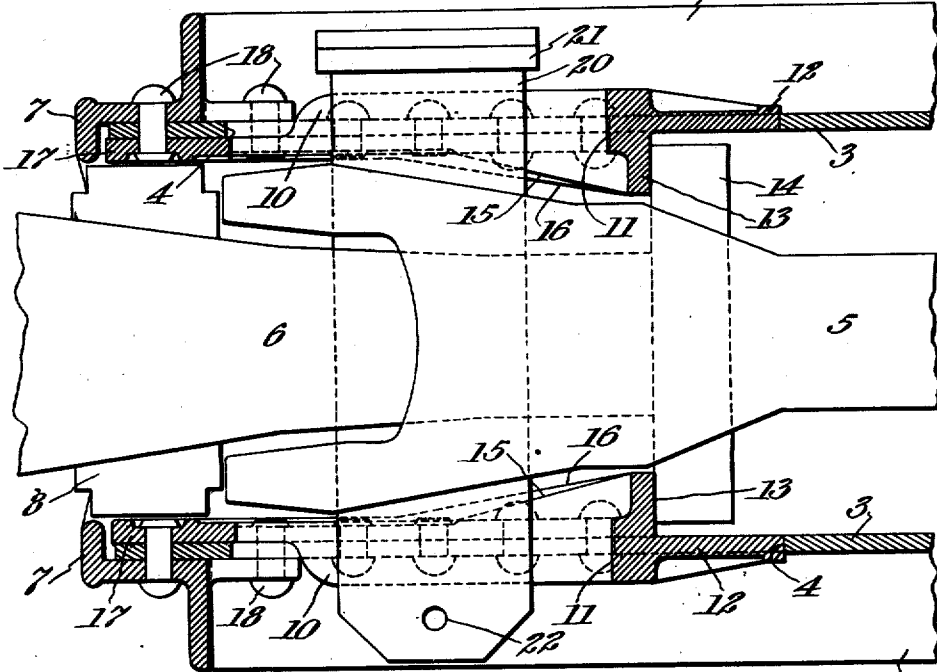
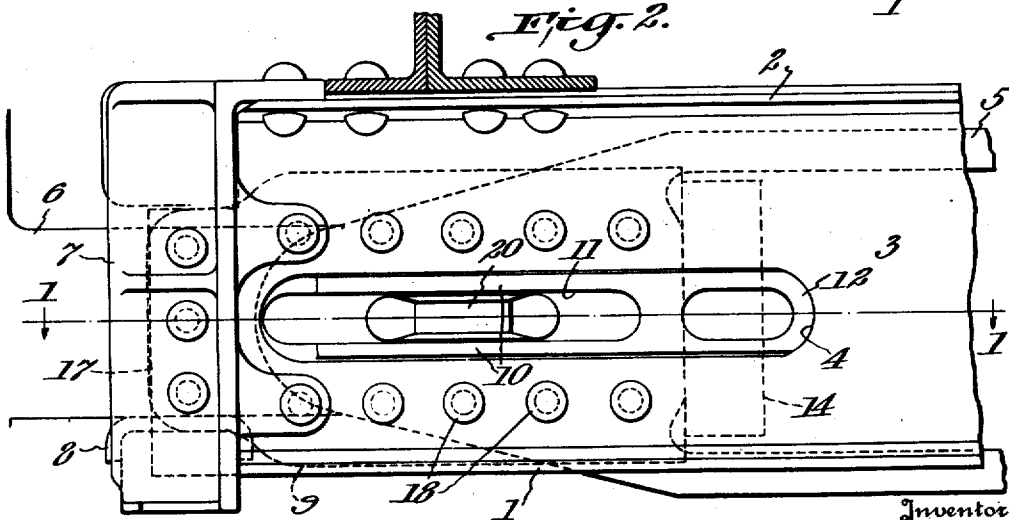


Fig. 2.



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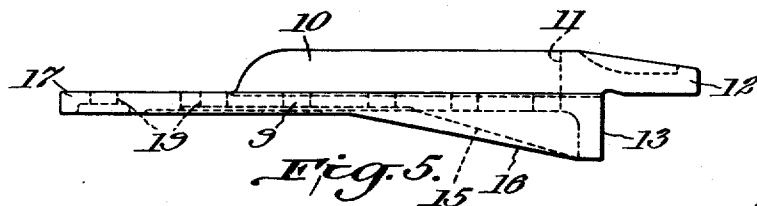
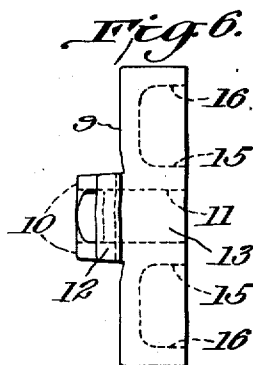
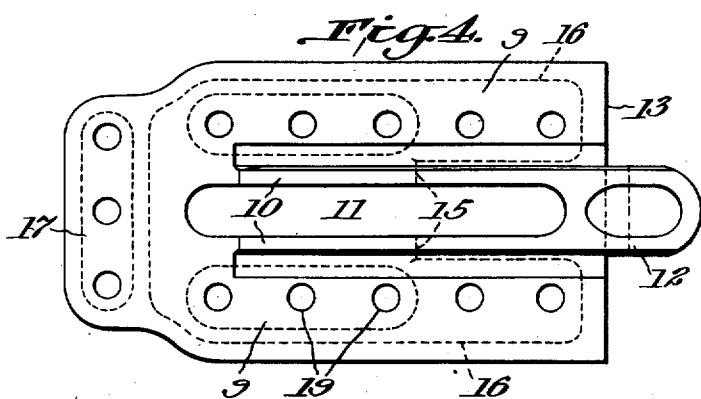
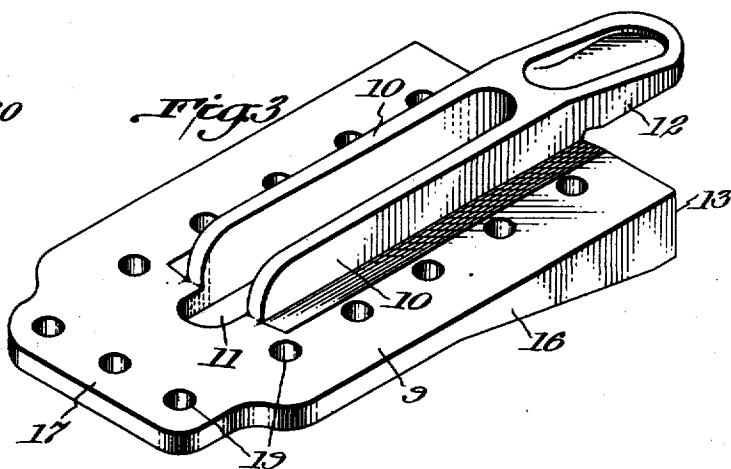
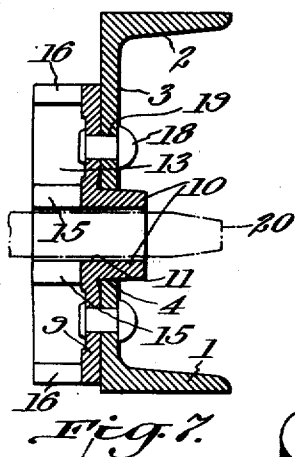
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FRONT DRAFT LUG

Filed Feb. 20, 1925

2 Sheets-Sheet 2



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Patented Aug. 25, 1925.

1,551,353

# UNITED STATES PATENT OFFICE.

ARTHUR H. WESTON, OF RICHMOND, VIRGINIA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO CAR DEVICES COMPANY, INCORPORATED, OF RICHMOND, VIRGINIA, A CORPORATION OF VIRGINIA.

## FRONT DRAFT LUG.

Application filed February 20, 1925. Serial No. 10,617.

*To all whom it may concern:*

Be it known that I, ARTHUR H. WESTON, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented a certain new and useful Improvement in Front Draft Lugs, of which the following is a full, clear, and exact description.

The object of this invention is to improve the draft gear attachments of railway cars.

In those forms of draft gear attachments in which is employed a vertical plane yoke connected with the center sills and the shank of the coupler by means of a transverse key, front and rear stop lugs are employed. The present invention replaces the front stop lugs.

The invention consists of pairs of lugs, provided with longitudinal slots, each lug preferably of integral or unitary construction, and adapted to be applied on the inner adjacent surfaces of the constituent members of the center sill and partly within slots in the webs of such center sill members, and having inwardly and outwardly extending ribs flanking the sides and inner end of the slot in the lug and forming bearings for the transverse key, said ribs being extended inwardly and rearwardly in a plane offset from the body or plate of the lug and forming a solid rearward projection beyond said body or plate, and an abutment for the front follower or draft gear, as I will proceed now to explain and finally claim.

In the accompanying drawings illustrating the invention, in the several figures of which like parts are similarly designated, Figure 1 is a top plan view, partly in horizontal section, on the line 1—1 of Fig. 2, illustrating enough of the center sill and adjacent parts to show the application of the present invention, and Fig. 2 is a side elevation with the end sill in cross-section. Fig. 3 is a perspective view of one of the front draft lugs detached. Fig. 4 is a plan view of said lug; Fig. 5 is an edge view, and Fig. 6 is an end view developed from Fig. 4. Fig. 7 is a cross-section of one of the members of the center sill, showing the front draft lug in place, and also showing, but in dotted lines, a part of the transverse key.

Without thereby limiting the invention to any particular form of draft rigging or draft sills or center sills, the invention will

be described, by way of illustration, in connection with a center sill made up of two metal channel beams, set with their webs upright and in parallelism and spaced apart sufficiently to admit the draft gear.

The channel beams, as shown in detail in Fig. 7, have the bottom flanges 1, top flanges 2, and webs 3, all of any usual or approved construction, and have their webs slotted longitudinally, as indicated at 4, to permit the ribs of the draft lugs, hereinafter particularly described, to extend through and beyond the said webs.

5 is the outer portion of an ordinary yoke, 6 is the shank of the coupler, 7 is the striking plate, and 8 is the draw-bar carrier, all of ordinary or approved construction.

The invention herein is not limited to these details, and is adaptable to other constructions.

The front draft lug of this invention comprises a plate 9, having the side shown uppermost in Fig. 3 as a substantially flat surface, but provided with the longitudinal ribs 10, parallel with an intermediate slot 11, and surrounding the inner end of said slot, so that the lug may be fitted flat and snug against the inside surface of the web of the center sill, with the ribs extending through the slot 4, and said ribs projecting outside of the web. These ribs are extended at 12 beyond the end of the lug, and such extension enters the slot in the web, thereby serving to align the parts and transmit strains to the center sill. The lug is provided with the transverse projection 13 on the opposite or inner side, so as to form an abutment for the front follower. This projection or abutment 13 preferably is reinforced by the inclined ribs 15, and there are similar ribs 16 at the longitudinal edges of the lug which extend back to and reinforce the abutment 13.

The plate 9 extends not only laterally beyond the slot and its ribs 10, but also extends forwardly at 17 so as to completely overlie the slot in the web of the center sill.

The front draft lug may be secured to the web of the center sill by any suitable means, preferably rivets 18, applied through the series of holes 19.

The front draft lug may be conveniently made as a single unitary casting, and preferably of steel.

As already indicated, one of these lugs is

secured to each of the center sill members on the inner side thereof, and when the coupler and yoke are placed in position between them, they are secured by means of any suitable transverse key 20, preferably headed at 21 on one end and provided with a hole 22 at the other end to receive a cotter-pin or other fastening means. The slots 11 in the lugs are made sufficiently large to allow for necessary motion of the draft gear, and so that in buffing the transverse key will abut against the extended surfaces of the lugs, the strain being taken off of the rivets practically by the solid or unslotted rearward extension 12.

As already sufficiently indicated, the front draft lug of this invention is intended to take the place of the front draft lugs heretofore used, same being a component part of all draft arrangements, inclusive of vertical plane yoke and friction draft gear.

In the handling of freight cars, both in heavy tonnage trains and in freight classification yards, the cars are subjected to end shocks which are frequently very much in excess of the cushioning capacity of friction draft gears, and as a result, the draft gears are subject to damage after they have ceased to function as a cushion and must act as a solid column.

A main purpose of the present invention is to have the lugs function as a limiting stop to the inward travel of the transverse or coupler key and coupler, the construction at the rear end supplying the needed strength to permit the lugs to act as an abutment for said key. In the case of friction draft gears having an extreme travel of two and three-quarters inches, the slots in the draft lugs would be made of such a length as to bring the key into contact with the rear end of the slots when the draft gear had exhausted its travel and had then ceased to act as a cushion. Thereafter the force would be transmitted through the key to the draft lugs and center sills, thus furnishing protection to the draft gear from over-solid blows. The rearwardly projecting portions 12 of the draft lugs contacting with the webs of the center sills at their rear ends, the force will be resisted not only by the rivets by which the lugs are secured in place, but also by the webs of the center sills. As draft lugs are now constructed, there is not sufficient strength at the rear end to permit contact of the transverse key with the rear ends of the slots, and it is common practice to have half an inch clearance between the key and the rear end of the slot, when the draft gear has been compressed solid.

Another advantage of the lugs of this invention is that because of the extension of the ribs 10 through and beyond the outer face of the center sill members, a wider

support and a greater bearing area are provided for the transverse key.

The standard draft gear pocket in order to accommodate friction draft gears of the permitted maximum length and width, must be kept clear of all projections inside and between the center sill members when the vertical plane yoke is used. For this reason the inner face of the extension 12 after application is flush with the inner face of the web of the center sill, because the inner face of this extension is in the same plane as that surface of the plate which contacts with the web of the sill while the body of the extension is within the sill slot. The extension 12 is longer than the maximum length of movement of the draft gear, so that should the relative thicknesses of the extension and the web of the sill or any other contingency involve a slight projection of the extension into this pocket, it would be impossible for the follower or front end of the draft gear to strike or foul the inner end of the extension in returning to normal position.

Variations in the details of construction are permissible within the principle of the invention and the scope of the claims following.

What I claim is:—

1. A front draft lug, comprising a plate adapted to be applied to the inner side of a center sill and provided with a longitudinal slot flanked at both sides and one end by ribs and of a length sufficient to limit the inward travel of the transverse key, said ribs adapted to be set in a slot in the center sill and extend outwardly therefrom, and a rear extension of said ribs offset from the vertical plane of the plate and projecting rearwardly beyond the plate to enter said sill slot and fill it flush on the inside.

2. A front draft lug, comprising a plate adapted to be applied to the inner side of a center sill and provided with a longitudinal slot flanked by ribs at both sides and one end, said slot of a length sufficient to limit the inward travel of the transverse key and said ribs adapted to be set in a slot in the center sill to project outwardly through the slot in the sill, and said ribs extending longitudinally beyond the rear end of the plate and offset from the vertical plane of the plate and set in the center sill slot and abutting its rear end.

3. A front draft lug, comprising a plate adapted to be applied to the inner side of a center sill and provided with a longitudinal slot flanked by ribs at both sides and extending around one end, said slot of a length sufficient to limit the inward travel of the transverse key, said ribs extending outwardly through a slot in the center sill, a rear extension offset from the vertical plane of the plate and arranged in the sill

slot and flush with the inner surface of the sill, and a transverse projection on the opposite side of the plate and at its rear end and adapted to serve as an abutment for the front follower or the draft gear.

4. The combination with center sill members provided with longitudinal slots, of front draft lugs slotted longitudinally and provided with ribs flanking the sides and inner ends of the slots in the lugs, said ribs extending solidly beyond the rear ends of the plates, the ribs and the extension fitted in the slots in the center sill members, and the lugs fixedly secured to the center sill members on the inner side thereof.

5. The combination with center sill members provided with longitudinal slots, of

front draft lugs slotted longitudinally and provided with ribs flanking the sides and inner ends of the slots in the lugs, said ribs extending solidly beyond the rear ends of the plates, the ribs and the extension fitted in the slots in the center sill members, and the said lugs having portions extending on both longitudinal sides of the slots in the lugs and also forwardly of said slots and these extensions arranged in contact with the inner surfaces of the center sill members and riveted to said members.

In testimony whereof I have hereunto set my hand this 19th day of February, A. D. 1925.

ARTHUR H. WESTON.

slot and flush with the inner surface of the sill, and a transverse projection on the opposite side of the plate and at its rear end and adapted to serve as an abutment for the front follower or the draft gear.

4. The combination with center sill members provided with longitudinal slots, of front draft lugs slotted longitudinally and provided with ribs flanking the sides and inner ends of the slots in the lugs, said ribs extending solidly beyond the rear ends of the plates, the ribs and the extension fitted in the slots in the center sill members, and the lugs fixedly secured to the center sill members on the inner side thereof.

5. The combination with center sill members provided with longitudinal slots, of

front draft lugs slotted longitudinally and provided with ribs flanking the sides and inner ends of the slots in the lugs, said ribs extending solidly beyond the rear ends of the plates, the ribs and the extension fitted in the slots in the center sill members, and the said lugs having portions extending on both longitudinal sides of the slots in the lugs and also forwardly of said slots and these extensions arranged in contact with the inner surfaces of the center sill members and riveted to said members.

In testimony whereof I have hereunto set my hand this 19th day of February, A. D. 1925.

ARTHUR H. WESTON.

#### Certificate of Correction.

It is hereby certified that in Letters Patent No. 1,551,353, granted August 25, 1925, upon the application of Arthur H. Weston, of Richmond, Virginia, for an improvement in "Front Draft Lugs," an error appears in the printed specification requiring correction as follows: Page 1, line 93, after the word "follower" and before the period insert the reference numeral 14; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 17th day of November, A. D. 1925.

[SEAL.]

WM. A. KINNAN,  
Acting Commissioner of Patents.

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[SEAL.]

WM. A. KINNAN,  
*Acting Commissioner of Patents.*