(No Model.)

J. C. HUHN, L. D. RAMSEY & J. H. HUHN.

WAGON.

No. 418,796. Patented Jan. 7, 1890.

Fig. 1.

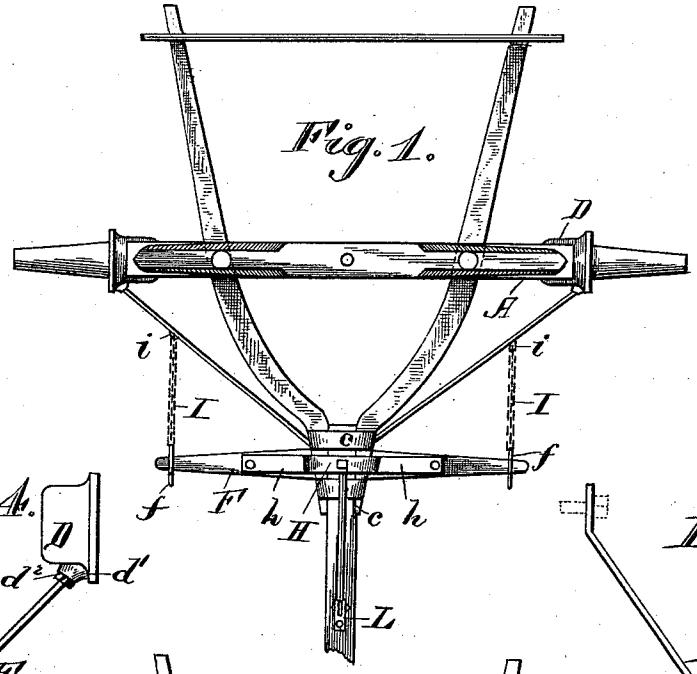


Fig. 4.

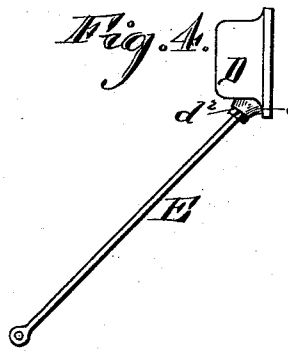


Fig. 5.

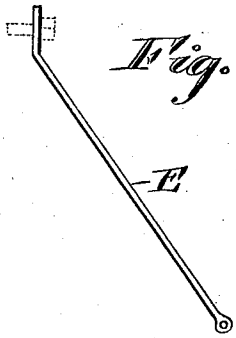


Fig. 2.

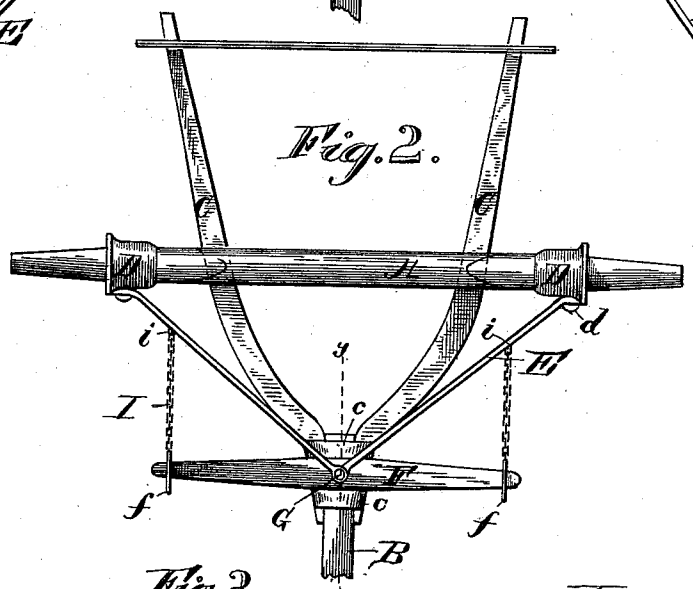
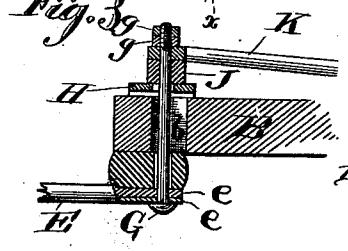


Fig. 3.



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WAGON.

SPECIFICATION forming part of Letters Patent No. 418,796, dated January 7, 1890.

Application filed January 21, 1889. Serial No. 297,015. (No model.)

To all whom it may concern:

Be it known that we, JAMES C. HUHN, LORENZO D. RAMSEY, and JOHN H. HUHN, citizens of the United States, residing at Smithfield, in the county of Fayette and State of Pennsylvania, have invented certain new and useful Improvements in Wagons, of which the following is a specification, reference being had therein to the accompanying drawings.

Figure 1 is a top or plan view of so much of the running-gear of a wagon as is necessary to illustrate our invention. Fig. 2 is a bottom view. Fig. 3 is a vertical section, enlarged, on line *x y*, Fig. 2. Fig. 4 shows a modification in the details of construction. Fig. 5 is a detached view of one of the draw-bars, Figs. 4 and 5 being also enlarged.

Referring to Figs 1, 2, and 3, A is an axle, of any suitable material, provided at its ends with, preferably, metal skeins.

B is the tongue.

C C are hounds connected rigidly at their front ends with the tongue, preferably by means of bands *c c*, as is customary in stiff-tongue wagons.

D D are hurters applied to the axles at the bases of the skeins. As indicated in Fig. 1, these hurters are of wrought-iron, in which case we prefer to shrink them onto the ends of the axles or of the skeins, as may be found most desirable.

E E are draw-bars and braces projecting forward and inward from the hurters and provided at their inner ends with eyes *e e*, which, when the parts are in working position, register with each other and with a hole through the evener F and the tongue to receive a bolt; or both draw-bars and braces may be made from a single piece of metal bent into V shape with an eye or loop at the apex to receive the bolt. The outer rear ends are welded to the hurters, or the construction of these parts may be modified, as indicated in Fig. 2, by making the hurters of cast metal, the rear ends of the draw-bars and braces having holes in them to receive bolts or set-screws *d*; or, as shown in Fig. 4, the hurters may be provided with internally-threaded lugs or bosses *d'*, into which the threaded ends of the draw-bars and braces are screwed, they being, by preference, provided with jam-nuts d^2.

F is a doubletree or evener, having a hole about midway between its ends to receive a bolt G, which passes through the eyes of the draw-bars and braces, thence upward through the evener, a slot *b* in the tongue, and a bracket H *h h* and other parts, to be hereinafter described. The bracket consists, preferably, of a central section H, of a length a little greater than the width of the tongue and hounds where it is applied, and two ends or arms arranged in a lower plane which is parallel with the plane of the part H, these ends being bolted or otherwise secured to the evener, whereby it (the evener) may be suspended upon the tongue and be free to vibrate in a horizontal plane within certain limits, which are determined by the distance apart of the angular portions which connect the parts H and *h h*.

I I are short chains or flexible links, each connected at its forward end to a hook *f* on the doubletree and at its rear end to a hook *i*, which is attached to the draw-bar and brace. While we prefer to attach the rear ends of these chains or links to the draw-bars and braces, as indicated, we do not wish to be limited to such details of construction, because we may adopt in place thereof any of the well-known forms and connections of chains or links or straps which are in common use for limiting the vibration of the doubletree.

J is a thimble surrounding the bolt G above the bracket.

K is a thrust-bar mounted at its rear end upon the upper end of the bolt G above the thimble and connected at its front end with the tongue, preferably by means of a hinge-joint L; but the hinge may be dispensed with and the front end of the thrust-bar bolted or otherwise connected rigidly with the tongue.

From the above description and an examination of the drawings it will be understood that when in operation the draft of the team is exerted upon the draw-bars and braces in such way as to counteract the tendency to whip the tongue sidewise when the front wheels, either of them, encounter an obstruc-

tion to their forward movement, thus materially relieving both the hounds and the tongue from the strain which in other wagons is thrown upon them when passing obstructions of that character. Again, the draft is applied at so low a point as to materially reduce the power which is required to move the vehicle forward as compared with those constructions in which the evener is arranged above the tongue; but the tendency to unduly elevate the front end of the tongue is counteracted by the thrust-bar K, because the pull of the team is borne in part by the draw-bars and braces and in part by the thrust-bar K, the forward push upon which is transferred through its front end to the tongue and tends to depress the front end of the tongue.

The action of the thrust-bar K in connection with the other devices will be readily understood, for if it be supposed that the upper end of this bar K were removed from the bolt or connecting-bar G it will be seen that as soon as the forward strain is exerted upon the evener or whiffletree F the upper end of the connecting-bar G will be swung forward. The eyes *e e* of the brace and draw-rod E E provide a fulcrum about which the bolt or connecting device G tends to vibrate in the slot in the tongue, there being of course more or less looseness of connection between the whiffletree or evener and the rod or bolt G, and between the latter and the bracket H, and also between the tongue and the evener and bracket. There being such looseness, the strain on the whiffletree causes the bolt or connecting-bar G to vibrate independently of the tongue and also independently of the evener or whiffletree, although the latter can be more or less rigid with the connecting device and still have the latter vibrate sufficiently, in which case the evener will rock slightly; but in any event there is a push exerted upon the thrust-bar, which is applied to the forward part of the tongue.

What we claim is—

1. The combination of the axle, the slotted tongue, the brace and draw-rods E E, connected to the tongue, the evener, the thrust-bar K, and the bolt G, passing through the slot in the tongue and securing together the bar K, the evener, and the rods E E, the last said parts being loose relatively to the tongue, substantially as described.

2. The combination of the axle, the slotted tongue, the evener situated below the tongue, the bracket H, passing over the tongue and secured to the evener, the brace and draw-rods E E, below the tongue and connected to the axle, the thrust-bar K, above the tongue, and the bolt G, which passes through the slot in the tongue and fastens together the rods E E, the evener, the bracket H, and the bar K, substantially as set forth.

3. The combination of the axle, the hurters D, formed with sockets, the tongue, the evener connected loosely to the tongue, and the brace and draw-rods connected at their front ends to the evener and at their rear ends secured in the sockets on the hurters, substantially as described.

4. The combination of the tongue, the thrust-bar arranged to bear downward on the front part of the tongue, the evener or whiffletree supported loosely on the tongue, and a bolt or connecting-bar, as at G, engaging with the evener or whiffletree and adapted to vibrate relatively thereto and bearing against the aforesaid thrust-bar, and a support or holder for said bolt independent of the tongue, substantially as set forth.

5. The combination of the tongue, the thrust-bar arranged to bear downward upon the forward part of the tongue, an evener or whiffletree supported loosely on the tongue, a bolt or connecting-bar engaging with the evener or whiffletree and adapted to vibrate independently of the tongue, and permanently bearing against the said thrust-bar, substantially as set forth.

6. The combination of the tongue, the thrust-bar bearing down upon the forward portion of the tongue, the evener or whiffletree, a connecting bolt or bar engaging with the whiffletree and bearing against the said thrust-bar, and a support for said connecting device below the whiffletree, adapted to prevent the lower end from moving forward or back, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

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L. D. RAMSEY.
J. H. HUHN.

Witnesses:
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S. A. POUNDSTONE.