

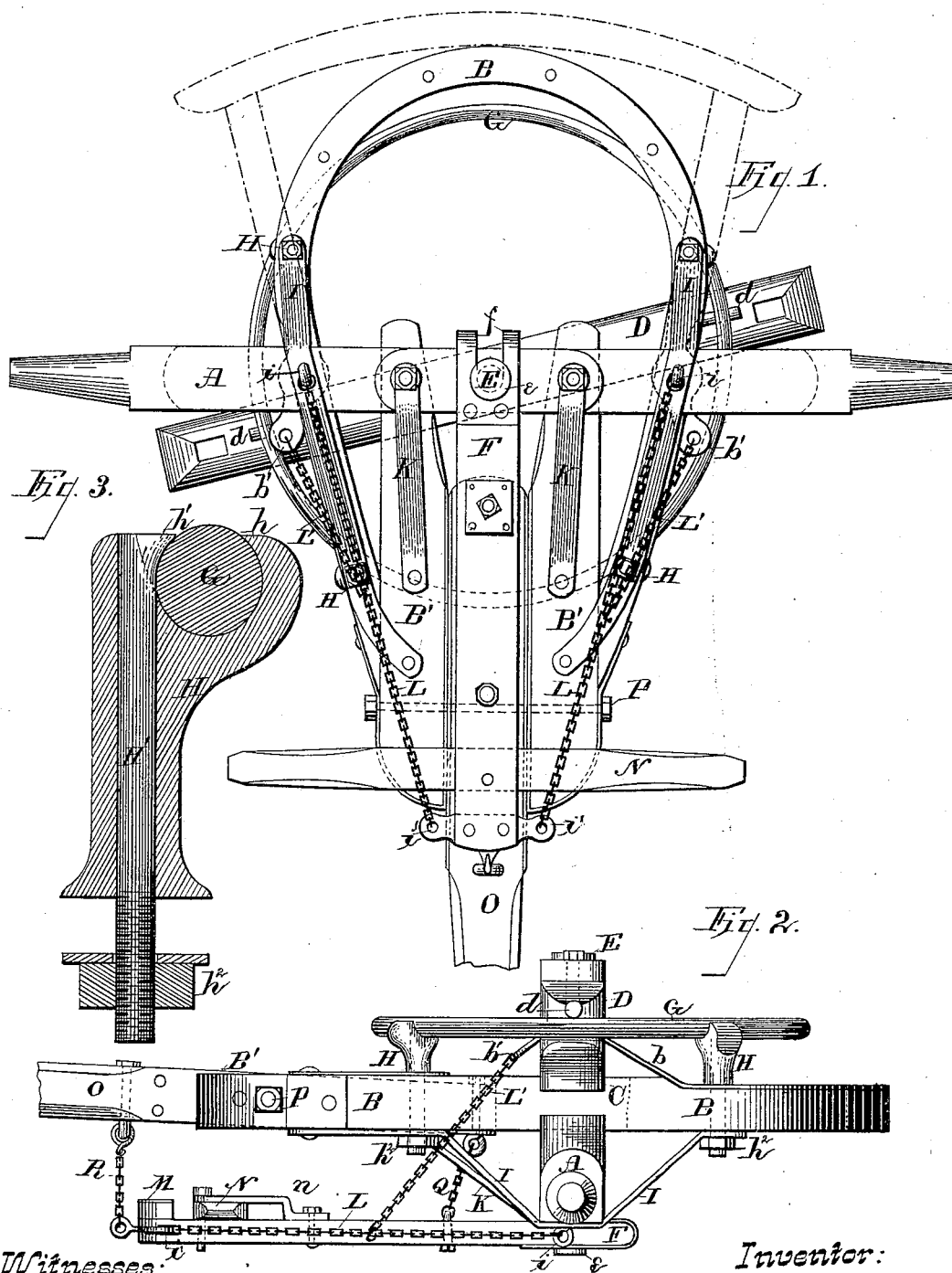
(No Model.)

B. F. SWEET.

RUNNING GEAR FOR VEHICLES.

No. 263,442..

Patented Aug. 29, 1882.



Witnesses:

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# UNITED STATES PATENT OFFICE.

BENJAMIN F. SWEET, OF FOND DU LAC, WISCONSIN.

## RUNNING-GEAR FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 263,442, dated August 29, 1882.

Application filed March 4, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, BENJAMIN F. SWEET, of Fond du Lac, in the county of Fond du Lac, and in the State of Wisconsin, have invented certain new and useful Improvements in Front Gears of Wagons and Trucks; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to the front gears of wagons and trucks; and it consists in certain peculiarities of construction, as will be more fully set forth hereinafter.

In the drawings, Figure 1 is a bottom view of my invention. Fig. 2 is a side elevation. Fig. 3 is a detail.

A is the front axle of my wagon-gear, on which the hounds and jaws B B' B' are supported, as shown, and above the hounds is the sand-bar C, these parts being all rigidly secured together. The bolster D rests on the sand-bar, and is provided with rounded bearing-bars *d* on its under side, which rest on the circle, described hereinafter. A king-bolt, E, serves as a pivot for the bolster and passes down through the sand-bar and axle and through a slot, *f*, in the rear end of the draft-bar F, which is held up against the under side of the axle by means of the king-bolt E, being upset at its lower end, as shown at *e*, while the slot permits of the slight longitudinal play of the said draft-bar.

G is the circle, having a rounded surface and supported by the uprights H, rising from the hounds, in the manner shown in detail in Fig. 3. Each support H has a central longitudinal perforation, down through which (after the circle G has been placed in position) is slipped the bolt H', screw-threaded at its base and provided with hooked extension *h'* at top, between which and a similar hooked extension, *h*, on the top of the support or standard H the circle G is securely held in place, as shown. The screw-bolt H' passes down through the hounds and is secured by nut *h''*, as shown.

I K represent the braces extending upward from the under side of the axle to support the hounds, and L L' are the draft-chains. The braces I consist of metal straps connected to the front and rear portion of the hounds and extend under the axles, the ends of said braces being secured to the hounds by the lower ends

and nuts of the standards which support the circle, while the braces K serve to support the jaws or forward portions, B' B', of the hounds. The rear or semicircle, B, of the hounds is protected by a metal strip, *b*, that rises up over the sand-bar C, forming braces, as shown, which are secured to it by bolts, and which end in forward-projecting loops *b'*, from which the upper portions, L', of the draft-chains extend downward and are hooked into the lower portions, L, of said chains, which extend from rings *i* on the under side of the axle (preferably on the ends of the bolts which pass down through the braces *b* and I) to other rings, *i'*, projecting from a plate on the forward end of the draft-bar F, above which is a block, M, on the extreme end of the draft-bar. Behind this block the whiffletree N is pivoted in suitable bearings, *n*. The tongue O is pivoted by the bolt P between the forward ends or jaws, B' B', of the hounds (the said bolt P passing also through side straps, which connect the outer sides of the hounds B and jaws B' B' together, and beyond the forward end of the hounds B proper, as clearly shown in Fig. 1) above the draft-bar F, and is connected to the latter by a short draft-chain, Q, extending from the rear end of the tongue to the draft-bar, and another short chain, R, extending from the forward end of the draft-bar to the tongue, the said chains being secured to the ringed heads of bolts in the two timbers, all as shown in Fig. 2. By means of this arrangement of parts and method of attaching and supporting the draft-bar which bears the whiffletree below the tongue the said tongue is partly counterbalanced by the weight of the bar, and draft upon the latter has a tendency to depress the rear end of the tongue, as strain is brought upon the rear chain, Q, which connects the rear end of the tongue with the draft-bar, and of course as the rear end drops it will raise the front end and relieve the animals of the weight of the tongue at the time they need all their strength for drawing the load.

By my system of braces the several parts are held firmly together and the hounds are rigidly secured to the axle and jaws and guarded against lateral strain, while by my particular manner of supporting the draft-bar on the king-bolt—*i. e.*, by a slot in the rear end of the

bar—and attaching the draft-chains, as shown, the strain is transferred from the said draft-bar directly to the axle and sand-bar, (instead of the king-bolt,) and thus the force of the strain is directed against those parts best able to withstand it and where needed, while the lower end of the king-bolt guides the draft-bar in its longitudinal movement.

The peculiar construction of my standards II admits of the circle G being readily secured therein without bolt-holes going through it, while the rounded surface of said circle, in connection with the rounded surfaces of the bearing-rods on the under side of the bolster, reduces the area of contact between them, and consequently the amount of friction between them, to a minimum, and leaves no place for the lodgment of dirt, grit, or other foreign matter, while the circle is not weakened, as it would be if perforated for the passage of bolts.

The block M, on the forward end of the draft-bar, serves to limit the horizontal swing of the whiffletree, and, also, in case the pin of the whiffletree should break, is available as a stop to prevent the whiffletree from being pulled off over the end of the draft-bar, and thus prevent loss of time, save trouble, and possibly avert a serious accident; and it also serves to keep the tongue and draft-bar at a suitable distance apart to insure free movement to the whiffletree should the bar be raised or the tongue fall somewhat in going over uneven roads.

The manner in which the jaws B' B' are braced by the side timbers of the hounds B is of great importance, as it insures the needed firmness and resistance to strain. These jaws are not only braced from the axle by the braces K K, but the forward ends of the side timbers of the hounds are bolted to the jaws, and the forward ends of the braces I I also extend from under the side timbers of the hounds B to and under the said jaws B' B', and thus the jaws are held firmly by the said side timbers of the hounds in front of the axle, and all the parts are securely united together. The rear or semi-circle of the said hounds may be either in one bent piece integral with the side timbers, as shown in full lines in Fig. 1, or it may be an independent cross-piece secured to two separate side timbers, as shown in dotted lines in said figure.

By reason of attaching my draft-chains to both the top and bottom of the gear the draft has always a tendency to keep the gear on a parallel line with the road, while the manner in which the draft-bar is attached at its rear end to the axle and supported from the gear gives it a motion sidewise, and also up and down, thereby forming a flexible counter-balance to the tongue, as hereinbefore described.

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

1. In a front gear for trucks or wagons, the combination, with the axle and king-bolt, of a

draft-bar slotted at its rear end to permit of longitudinal movement on said king-bolt, and draft-chains connecting the forward end of the draft-bar with the axle, as set forth.

2. The combination, in the front gear of a truck or wagon, of a draft-bar slotted at its rear end and supported by the king-bolt at that point with the axle and sand-bar, and draft-chains connecting the front end of the draft-bar with the said axle, and upper draft-chains connecting the draft-chains just named with the sand-bar, as set forth.

3. In a front gear for trucks or wagons, the combination of a draft-bar slotted at its rear end and supported by the king-bolt at that point with the tongue having a pivotal support above said bar, and a chain connecting the rear end of the tongue with the draft-bar, whereby the said end of the tongue is depressed and its forward end tilted up by a forward movement of the draft-bar, as set forth.

4. In a front gear for trucks or wagons, the combination of a draft-bar slotted at its rear end, and supported by the king-bolt at that point, and supporting the whiffletree on its forward end, with the tongue having a pivotal support above the said bar and connected to the latter by a chain from the rear end of the tongue to the bar and another chain from the front end of the bar to the tongue, whereby the tongue is counterbalanced by the draft-bar, as set forth.

5. In a front gear for trucks or wagons, the braces b, secured to the hounds at the rear of the sand-bar and extending over the same and terminating in the loops b', in combination with a securing-bolt passed through or around said sand bar, and the draft-chains L' L and the draft-bar, as set forth.

6. In a wagon-gear, the combination of the hollow standards or supports H, open at the top to receive a continuous circle-iron from above, clamping-bolts H', extending entirely through the hollow standards to the top thereof, and circle G, with the hounds and tightening-nuts, as set forth.

7. In a wagon-gear, the combination of a continuous circle-iron supported on open-topped standards rising from the hounds, and secured to said standards by clamping-bolts extending entirely through them in such manner that the top of the rounded surface of the circle-iron shall be wholly above the tops of the said standards and bolts, with a bolster having rigid rounded bearing-bars on its under side, as set forth.

8. In combination with the gear and tongue of a wagon, the draft-bar F, whiffletree N, and its bearing n, and the block M on the outer end of the draft-bar in front of the whiffletree, whereby by means of the construction and relative position of the said block M and bearing n, in case of breakage or loss of the linch-pin, the whiffletree is prevented from being pulled off over the end of the draft-bar, as and for the purpose set forth.

9. In a front gear for trucks or wagons, the combination, with the axle A and hounds B, of the jaws B' B', bolted to said axle and to the hounds, and projecting in front of the said hounds and provided with supporting-braces I K, connecting the under sides of these parts together, as set forth.

10. In a front gear for trucks or wagons, the combination, with the axle A and hounds B, of the jaws B' B', bolted to said axle and braced in front of it by the side timbers of the hounds B, the said jaws bolted to and projecting in front of the said hounds, and being further connected together by side strips, through the forward portions of which, beyond the forward end of the hounds B, the bolt P, that forms the pivot of the wagon-tongue, passes, thereby connecting the two jaws B' B' together, as set forth.

11. In a wagon-gear, a circle-iron made with out bolt-holes and supported and held in po-

sition upon standards to which it is clamped, the said circle-iron being continuous and having a rounded surface which rises above the tops of the supporting-standards and clamping-bolts, and thereby presents an uninterrupted, continuous, and perfectly level bearing-surface, as shown and described.

12. In a front gear for trucks or wagons, the combination, with the axle, of a draft-bar supported at its slotted rear end by the king-bolt, and having a side and up-and-down motion, thereby forming a flexible counter-balance to the tongue, as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 3d day of February, 1882.

BENJAMIN F. SWEET.

Witnesses:

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