L. W. FREDERICK.

WAGON GEARING.

No. 185,909. Patented Jan. 2, 1877.

Fig. 1.

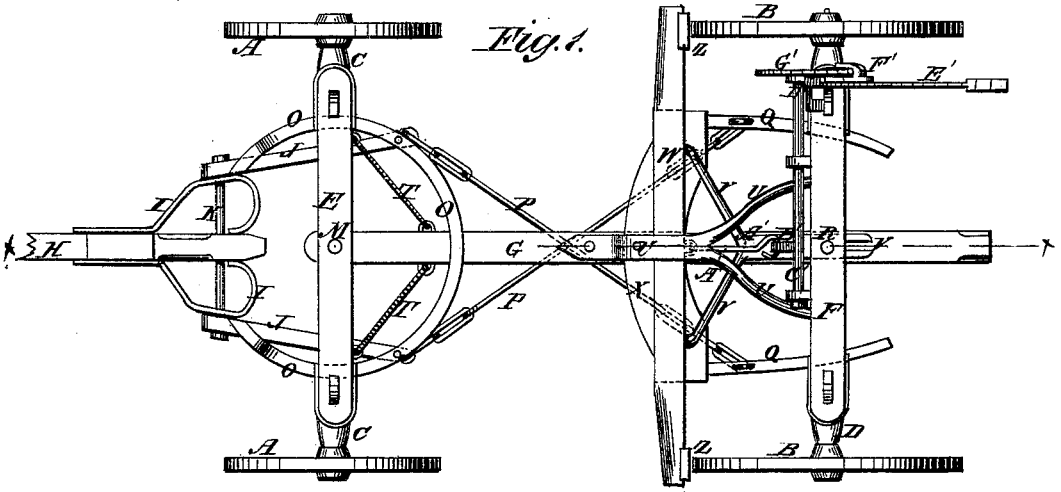


Fig. 2.

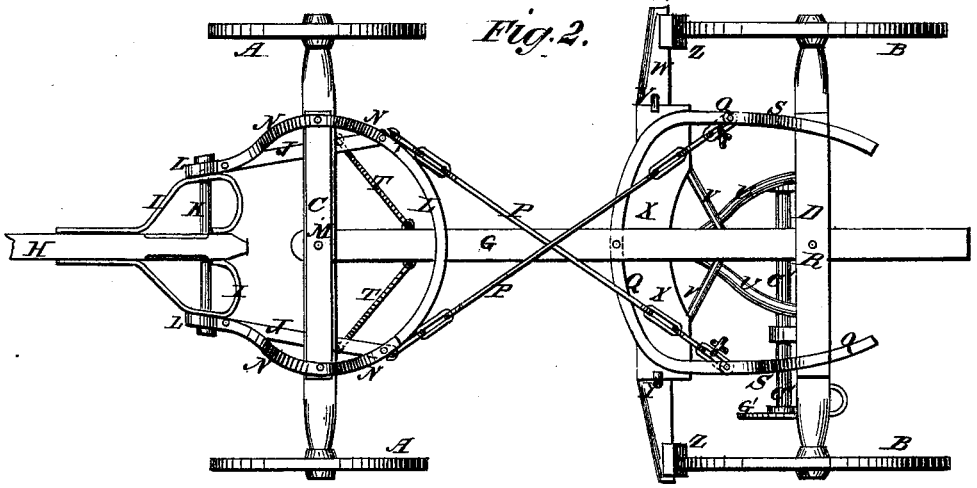
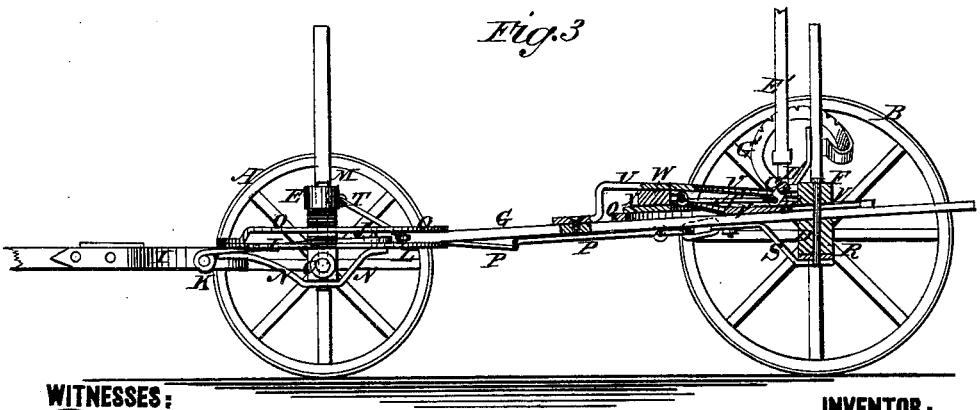


Fig. 3



WITNESSES:

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UNITED STATES PATENT OFFICE.

LEVI W. FREDERICK, OF HALL, INDIANA.

IMPROVEMENT IN WAGON-GEARINGS.

Specification forming part of Letters Patent No. **185,909**, dated January 2, 1877; application filed April 10, 1876.

To all whom it may concern:

Be it known that I, LEVI W. FREDERICK, of Hall, in the county of Morgan and State of Indiana, have invented a new and useful Improvement in Wagon-Gearing, of which the following is a specification:

Figure 1 is a top view of the running-gearing of a wagon, illustrating my invention. Fig. 2 is an under-side view of the same. Fig. 3 is a side view of the same, partly in section, through the line *x x*, Fig. 1, and having the near forward wheel removed.

Similar letters of reference indicate corresponding parts.

The object of this invention is to improve the construction of the running-gearing of buggies, hacks, coaches, and other wagons, which shall make the gearing stronger, more durable, and more convenient, giving it more freedom of movement, while keeping it fully under the control of the team.

The invention consists in the construction and combination of parts, which will be hereinafter more fully described, and then pointed out in the claims.

A are the forward wheels. B are the rear wheels. C is the forward axle. D is the rear axle. E is the forward bolster. F is the rear bolster. G is the reach, and H is the tongue. I are tongue-hounds, which are iron bars bent into proper shape and attached to the opposite sides of the rear end of the tongue H. This construction of the tongue-hounds I makes them much stronger and less expensive than the ordinary wooden hounds, which are liable to break, and cannot be made as cheaply and with the same facility as the metallic hounds made by me. The tongue H and hounds I are pivoted to and between the forward ends of the forward hounds J by a pin or bolt, K. The middle parts of the hounds J are attached to the forward axle C. L is the slider or sway-bar, which is made in the form of an open circle, having the king-bolt M as its center. The sway-bar or slider L is attached to the rear ends of the forward hounds J, and its ends are attached to the forward end of the said forward hounds J. The circular sway-bar or slider L passes over and is secured to the axle C, and the connection is strengthened by the braces N, which pass beneath and are secured to the axle C, and the ends of which are secured to the said slider L. O is the upper circle, which is placed at such a distance above the circle L as to receive the reach G between them. The ends of the circle O are bent downward, and are secured to the forward parts of the circle L, and their rear parts are kept at the proper distance apart by short studs interposed between them a little in the rear of the axle C. P are two connecting rods or chains, which may be made wholly of links, or their middle parts may be rods and their end parts links. The forward ends of the connections or couplings P are secured detachably and adjustably to the circular slider or sway-bar L, a little in the rear of the axle C, by pins, bolts, or other convenient means. The couplings P cross each other at their centers, and their rear ends are secured to the rear hounds Q, a little in front of the rear axle D, by pins, bolts, or other conveniently-detachable means. The forward part of the rear hound Q is curved upon the arc of a circle having its center in the king-bolt R of the rear axle. The end parts of the hound Q are secured to the rear axle D, the connection being strengthened by the braces S, secured to the lower side of said axle, and the forward ends of which are secured to the said hounds.

The ends of the perch G are secured and pivoted to the axles C and D by the king-bolts M and R, so that the said axle may turn freely upon the said reach, the couplings P causing the two axles to always turn in opposite directions, so that the wagon can be turned in a very short space.

T are two braces, the forward ends of which are secured to the end parts of the forward bolster E, and their rear ends are secured to the reach G a little in the rear of the axle C. The braces T keep the bolster E always in a position at right angles with the reach G, so that the said bolster cannot turn with the axle C. U is a bar, the forward end of which is bolted to the reach G in front of the rear hounds Q. The bar U is made with an offset to pass over the rear hounds, and the brake-bar, and its rear part is forked, and is attached to the rear bolster F, so as to keep the said bolster always in a position at right an-

gles with the reach G, so that it cannot turn with the axle D. The braces T and U thus keep the bolsters E F always parallel with each other, so that the wagon-body or load resting upon said bolsters will not be affected by turning the wagon. V is a brace, the forward end of which is forked, and is attached to the brake-bar W. The brace V passes back along the top of the reach G, and its rear end is slotted to receive the rear king-bolt R. The brake-bar W rests upon a plate, X, attached to the forward part of the rear hounds Q, and has hooks Y attached to it, which hook upon the ends of the said plate X. The brace V, plate X, and hooks Y keep the brake-bar W always parallel with the axle D, and thus in position to apply the brake-shoes Z to the wheels B. To the center of the rear side of the brake-bar W is pivoted the forward end of a rod, A′, the rear end of which is pivoted to the end of a short crank-arm, B′, rigidly attached to or formed solidly upon a shaft, C′, that works in bearings attached to the forward side of the rear bolster F. To the outer end of the rock-shaft C′ is attached a short lever, D′. Upon the lever D′ is slipped a socket formed upon the lower end of the lever E′. Upon the lever E′ is formed, or to it is attached, a hook, F′, which passes through a slot in the outer part of the short lever D′, and hooks over a curved bar, G′, attached to the bolster F and to its stake. The edge of the curved bar G′ is notched, so that the hook F′ may serve as a catch to lock the brake, and as a guard to keep the lever E′ in place as it is operated.

The coupling may be made rigid by passing a pin or bolt through a hole in the brace-bar U, the rear hounds Q, and the reach G, and if, at the same time, the crossed couplings P are detached, the gearing will operate in the same manner as an ordinary gearing.

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

1. The combination of the forked and slotted brace V, the hooks Y, and the plate X with the reach G, the rear king-bolt R, the brake-bar W, and the rear hounds Q, substantially as herein shown and described.

2. The combination of the rod A′, the crank-arm B′, the rock-shaft C′, the short lever D′, the lever and hook E′ F′, and the catch-bar G′ with the rear bolster F and the brake-bar W, substantially as herein shown and described.

LEVI W. FREDERICK.

Witnesses:

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