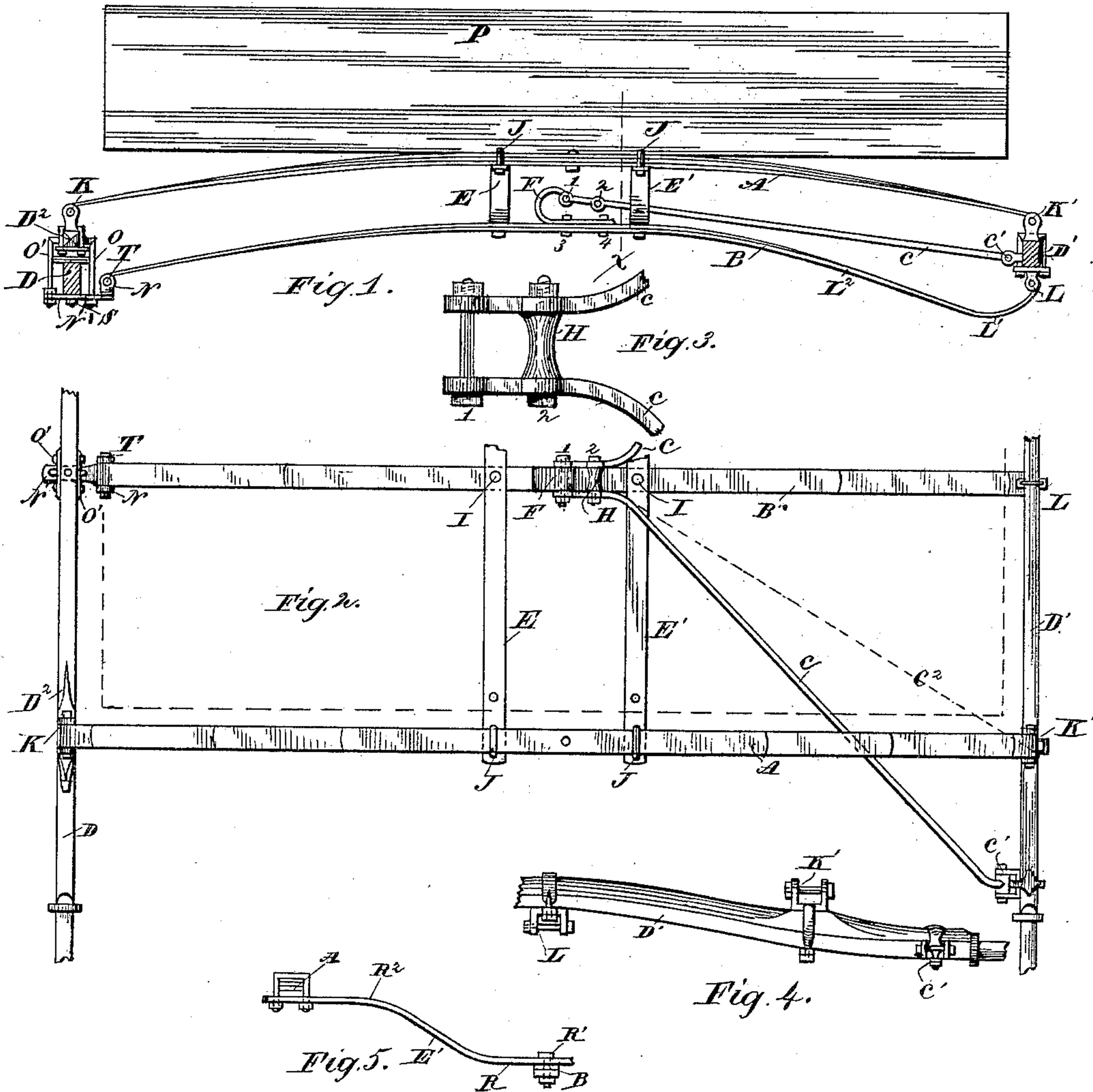


(No Model.)

C. W. SALADEE.  
RUNNING GEAR FOR ROAD WAGONS.

No. 411,473.

Patented Sept. 24, 1889.



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Witnesses  
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# UNITED STATES PATENT OFFICE.

CYRUS W. SALADEE, OF CLEVELAND, OHIO.

## RUNNING-GEAR FOR ROAD-WAGONS.

SPECIFICATION forming part of Letters Patent No. 411,473, dated September 24, 1889.

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*To all whom it may concern:*

Be it known that I, CYRUS W. SALADEE, a citizen of the United States, and a resident of the city of Cleveland, State of Ohio, have invented certain new and useful Improvements in the Running-Gear of Road-Wagons, as set forth in the following specification and pointed out in the appended claims.

In the drawings, Figure 1 is a side elevation of the running-gear, with a body mounted thereon. Fig. 2 is a half-plan view of the gear with body removed. Fig. 3 is a detached enlarged view of the front ends of the axle-stays. Fig. 4 is a half front elevation of the hind axle; and Fig. 5 is a front elevation of the truss-brace, with the springs cut off at dotted line  $x$ , Fig. 1.

To retain the hind axle of a side-spring vehicle of this special class, constructed without a rigid reach, in its right-angle position to the center spring has not heretofore been entirely practical or successful. When more weight is imposed on one side spring than on the other, the hind axle is thrown out of its right-angle position, and hence the perfect track of the wagon is defeated. Diagonally-arranged lower springs, as also a single center spring, with axle-stays in one form or another, have been employed to remedy this defect; but in all cases the details have been at fault at some one or more points, and the object sought proved abortive. The combination of rigid axle-stays with the hind axle and the center spring or springs connecting the axles is met with the fact that as the springs are depressed they are accordingly elongated, while the axle-stays, being rigid, tend to counteract this motion of the springs. To meet this difficulty I have heretofore resorted to a "link motion" at the rear end of the center spring and other devices, as shown in my former patents. The link motion before mentioned, while it serves to meet this antagonism between the rigid axle-stays and the springs, soon becomes loose and rattles, and the other devices referred to tend to fracture the axle-stays prematurely from the lack of a practical pivotal connection at both ends of the same. My present discovery and invention will overcome these defects and admit of the construction of a light, durable, anti-rat-

ting gear possessing the requisite of easy motion and a carriage-like and stylish appearance.

In the construction of this gear I proceed as follows: D represents the front axle, D' the hind axle, D<sup>2</sup> the bolster over the front axle. To the opposite ends of the bolster is secured the spring-shackles K, and to the hind axle the like shackles K', between the ears of which the terminal eyes of the side spring A are immovably pivoted in the usual way, as seen in Figs. 1 and 2. To the under side of the hind axle, at its center, is clipped the shackle L, (see Fig. 4.) which receives the terminal eye of the spring-reach B. (See Fig. 1.) The bolster and front axle have interposed between them the usual fifth-wheel plates. A shackle-plate N' is formed, the inner end of which terminates with up-turned ears N, between which the terminal eye of the front end of the spring-reach B is secured by the passing bolt T, as seen in Figs. 1 and 2. This shackle-plate passes under the center of the front axle, and is there secured in its position by means of the hanger-bolts O and O', the top ends of which are provided with a T-head and the latter bolted to the opposite sides of the bolster, as plainly seen in Figs. 1 and 2. A king-bolt S, Fig. 1, passes down through the bolster and axle. Thus the shackle-plate N' is held in its position below the axle by means of the two hanger-bolts O and O' and the king-bolt S. This shackle-plate differs from all others in that of having the ears N turned up, and by which means the center bolt T (see Fig. 1) may, according to the length of these ears, be placed at any point high or low which necessity may dictate as the proper point to pivot the front end of the spring-reach B. The rear end of the spring-reach B is bent to the self-compensating form—that is, bent down from the truss-brace E' and its end turned up and the terminal eye engaging the shackle L, as seen in Fig. 1. The side springs A A and the spring-reach B, being in different horizontal planes, have their center portions connected by the truss-braces E and E', as clearly shown in Figs. 1 and 2. Preferably between these truss-braces is secured the bracket F by bolts 3 and 4, the front end of



which is bent up and terminates in an eye which engages the front ends of the axle-stays C C by the passing bolt 1. Now, for the purpose of imparting added strength to this last-named connection, I employ a distance sleeve or spool H, which latter is more clearly shown in Fig. 3. The length of this spool is equal to the width of the eye of the bracket F, and is secured in its position by the passing bolt 2, as seen in Figs. 1, 2, and 3. The truss-braces E and E' are made to such form as seen in Fig. 5. Their base, which is in contact with the spring-reach, is straight from R' to R, (see Fig. 5,) and then bent up, as shown, to R<sup>2</sup>, thence straight to the end to form a base on which to secure the body. This form of truss-brace admits of passing the front end of the axle-stays over the top of the brace, as is required in this instance, and as seen in Figs. 1 and 2. The rear ends of the axle-stays are shackled to the hind axle, preferably at or near the shoulders thereof, as more plainly seen at C' in Fig. 2; but if preferred the stays C' may take the direction of the dotted line C<sup>2</sup>, and be shackled to the axle immediately under the spring-shackle K, or in any other position that will answer the intended purpose. The body is secured in the usual way to the truss-braces E and E'. It will now be seen that as the springs and front ends of the axle-stays are depressed the self-compensating form imparted to the rear end of the spring-reach B from L L' to L<sup>2</sup> will, without the employment of a link or other means, accommodate itself to any variation which the elongation of the side springs and the action of the axle-stays may impart to the hind axle, and that the axle-stays will effectually prevent the axle from being thrown out of its right-angle position, and thereby secure the perfect track of the wagon under all circumstances, and all rattling of the connections will be obviated. The center portion of the truss-braces are preferably secured to the top surface of the spring-reach by bolts I; but when preferred they may be clipped to the under side of the reach.

Without limiting my claim to the precise arrangements of the several parts shown, I claim—

1. In a road-wagon, longitudinally-arranged side springs adapted to carry the body, the terminal eyes of said springs being pivotally connected to the hind axle and front bolster upon immovable bearings, in combination with a spring-reach extended to connect the axles, the rear end of said reach being bent downward, then upward, with its terminal eye pivotally connected to the center portion of the hind axle without a link, and axle-stays having their front ends pivotally connected to the spring-reach at or near its center portion, and their rear ends shackled to the axle at widely-separated points, the whole being constructed, combined, and arranged to operate substantially as shown and described.

2. The bracket F, rigidly secured to the spring-reach B at or near its central portion, having its terminal eye engage the front ends of the axle-stays C C by the passing bolt 1, in combination with the intermediate distance sleeve or spool H, and passing bolt 2, substantially as and for the purpose set forth.

3. The combination of the truss-brace E', bracket F, axle-stays C C, the rear ends of the latter being shackled to the axle preferably at or near the shoulders thereof, and the front ends passed over the top side of the truss-brace and pivotally connected to the bracket F, substantially as specified.

4. In combination with the longitudinally-arranged side springs A A, the central spring-reach B, suspended in a plane below the side springs and extended to connect the axles, having its rear end pivotally connected to the middle portion of the hind axle and its front end to the shackle-plate N', carried by the bolster D<sup>2</sup>, the inner end of said plate terminating in the upturned ears N, between which the terminal eye of the spring B is held by the passing bolt T, substantially as set forth.

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Witnesses:

WM. M. MONROE,  
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