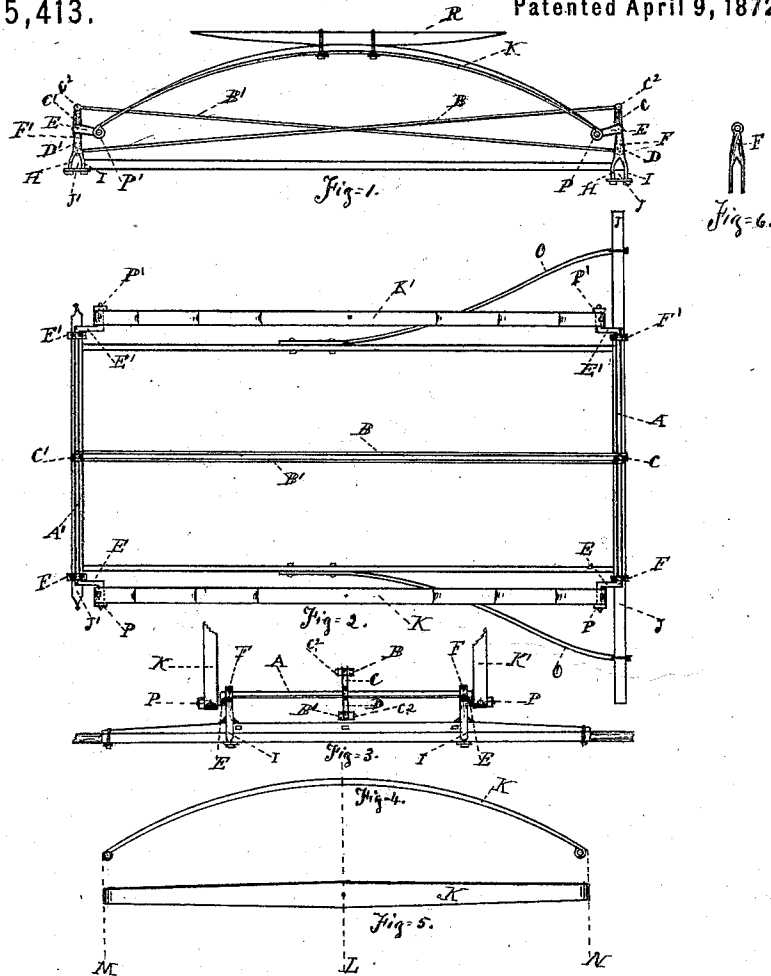


C. W. SALADEE.

Improvement in the Mode of Equalizing the Action of Carriage Springs.

No. 125,413.

Patented April 9, 1872.



Witnesses.

C. W. Saladee

C. Danforth

Inventor.

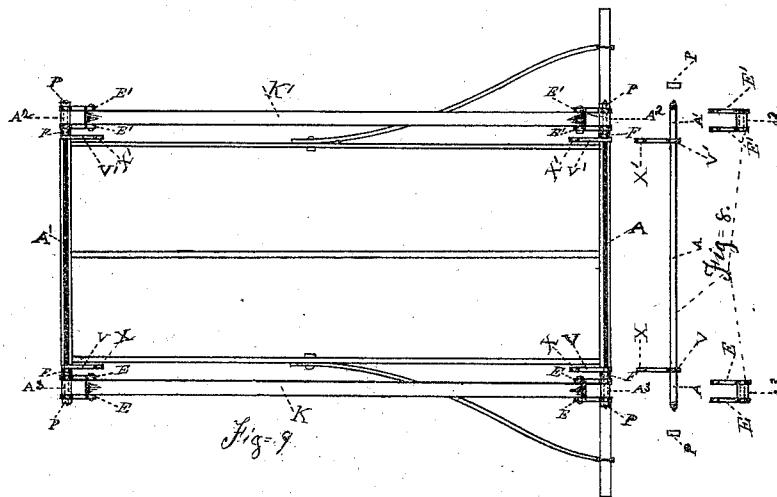
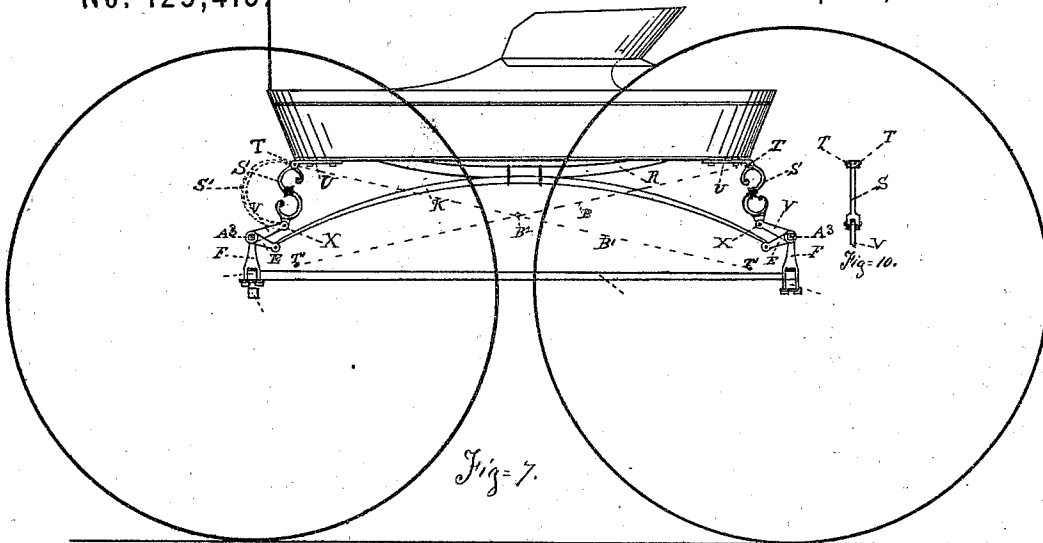
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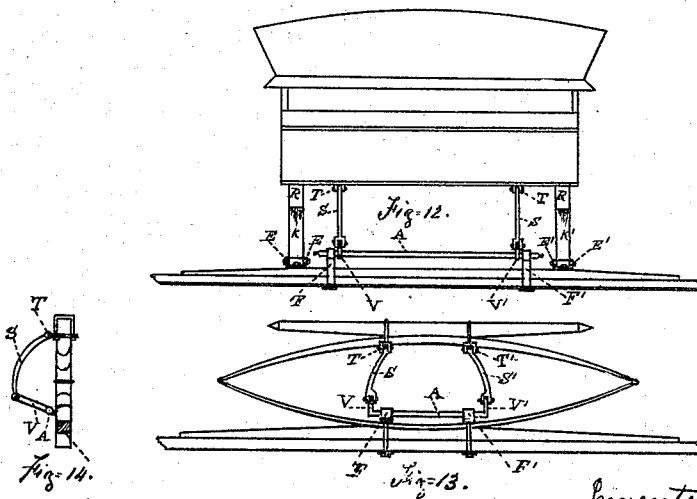
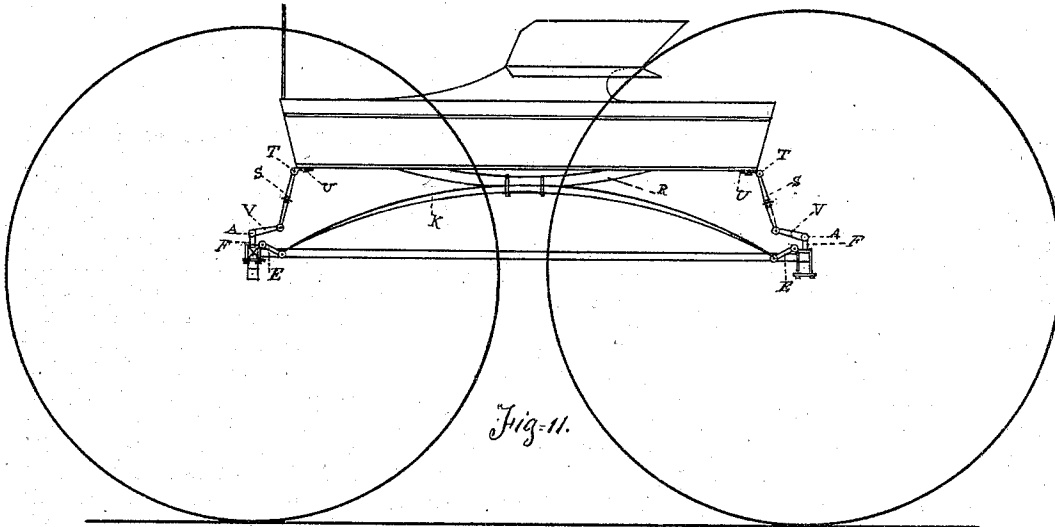
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Witnesses
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 S. B. Saladee

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UNITED STATES PATENT OFFICE.

CYRUS W. SALADEE, OF ST. CATHARINE'S, CANADA.

IMPROVEMENT IN THE MODE OF EQUALIZING THE ACTION OF CARRIAGE-SPRINGS.

Specification forming part of Letters Patent No. 125,413, dated April 9, 1872.

SPECIFICATION.

Be it known that I, CYRUS W. SALADEE, of St. Catharine's, in the Dominion of Canada, have invented certain new and useful Improvements for Equalizing the Action of Springs to Vehicles, of which the following is a specification embodying my invention:

My invention consists in the employment of two separate connecting-rods, A and A', having cranks E formed upon each end, and the same connected to the top of the rear axle and to the top of the front bolster by means of clip-bearings F F', and the cranks E P connected to the ends of the springs K K'.

In the drawing, Sheet 1, Figure 1 is a side elevation, in which is seen the connection of the cranks of the connecting-rods with the ends of the springs, but which is more clearly shown in the top view, Fig. 2. Fig. 6 is a face view of the clip-bearings F and F', seen in the other figures; while Fig. 3 is a back view of the hind axle, plainly showing the other parts embraced in the first part of my invention.

Now it will be understood, by reference to the drawing on Sheet 1, that, by means of the connecting-rod A or A', the cranks E P and E' P' must act in unison each with the other, and thus cause the ends of both springs to vibrate together, or nearly so, and prevent nearly all side motion to the body of the vehicle. But without further provision to the contrary, each connecting-rod is operated independent of the other, so that, if all the weight is thrown upon the one end or the other of the springs, that end sustaining the greater portion of the weight is correspondingly more depressed than the opposite end. If, however, both connecting-rods are actuated in unison with each other, both ends of the body and springs will be depressed equally, and the accomplishment of this end is the main feature embraced in the first part of my invention. To effect the purpose last above recited, I rigidly connect to the center of each connecting-rod A and A' a cross-arm, C D, a rear view of which is seen in Fig. 3, and a partial side view in Fig. 1. To the opposite ends of the cross-arm I hinge the two independent cross-rods B and B', as clearly indicated in the drawing. Now it will be seen that, by means of these cross-arms C D, secured to the connecting-rods A and A', and connected between the front

bolster and rear axle by the cross-rods B and B', both the connecting-rods must act together, for the instant the crank P, Fig. 1, is depressed a corresponding movement is made by the cross-arm C D, when, through the cross-rod B', the same movement is transmitted to the front cross-arm C' D', and thus compels the crank P' of the front connecting-rod to be depressed the same as the crank P in the rear, when a perfect equalization of the action of both ends of the springs is attained, and so as almost entirely to prevent the tipping of the body to the front or back, right or left. Another modification of my invention consists in connecting the two separate connecting-rods A and A' with the ends of the body in such manner that they shall operate in unison with the movement of the springs, and so as to effectually prevent side motion of the body or load. In this modification of my invention I make the connecting-rods as seen in Fig. 8, Sheet 2, with arms V and V' rigidly secured to the rod within about four inches of each end. The connecting-rods are now secured to the hind axle and front bolster, (see Figs. 7 and 9, Sheet 2,) upon clip-bearings F, so as to rotate freely in said bearings; and upon the outer ends of the connecting-rods, extending through the clip-bearings F, I pass the solid open links E E A³, (see Figs. 7, 8, and 9,) so as to play freely upon the ends of the connecting-rod, and are there held by a nut, P, or otherwise. (See Fig. 9.) The ends of the springs are now secured in the open ends of the links before described, as clearly shown in Fig. 9, as well as in Fig. 7. The body is next placed in position upon the springs, (see Fig. 7,) when a connecting-brace, S, of any design which the fancy may suggest, is applied to or under each corner of the body by pivoting its lower end X to the outer end of the arm V, and its upper end T to the corner of the body or other equivalent position to the bearing U. Fig. 10, Sheet 2, is a back detached view of this connecting-brace S. This substantially completes this modification, and it will be seen that by securing and operating the connecting-rods A and A' to both ends of the body, as shown and described, I secure a positive equal movement of both sides of the body without reference to the unity of action in the springs, yet compelling the latter to act in unison with the up-and-down move-

ment of the body, and without imposing that end strain upon the springs requisite in the other modification shown by the drawing on Sheet 1; and not only this, but I secure a degree of safety against accident by the breaking of either of the springs not had in any of the side-spring buggies now in use; for if either one of the springs break that side of the body is safely supported from falling by reason of its direct connection to the connecting-rods A and A' through the braces S and arms V. Furthermore, that open space between the ends of the body and the ends of side springs is filled up by the connecting-brace S, and a highly ornamental appearance imparted to a side view of the vehicle.

As before intimated, these connecting-braces S I contemplate making in a variety of styles and forms, as, for example, the dotted lines S' in Fig. 7, Sheet 2, give the appearance of a "C-spring" under each corner of the body, and thereby greatly add to the general appearance of the vehicle. Another modification of my invention consists in the employment of the same arrangement of connecting-rods A and A', clip-bearings F, arms V, and connecting-braces S, as already shown and described, but separate from and independent of the links E E A³, and so that I can apply my connecting-rods to any side spring, or elliptic spring, or C-spring, or platform-spring vehicle, without reference to the manner in which the springs or the ends of the springs are secured in their position. Fig. 11, Sheet 3, is a side elevation of a side-spring buggy with the same arrangement of connecting-rods as shown on Sheet 2, but applied, as last above described, independent of the spring connections, to the hind axle or front bolster. In Fig. 11 the ends of the springs are secured to the hind axle and front bolster after the

old well-known plan. Fig. 12 is a back view of Fig. 11, which clearly shows the attachment and connections of the different parts A F V S T contemplated in this part of my invention. Fig. 13 represents the rear axle of a buggy with an elliptic spring, and Fig. 14 is a side view of the same with this last above-described modification connected therewith. In place of securing the upper end of the braces S to the ends of the body, they are here shown connected to the spring-bar, although they may reach up and fasten to the ends of the body in an elliptic-spring buggy the same as in side-spring buggies, and as effectually prevent side motion to the body of the one as of the other.

I will here state that in either of the last-named modifications I may, if I so prefer, employ the use of the cross-rods B and B', shown in the drawing of Sheet 1.

Claims.

1. In combination with springs to vehicles, connecting-rods A and A', cross-arms C D, and cross-rods B B', substantially as and for the purpose set forth.

2. Equalizing the action of springs to vehicles having side springs by means of connecting-rods A and A', supported and operating in clip-bearings F, with the links E E A³ loosely playing on the outer ends of the connecting-rods, in combination with the arms V, connecting-braces S, and bearings U and F, substantially as and for the purpose set forth.

3. Equalizing the action of springs of vehicles generally by means of connecting-rods A, arms V, connecting-braces S, and bearings U and F, as and for the purpose set forth.

CYRUS W. SALADEE.

Witnesses:

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E. A. SALADEE.