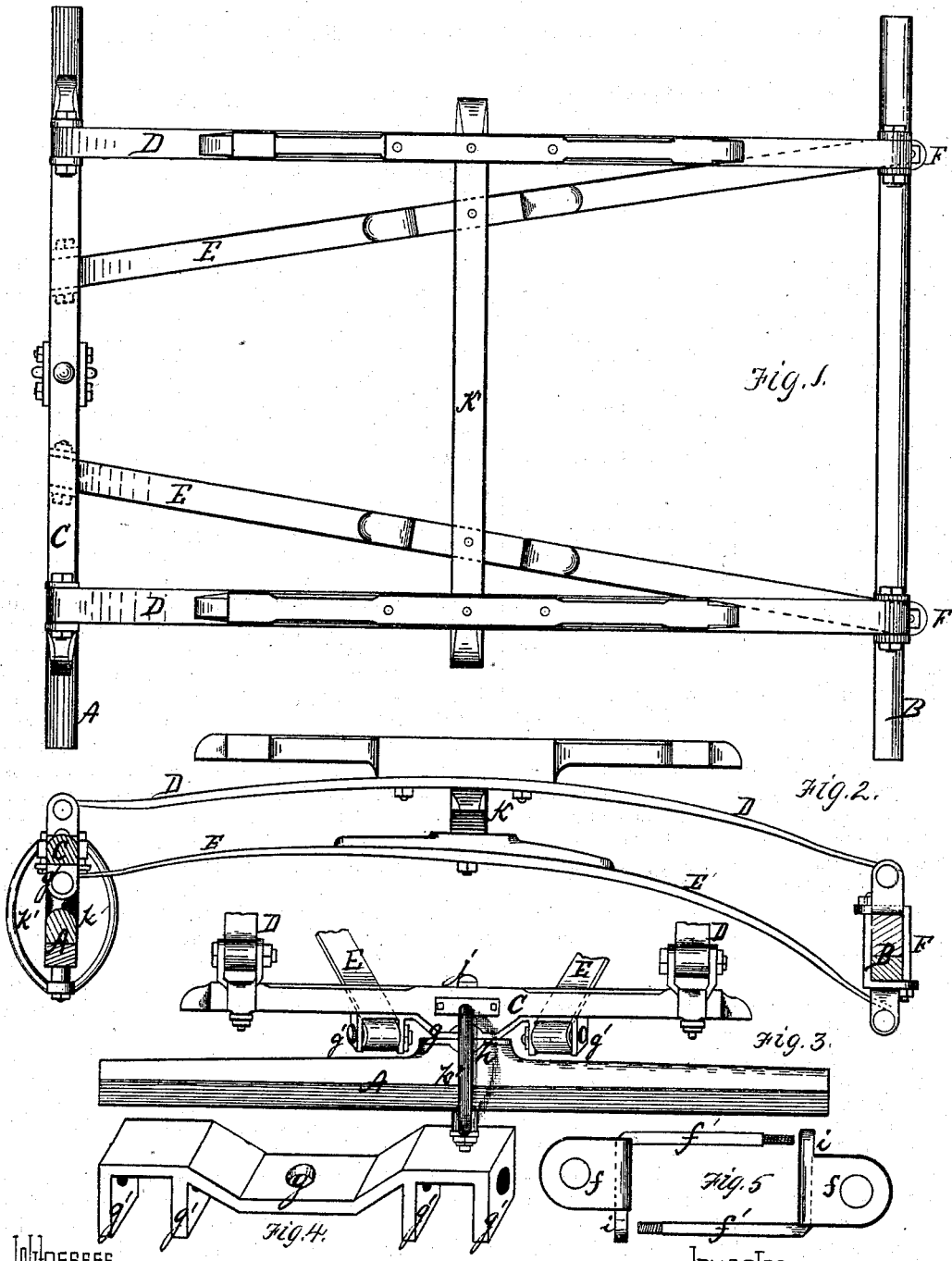


W. W. GRIER.
Side-Spring Vehicle.

No. 197,930.

Patented Dec. 11, 1877.



Witnesses.
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John F. Best

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UNITED STATES PATENT OFFICE.

WILLIAM W. GRIER, OF HULTON, PENNSYLVANIA.

IMPROVEMENT IN SIDE-SPRING VEHICLES.

Specification forming part of Letters Patent No. 197,930, dated December 11, 1877; application filed October 13, 1877.

To all whom it may concern:

Be it known that I, WILLIAM W. GRIER, of Hulton, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Vehicle Springs and Fittings; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is a plan view of devices embodying my invention. Fig. 2 is a side view of the same, partly in section. Fig. 3 is a front view. Fig. 4 is a detached view of the combined friction-plate and spring-clips; and Fig. 5 is a detached view of the double clip.

Like letters refer to like parts wherever they occur.

My invention relates to the arrangement and manner of connecting the springs and running-gear in vehicles; is generally applicable in those vehicles where diagonal or obliquely-arranged springs are employed, and is especially applicable in "no-perch" vehicles, wherein diagonal or oblique side springs are connected directly to the running-gear.

It consists in forming clips upon or with the upper friction-plate or half of the fifth-wheel, whereby the fittings are rendered more simple and effective, and the appearance of the vehicle improved.

I will now proceed to describe my invention, so that others skilled in the art to which it appertains may apply the same.

In the drawing, A indicates the front axle; B, the rear axle; C, the head-block; D D, the upper springs, and E E the lower springs; the vehicle being devoid of perch or reach, the gearing being coupled by means of the springs.

The springs D D and E E are arranged in different horizontal planes, and are of any suitable material and number of leaves. The upper or top springs D D extend longitudinally from the top of the head-block C to the top of the rear axle B, being secured at each end by suitable clips, and are preferably arranged in substantially parallel position. The lower or under springs E E are arranged obliquely or diagonally, diverging from the head-block C to the rear axle B, and are secured by their ends to the under side of said head-block and rear

axle by clips having oblique lugs or ears. The rear ends of springs E E may be either to the outer or inner side of the springs D, but are preferably connected to the under side of the axle in the same vertical plane with the attachment of springs D, as shown, while the front ends of said springs E E should be connected to the under side of the head-block on either side of the king-bolt.

The ends of the diagonal springs E are secured by clips having oblique ears for the pivotal attachment of said springs, so that the springs do not require to be bent from a direct line for purposes of attachment, and consequently are stronger, vibrate more evenly and uniformly, and the connections have less strain put upon them. For the best results, as well as for simplicity and neatness of finish, a double clip, F, is used at the rear, and a combined clip and friction-plate in front. F, the double clip for the rear axle, (or any springs when pivoted in the same vertical plane,) is composed of two similar sections, each having two ears, *f*, perforated for the bolt which secures the spring, and single strap *f'*, forming half the shackle, and terminating in a bolt, and an eye, *i*, for the reception of the bolt of the opposite section. Said construction dispenses with the independent link of the old-style shackle, and couples the shackle in a manner which renders it better adapted to bear strain, and less liable to wear loose or cast a nut.

In the present instance, one set of lugs or ears, *f*, are set up obliquely, in order to secure the end of the under spring F in the line of its projection and vibration, as before specified.

It will be seen that the two sections composing the double clip and shackle are identical, so that any two of similar proportions will match, thus obviating the multiplicity of parts, and special parts, which is a material advantage.

Secured to the under side of head-block C is the upper friction-plate *g* of the fifth-wheel. This plate I extend out or form as a bar, so shaped as to apply itself to the head-block, and on each wing or extension thereof are made ears *g'*, either arranged obliquely or otherwise, according to the direction of the

spring secured therein. In the present case they are oblique. The lower friction-plate *h* of the fifth-wheel is of the usual or any approved form, is secured to the upper surface of the front axle, the axle and head-block being connected by the king-bolt *j*, and fifth-wheel braces *k*, of any desired pattern, being applied in the well-known manner.

The springs D D and E E are rigidly connected at or near their midlength by means of a transverse tie bar or stay, K, so that the weight is uniformly distributed to the several springs, so that they will vibrate in unison.

Additional brackets, braces, and stays may be used, if desired; or any of the well-known constructions and connections adapted for the purpose specified, and to prevent rotation of the axle.

The advantages of my devices are, that a more durable and serviceable running-gear is obtained, and one less likely to work loose and

rattle, and, finally, simplicity and gracefulness of construction are attained.

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

1. The fifth-wheel for no-perch vehicles, having a winged upper friction-plate provided with ears for securing the lower springs, substantially as specified.

2. The clip having suitable ears *f*, single strap *f'*, and eye *i*, the whole constructed substantially as described, and adapted to form with a like section the double clip F, for the purpose specified.

In testimony whereof I, the said WILLIAM W. GRIER, have hereunto set my hand.

WILLIAM W. GRIER.

Witnesses:

F. W. RITTER, Jr.,
JAMES I. KAY.