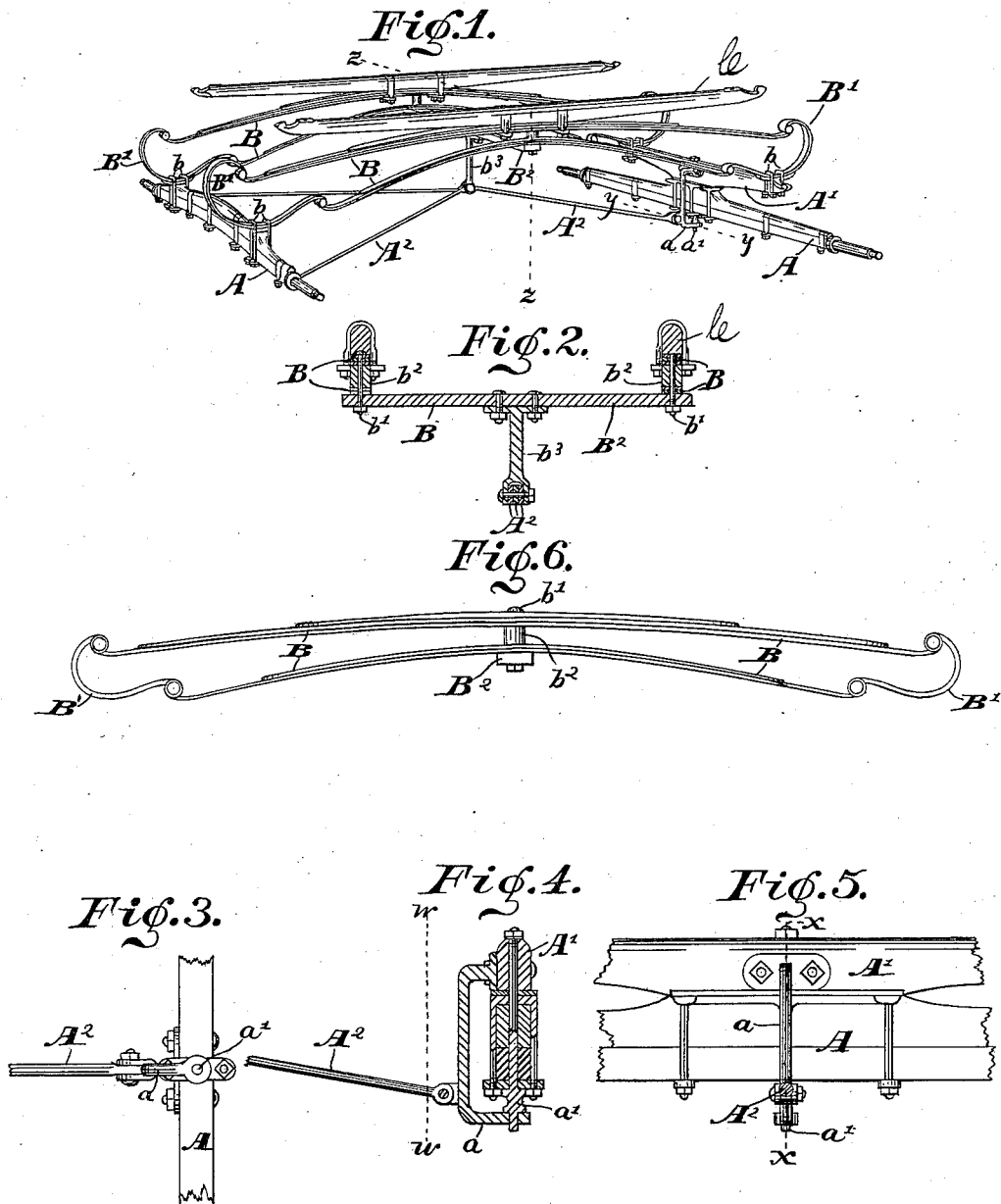


(No Model.)

J. P. SMITH.  
RUNNING GEAR FOR VEHICLES.

No. 304,573.

Patented Sept. 2, 1884.



WITNESSES.

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# UNITED STATES PATENT OFFICE.

JAMES P. SMITH, OF RUSHVILLE, INDIANA, ASSIGNOR OF ONE-HALF TO  
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## RUNNING-GEAR FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 304,573, dated September 2, 1884.

Application filed April 12, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES P. SMITH, of the town of Rushville, county of Rush, and State of Indiana, have invented certain new and useful Improvements in Running-Gear for Vehicles, of which the following is a specification.

My said invention consists in an improvement in the construction of springs and other parts of running-gear for vehicles, whereby a flexible and easy-riding running-gear is provided, as will be hereinafter more fully described.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a perspective view of my improved running-gear; Fig. 2, a transverse vertical section through the same on the dotted line  $z z$ ; Fig. 3, an under side plan of a portion of Fig. 1, looking upwardly from the dotted line  $y y$ ; Fig. 4, a central section through the same on the dotted line  $x x$  in Fig. 5; Fig. 5, a view of Fig. 4, looking to the right from the dotted line  $w w$ ; and Fig. 6, a view of the spring separately.

In said drawings, the portions marked A represent the axles; B, the springs, and C the side bars.

The axles A are or may be of the ordinary construction, the front axle having the bolster A', mounted thereon in the usual manner. Said axle and bolster are also connected by the clip  $a$ , the upper end of which is bolted to the rear side of the bolster, and the lower end of which is journaled below the axle on the lower end of the king-bolt  $a'$ , as shown. The axles are connected by rods A<sup>2</sup>, preferably three in number, two of which are hinged at one end to the rear axle, and one to the clip  $a$  on the front axle, the other ends of the three being brought together under the center of the body and hinged to a downwardly-projecting arm, which is secured at its upper end to a cross-bar which connects the springs.

The springs B are formed in two main parts, as shown, the top part being somewhat longer than the other, and the two ends being connected by a bar, B', which rests upon and is secured to the axle or bolster by the clips  $b$ ,

and forms in effect a third part of the spring. The outside end of said bar is preferably curved from where it is secured to the axle out and over said axle, where it is connected to the top part of the spring, in order that the weight may bear evenly upon the axles. The two parts of each spring are secured together in the middle by the bolts  $b'$ , a washer,  $b''$ , being interposed between them to keep them the desired distance apart. The two springs of the vehicle are connected, and thus prevented from spreading, by a cross-bar, B<sup>2</sup>, from the center of which an arm,  $b^3$ , extends downwardly, to which the connecting-rods A<sup>2</sup> are hinged, as before described.

The side bars, C, are mounted on the top of the springs in any suitable manner, and, being of the ordinary construction, need no special description.

By this construction of gear the axles are permitted to spread apart as the springs are borne down by the load, and as the weight is lessened the springs tend to draw them together again, and thus a very flexible gear is provided.

It may be well to say that the several parts marked B and B' (shown most plainly in Fig. 6) may all be considered as parts of the springs, and therefore it would be allowable to describe the spring as composed of four parts, instead of as composed of two parts connected by bars, the parts B' being necessarily elastic, as will be readily understood.

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

1. The combination, in a running-gear for vehicles, of connecting-rods hinged or pivoted to the axles of said gear at one end, their other ends being hinged to a suitable bearing under the central portion thereof, and said axles and bearing, substantially as set forth.

2. In a running-gear for vehicles, the combination, with the axles A and bolster A', of connecting-rods A<sup>2</sup>, connecting said axles to a suitable bearing under the center of the body, to which they are all hinged, and the springs B, substantially as described, and for the purposes specified.

3. The combination of the axles A, connected  
by connecting-rods A<sup>2</sup>, said connecting-rods  
being preferably three in number, one of  
which is hinged to the front axle, and the others  
5 of which are hinged to the rear axle, the three  
being hinged to an appropriate bearing under  
the center of the body, and the springs B, said  
springs being formed in two parts, the ends  
of which are connected by a bar, B', and said  
10 bar being secured to the axle or bolster, sub-  
stantially as described, and for the purposes  
specified.

4. In a running-gear for vehicles, the com-  
bination of the axles A and bolster A', the  
15 springs B, connecting-rods A<sup>2</sup>, two of which

are connected at one end to the rear axle and  
at the other end to the arm b<sup>3</sup>, under the mid-  
dle portion of the gear; and the other of which  
is connected at one end to the clip a on the  
front axle and bolster and at the other end to 20  
said arm b<sup>3</sup>, and said clip and arm, substantially  
as set forth.

In witness whereof I have hereunto set my  
hand and seal, at Rushville, Indiana, this 3d  
day of April, A. D. 1884.

JAMES P. SMITH. [L. S.]

In presence of—

JAMES D. SLOAN,

THOMAS J. NEWKIRK.