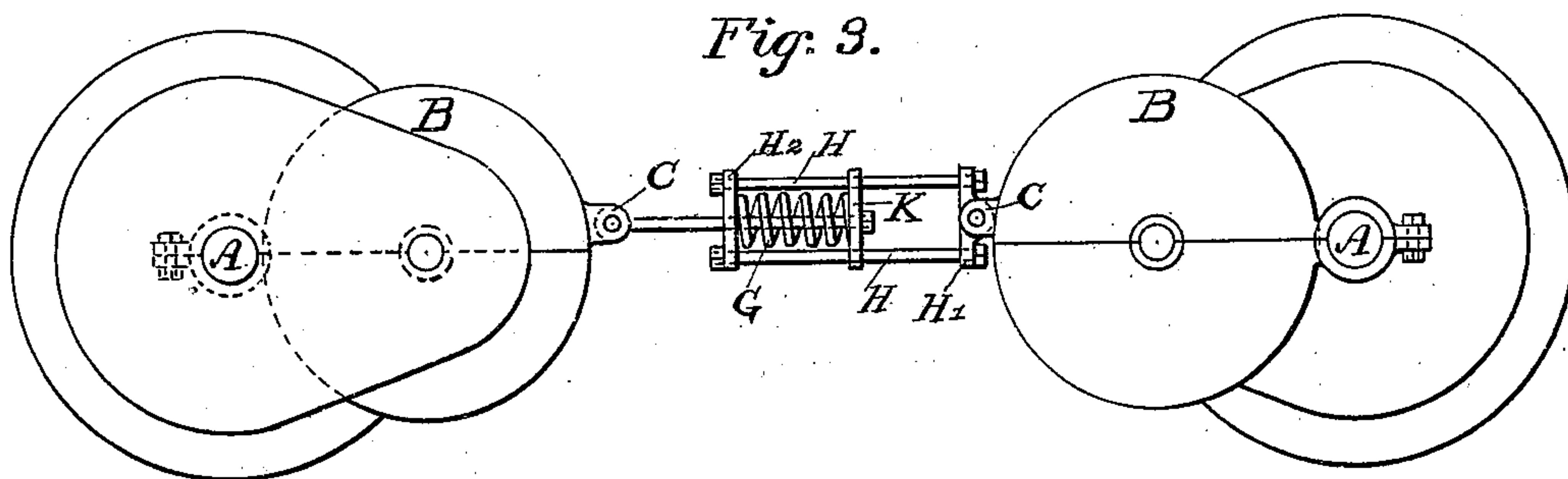
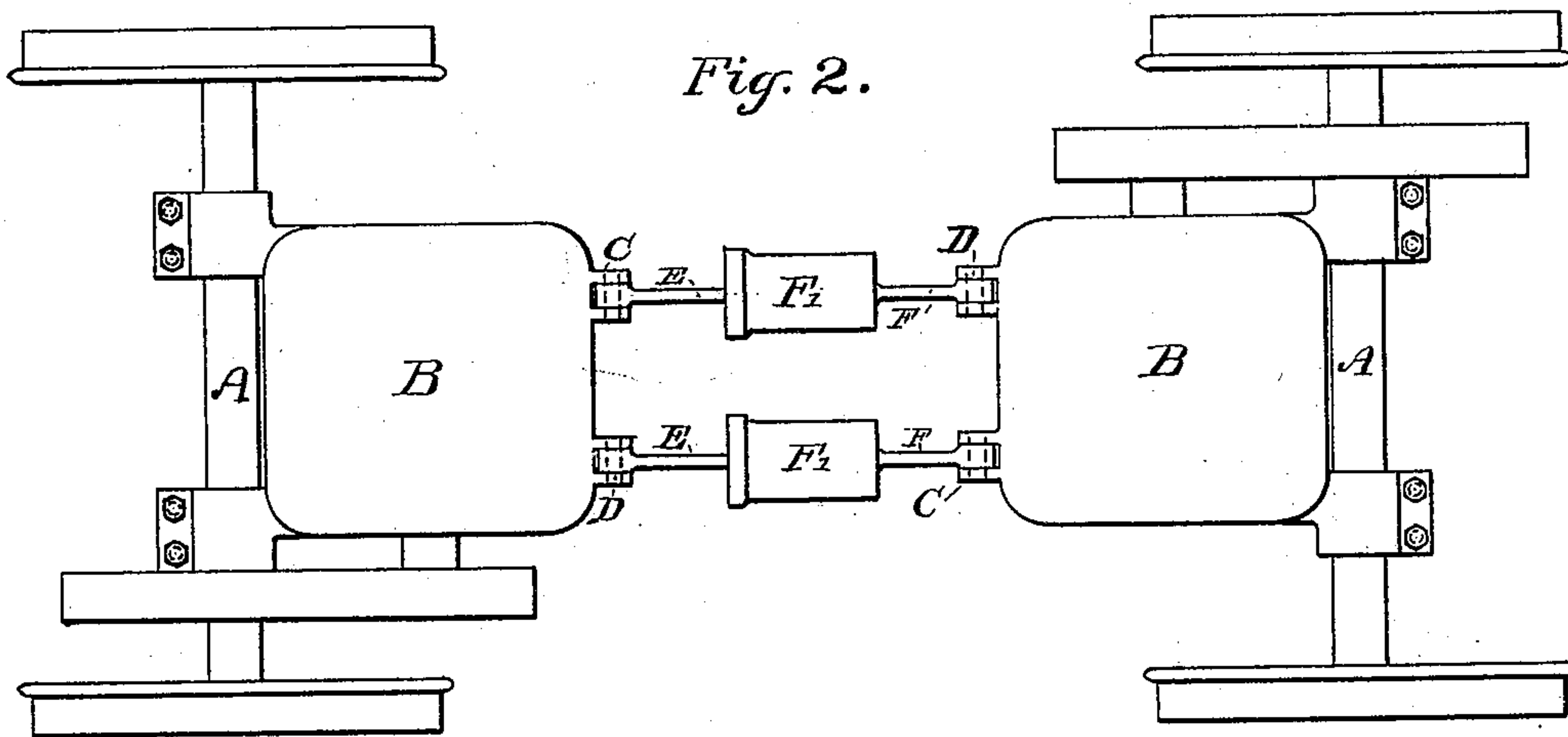
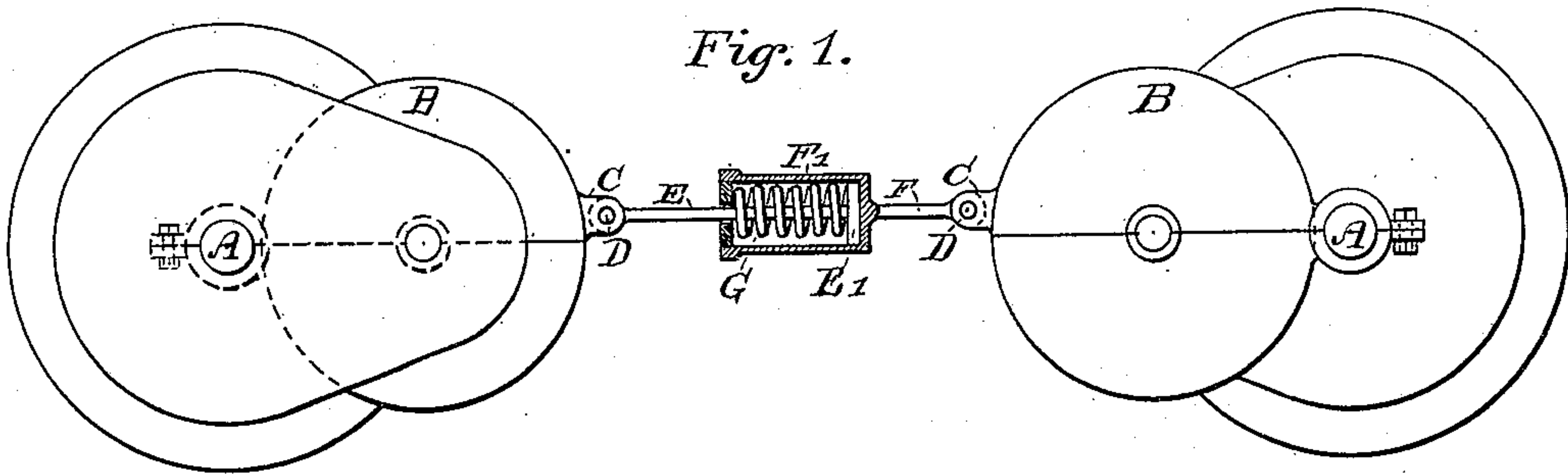


No. 644,199.

Patented Feb. 27, 1900.

R. D. EYRE.
MOTOR SUSPENSION.
(Application filed Aug. 22, 1899.)

(No Model.)



WITNESSES:
S. E. Clarkson
M. E. Sharpe.

INVENTOR
Richard D. Eyre
BY
Geo. H. Parmelee
his ATTORNEY.

UNITED STATES PATENT OFFICE.

RICHARD D. EYRE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE
LORAIN STEEL COMPANY, OF PENNSYLVANIA.

MOTOR SUSPENSION.

SPECIFICATION forming part of Letters Patent No. 644,199, dated February 27, 1900.

Application filed August 22, 1899. Serial No. 728,073. (No model.)

To all whom it may concern:

Be it known that I, RICHARD D. EYRE, of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement
5 in Motor Suspensions, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention has relation to new and useful improvements in motor suspensions for electric vehicles, and is designed to provide a suspension possessing the desired flexibility and elasticity, which is entirely independent of connections to the vehicle-body and truck-frame, and which involves the employment of
15 but few parts.

With this object in view my invention consists in the combination, with a pair of motors sleeved to the vehicle-axles at one end in the
20 usual manner, of suspension or connecting members arranged in one or more pairs, one member of each pair being attached to the free or nose end of each motor and extending toward the opposite motor, the two members
25 being loosely engaged with each other intermediate the motors, with an interposed spring so arranged that its tendency is to draw the two motors toward each other and maintain their horizontal positions. These engaged
30 members and spring constitute a mutual support for the nose ends of the motors, which permits movement of the latter about the axles to a limited extent and cushions them against jars and strains resulting from such
35 movement in a very effective manner.

The invention also consists in the novel construction and combination of parts, all as hereinafter described, and pointed out in the appended claims, reference being had to the accompanying drawings, in which—
40

Figure 1 is a side elevation; Fig. 2, a plan view illustrating the application of my invention, and Fig. 3 a side view showing a modification.

45 In the drawings the letters A A designate the axles of a car-truck, and B B the two motors, sleeved thereon in the usual manner.

C C are lugs formed on the nose ends of each motor and carrying transverse rods or
50 bolts D D.

E is an arm or member which is loosely

sleeved or centered on the rod or bolt D of one motor and terminates between the motors in an enlarged head or end portion E'.

F is an arm or member loosely sleeved or
55 centered on the rod or bolt C of the other motor and terminates in a chambered or socketed head F', in which is received loosely the head E' of the member E.

G is a stiff compression-spring which is
60 seated in the head F', with one end bearing against the head E' and the opposite end against the outer wall of the chamber. The action of this spring is, as will be readily seen, to tend to separate its two end bearings, and
65 thereby draw the two motors toward each other. This of course tends to maintain the horizontal positions of the motors against the action of gravity and to restore them to such
70 position when moved vertically by the torque or by track conditions, such movements being limited and effectually cushioned.

In the drawings I have shown two pairs of members, one near each side of the motors. I may, however, employ but one pair attached
75 to the central portions thereof.

In the modification shown in Fig. 3 in lieu of the member F, having a chambered head F', there is employed a member composed of two parallel rods or bars H, connected by end
80 pieces H' H², the piece H' being pivoted to the lugs C. The member connected to the other motor is substantially the same as in Figs. 2 and 3, except that its head K is apertured to embrace and slide upon the rods or
85 bars H, the member itself passing loosely through the piece H². The spring G is seated between the head K and the end piece H². The operation, as will be readily seen, is similar to that first described.
90

I do not wish to limit myself to the particular construction which I have herein shown and described, as my invention is considerably broader in its application than such construction.
95

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

1. The combination with two motors, each of which is sleeved to one of the driving-axes, 100
of an arm or member loosely connected to each motor at its free or nose end, and a spring

engaging the ends of both of said arms or members and tending, by its action, to draw the two motors toward each other.

2. The combination with two motors, each of which is sleeved to one of the driving-axles, of a suspension connection therefor, comprising two members, one of which is loosely connected to each motor, a loose connection between said members, and a spring acting horizontally upon both members and tending to hold the motors to horizontal position.

3. The combination with two motors, each of which is sleeved to one of the driving-axles, of an arm pivoted to the nose end of one motor and terminating in a head, an arm pivoted to the other motor and terminating in a guide portion for the said head, and a compression-spring seated within the said guide portion and tending by its action to maintain the horizontal position of said motors.

4. The combination with two motors, each of which is sleeved to one of the driving-axles, of a pair of arms, one of which is centered or pivoted to the nose end of each motor, one of said arms having a head and the other a guide

which is engaged by said head, and a compression-spring seated between the said head and the outer end of said guide.

5. The combination with two motors, each of which is sleeved to one of the driving-axles, and having the lugs C and the rods or bolts D at their opposite ends, of the arm E centered upon one of said rods or bolts, and terminating in a head E', the arm F centered to the other rod or bolt and having the chambered head F' which seats the said head E' and the spring G seated in said head F', as described.

6. The combination with two railway-motors sleeved to different axles of a spring connection between the same acting in a horizontal direction to draw said motors toward each other.

In testimony whereof I have affixed my signature in presence of two witnesses.

RICHARD D. EYRE.

Witnesses:

B. M. SMITH,
H. W. SMITH.