J. J. MORAN.

VEHICLE SPRING.

APPLICATION FILED JAN. 23, 1915.

1,154,999.

Patented Sept. 28, 1915.

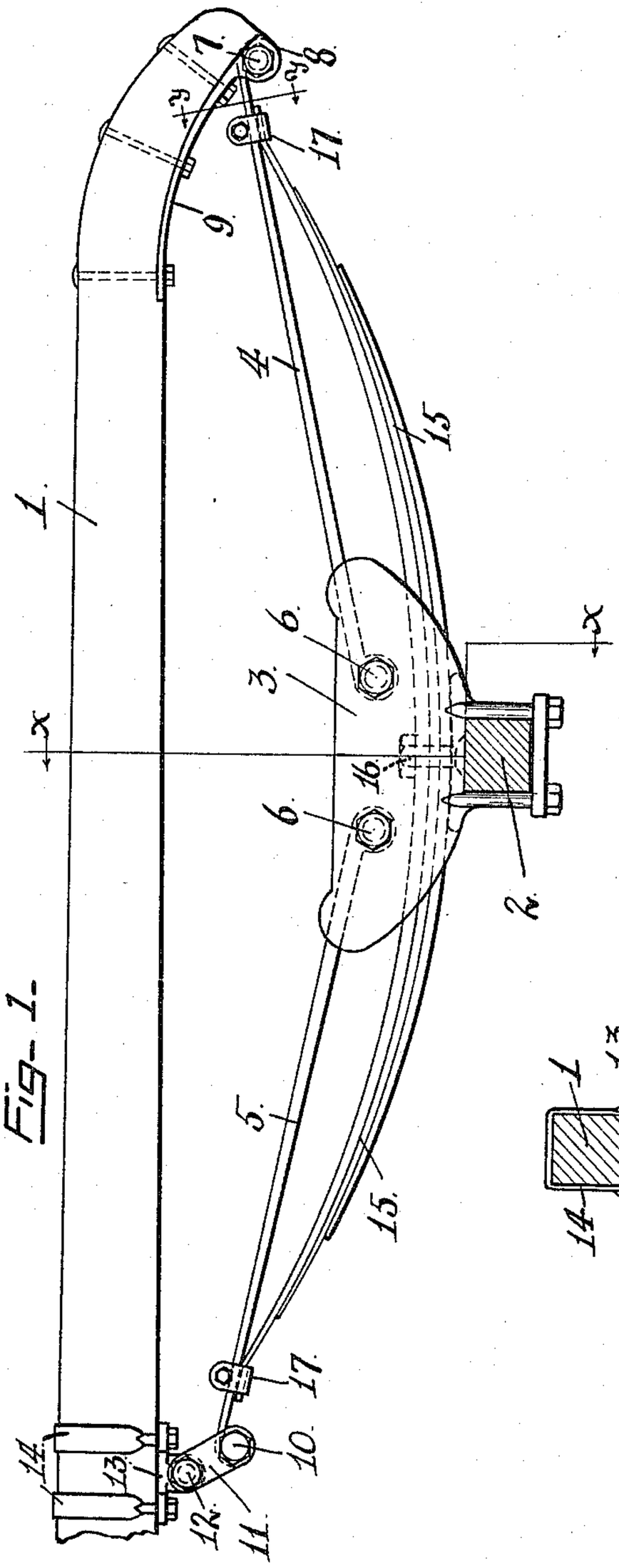

Fig. 1.

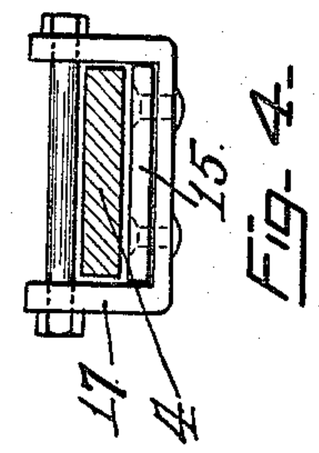

Fig. 4.

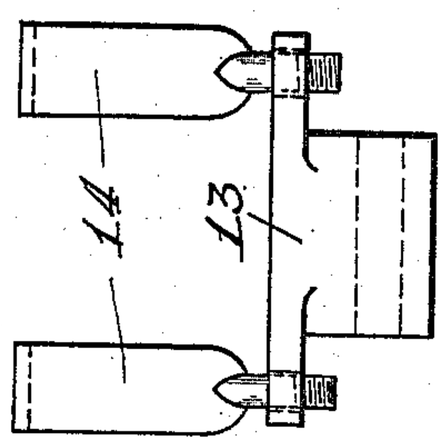

Fig. 3.

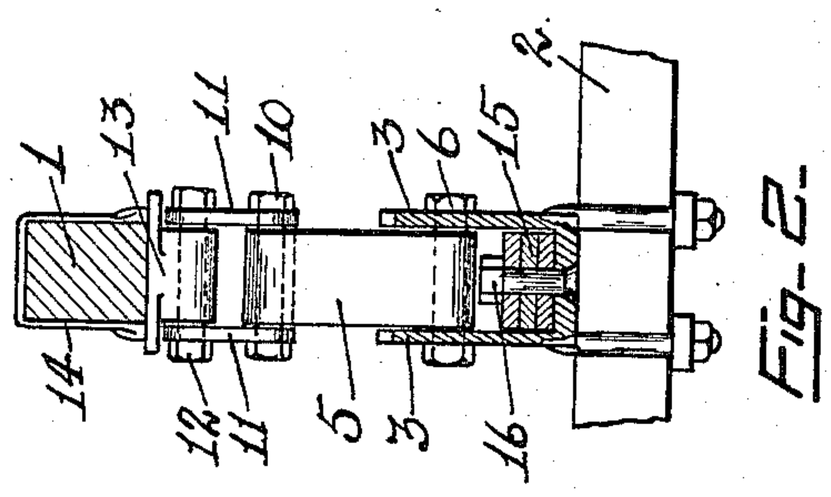

Fig. 2.

WITNESSES:

Wm. F. Drew.

S. Constine.

INVENTOR

James J. Moran

BY Wm F. Booth

ATTORNEY

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES J. MORAN, OF MARICOPA, CALIFORNIA, ASSIGNOR OF ONE-HALF TO WILLIAM J. SCHULTZ, OF MARICOPA, CALIFORNIA.

VEHICLE-SPRING.

1,154,999.

Specification of Letters Patent. Patented Sept. 28, 1915.

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To all whom it may concern:

Be it known that I, JAMES J. MORAN, a citizen of the United States, residing at Maricopa, in the county of Kern and State of California, have invented certain new and useful Improvements in Vehicle-Springs, of which the following is a specification.

My invention relates to the general class of vehicle-springs.

Though my invention is applicable to the springs of any vehicle, it is particularly intended for automobiles and finds its highest use when applied to motor-vehicles, for the reason that such vehicles, on account of their weight and speed and the exigencies of their travel, are liable to such extraordinary strains and stresses as to frequently result in the breaking of their springs.

The object of my invention is to provide a vehicle-spring construction in which the liability of spring breakage is so reduced as to be practically eliminated; and to this end my invention consists in the novel spring construction, which I shall now fully describe by reference to the accompanying drawings, in which—

Figure 1 is a side elevation of my vehicle-spring construction. Fig. 2 is a section on line *x*—*x* of Fig. 1. Fig. 3 is a front elevation enlarged, showing the clip for the swinging or yielding connection of the rear connecting bar with the sill of the vehicle frame. Fig. 4 is a section on the line *y*—*y* of Fig. 1.

1 represents one of the sills of the frame of the vehicle, and 2 indicates the axle. Firmly secured to the axle is a clip 3, which in its best form is channel-shaped in order to serve as a guide as well as a connection for the parts which are associated with it.

4 and 5 indicate a pair of alined rigid connecting bars between the frame sill and the axle. At their adjacent ends these bars lie within the guide clip 3 and are pivoted thereto by the cross bolts 6. The front end of the forward bar 4 is directly pivoted by the bolt 7 in the ears 8 of the strap 9 secured to the frame sill 1. The back end of the rearward bar 5 is pivoted by the bolt 10 in the lower extremities of swinging links 11, which links at their upper ends are pivoted by the bolt 12 in the yoke 13 of the clip 14 secured to the frame sill 1.

15 is a spring. This is of the leaf type being composed of one or more leaves, here shown as three. The spring, at its middle, lies within the length of the channeled clip 3 and rests upon the bottom of said clip, being secured thereto by the bolt 16. To the ends of the spring, which bear up under the connecting bars 4 and 5, are secured the guides 17 which freely embrace the sides of said bars.

It will be seen from the foregoing that the spring proper has no other function or duty than that of a spring, as it forms no connection whatever between the frame and axle. The necessary connection between said frame and axle is established by and through the bars 4 and 5, which are pivotally mounted to yield, but are controlled in their yielding motion by the spring. All stresses and strains, due to the draft and the jolts and shocks, caused by roughness of the road, fall upon the bars 4 and 5 alone, the spring taking none of them, said spring serving the sole purpose of resiliency. It need, therefore, absorb only such shocks as are legitimately imposed upon it in its mere function as a spring, and it is not, under these alone, nor in the subservience of its proper function, liable to break.

I claim:—

1. A vehicle-spring structure comprising a pair of alined rigid connecting bars; a clip secured upon the vehicle axle; pivotal connections between the adjacent ends of the connecting bars and the clip; a direct pivotal connection between the other end of one of said bars and the vehicle frame; a yielding, shackle connection between the other end of the other bar and the vehicle frame; a spring connected at its middle with said clip and having its ends bearing up under said connecting bars to control their movements; and freely playing guides connecting the ends of the spring with said bars.

2. A vehicle-spring structure comprising a channeled guide clip secured to the vehicle axle; a pair of alined rigid connecting bars, the adjacent ends of which lie within the guide clip; pivotal connections between the adjacent ends of said bars and the clip; a direct pivotal connection between the other end of one of said bars and the vehicle frame; a yielding, shackle connection between the other end of the other bar and the

vehicle frame; a spring lying within the guide clip at its middle portion and secured thereto, said spring having its ends bearing up under said connecting bars to control their movements; and freely playing guides connecting the ends of the spring with said bars.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES J. MORAN.

Witnesses:
G. N. McCARTNEY,
H. P. MOORE.