

(No Model.)

M. E. ROBB.  
VEHICLE SPRING.

No. 506,546.

Patented Oct. 10, 1893.

Fig. 1.

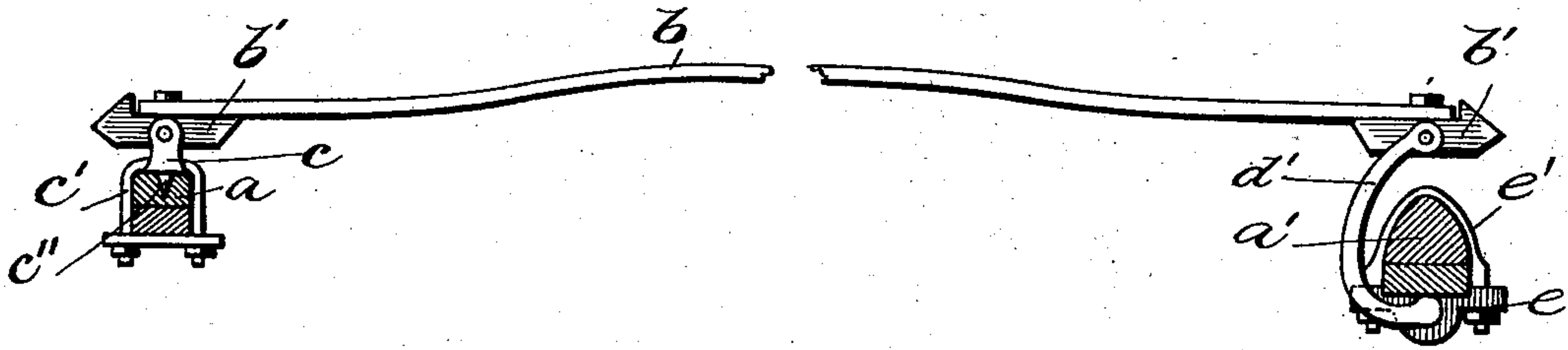


Fig. 2.

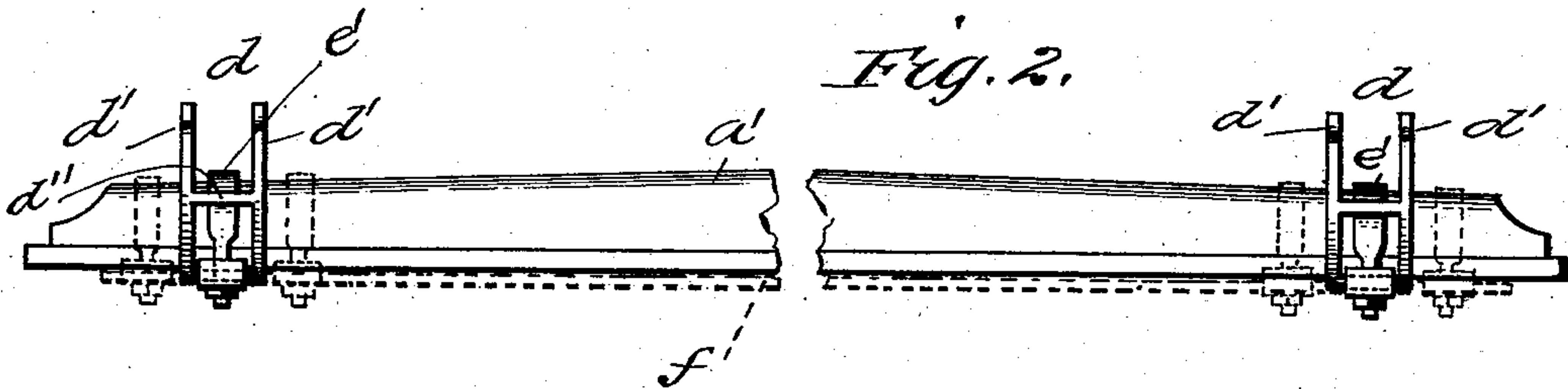


Fig. 3.

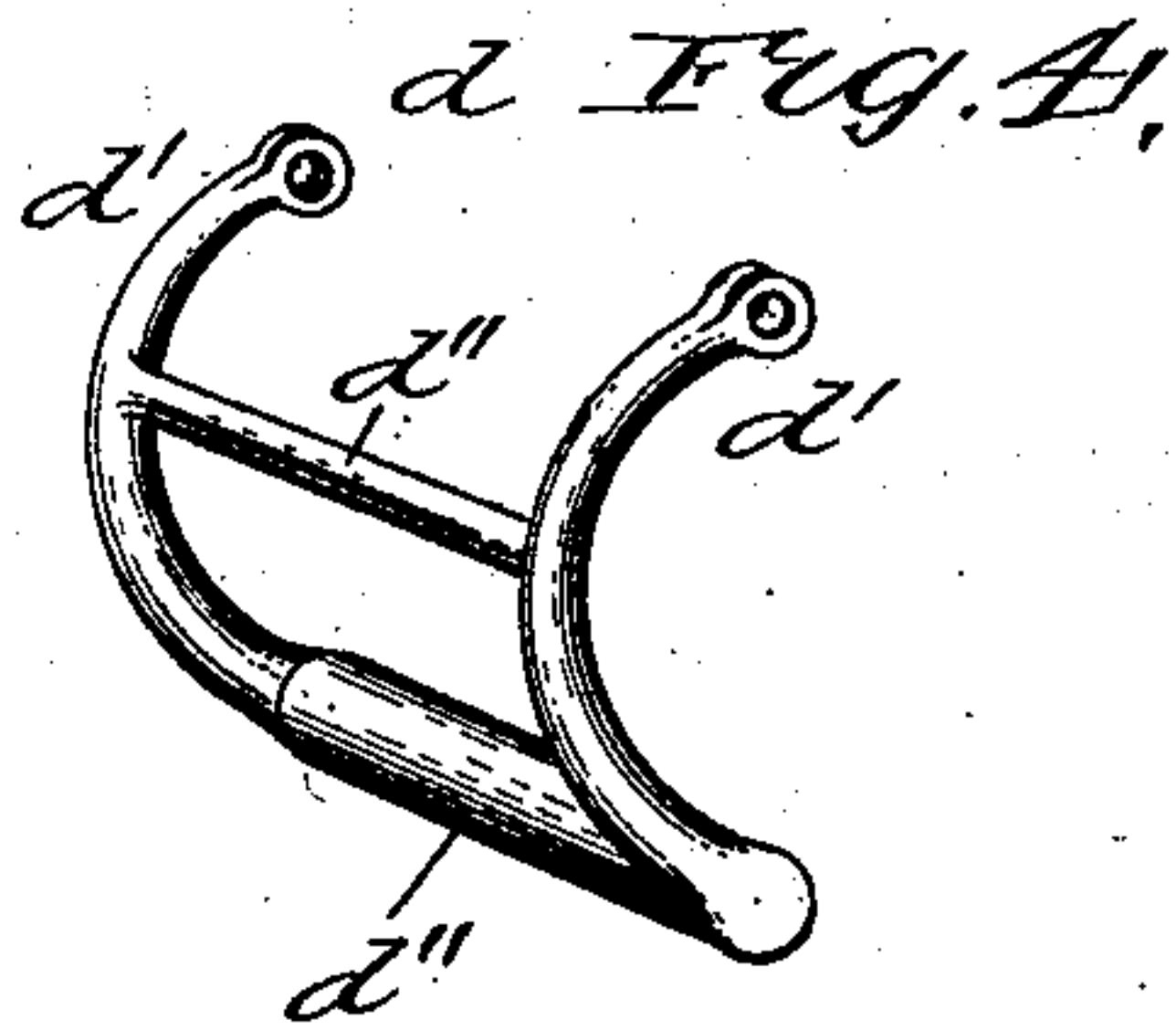
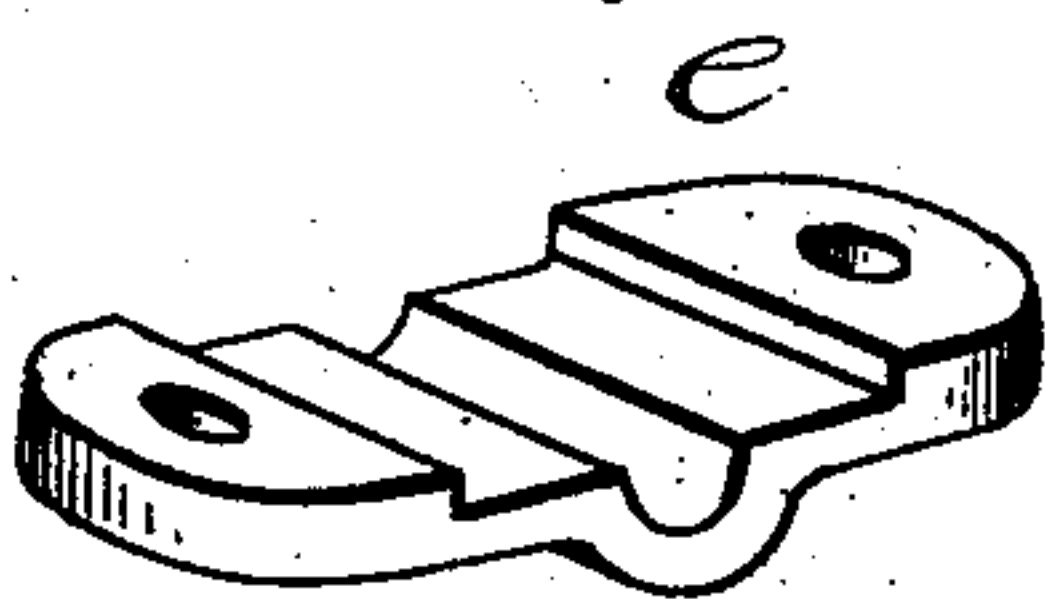


Fig. 5.

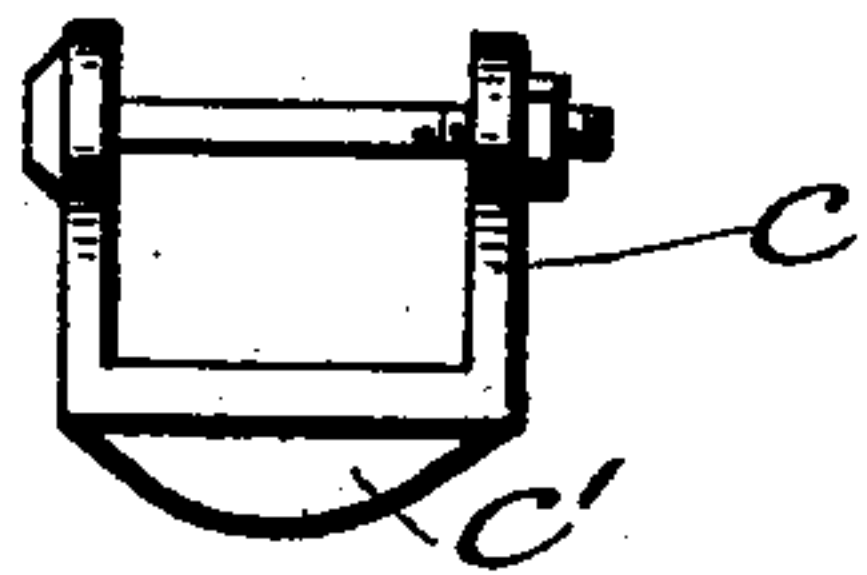
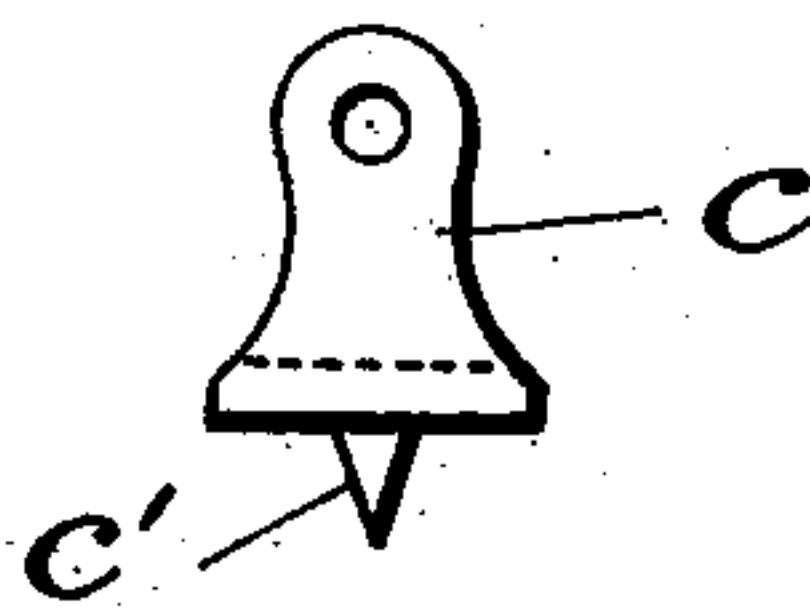


Fig. 6.



Witnesses  
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# UNITED STATES PATENT OFFICE.

MALCOLM E. ROBB, OF KNOWLTON, CANADA.

## VEHICLE-SPRING.

SPECIFICATION forming part of Letters Patent No. 506,546, dated October 10, 1893.

Application filed April 1, 1893. Serial No. 468,713. (No model.)

*To all whom it may concern:*

Be it known that I, MALCOLM ELWIN ROBB, a subject of the Queen of Great Britain, residing at Knowlton, in the county of Brome, Province of Quebec, Canada, have invented certain new and useful Improvements in Vehicle-Springs, of which the following is a specification, reference being had therein to the accompanying drawings, in which—  
10 Figure 1 is a vertical longitudinal section of the front rocker and axle and the connecting spring of a vehicle; Fig. 2 a front view of the rear axle; Fig. 3 a detail view of one of the bearing boxes for the oscillating arms;  
15 Fig. 4 a detail perspective of one of the oscillating arms; and Figs. 5 and 6 detail views of the coupling at the forward ends of the springs.

The object of this invention is essentially  
20 to provide improved means for attaching the ends of the side-springs of a vehicle to the rocker and rear axle in such a manner that the cramping or buckling strain to which the ordinarily constructed springs are subjected  
25 to will be entirely obviated as more fully hereinafter set forth.

In the drawings, *a* designates the rocker, *a'* the rear axle and *b* one of the side-springs connecting the rocker and axle. The ends of the springs have attached to them bearing  
30 plates *b'*, each of these plates being pivotally supported, by a horizontal bolt, between the upwardly-extending arms of a coupling-bracket, *c*, which is clamped down securely on  
35 the rocker by an ordinary clip *c'*, which also passes between said arms. These brackets *c* have each a sharpened rib *c''* on its underside which extends longitudinally of the rocker and enters the wooden part thereof.  
40 The object of this connection is to provide means for securing the front ends of the spring to the rocker more rigidly than the devices now in use.

It will be observed that the rib *c'* extends  
45 nearly the full length of the coupling-bracket and is in substantially the form of a segment, whereby the rib not only greatly strengthens the bracket-coupling but also prevents its slipping or twisting on the  
50 rocker.

The blocks *b'* on the rear ends of the

springs are each pivotally secured, by a horizontal bolt, between the upper ends of a pair of vertical side-bars *d'* composing the curved supporting arms *d*, these arms being  
55 pivotally clamped to the underside of the rear axle and curved upwardly and slightly backwardly so as to terminate directly over the axle, as shown. Each of the two oscillating arms or brackets *d* is composed of the  
60 vertical side-bars *d'* and the connecting cross-bars *d''*, the lower cross-bar being rounded to serve as the pivotal-bar. The pivotal bars are supported in bearing-grooves formed in the upper sides of the flanged  
65 bearing-blocks *e*, which are clamped to the under-side of the axle by clips *e'* of the ordinary construction, the curved arms being thereby securely connected to the axle.

In use, it will be observed that the curved  
70 arms will freely oscillate or swing in unison with the endwise movements of the springs and thereby relieve the same of all crushing or buckling strain.

If it is desired that the two arms oscillate  
75 in unison, they may be connected together by a rod *f*, as shown in Fig. 2, which connection will partly equalize the strain should one of the springs be depressed more than the  
80 other. The pivotal bar *f* connecting the vertical curved arms may be extended on each side of the arms, and clamped there by two bearing blocks, instead of by one between the arms—the same flanged bearing block  
85 being used—as shown in dotted lines in Fig. 2.

I am aware of the Throop and Doyle patent of June 12, 1877, No. 192,033, and I do not claim anything therein shown and described. In this patent the two side-springs are each  
90 supported on the upper ends of a single curved arm, said arms being formed by bending up the ends of a rock-shaft mounted under the axle and extending nearly the full length thereof, said arms coming outside the  
95 bearings supporting the rock-shaft. This construction necessarily brings the weight of the load outside the bearings and thereby unevenly wears the same and causes side motion; this construction also renders it neces-  
100 sary that the two curved arms be connected by an unnecessarily heavy rock-shaft, whereas



my invention involves the use of two independent supports, each of which is cast of a pair of rigidly-connected curved-arms, the two supports being connected by a light rock-  
5 shaft or rod or not as desired. The extreme lower ends of the arms of each support are integrally connected by a rounded bearing-bar, which serves as the pivot, and about  
10 midway their length they are connected by another integral bar, the whole forming a light rigid frame and broad bearing, which will throw the weight of the load directly and evenly on the bearing-clip and prevent uneven wearing and side motion. The construction covered by Throop and Doyle necessitates the employment of a rock-shaft, and  
15 this shaft must be, in order to properly support the load, too large to admit of being attached to the bottom of the light axles now  
20 employed in light vehicles.

Having thus fully described my invention, what I claim is—

The combination of an axle, two supports *d* carried by the axle, one near each end, each of said supports consisting of a pair of curved  
25 side bars *d' d'*, curving from below the axle up above the same and rigidly connected at a point about midway between their ends by a bar *d''*, means for connecting and pivoting  
30 the lower ends of the supports to the axle, and springs having their ends pivotally secured between the upper ends of the side bars *d' d'*, substantially as described.

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

MALCOLM E. ROBB.

Witnesses:

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