

D. M. LANE.  
Vehicle Side-Springs.

No. 158,949.

Patented Jan. 19, 1875.

Fig. 1.

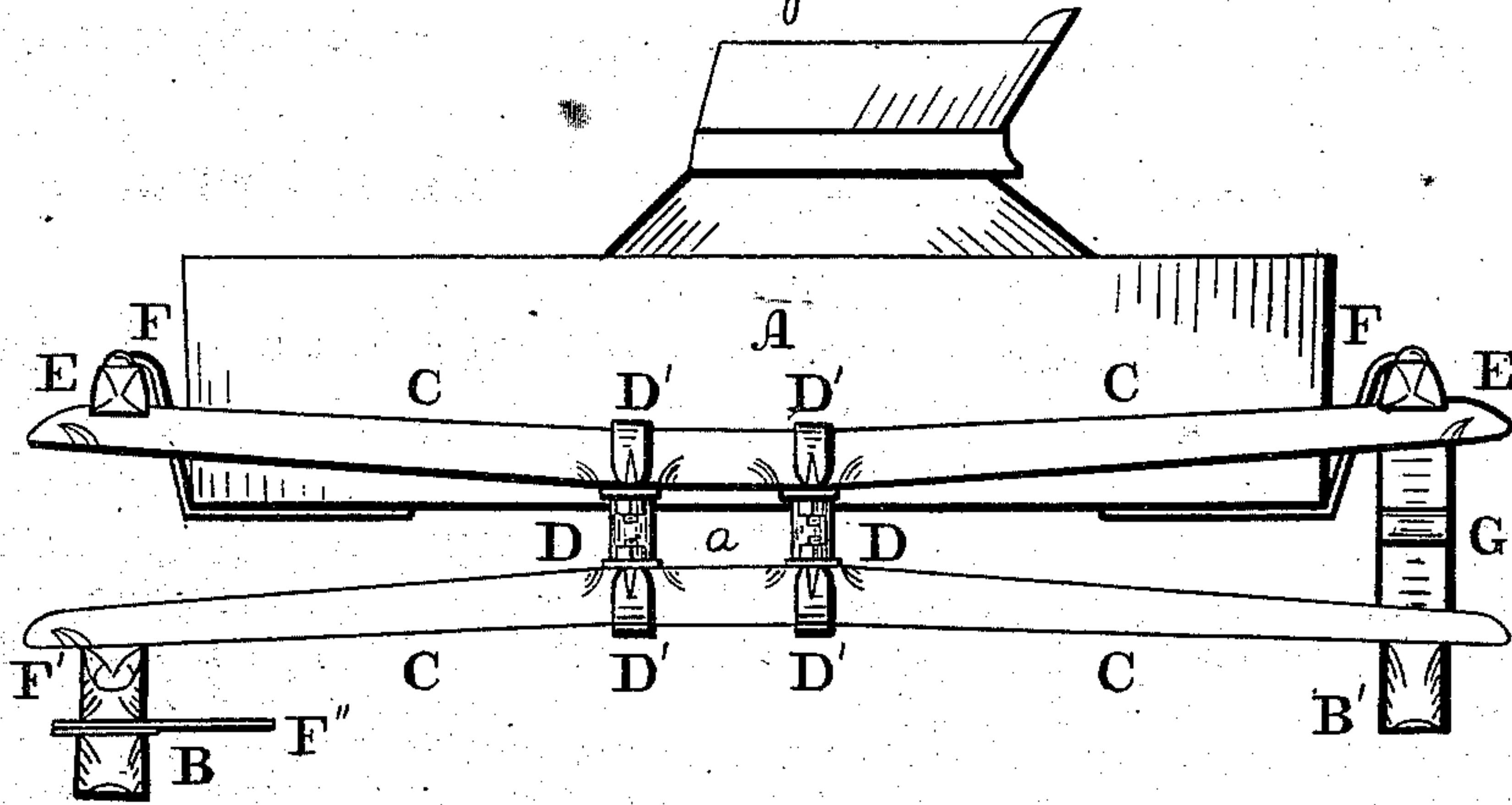


Fig. 2.

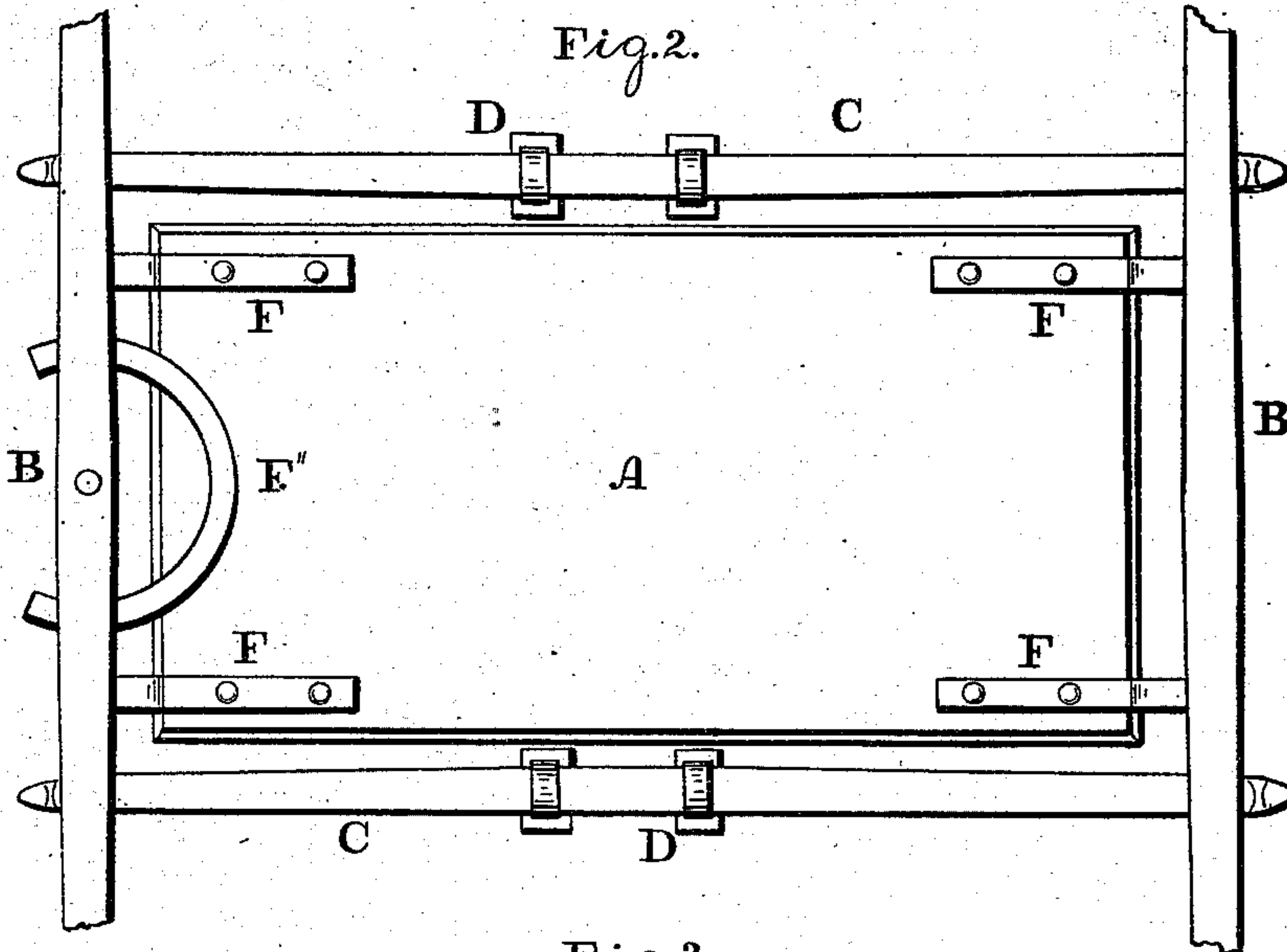
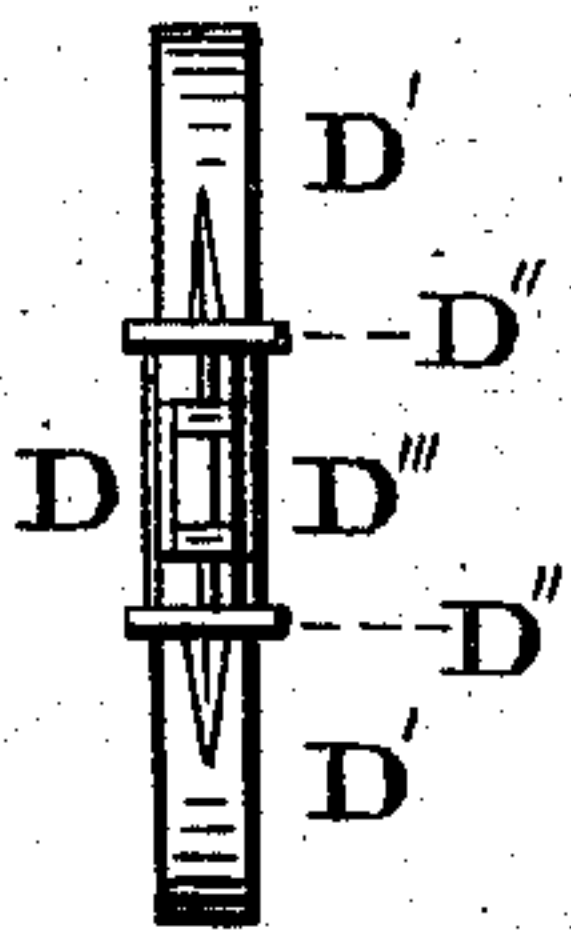


Fig. 4.



Witnesses:

L. F. Brown.

A. P. Grant.

Fig. 3.

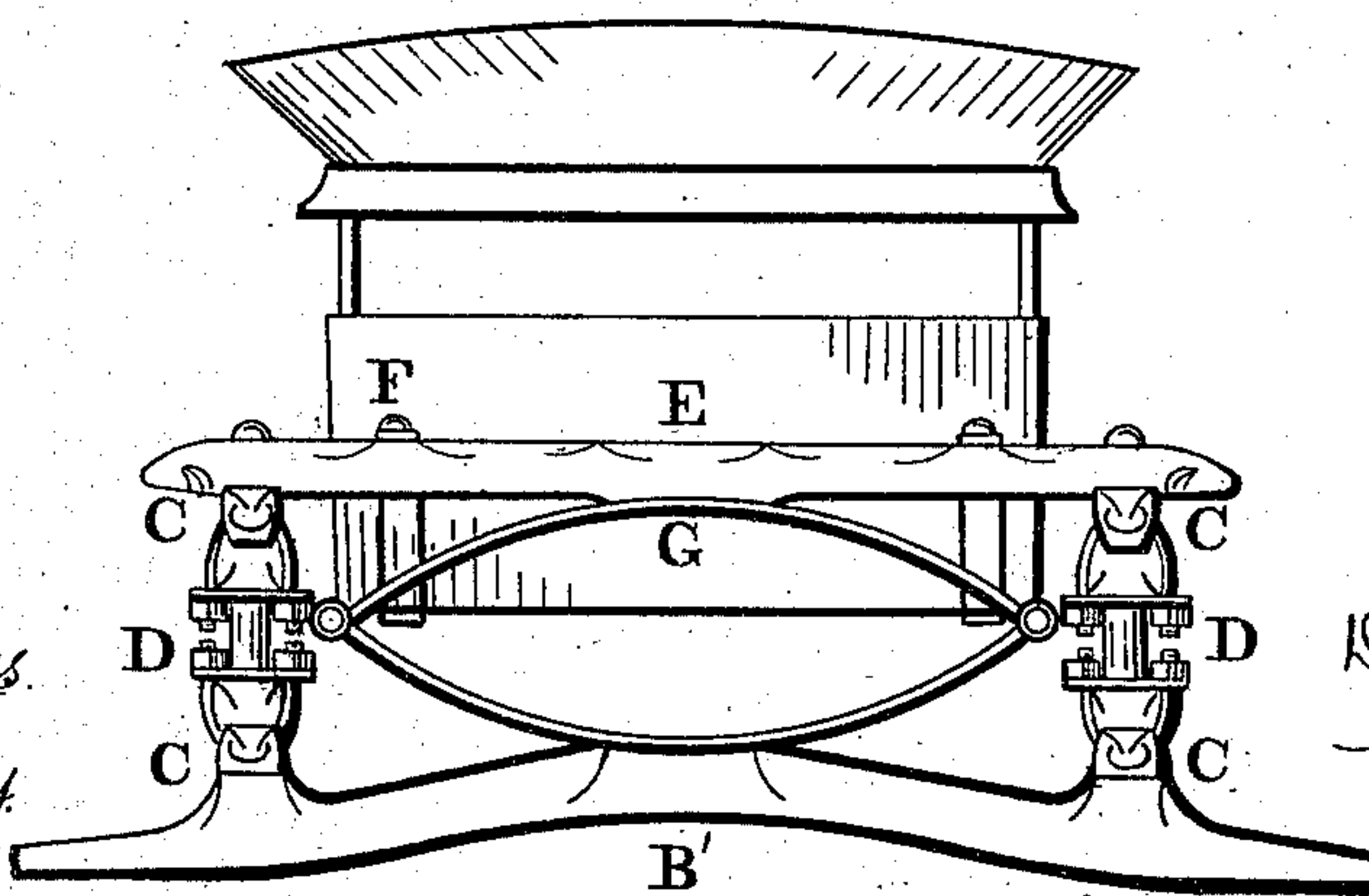
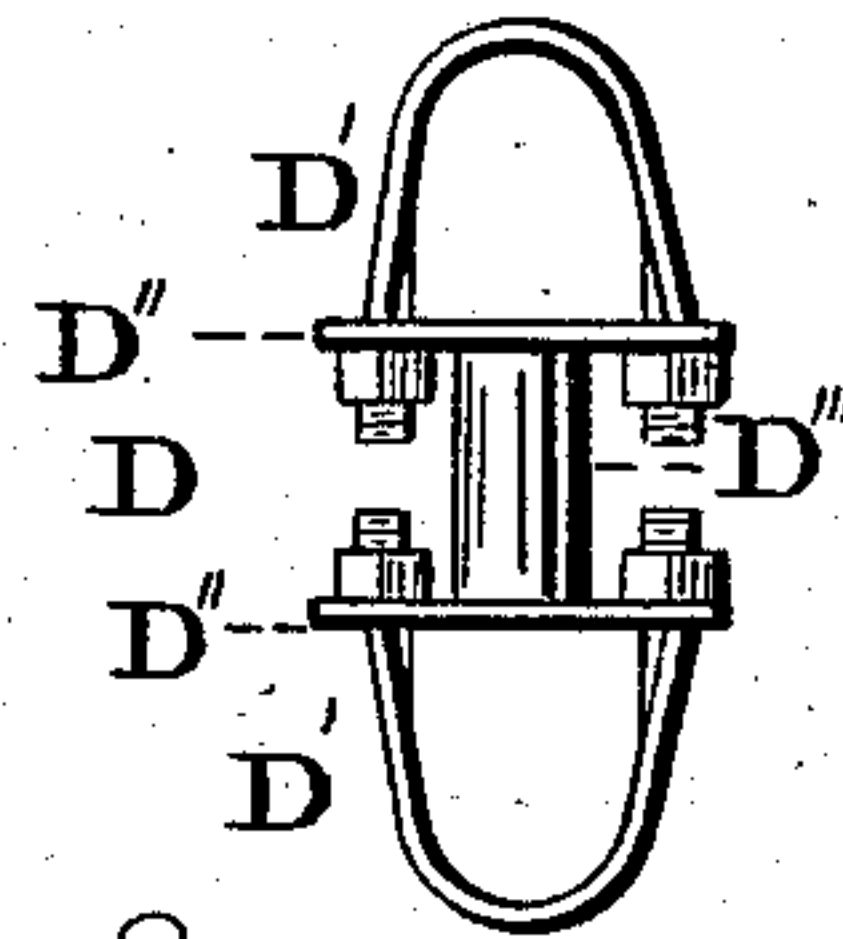


Fig. 5.



Inventor:

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Att'y.



# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN VEHICLE SIDE SPRINGS.

Specification forming part of Letters Patent No. 158,949, dated January 19, 1875; application filed November 16, 1874.

*To all whom it may concern:*

Be it known that I, DAVIS M. LANE, of the city and county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Carriages; and I do hereby declare the following to be a clear and exact description of the nature thereof, sufficient to enable others skilled in the art to which my invention appertains to fully understand, make, and use the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side view of the device embodying my invention. Fig. 2 is a bottom view thereof. Fig. 3 is a rear-end view thereof. Figs. 4 and 5 are views of detached parts.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists in two curved spring-spars arranged at each side of the body of the carriage, the curvatures of the spars being in reverse order, so that the ends of the upper spar point upwardly, and those of the lower spar point downwardly, whereby the body of the carriage will set and run easily, perches are rendered unnecessary, and the expense of the carriage is reduced. The spars are separated from each other, and connected by rigid couplings for properly holding the spars in position at the centers thereof, so that the elasticity of the ends of the spars is insured, and lateral swinging of the body of the carriage is prevented. It further consists in a transverse spring interposed between the upper spar and axle.

Referring to the drawings, A represents the body of a carriage or vehicle, and B B' the axles thereof. C represents two spring-spars, which are arranged on each side of the carriage, and consist of wooden bars of curved form, the curvatures thereof being in reverse order, so that the centers *a*, or what may be termed the crowns of the spars, face each other, whereby the ends of the upper spars point upwardly, and those of the lower spars point downwardly. The central portions of the spars are rigidly connected by couplings D, so that the ends of the spars possess full elasticity, and the elasticity of one end is independent of that of the other end; in other words, the spars have no rocking or rolling

motion, but spring from end to center, and vice versa, without moving on their centers, whereby their elasticity is insured. On the front and rear ends of the upper spars there are supported and secured transverse bars E, from which, by means of hangers F, the body A of the carriage is suspended. The rear ends of the lower spars rest on the hind axles, B', and the front ends of the same spars rest on the front bolster, F', which, with the fifth-wheel F'', rests on the fore axle, B. The couplings D consist of clip D', which embrace the spars, and are connected to horizontal arms D'' at the ends of the vertical posts D''', with which said arms D'' are preferably cast in one piece.

It is evident that when the nuts on the threaded ends of the clips are tightened against the arms D'' of the posts D''', each of the several parts of a coupling becomes a rigid unity, so that the spars are held firm at their centers, kept separated for their proper distance, and their lateral play or swaying is prevented.

It will be observed that the body of the carriage supported on spars, as constructed and connected, will be affected by the characteristics of the spars, so that it will run with gentle yet full elasticity, and without wildness. There will be no rolling or rocking motions, either longitudinally or transversely; and in the event of any sudden or harsh jerking at one end of the carriage, the spars will not convey or communicate the same to the other end, since the centers of the spars are rigid, and thus act, as it were, to isolate the ends of the spars. It will also be observed that perches and expensive metallic springs are dispensed with.

As there may be at times what is known as "dancing" of the carriage, a transversely-arranged spring, G, will be interposed between the rear of the upper spars and rear axle, so that said spring resting on the rear axle will have the bar E at the rear of the upper spars rest thereon. By these means any dancing of the carriage will be corrected, and the easy setting and run thereof will be preserved at all times.

I am aware that two spars have been applied to each other in contact, and bolts passed through the centers thereof; but the openings



for the bolts weaken the spars, and the latter, being in contact, do not afford the greatest possible elasticity, as in my construction.

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

1. The two spring-spars C, of reversely-curved order, in combination with the rigid couplings D, separating said spars, and connecting them at their centers, substantially as and for the purpose set forth.

2. The two spring-spars C, of reversely-curved order, in combination with the coupling-posts D'', interposed between the spars

and connecting their centers, substantially as and for the purpose set forth.

3. The two spring-spars C, in combination with the couplings D, constructed of the posts D'', with arms D'', and the clips D', substantially as and for the purpose set forth.

4. The two spring-spars C, in combination with the transverse spring G and cross-bar E, substantially as and for the purpose set forth.

DAVIS M. LANE.

Witnesses:

JACOB SMITH,

CHAS. H. LUNGREN.