

CYRUS W. SALADEE.  
Improvement in Carriages.

No. 120,106.

Patented Oct. 17, 1871.

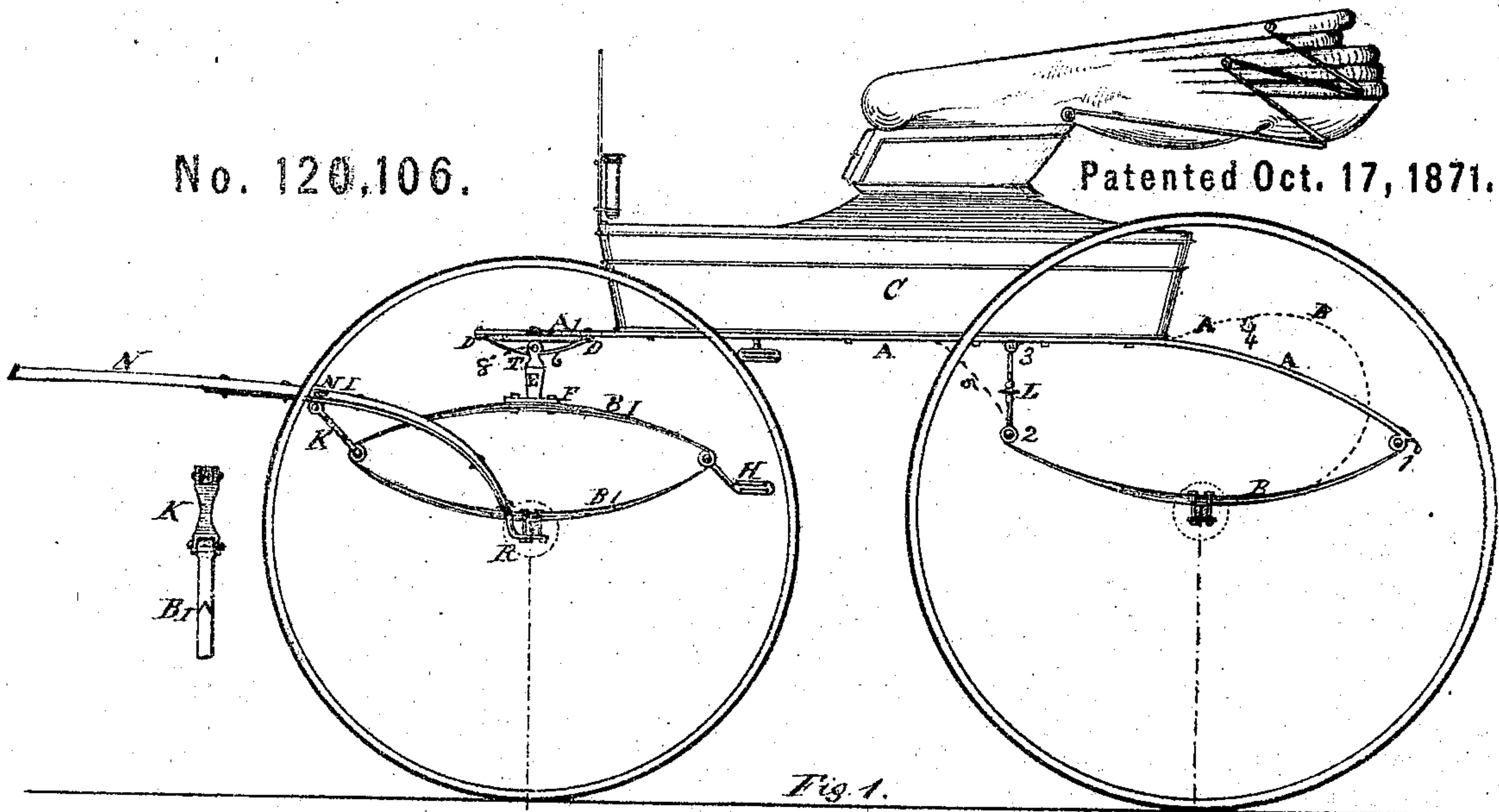


Fig. 1.

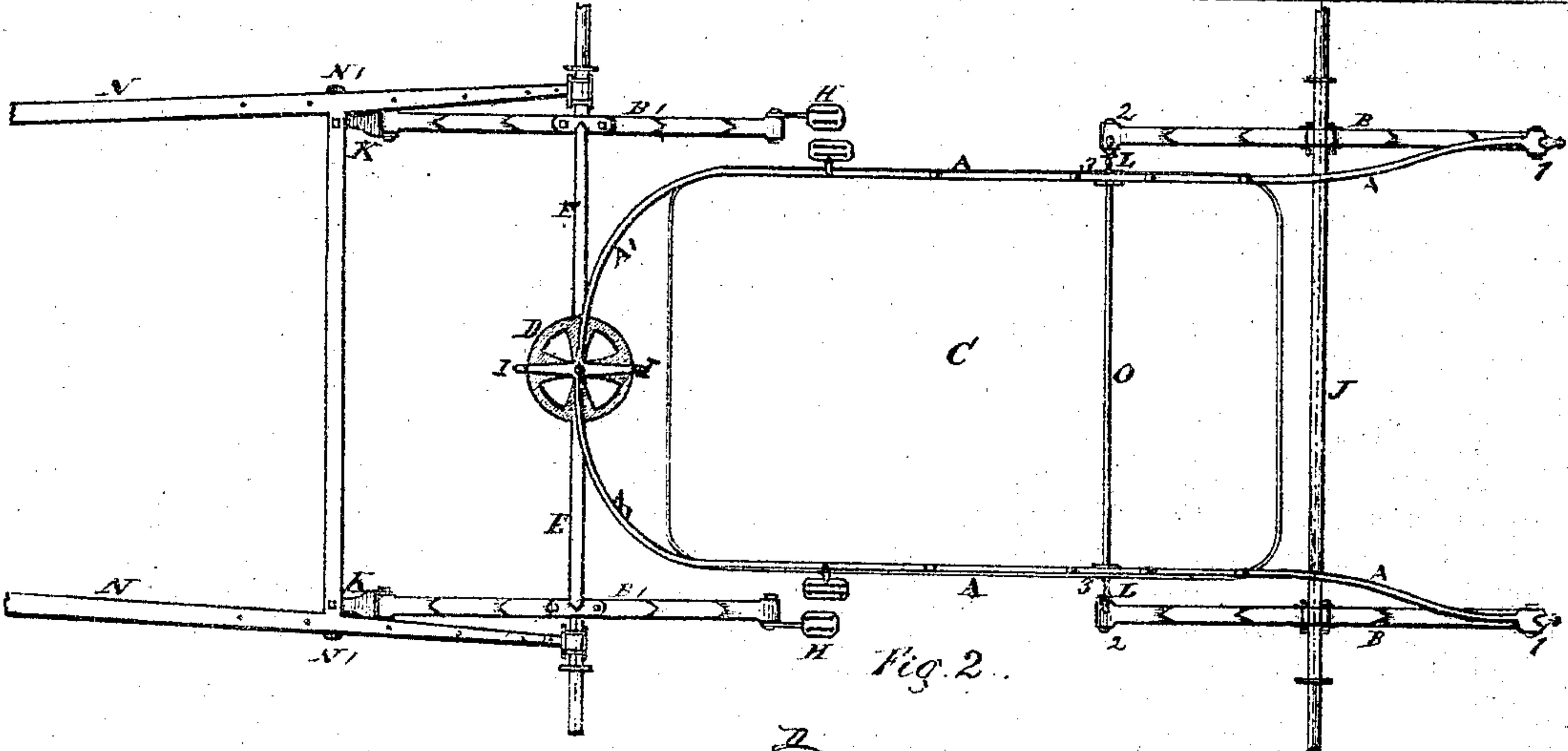


Fig. 2.

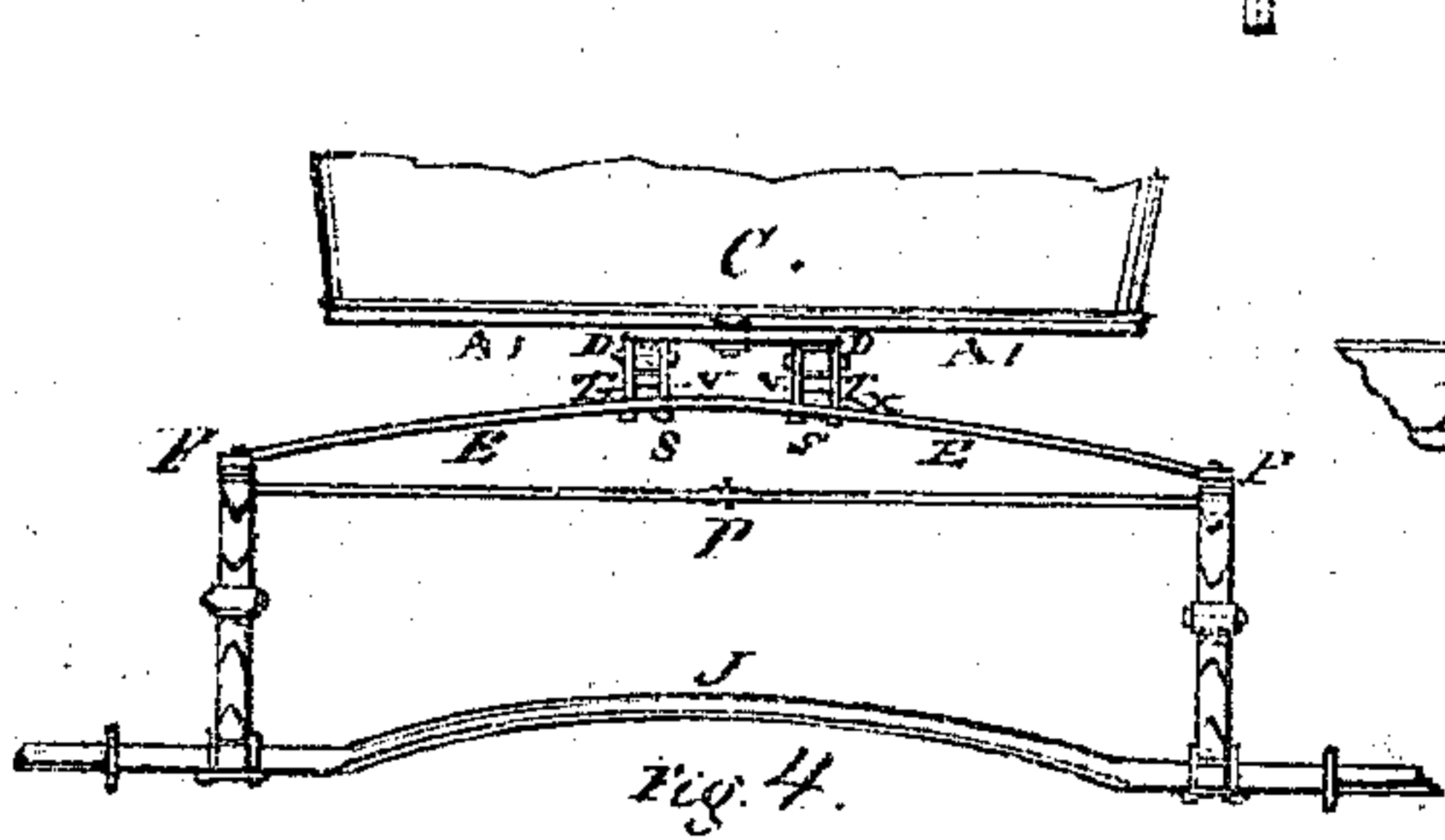


Fig. 4.

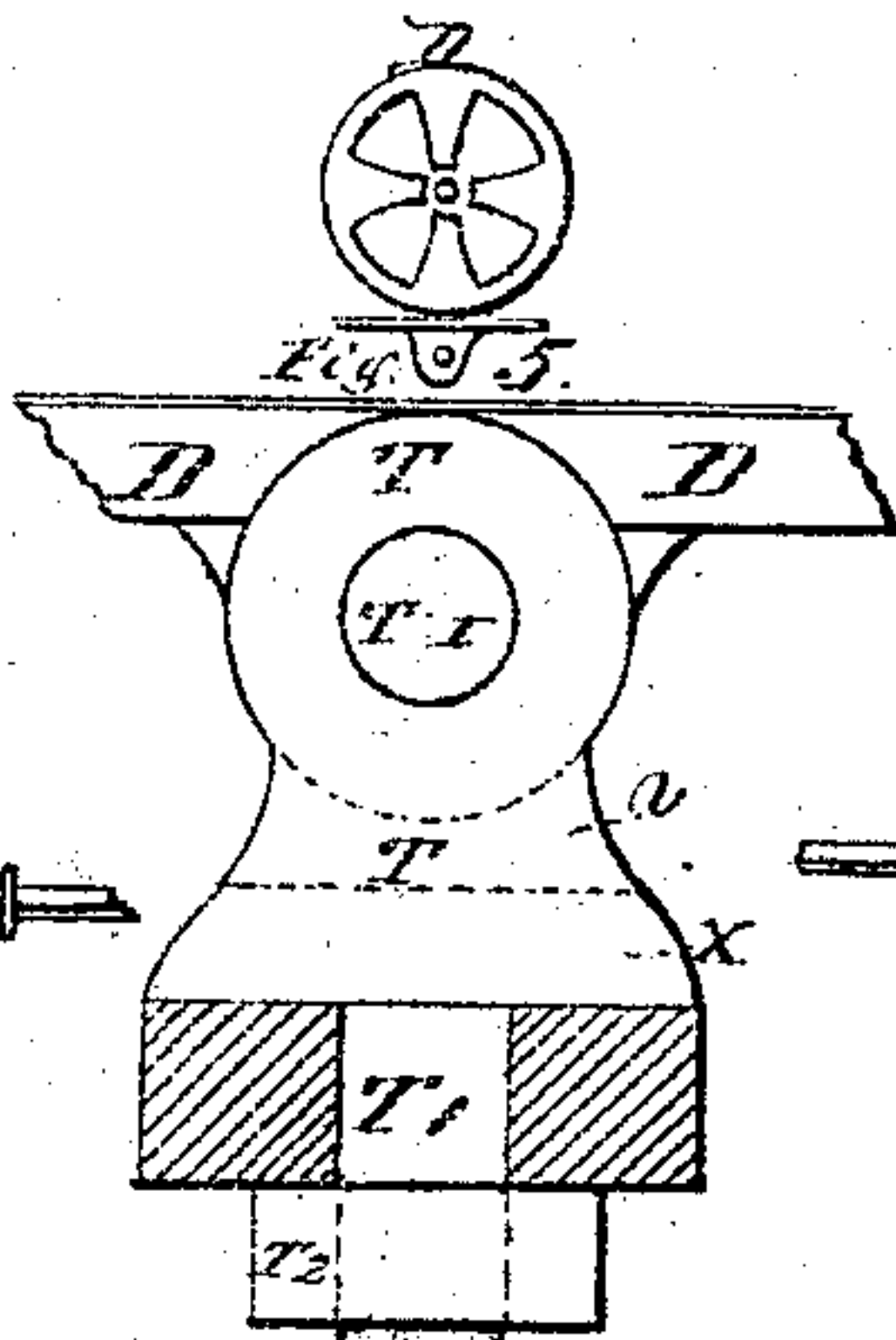


Fig. 5.

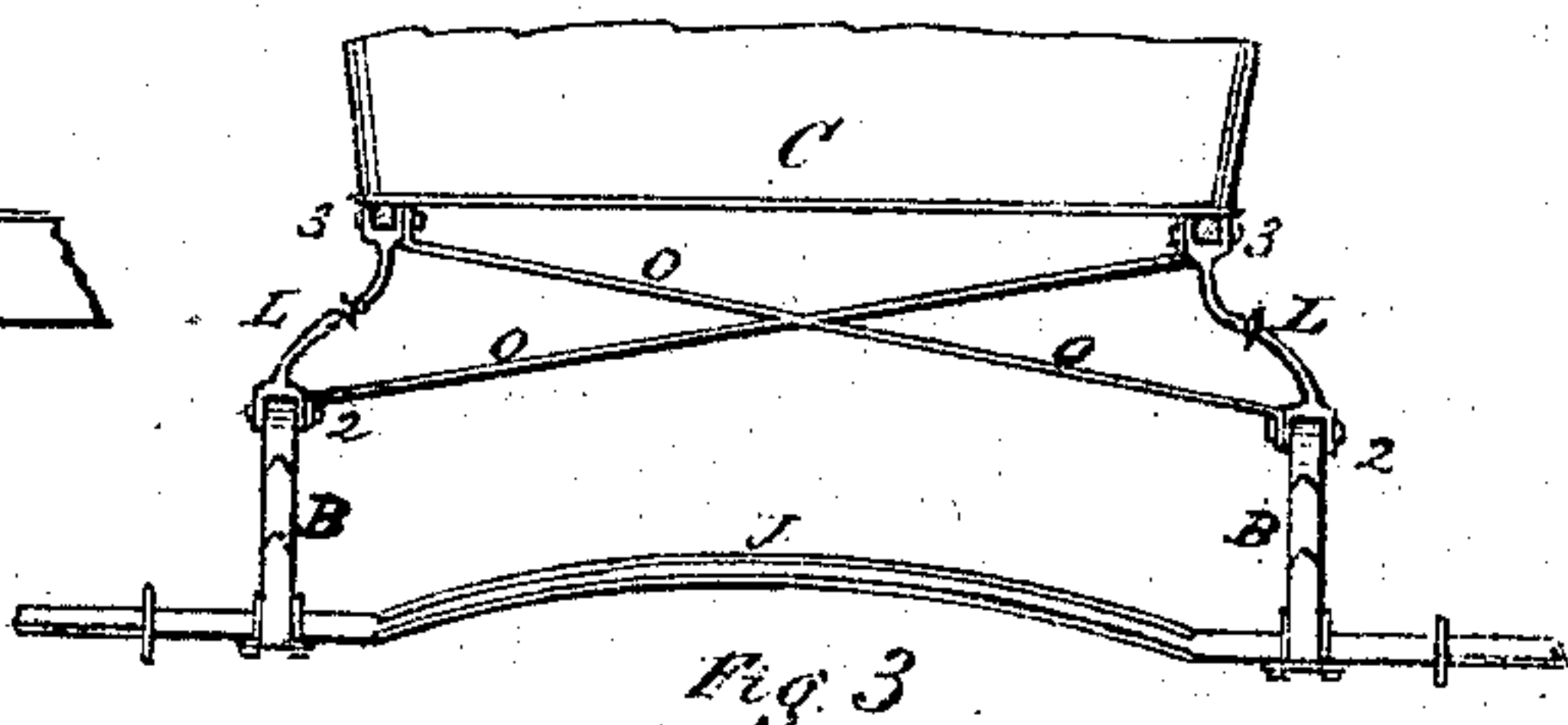


Fig. 3.

Witnesses:

A. M. M. J.  
Charles W. Weaver

Inventor

Cyrus W. Saladee



# UNITED STATES PATENT OFFICE.

CYRUS W. SALADEE, OF ST. CATHERINES, CANADA.

## IMPROVEMENT IN CARRIAGES.

Specification forming part of Letters Patent No. 120,106, dated October 17, 1871.

*To all whom it may concern:*

Be it known that I, CYRUS W. SALADEE, of St. Catherines, in the Dominion of Canada, have invented certain new and useful Improvements in the Construction of Pleasure-Vehicles, of which the following is a specification embodying my invention:

It is a well-established fact that a greater degree of elasticity and ease of motion is attained in pleasure-vehicles—with like dimension of springs—with body suspended upon the axles without perch than can be acquired in those constructed with a perch-coupling. In the latter case the two axles are rigidly secured in their relative position to each other, and not the slightest longitudinal vibration is permitted to the wheels in their forward movement, and while passing over abrupt obstacles in the way; and hence the concussion to the body must needs be greater than if the axles were held in their relative position to each other by the springs of the vehicle and not rigidly connected. But while this is an established fact in mechanics relating to wheeled vehicles, it is equally true that the cost of constructing them upon any of the various plans now in use forbids the general manufacture of the light class of pleasure-vehicles upon the principle of no perch.

The object of my invention, therefore, is to produce a no-perch buggy or light carriage, of any approved style, by such an arrangement and combination of springs, axles, fifth-wheel, and thills or pole as not only to reduce the cost of construction to a materially-lower figure than the ordinary perch-vehicles can be made, but at the same time to impart additional strength, with a less proportion of material, and, therefore, lighten, as well as to improve the general appearance of the complete vehicle. The first part of my invention relates to suspending the body of the vehicle upon four springs, the hind ones of which are secured to the axle and rear end of the body, as hereinafter shown and described, while the two front springs and the rear end of the thills or pole are rigidly secured to the front axle, as hereinafter shown and described. The second part of my invention relates to the application of the fifth-wheel to the front gearing, as and for the purpose here shown and described. The third part of my invention relates to the manner of cross-bracing the springs—front and back—to prevent lateral strain upon the same, as hereinafter fully shown

and described. It will be seen that the entire gearing, except the thills or pole, is constructed without any piece or part of wood-work, thus simplifying its construction, and imparting a lightness in appearance not attainable under any of the present known devices for light gearings.

It is proper in this connection for me to state that the arrangement and combination of the parts forming the principles of my invention in the construction of light gearings is susceptible of a variety of modifications without in any material point altering the main features therein claimed; therefore I do not limit my claims to the exact combination of the parts as shown in the drawing, as they may be altered or modified to meet the particular fancy of the manufacturer and still retain the principal features of my invention.

In the drawing, Figure 1 represents a side elevation of a complete top-buggy embodying my improvements. Fig. 2 is a plan view of the same. Fig. 3 is a front view of the hind axle with the body C cut in two just in front of the stirrup L, seen in Fig. 1, and showing the cross-braces O and stirrups L and L. Fig. 4 is a front view of the front axle, showing the arrangement of springs, cross-brace P, cross-bar E and E, fifth-wheel, and front of body in part. Fig. 5 is a top and side view of one of the ears T which form the joints under the fifth-wheel, seen in Figs. 1 and 4, having a piece of the fifth-wheel D in position.

The hind axle is forged and bent, as seen in Fig. 3, to which is clipped or otherwise secured the two half-elliptic springs B, as seen in Fig. 1. The body-loops A are extended from the rear end of the body and made to hinge upon the rear ends of the springs, as plainly shown in Figs. 1 and 2. In the front ends 2 of the springs I hinge the lower ends of the stirrups L, the top ends of which are hinged to the body-loop at 3. (See Figs. 1 and 3.) Now, for the purpose of bracing the front ends of the springs against lateral strain, by either one of the hind wheels striking an abrupt obstacle in the road, I interpose the cross-braces O and O, substantially as shown in the view of the same in Fig. 3. These braces may be leathern straps, if desired. With the hind axle and springs thus connected to the body it will be seen that the operation of the stirrups L and L upon their hinge ends 2 and 3, Fig. 1, will freely permit of the extension of the springs when vibrating under their burden, while the body-loops A serve to pull the



axle and hind wheels from the rear ends of the springs at 1.

I will here describe another modification of springs in connection with the body and hind axle, and which, also, I claim as part of my invention, viz.: In place of the half-elliptic spring shown in Fig. 1 I will use a C-spring, as shown by the dotted line B, while the front half of this spring, from the axle to the end at 2, is as now shown in the drawing, Fig. 1; but in this case the stirrups L are rigidly connected to the bottom of the body at 3, and braced, as shown by dotted line 5, but the lower ends working freely in the joints 2 on the inner ends of the springs, and laterally supported by the braces O and O, as shown in Fig. 3. The dotted body-loop A is hinged to the top end of the C-spring at 4 in the usual way. The front axle is forged and bent the same as the hind one, upon which the two full-elliptic springs B 1 are secured in any substantial manner. The tops of these springs are spanned by the cross-bar E, seen in 1, 2, and 4, which is made of wrought-iron, and arched up in the center, as shown in Fig. 4. The outer ends of this cross-bar E terminate in a cross-head, as seen in Fig. 2, by which it is bolted to the tops of the springs. To strengthen this arched bar E, as well as to brace the springs laterally, the cross-brace P is interposed, as shown in Fig. 4. On the top of the cross-bar E is hinged the fifth-wheel D, separately shown by Fig. 5, in the manner plainly seen in Figs. 4 and 6. Between the ears T, and next to the cross-bar E, I place a flat block of rubber, X, and on the top of this the friction-plate *v*, (see Fig. 4 and 6,) so that, when the ears T are drawn down into their position the rubber block is compressed, and the joint between the cross-bar E and fifth-wheel D rendered secure and anti-rattling. Across the top of the fifth-wheel D I secure the body-loop A 1, bent in the form seen in Fig. 2, having two diagonal branches, I and I, made solid therewith, and which also rest upon and support the fifth-wheel in position. To the outer ends of these branches I is secured the guard-brace 6, seen in Fig. 1. The rear ends of the shaft or pole-irons are rigidly clipped to the front axle, as plainly shown in Figs. 1 and 2, and thus dispensing with the usual joint at this con-

nection, and thereby secures a greater degree of safety in this very important point. And finally I interpose the stirrup *k*, seen in Figs. 1 and 2, between the front end of the springs B 1 and the under side of the cross-bar N 1 of the shafts for the purpose of the more securely supporting the springs in their relative position with the thills and axle, so that in raising or lowering the thills or pole the joint 8 under the fifth-wheel, Fig. 1, is operated to admit of such movement. The steps H, I secure to the rear end of the front springs, as seen in Figs. 1 and 2. Now,

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In vehicles without perch, the half-elliptic or C-spring B, in combination with the body-loop A and stirrup L, substantially as and for the purpose shown and described.

2. Extending the body-loop A and hinging it upon the rear end of the half-elliptic spring B, as and for the purpose shown and described.

3. In combination with the stirrups L, the cross-braces O and O, seen in Fig. 3, in the manner and for the purpose substantially as shown and described.

4. Rigidly securing the front springs B 1 and the thills or pole to the axle, substantially as and for the purpose set forth.

5. The stirrup K, in combination with the front ends of the springs B 1 and the thills or pole of the vehicle, substantially as and for the purpose set forth.

6. The combination of the cross-brace P with the cross-bar E, Fig. 4, as shown and described.

7. Interposing the joint 8, Fig. 1, between the fifth-wheel D and the cross-bar E and body-loop A 1, substantially as and for the purpose shown and described.

8. The combination of the ears T, Figs. 1, 4, and 6, with the cross-bar E or its equivalent, friction-plates *v*, rubber block X, and the fifth-wheel D, the whole constructed and operating substantially as shown and described.

CYRUS W. SALADEE.

Witnesses:

CHARLES E. WEAVER,  
V. C. CLAYTON.

(31)