O. B. THOMPSON.

Carriage-Springs.

No. 152,020. Patented June 16, 1874.

Fig. 1.

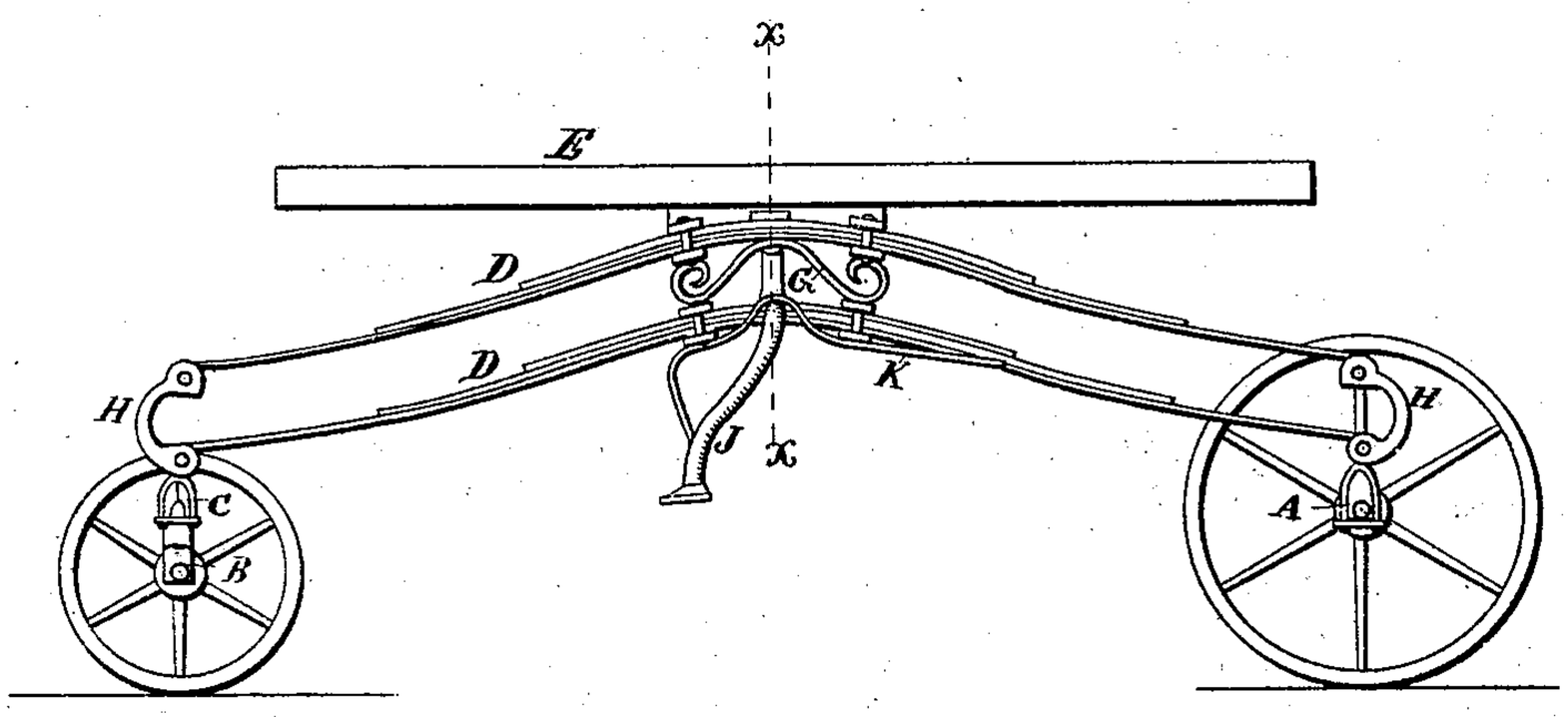


Fig. 2.

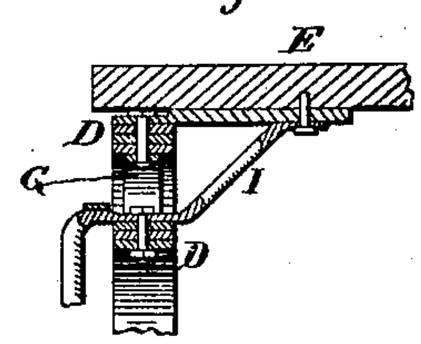
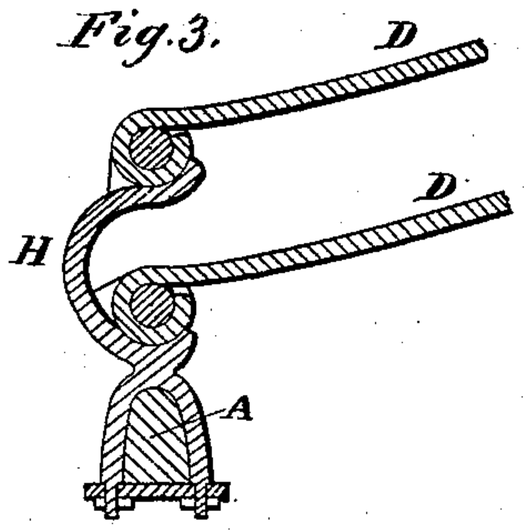


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

ORRIN B. THOMPSON, OF WHITE ASH, ASSIGNOR OF ONE-HALF HIS RIGHT TO WILLIAM W. GRIER, OF HULTON, PENNSYLVANIA.

IMPROVEMENT IN CARRIAGE-SPRINGS.

Specification forming part of Letters Patent No. **152,020**, dated June 16, 1874; application filed May 6, 1874.

To all whom it may concern:

Be it known that I, O. B. THOMPSON, of White Ash, county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Carriage-Springs, of which the following is a specification:

My invention relates to that class of carriages in which the carriage-body is supported upon springs at the sides; and the nature of my invention consists in the employment upon each side of the carriage of two springs, one above the other, parallel throughout, and rigidly connected at their centers, so that they both act as one spring in sustaining the load. My invention also consists in the means for connecting said spring to the rear axle and front cross-bar; also, in the means for bracing and connecting the springs, and in the combination of parts, as hereinafter more fully set forth.

In the accompanying drawing, Figure 1 is a side elevation of a carriage-frame embodying my invention. Fig. 2 is a cross-section of the same through the line *x x*, Fig. 1. Fig. 3 is an enlarged section, showing the mode of connecting the springs to the rear axle-tree and front cross-bar.

A represents the rear axle, and B the front axle, to which latter the cross-bar C is pivoted by the usual central king-bolt. E represents a part of the carriage-body, supported upon each side by two simple concord or side springs, D D, each of which may consist of any desired number of leaves, according to the strength required. The springs D D are placed one above the other, are parallel throughout, and are rigidly connected at their centers by a brace, G, so that they both act as one spring in sustaining the load. The springs D D are pivoted at their ends to links H H, which links are rigidly attached by their lower extremities, one to the back axle A and the other to the front cross-bar C, as shown in Fig. 3. The lower ends of the links H form clips to fasten permanently in their respective positions, and the parts in which the springs are pivoted extend above the same, as shown. From the center of the lower spring inward and upward to the carriage-body E passes an equalizing-bar, I, whereby any sidewise motion of the springs and body is entirely prevented. This equalizing-bar causes the carriage-body to come down perfectly vertical without any side motion whatever. The rolling motion of the axles in their boxes, so common to carriages and road-wagons without reaches, is prevented by the springs being parallel, and by the rigid attachment of the links to the back axle and cross-bar, as described. The brace G, which connects the two springs, passes diagonally from the middle of the upper spring toward the bearings of the lower spring, thus dispensing with all braces passing from the back axle forward. The direct connection of the axle and cross-bar to the carriage-body through the lower spring and center piece G answers instead of braces. From the points where the center piece G is connected with the lower spring, the ends of said center piece are curved upward again to connect with the upper spring, as shown in Fig. 1. The diagonal brace or side piece G braces the springs and retains the axles in position when the wheels pass over an obstruction. J represents the step, and K the wear-iron, which are attached to the lower spring, as shown.

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

1. The combination of the springs D D with the equalizing-bar I, passing from the middle of the lower spring to the carriage-body, substantially as and for the purposes set forth.

2. The combination of the springs D D with the center brace G, substantially as and for the purposes set forth.

3. The combination, with the springs D D, of the links H H, rigidly attached to the back axle and front cross-bar, substantially as and for the purposes set forth.

4. The combination of the springs D D, central piece G, brace I, and links H H, substantially as shown and described.

In testimony that I claim the foregoing as my invention I hereunto affix my signature this 4th day of May, 1874.

O. B. THOMPSON.

Witnesses:
GEO. L. LEE,
MAT. LLOYD.