E. P. CARTER.

Improvement in Running Gear for Buggies.

No. 119,819. Patented Oct. 10, 1871.

Fig 1.

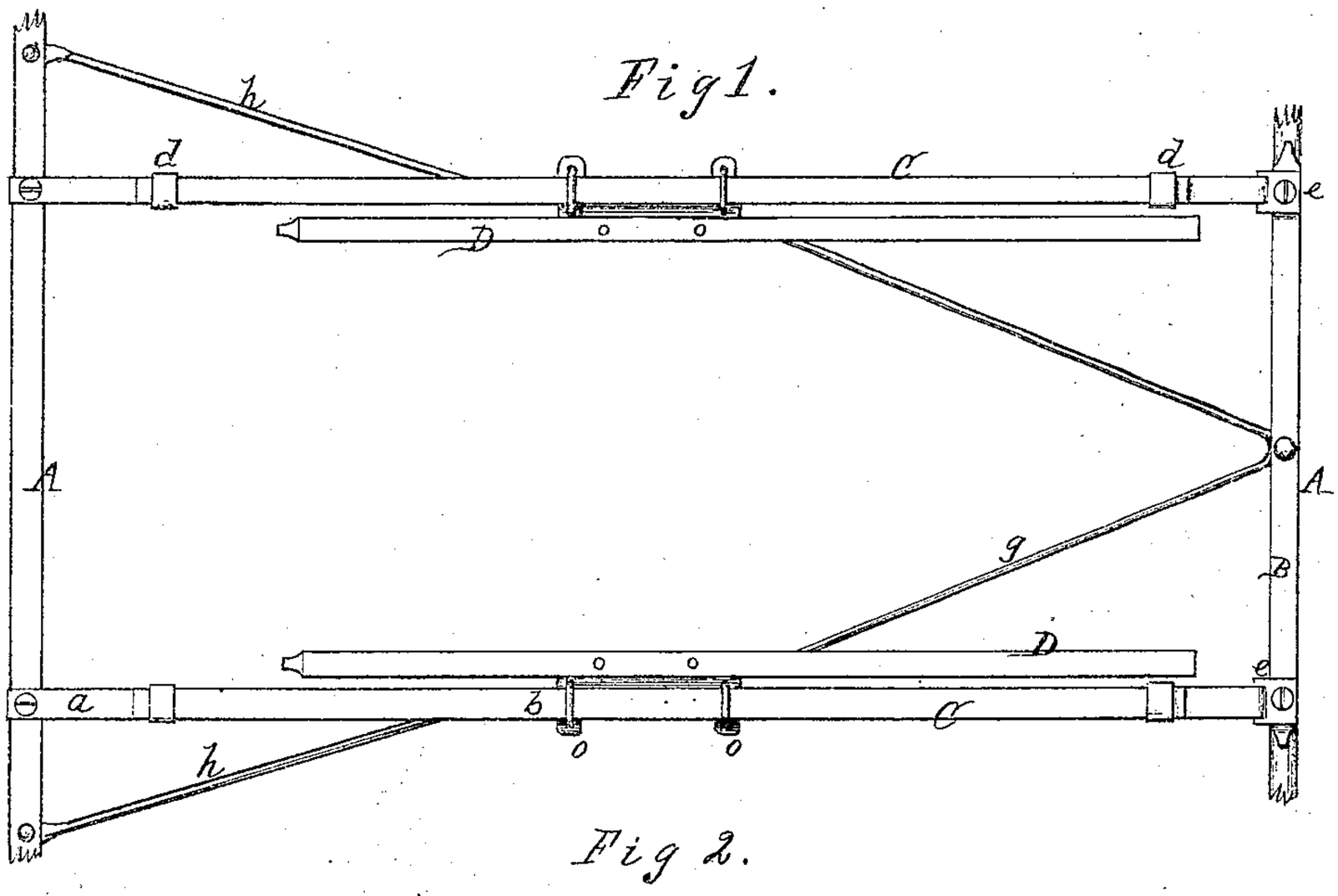


Fig 2.

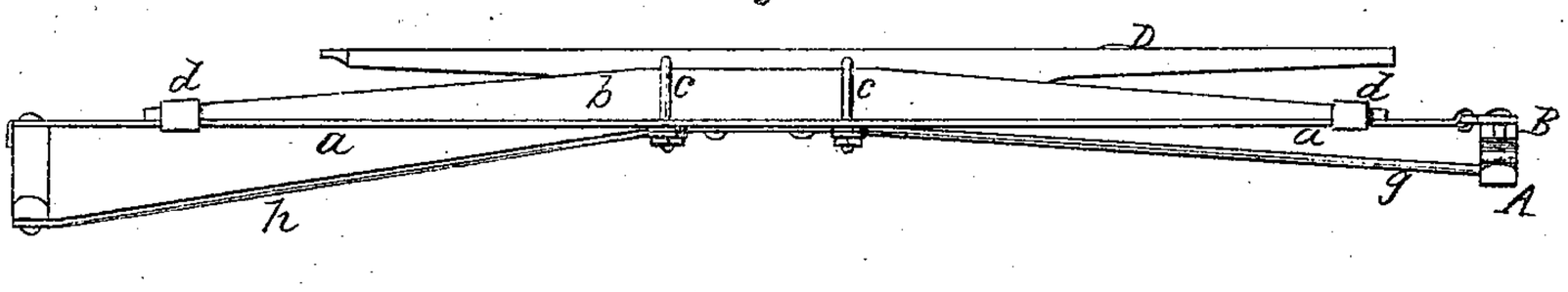
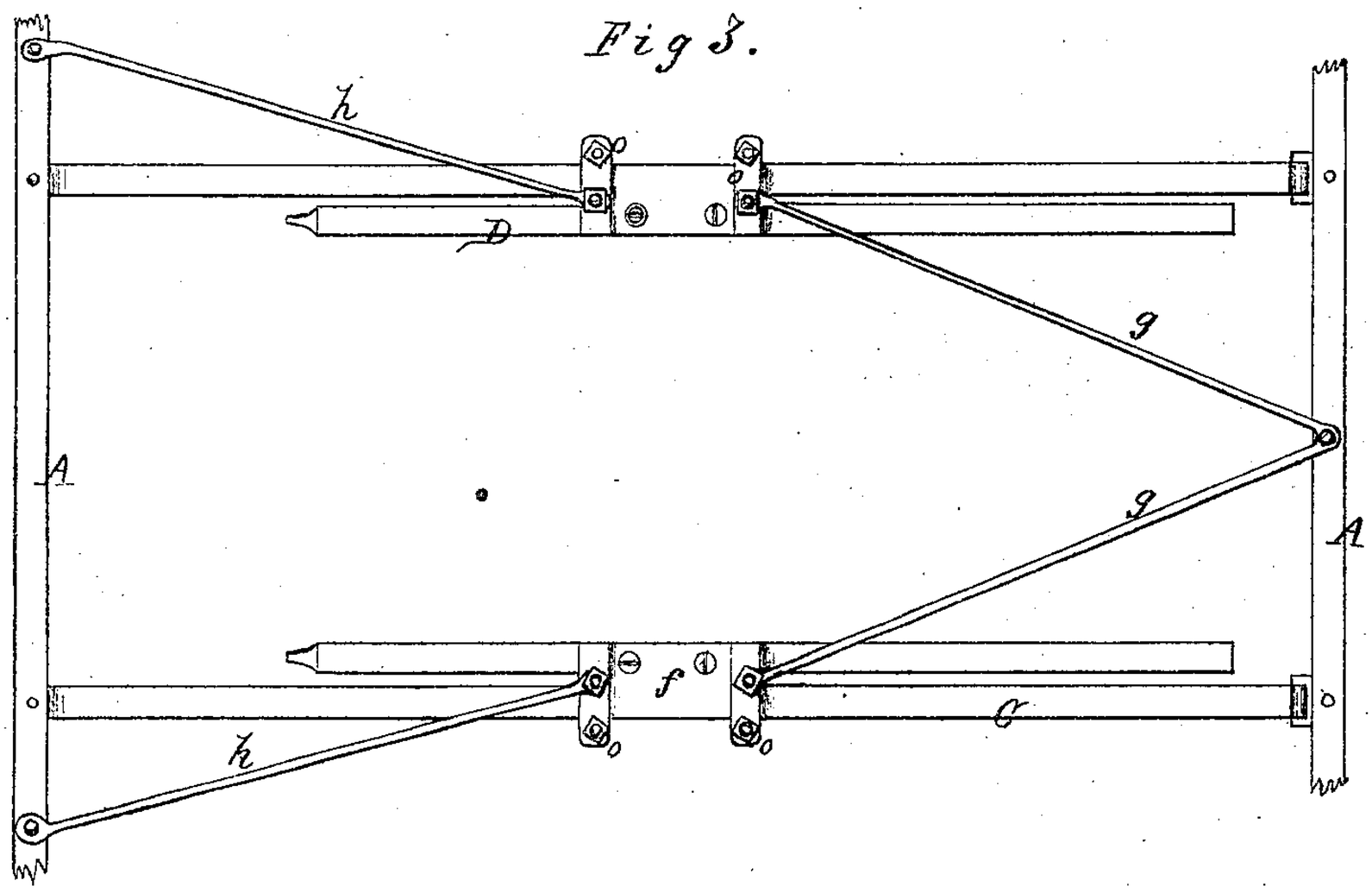


Fig 3.



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UNITED STATES PATENT OFFICE.

EGBERT P. CARTER, OF ARCADE, NEW YORK.

IMPROVEMENT IN RUNNING-GEARS FOR BUGGIES.

Specification forming part of Letters Patent No. 119,819, dated October 10, 1871.

To all whom it may concern:

Be it known that I, EGBERT P. CARTER, of Arcade, in the county of Wyoming and State of New York, have invented certain Improvements in Running-Gear for Buggies, of which the following is a specification:

My invention relates more particularly to that class of light vehicles known as trotting-wagons, but it is also applicable to any variety of light carriages. It consists mainly in a spring made up partly of wood and partly of spring metal, combining lightness with strength; and also in a novel method of hanging the carriage-body and bracing the whole upon the axles.

In the drawing, Figure 1 is a plan view of my invention. Fig. 2 is a side elevation. Fig. 3 is an inverted view.

In the ordinary trotting-wagon the springs are usually bars of wood extending from axle to axle, and performing the office of both springs and reaches, as well as forming the support for the wagon-seat and bottom. This is a very uncomfortable vehicle for the rider, as there is scarcely any elasticity in the springs, and having strains upon them in two directions they very soon become "set" and useless as springs. I have by my invention obviated these difficulties, and at the same time provided a very light running-gear which is comparatively cheap in construction.

A represents the axles, upon the forward one of which the spring-bar B is pivoted at the center, as usual. C C are springs attached at the extremities to one axle, A, and to the spring-bar B, and arranged to support the body of the carriage at or near the center. These springs are formed of a strip, *a*, Fig. 2, of spring-steel, upon which backings *b* of wood are secured at or near the center by suitable clips *c*. Clasps *d* are also provided near the extremities of the backings *b*, which are preferably made fast to said backings, but are free to move upon the metallic strips *a*. By this means the parts are allowed end play upon each other when vertical movement of the spring occurs. It will be seen that by combining the wood with the metal in the manner shown I utilize the elasticity of both materials, while the toughness of the wood counteracts the tendency of the steel to become broken by sudden jars or strains. This spring is also much cheaper than the ordinary leaf-spring, which is frequently used in carriages of this kind. The metallic strips may be secured directly to the axle and spring-bar by a bolt or screw; or a slotted plate, *e*, Figs. 1 and 2, may be bolted thereon, into the slot of which the ends of the strips are hooked, as shown in Fig. 2. The backings *b* are made somewhat shorter than the strips *a*, as indicated, the amount of vertical movement, owing to the resilience of the springs, being thereby increased and the strength of the spring not impaired. The carriage-body may be attached directly to the backings *b;* but I prefer to provide plates *f*, Fig 3, which are fastened to the springs by the extremities of the clips *c*. These plates project one side of the springs, as shown, and receive the bars D, by which the carriage-bottom or body is supported. The bars are fastened to the plates *f* in any convenient manner. By this construction the wagon-body is brought much lower than it otherwise would be, and the sills or bars D allowed ample vertical movement without coming in contact with the backings *b*, as would necessarily be the case if located directly over them. For the purpose of stiffening the running-gear laterally, and also to form a connection between the two axles, I provide the brace-rods *h* and *g*, which are attached to the plates *f* and to the axle, as shown in Fig. 3. The plates *f* thus form rigid connections between the braces and the other parts, preventing lateral twist, while at the same time the brace-rods act as reaches, entirely relieving the springs C from longitudinal strain arising from the draft of the vehicle. The peculiar connection and arrangement of the plates *f*, brace-rods, and bars also prevent any longitudinal slipping of the parts upon the springs. Tie-bars or washers *o* are placed upon the ends of the clips *c*, which thus stiffen the plates *f*, and the extremities of the braces *h* and *g* are conveniently secured by these threaded ends of the clips as shown, the nuts being screwed down over the whole.

It will be observed that by this construction of running-gear I obtain lightness, strength, and simplicity of construction, as well as a greater resilience of the springs than is possible in the old plan of mounting this class of wagons. My invention is also applicable to all varieties of one-seated carriages in which lightness, strength, and ease in riding are desirable.

What I claim as my invention is—

1. The compound spring C composed of a single strip *a* of spring-metal, and the backing *b* of wood, rigidly connected at or near the center and loosely attached near the ends by means of suitable clips *d*, substantially as and for the purposes set forth.

2. In combination with the springs C extending from axle to axle, the supporting-plates *f* and bars D, constructed and arranged as herein set forth.

3. A running-gear for buggies, embracing in its construction the following instrumentalities: The springs *a*, the attaching-plates *b*, and the brace-rods *c*, arranged with reference to each other and the axle, substantially in the manner set forth.

E. P. CARTER.

Witnesses:
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